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Perceived Weight Discrimination, Changes in Health, and Daily Stressors

Angelina R. Sutin[1], Yannick Stephan[2], Joseph G. Grzywacz[3], Eric Robinson[4], Michael Daly[5,6], and Antonio Terracciano[1]
[1]Florida State University College of Medicine
[2]University of Montpellier
[3]Florida State University College of Human Sciences
[4]Institute of Psychology, Health & Society, University of Liverpool
[5]Behavioural Science Centre, University of Stirling
[6]UCD Geary Institute, University College Dublin

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Address correspondence to:
Angelina R. Sutin, Ph.D.
Florida State University College of Medicine
1115 W. Call Street
Tallahassee, FL 32306
(850) 645-0438
Fax: (850) 645-1773
angelina.sutin@med.fsu.edu

Abstract

Objective: To examine whether perceived weight discrimination is associated with change in health markers over time and whether it is associated with daily stressors, physical symptoms, and affect.

Method: Participants were selected from the Midlife in the United States (MIDUS) study if they had data on perceived weight discrimination and health markers at MIDUS II (2004-2006), health markers at MIDUS III (2013-2014), and a body mass index ≥25 (*N*=1,841). A subset of these participants (*N*=1,153) reported on their experiences daily for eight days as part of the second National Study of Daily Experiences (NSDE II).

Results: Perceived weight discrimination was associated with declines in mental and physical health over time. Participants who reported weight discrimination experienced more daily stressors, physical symptoms, and negative affect and less positive affect over the eight days of the NSDE II. Weight discrimination was most strongly associated with interpersonal stressors, feelings of anger and frustration, lower attention and activity, and more non-specific physical symptoms (e.g., fatigue).

Conclusions: The present research replicates the association between perceived weight discrimination and worse health over time and extends this literature to show that people who experience weight discrimination have more daily stressors, physical symptoms, and negative emotions.

Keywords: Weight discrimination; Daily Stress; Weight gain

What is already known about this subject?

- Perceived weight discrimination is associated with weight gain and decline in physical and mental health
- Experimental manipulations indicate that exposure to weight-stigmatizing material increases cortisol reactivity and negative affect
- Less is known about how weight discrimination is associated with stress in daily life

What does this study add?

- Perceived weight discrimination is associated with more daily stressors, physical symptoms, and negative affect and less positive affect
- Weight discrimination and declines in physical health are mediated, in part, by more daily physical symptoms and less positive affect
- Daily stress does not mediate the relation between perceived weight discrimination and weight gain

Introduction:

Many individuals have had the experience of being treated unfairly because of their body weight (1). Individuals who experience weight discrimination tend to engage in more health-risk behaviors (2), have lower subjective well-being, and are in worse physical health (3); such experiences may culminate ultimately in premature mortality (4). Less is known, however, about the daily experiences of individuals who have faced discrimination based on their body weight. The goals of the present research are twofold: First, we aim to replicate the longitudinal association between weight discrimination and declines in health over time. Second, we examine the daily experiences of individuals who experience weight discrimination. Specifically, we are interested in whether weight discrimination is associated with daily stressors, physical symptoms, and affect and whether these associations mediate the relation between perceived weight discrimination and declines in health over time.

Individuals who perceive unfair treatment on the basis of their body weight tend to engage in behaviors that are conducive to obesity. Individuals who report weight discrimination, for example, tend to overeat (5), eat at irregular intervals (6), and avoid physical activity (7). Consistent with these retrospective ratings of average or typical behavior, the few available diary studies suggest that weight discrimination is associated with worse eating habits (8). Such behaviors may contribute to the greater risk of weight gain over time that is associated with weight discrimination. The association between weight discrimination and weight gain has replicated across older and middle-aged adults in the United States (9, 10) and older adults in the United Kingdom (11). In addition, girls labeled as fat in adolescence are at greater risk of obesity by adulthood (12). There is thus consistent evidence that discrimination based on weight is associated with increased risk of weight gain. Weight discrimination has also been associated

with declines in other aspects of physical and mental health. Individuals who experience weight discrimination, for example, have greater declines in functional disability (13), more difficulty managing their diabetes (14), and greater declines in subjective well-being and greater increases in loneliness over time (3).

Less is known about the daily experiences of individuals who perceive discrimination based on their weight. Studies on the daily subjective experience of weight discrimination have focused primarily on the context (e.g., the source of the discrimination) and emotional reaction (e.g., negative affect) to stigmatizing experiences (15). In addition to the experience of unfair treatment on the basis of body weight, individuals who have experienced discrimination may be more vulnerable to stressors in their daily lives that are not necessarily a direct result of the discrimination. Models of weight stigma implicate stress as a consequential component of the experience of weight discrimination (16, 17). Several well-designed experimental studies have demonstrated that individuals exposed to weight stigma-related media content (18) or stigmatizing interpersonal interactions (19) show increased negative affect and greater cortisol reactivity, a physiological marker of stress, than individuals not exposed to such stigmatizing material. There are thus immediate psychological and physiological consequences to experiences with weight bias.

Complementary to laboratory studies, other research paradigms can be informative on the links between weight bias and stress in daily life. Over the course of an average day, for example, an individual may experience any number of stressors, physical symptoms, and/or emotions that are indicators of stress (20). Less is known, however, about how weight discrimination is associated with these daily experiences. In addition to greater physiological reactivity, individuals who experience weight discrimination may be more vulnerable to

experiencing daily stress that in turn may increase risk of poor health outcomes. Daily stress is likewise implicated in health status, through both physiological (21) and behavioral mechanisms (22). As such, daily stress may be one mechanism that links weight discrimination to these worse health outcomes.

The present research uses the second and third waves of the Midlife in the United States (MIDUS) study to examine the relation between perceived weight discrimination and change in health markers over approximately 10 years and how weight discrimination is associated with daily experiences with stressors, physical symptoms, and positive and negative affect. Previous research has identified an association between weight discrimination and weight gain between the first and second waves of MIDUS (10); we seek to replicate this association between the second and third waves of MIDUS. We also seek to replicate the association between weight discrimination and declines in physical and mental health over time (3). We then expand on this work to examine how weight discrimination is associated with daily experiences with stressors, physical symptoms, and affect as reported in the National Study of Daily Experiences (NSDE II), a sub-study of the MIDUS II (23). We expect that individuals who had experienced weight discrimination will report more daily stressors, physical symptoms, and negative affect and less positive affect than individuals who had not reported such experiences. We also test whether stressors, symptoms, and affect are mediators between weight discrimination and change in the health markers over time. We focus on individuals whose body weight places them in the overweight or obesity category because individuals in these weight categories are the most likely to experience weight discrimination[1] (1).

[1] Individuals with underweight and normal individuals also perceive discrimination based on weight. The current sample, however, had very few participants in the underweight category (n=25), and of those participants, only 1 reported weight discrimination. In addition, the

Methods:

Participants and Procedure

Participants were from the second wave of the Midlife in the United States (MIDUS II; 2004-2006) study who also completed either the second National Study of Daily Experiences (NSDE II) and/or the third MIDUS assessment (MIDUS III; 2013-2014). The NSDE II is a substudy of MIDUS that occurred approximately nine months after the MIDUS II assessment (23). As part of the NSDE II, MIDUS staff called participants every evening at a similar time for eight consecutive days and conducted a 10-15 minute telephone interview about participants' experiences that day, which included their daily stressors, physical symptoms, and affect (see below).

A total of 1,841 participants from MIDUS II with a BMI $\geq$ 25 also had information available on the health indicators at this assessment and again in MIDUS III (due to missing data, BMI was available for 1,584 participants at MIDUS III).[2] This sample was used for the analysis of weight discrimination and change in health status. A total of 1,153 MIDUS II participants also completed the NSDE II, had information available on the variables of interest and a BMI$\geq$25[3]. See Table 1 for sample descriptive statistics. This sample was used for the analysis of weight discrimination and daily stressors, physical symptoms, and affect.

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proportion of participants who reported weight discrimination was low (about 3%) among individuals with normal weight. We thus focused on individuals in the overweight and obesity BMI categories because they had the greatest exposure to the stressor. The results, however, were similar when all participants were included in the analysis.

[2] A total of 1,030 participants with available data were not selected into the analyses because they had a BMI<25. Compared to the analytic sample, the unselected sample had fewer men (p<.01), was younger (p<.01), in better physical health (p<.01), and less likely to have experienced weight discrimination (p<.01). There was no difference in race, education, mental health, or depressive symptoms between the included and excluded samples.

[3] A total of 869 participants completed the NSDE II but were not included in the analyses because they had a BMI<25. Compared to the analytic sample, the unselected sample rated their

Measures

Weight discrimination. During the MIDUS II assessment, participants rated their experiences with everyday discrimination and then attributed those experiences to a number of personal characteristics (24). Specifically, participants rated nine statements about experiencing discrimination (e.g., "you are treated with less respect or courtesy"). After making these ratings, participants were asked, "What was the main reason for the discrimination you experienced? (If more than one main reason, check all that apply)." Participants could attribute those experiences to height or weight; weight discrimination was scored as 1 (experienced weight discrimination) versus 0 (have not experienced weight discrimination). This measure has been used successfully to track trends in weight discrimination over time (25) and its association with health outcomes such as mobility (13) and mortality (4).

Health indicators. At both MIDUS II and III, participants reported on a number of health indicators. First, participants reported their weight and height; BMI was derived as kg/m^2. Second, participants were sent a tape measure and asked to measure their waist circumference at the level of their navel. Third, participants reported on their depressive symptoms with the World Health Organization Composite International Diagnostic Interview-Short Form (26). Seven items related to the experience of depressed affect were summed as a measure of depressive symptoms (range 0 to 7). Fourth, participants rated their subjective physical (mental) health on a single-item measure that asked, "In general, would you say your physical (mental) health is excellent, very good, good, fair, or poor?" Response options ranged from 1 (excellent) to 5 (poor).

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stressors as more severe ($p<.05$), perceived more control over their stressors ($p<.05$), rated their physical symptoms as more severe ($p<.05$), and experienced more daily negative affect ($p<.01$). There were no differences on any of the other daily measures.

Daily experiences. Participants reported on their daily stressors, physical symptoms, and affect each night for eight nights during the NSDE II assessment. For daily stressors, participants were asked whether any of seven stressors (e.g., an argument or disagreement) had occurred since the previous evening. Participants responded yes/no to each stressor. The sum of the stressors was calculated for each day and then the mean was taken across the eight days. Participants were also asked follow-up questions for each stressor. Specifically, participants rated its severity on a 4-point scale from *not at all stressful* to *very stressful*, their feelings of negative affect during the stressor (e.g., anger, shame) on a 4-point scale from *not at all* to *very*, and their perceived control over the stressor on a 4-point scale from *none at all* to *a lot*.

For physical symptoms, participants were asked if they had experienced any of 28 symptoms during that day (e.g., headache, backache). Participants responded yes/no to each symptom. The number of physical symptoms each day were summed and then the mean taken across the eight days. For each reported symptom, participants also rated the severity of the symptom on a 10-point scale from *very mild* to *very severe*.

For daily affect, participants rated how often they felt 27 emotional states throughout the day. Specifically, they were asked, "How much of the time today did you feel…" and rated 13 positive affect items (e.g., cheerful, proud) and 14 negative affect items (e.g., upset, angry) on a 5-point scale from *none of the time* to *all the time*.

Statistical Approach

To address whether weight discrimination was associated with change in BMI, waist circumference, depressive symptoms, and subjective physical and mental health between baseline and follow-up, we used linear regression to predict each outcome from discrimination, controlling for the baseline value of each indicator and age, sex, race, and education. To address

whether weight discrimination was associated with the daily experience of stressors, physical symptoms, and affect, we used linear regression to predict each daily experience from discrimination, controlling for the demographic factors. Additional models included BMI and depressive symptoms as covariates. To address whether daily experiences were one mechanism between weight discrimination and decline in health over time, we used standard bootstrapping techniques for multiple mediators (27) to test whether daily experiences mediated the relation between weight discrimination and change in each of the health indicators. Finally, for each analysis, we also tested whether BMI moderated any association using Aiken and West's (28) methodology for testing interactions.

Results:

We first examined whether weight discrimination was associated with change in the health markers over the approximately 10-year interval between MIDUS II and III (Table 2). Across this follow-up period, weight discrimination was associated with worsening subjective physical and mental health and increases in depressive symptoms. These associations held controlling for BMI and were not moderated by BMI. Surprisingly, weight discrimination was unrelated to change in BMI across the follow-up period at the sample level. When stratified by weight category, however, weight discrimination was related to greater weight gain among participants in the overweight category (β=.07, p<.05) but not participants in the obesity weight category (β =.00, *ns*); the interaction between baseline BMI and weight discrimination on change in BMI over time was significant ($\beta_{interaction}$ = -.05, p<.05). Weight discrimination was unrelated to changes in waist circumference.

We next examined whether weight discrimination was associated with daily stressors, physical symptoms and affect (Table 3). Participants who reported weight discrimination tended

to experience more daily stressors and negative affect related to those stressors. Among participants who had experienced daily stressors, weight discrimination was unrelated to the severity of the stressor or perceived control over it. Participants who reported weight discrimination also experienced more daily physical symptoms; discrimination was unrelated to symptom severity. Finally, weight discrimination was associated with experiencing more negative affect and less positive affect across the 8-day study period. All associations held when controlling for BMI and depressive symptoms (Table 3). BMI did not moderate the association between weight discrimination and stressors, symptoms, or affect.

To further identify how weight discrimination was associated with specific daily experiences, we examined the relation between discrimination and the individual stressors, symptoms, and affect. Weight discrimination was more strongly related to interpersonal stressors than other types of stressors (Table 4). Specifically, participants who had experienced weight discrimination were more likely to report having had arguments with someone, having actively avoided an argument, and having experienced some form of discrimination that day (not necessarily due to weight); these associations were also independent of BMI. Weight discrimination was likewise more strongly associated with some physical symptoms more than others (Table 5). It was primarily related to fatigue, backache, joint pain, poor appetite, stomach symptoms, and chest pain. These associations persisted controlling for BMI, which suggested that these relations were not due to shared overlap with body weight. Weight discrimination was also generally associated with feeling less of all of the items related to positive affect (except for calm and peaceful; Table 6). Participants who had experienced weight discrimination particularly felt less attentive, less active, and less confident on average across the eight days. Of the negative

affect items, participants who experienced weight discrimination were particularly likely to report feeling angry, frustrated, upset, and jittery (Table 6).

Finally, we tested the daily experiences as mediators between weight discrimination and change in the health indicators (*n*=946 with the necessary MIDUS II, III and NSDE assessments). Physical symptoms and positive affect mediated the relation between weight discrimination and increases in poor physical health across the follow-up: The association between weight discrimination and worse subjective physical health was accounted for, in part, by more daily experiences of physical symptoms (point estimate = .0299, 95% bias corrected CI=.0036, .0728) and less positive affect (point estimate = .0185, 95% bias corrected CI=.0018, .0550). The daily experiences did not mediate the relation between weight discrimination and change in depressive symptoms, subjective mental health, or change in BMI among participants who measured in the overweight BMI category, and BMI did not moderate any association.

Discussion:

The present findings indicate that weight discrimination is associated with worse physical and mental health over time. Individuals who experience weight discrimination also subsequently go on to report more daily stressors throughout the course of an average week, experience more physical symptoms and feel more negative affect and less positive affect than individuals who have not experienced weight discrimination. These associations persist after controlling for BMI and depressive symptoms, which indicates that the associations are not due solely to physical and emotional comorbidities associated with discrimination. In contrast to our hypothesis, there was little evidence that the daily experiences mediated the association between weight discrimination and declines in health.

The present research gives a glimpse into the everyday emotional life of individuals who have experienced discrimination based on their weight. Weight discrimination was most strongly correlated with feeling less attentive and active and feeling more anger and frustration. These results are consistent with the experimental literature. Following a weight bias manipulation, for example, individuals in the stigmatizing condition had less attentional control and felt more negative emotions than those in the control condition (29). Further experimental evidence indicates that individuals tend to display anger after experiencing discrimination (30). The present results suggest that these cognitive and emotional patterns are not limited to immediately after the experience but are repeatedly played out in individuals' everyday lives. There are significant consequences to these processes. Anger, for example, is implicated in cardiovascular outcomes, including heart attack and stroke (31), and deficits in attention have been linked to health-risk behaviors (32). This pathway may be one mechanism that contributes to the relation between weight discrimination and mortality.

Individuals who experience weight discrimination also have more stressors of an interpersonal nature on a day-to-day basis. Humans have a fundamental need to belong (33), and experiences with discrimination can threaten that need (34). Our findings highlight the interpersonal difficulties that individuals who have experienced weight discrimination face on a daily basis. Individuals who have endured discrimination in the past tend to have more arguments with others and especially try to avoid having even more arguments. Avoidance and anger are common responses to rejection that can inhibit social acceptance (34).

The experience of weight stigma is physiologically stressful (18, 19). Experimental manipulations of weight bias show that individuals have greater cortisol reactivity in response to stigmatizing content compared to individuals in control conditions (18, 19). Correlational

evidence further indicates that individuals who experience discrimination based on their weight have higher circulating levels of c-reactive protein (35), a marker of inflammation associated with chronic stress. The present research suggests that in addition to physiological responses to weight stigmatizing experiences, individuals who perceive weight discrimination are vulnerable to stressors in the course of their daily lives. Such daily stressors can have long-term consequences. Individuals who experience more daily physical symptoms, for example, are more likely to develop a chronic condition and functional limitations over time, even if they are free of chronic illness and limitations at baseline (36). The impact of these stressors likely accumulates over time and may be one mechanism through which weight discrimination is associated with worse physical health over time. And, indeed, in the present research, daily physical symptoms mediated the association between weight discrimination and declines in subjective physical health over the follow-up period.

It was of note that although weight discrimination was associated with both more negative affect and less positive affect, it was only the latter that independently mediated the relation between discrimination and declines in subjective physical health. Individuals who frequently experience positive affect tend to have healthier neuroendocrine profiles and have less reactivity to stressors in the lab, independent of negative affect (37). Greater frequency of positive emotions may contribute to more positive health outcomes through building stronger connections with other people that may help buffer against threats to health (38). Coupled with the social isolation that tends to occur with discrimination, a deficit in positive emotions may be particularly harmful for individuals who have experienced weight discrimination. This pattern points to the importance of addressing deficits in positive emotionality as well as proneness to negative emotions.

Previous research has linked weight discrimination with subsequent weight gain (9, 10, 11). Interestingly, in the present research, weight discrimination was only associated with weight gain among participants in the overweight, but not the obesity, weight category, and it was unrelated to change in waist circumference. Further, in contrast to our hypothesis, daily stressors were not the mechanism that accounted for this association. The stress response, rather than the number of actual stressors, may be more important for weight gain. It also may be the case that the response to stressors due to body weight (e.g., weight discrimination) may be more harmful for weight gain than the experience of stressors that are not necessarily weight specific. Thus, even though those who experience weight discrimination tend to also have more daily stressors, these stressors may be less relevant for weight gain relative to weight stigmatizing experiences.

It is important to note that the design of the present study means that it is not possible to infer that daily stressors associated with weight discrimination were a direct result of experiencing weight discrimination. These associations suggest that individuals who experience weight discrimination are vulnerable to also experiencing daily stressors, physical symptoms, and negative emotions. Thus, in future research, it would be worthwhile to examine whether daily stressors that are a direct result of the experience of weight discrimination contribute to changes in health over time. It would also be useful to have objective measures of all outcomes (e.g., BMI, health status) rather than self-reports. Future research could further examine whether the temporal relation between discrimination and stress also goes in the opposite direction. That is, it may be the case that people who experience more daily stressors are also more vulnerable to experiencing weight discrimination. Finally, it would be worthwhile to examine these associations in more racially and socioeconomically diverse samples to evaluate the generalizability of the results. Despite these limitations, this research indicates that individuals

who experience unfair treatment on the basis of their body weight experience more stressors in their daily lives, whether it be stressful interactions, physical symptoms, or negative affect. Such experiences may add to the long-term burden of weight discrimination.

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Table 1

Descriptive Statistics for Study Variables

Variable	MIDUS II	NSDE II
Demographic Variables		
Age	55.32 (11.19)	56.91 (11.89)
Sex (female)	50%	52%
Race (Black)	4%	3%
Race (other)	4%	5%
Education		
High school or less	30%	30%
Some college	28%	30%
College degree	21%	20%
Graduate work/degree	21%	20%
Health Indicators at Baseline		
Body mass index	30.48 (5.08)	30.50 (4.85)
Waist circumference (cm)	100.48 (12.62)	100.81 (13.22)
Depressive symptoms	.46 (1.56)	.59 (1.71)
Subjective physical health	2.42 (.93)	2.48 (.98)
Subjective mental health	2.13 (.89)	2.17 (.93)
Perceived weight discrimination	12%	12%
NSDE Stressors		
Daily stressors	--	.53 (.46)
Severity of stressors	--	1.72 (.67)
Stressor negative affect	--	.82 (.47)
Control over stressors	--	1.45 (.92)
Negative affect	--	.19 (.24)
Positive affect	--	2.71 (.70)
Physical symptoms	--	1.90 (1.83)
Severity of symptoms	--	3.45 (1.43)

Note. *N*=1,841 for MIDUS II and N=1,153 for NSDE II. Values are means (standard deviations) or percentages. Daily stressors range from 0-4; severity range from 0-3; stressor negative affect range from 0-3; control over stress range from 0-3; physical symptoms range from 0-28; severity of symptoms range from 1-9; positive affect and negative affect range from 0-4. MIDUS = Midlife in the United States Study. NSDE = National Study of Daily Experiences.

Table 2

The Relation Between Weight Discrimination and Change in Body Mass Index, Depressive Symptoms, and Subjective Physical and Mental Health across 10 Years from MIDUS II to MIDUS III

Health Indicator	Change
Body Mass Index	.02[a]
Waist Circumference	.02
Subjective Physical Health	.08*[b]
Subjective Mental Health	.08*[b]
Depressive Symptoms	.06*[b]

Note. *N*=1,841; *n*=1584 for body mass index. Coefficients are standardized beta coefficients from linear regression controlling for age, sex, race, education, and baseline health. [a]Moderated by BMI. [b]Findings hold when controlling for BMI. MIDUS = Midlife in the United States Study. *$p<.05$.

Table 3

The Relation Between Weight Discrimination In MIDUS II and Average Daily Experiences Across Eight Days in the NSDE II

Stress Outcome	Model 1	Model 2 (+BMI)	Model 3 (+Depressive symptoms)
Daily Stressors			
Average # of stressors	.13**	.15**	.14**
Negative affect in response to stressor	.09**	.09**	.08*
Stressor severity	.04	.03	.02
Control over stress	-.02	-.03	-.02
Physical Symptoms			
Average physical symptoms	.13**	.11**	.09**
Physical symptoms severity	.02	-.01	-.02
Daily Affect			
Positive Affect mean	-.12**	-.12**	-.10**
Negative Affect mean	.13**	.14**	.12**

Note. *N*=1,153. Model 1 is the standardized beta coefficient for the association between weight discrimination and the stress variable controlling for age, sex, race, and education. Model 2 is Model 1 plus body mass index (BMI). Model 3 is Model 2 plus depressive symptoms. MIDUS = Midlife in the United States Study. NSDE = National Study of Daily Experiences.
*$p<.05$.
**$p<.01$.

Table 4

The Relation Between Weight Discrimination in MIDUS II and Daily Stressors Across Eight Days in the NSDE II

Stressor	$\beta_{Discrimination}$	Discrimination		*d*
		No	Yes	
Did you have an argument or disagreement with anyone?	.10**	.09 (.00)	.13 (.01)	-.23**
Did anything happen that you could have argued about but you decided to let pass in order to avoid a disagreement?	.14**	.14 (.01)	.21 (.01)	-.37**
Did anything happen at work or school (other than what you already mentioned) that most people would consider stressful?	.00	.09 (.01)	.09 (.01)	.00
Did anything happen at home (other than what you already mentioned) that most people would consider stressful?	.05	.08 (.00)	.10 (.01)	-.15
Many people experience discrimination on the basis of such things as race, sex, or age. Did anything like this happen to you?	.16**	.00 (.00)	.02 (.00)	-.37**
Did anything happen to a close friend or relative (other than what you've already mentioned) that turned out to be stressful for you?	.03	.05 (.00)	.06 (.01)	-.09
Did anything else happen to you since yesterday that people would consider stressful?	.08**	.05 (.00)	.08 (.01)	-.28**

Note. *N*=1,153. Coefficients are standardized beta coefficients from linear regression controlling for age, sex, race, and education. MIDUS = Midlife in the United States Study. NSDE = National Study of Daily Experiences. All results were similar when BMI was included as a covariate.
*p<.05.
**p<.01.

Table 5

The Relation Between Weight Discrimination in MIDUS II and Physical Symptoms Across Eight Days in the NSDE II

Physical Symptoms	$\beta_{Discrimination}$	Discrimination		*d*
		No	Yes	
Headache	.05	.12 (.01)	.15 (.02)	-.14
Backache	.08**	.17 (.01)	.25 (.02)	-.26**
Muscle soreness	.07*[a]	.21 (.01)	.27 (.02)	-.20*
Fatigue	.10**	.21 (.01)	.31 (.02)	-.32**
Joint pain	.10**	.26 (.01)	.36 (.03)	-.27**
Muscle weakness	.08**[a]	.08 (.01)	.14 (.02)	-.23**
Cough	.03	.13 (.01)	.15 (.02)	-.07
Sore throat	.02	.05 (.01)	.06 (.01)	-.06
Fever	.03	.01 (.00)	.01 (.01)	.00
Chill	.04	.02 (.00)	.02 (.01)	.00
Other cold of flu symptoms	.06*	.05 (.01)	.08 (.01)	-.18*
Nausea	.03	.03 (.00)	.04 (.01)	-.11
Allergies	-.01	.14 (.01)	.13 (.02)	.04
Diarrhea	.06*[a]	.03 (.00)	.05 (.01)	-.14*
Constipation	.03	.02 (.00)	.02 (.01)	.00
Poor appetite	.10**	.03 (.00)	.06 (.01)	-.22**
Other stomach symptoms	.10**	.04 (.01)	.08 (.01)	-.23**
Chest pain	.09**	.02 (.00)	.04 (.01)	-.17**
Dizziness	.05	.03 (.00)	.05 (.01)	-.15
Shortness of breath	.08**[a]	.06 (.01)	.10 (.02)	-.20*
Menstrual related symptoms	.00	.02 (.00)	.01 (.01)	.12
Hot flashes or flushes	.02	.05 (.01)	.06 (.02)	-.05
Any other physical symptoms	.03	.04 (.00)	.05 (.01)	-.10
Skin related symptoms	.01	.00 (.00)	.00 (.00)	.00
Eye related symptoms	-.01	.00 (.00)	.00 (.00)	.00
Ear related symptoms	.01	.00 (.00)	.00 (.00)	.00
Teeth related symptoms	-.02	.00 (.00)	.00 (.00)	.00
Leg or foot related symptoms	-.02	.02 (.01)	.02 (.01)	.00

Note. *N*=1,153. Coefficients are standardized beta coefficients from linear regression controlling for age, sex, race, and education. [a]Reduced to non-significance when body mass index is included as a covariate. MIDUS = Midlife in the United States Study. NSDE = National Study of Daily Experiences.

Table 6

The Relation Between Weight Discrimination in the MIDUS II and Daily Positive and Negative Affect Across Eight Days in the NSDE II

How much of the time today did you feel…	$\beta_{Discrimination}$	Discrimination		*d*
		No	Yes	
Positive Affect				
In good spirits?	-.07*	3.00 (.02)	2.86 (.05)	.22*
Cheerful?	-.08**	2.84 (.02)	2.64 (.06)	.27*
Extremely happy?	-.10**	1.99 (.03)	1.65 (.09)	.31*
Calm and peaceful?	-.04	2.79 (.02)	2.69 (.06)	.14
Satisfied?	-.11**	2.91 (.02)	2.65 (.06)	.33**
Full of life?	-.11**	2.64 (.03)	2.31 (.08)	.34**
Close to others?	-.10**	2.77 (.03)	2.50 (.07)	.31**
Like you belong?	-.08**	3.09 (.02)	2.90 (.07)	.24**
Enthusiastic?	-.12**	2.56 (.03)	2.24 (.08)	.35**
Attentive?	-.14**	2.88 (.02)	2.56 (.06)	.42**
Proud?	-.11**	2.51 (.03)	2.13 (.09)	.35**
Active?	-.16**	2.73 (.02)	2.34 (.07)	.47**
Confident?	-.12**	3.00 (.02)	2.74 (.06)	.35**
Negative Affect				
Restless or fidgety?	.07*	.38 (.02)	.49 (.05)	-.19*
Nervous?	.06*	.25 (.01)	.33 (.04)	-.18*
Worthless?	.04	.06 (.01)	.10 (.02)	-.13
So sad nothing cheers you up?	.00	.05 (.01)	.05 (.02)	.00
Everything was an effort?	.08**[a]	.23 (.02)	.35 (.04)	-.20**
Hopeless?	.08**	.06 (.01)	.13 (.02)	-.17**
Lonely?	.04	.12 (.01)	.17 (.03)	-.13
Afraid?	.06*[a]	.05 (.01)	.08 (.01)	-.14*
Jittery?	.12**	.11 (.01)	.21 (.02)	-.33**
Irritable?	.11**	.28 (.01)	.43 (.04)	-.28**
Ashamed?	.05	.03 (.01)	.06 (.02)	-.11
Upset?	.12**	.27 (.01)	.43 (.04)	-.32**
Angry?	.16**	.18 (.01)	.36 (.03)	-.36**
Frustrated?	.14**	.46 (.02)	.69 (.04)	-.36**

Note. *N*=1,153. Coefficients are standardized beta coefficients from linear regression controlling for age, sex, race, and education. [a]Reduced to non-significance when body mass index is included as a covariate. MIDUS = Midlife in the United States Study. NSDE = National Study of Daily Experiences.

*p<.05.

**p<.01.