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# The Impact of Racial and Socioeconomic Disparities on Binge Eating and Self-Efficacy among Adults in a Behavioral Weight Loss Trial

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The prevalence of obesity is a significant problem among racial and ethnic minorities and those of low socioeconomic status (SES). Psychosocial barriers, such as binge eating and low self-efficacy, are known to hinder the adoption of a more healthful diet. There is limited research identifying racial and SES differences in binge eating and self-efficacy. Further investigations of these constructs may allow researchers to improve the effectiveness of weight management interventions and increase social worker involvement. In this article, the authors examine the socioeconomic and racial differences in binge eating and eating self-efficacy in a sample of individuals seeking weight loss treatment ( $N = 151$ ). They explore associations between various sociodemographic variables and the Binge Eating Scale and Weight Efficacy Lifestyle Questionnaire (WEL). At baseline, nonwhite participants or those with fewer years of education exhibited more confidence resisting eating when food was available. Moreover, nonwhite participants reported more self-confidence eating under social pressure and had higher total WEL scores than white participants. However, at six months, nonwhite participants' WEL scores decreased. White participants increased their total WEL scores and obtained a higher percent weight change by the end of the intervention. Additional investigations on the dynamics affecting the development of self-efficacy are warranted.

KEY WORDS: *binge eating; obesity; racial-ethnic groups; self-efficacy; weight loss*

The prevalence of overweight and obesity continues to cause widespread concerns for many health professionals in the United States. Currently, more than two-thirds (68.7 percent) of the adults in the United States are overweight (BMI  $\geq 25$  and  $< 30.0$  kg/m<sup>2</sup>) and obese (BMI  $\geq 30$  kg/m<sup>2</sup>) (National Institute of Diabetes and Digestive and Kidney Diseases, 2012). Obesity is a significant public health concern and is associated with numerous comorbidities, such as diabetes, cardiovascular disease, and several cancers. In addition, with annual medical costs projected to rise above \$147 billion, obesity also significantly affects U.S. financial resources (Finkelstein, Trogdon, Cohen, & Dietz, 2009). Whereas this epidemic is not showing signs of abating, it is critical that we improve the long-term outcomes of current weight loss interventions.

Compared with white people, certain racial and ethnic groups have a higher prevalence of overweight and obesity (Flegal, Carroll, Kit, & Ogden, 2012).

The highest rates of overweight and obesity combined are seen in non-Hispanic black Americans (76.6 percent) and Mexican Americans (80.0 percent). Moreover, when overweight and obesity rates are examined by ethnicity and gender, non-Hispanic African American women (82.1 percent) and Mexican American men (81.3 percent) have the highest prevalence rates (Flegal et al., 2012).

There are numerous reasons for racial and socioeconomic differences in overweight and obesity prevalence, many of which remain unclear. Cultural differences in exercise behaviors, food choice, and food preparation may serve as partial contributors (Airhihenbuwa et al., 1996; James, 2004). In addition, investigators are becoming increasingly aware of the differential presence of environmental factors (for example, food deserts, inadequately built environment, systems of oppression, allostatic load) and psychosocial barriers (for example, reduced self-efficacy, binge eating, limited problem-solving skills) that affect the

development of overweight and obesity among residents in low-income and racial and ethnic minority neighborhoods (Chang, Nitzke, Guilford, Adair, & Hazard, 2008; Jeffery, Baxter, McGuire, & Linde, 2006; Taylor et al., 2013). Because overweight and obesity rates are different across population and socioeconomic groups, it is important to examine the individual-level factors and behaviors that may partially explain the differential prevalence.

A growing body of evidence indicates that binge eating is associated with severe obesity (Hudson, Hiripi, Pope, & Kessler, 2007; Yanovski, 2003). Disordered eating behaviors may be misunderstood, underreported, and untreated among racial and ethnic minorities in the United States (Taylor et al., 2013). Traditionally, eating disorders have been identified as a concern of affluent, upper-class white women, whereas racial and ethnic minorities seemed to be at far less risk for developing these disordered eating behaviors (O'Neill, 2003; Taylor, Caldwell, Baser, Faison, & Jackson, 2007). However, a recent investigation revealed that the presence of binge eating behaviors may actually be higher among ethnic minority groups than non-Hispanic white people (Marques et al., 2011).

Originally theorized by Albert Bandura (1977), *self-efficacy* refers to one's belief that he or she is capable of performing a specific behavior (Dutton, Martin, Rhode, & Brantley, 2004). Obesity researchers have learned that improvement in self-efficacy is associated with weight loss (Clark, Abrams, Niaura, Eaton, & Rossi, 1991; Warziski, Sereika, Styn, Music, & Burke, 2008). Conversely, lower rates of self-efficacy have been linked with a decreased likelihood of practicing weight management behaviors (Palmeira et al., 2007; Shin et al., 2011).

Investigators have identified a differential impact of socioeconomic status (SES) on the development of obesity. Traditionally, there has been an inverse relationship between SES and obesity in developed countries and among women; that is, as the level of SES decreases, obesity rates increase (McLaren, 2007; Sobal & Stunkard, 1989). The 2005–2008 National Health and Nutrition Examination Survey revealed that 42 percent of women with an income below 130 percent of the poverty level were obese, compared with only 29 percent of women who live in households with an income at or above 350 percent of the poverty level (Ogden, Lamb, Carroll, & Flegal, 2010). Among men, the opposite is true; as poverty rates increase, obesity rates decrease (Flegal, Carroll, Ogden, & Curtin, 2010).

Currently, the data on the racial and socioeconomic differences in binge eating and self-efficacy among individuals who are overweight or obese are limited. Identifying these potential differences is important for several reasons. First, due to the established differences in overweight and obesity prevalence among ethnic and socioeconomic groups, identifying differences in psychosocial behaviors associated with weight gain or loss may help us further tailor weight management interventions for these affected groups. In addition, this information may also aid us in comprehending the specific factors that contribute to differing rates of overweight and obesity seen among racial and socio-economic lines. Thus, the purpose of this article is to examine the racial and socioeconomic differences in binge eating behaviors and level of self-efficacy among adults participating in a behavioral weight-loss study. We hypothesized that nonwhite participants and those with fewer years of education and a lower income would have lower levels of healthful eating self-efficacy. Moreover, we hypothesized that within our sample nonwhite participants would have higher binge eating scores than white participants.

## METHOD

### Sample and Study Design

The following study was a secondary analysis of baseline, six-month, and 12-month data from the EMPOWER study (Burke et al., 2016), a 12-month behavioral intervention for weight loss. The purpose of the EMPOWER study was to examine factors relating to relapse following intentional weight loss. The study provided a 12-month standard behavioral intervention for weight loss and included 24 group sessions.

Individuals were eligible for the EMPOWER study if they met the following criteria: (a) 18 years of age or older, (b) had a body mass index (BMI) between 27 and 44 kg/m<sup>2</sup>, and (c) had not participated in a weight-loss program over the last three months. Individuals were not eligible if they (a) were pregnant or were planning to become pregnant in the next 12 months; (b) were planning to travel frequently, relocate, or take extended vacations over the next 12 months; (c) had diabetes or had a history of bariatric surgery; (d) reported alcohol intake  $\geq$  four drinks per day; (e) were engaged in treatment for a serious mental illness; (f) had a job that prevented them from being interrupted for brief periods of the day; and (g) refused or were unable to use a smartphone for Ecological Momentary Assessment data collection.

## Independent Variables

The following baseline sociodemographic characteristics were used as the primary independent variables in our analysis: age, gender, and race. Years of education, employment, and income category were used as a proxy for SES. These baseline sociodemographic characteristics were obtained via a self-administered, standardized questionnaire. Weight and height were measured with participants wearing light clothing and no shoes by trained staff. A Tanita TBF-300A digital scale was used to assess weight. We used a wall-mounted stadiometer to record height. BMI was calculated as weight in kilograms divided by height in meters squared ( $\text{kg}/\text{m}^2$ ).

## Dependent Variables

**Weight Efficacy Lifestyle Questionnaire (WEL).** The WEL is a 20-item questionnaire that assesses participants' level of confidence in resisting eating when experiencing various emotions and in a myriad of situations. Higher scores indicate greater levels of eating self-efficacy. Responses are based on a 10-point Likert scale, with scores ranging from 0 = not confident to 9 = very confident (Clark et al., 1991). The WEL contains five components: (1) negative emotions (for example, I can resist eating when I am angry), (2) availability (for example, I can control my eating on the weekends), (3) social pressure (for example, I can resist eating even when I have to say no to others), (4) physical discomfort (for example, I can resist eating when I feel physically run down), and (5) positive activities (for example, I can resist eating when I am watching TV). Reported Cronbach's alpha coefficients from the literature range from .70 to .90 (Clark et al., 1991; Turk et al., 2012).

**Binge Eating Scale (BES).** The BES (Timmerman, 1999) is a 16-item scale used to assess behaviors and feelings associated with binge eating episodes. Individuals rate responses on a four-item Likert scale, ranging from 0 to 3. The total score range is 0 to 46, with a higher score indicating greater severity of binge eating symptoms (Gormally, Black, Daston, & Rardin, 1982). The presence of severe binge eating is associated with scores  $\geq 27$ , and scores  $\leq 17$  indicate mild to no binge eating. Individuals scoring above 37 were ineligible for trial enrollment and were advised to seek treatment for this disorder. The test-retest reliability of the BES is .87 (Timmerman, 1999).

**Percent Weight Change.** Percent weight change was defined as the percentage of change from the baseline weight.

## STATISTICAL ANALYSIS

Statistical analyses were conducted using SAS (Version 9.3) (2011). Significance was set at .05 for two-sided hypothesis testing. Summary statistics were reported as means and standard deviations and frequency counts (%). Univariate linear regression was used to estimate the association between BES and age, gender, race, education, employment, and income. The same statistical method was also used to model the relationship between WEL and age, gender, race, education, employment, and income.

At six and 12 months, missingness in weight and WEL score were considered as missing at random. For examining the difference in percent WEL change and percent weight change between white and nonwhite participants at six months and at 12 months, one-way analysis of variance was used. Linear mixed modeling was used to explore the relationship between WEL total score and percent weight change, while controlling for race effect and time effect. In addition, an unstructured covariance pattern was considered for the model to handle repeated measures.

## RESULTS

The description of our sample is presented in Table 1. The EMPOWER sample ( $N = 151$ ) was 90.73 percent female and 79.47 percent white, with a mean ( $\pm SD$ ) age of  $51.18 \pm 10.22$  years. The mean BMI was  $34.02 \pm 4.56$ . On average, participants completed  $16.42 \pm 2.80$  years of education. Approximately 24.48 percent of the sample had a gross annual income of \$10,000 to \$49,999, followed by 39.16 percent in the \$50,000 to \$99,999 range, and 36.36 percent  $\geq$  \$100,000. Our participants had an average score of  $15.32 \pm 6.81$  (range: 0–48) on the BES, indicating the presence of mild to no binge eating. They had a mean total WEL score of  $104.13 \pm 30.08$

**Table 1: Demographic Characteristics of EMPOWER Sample ( $N = 151$ )**

Sociodemographic Descriptor	M (SD)	%
Age	51.18 (10.22)	
Years of education	16.42 (2.80)	
Employment: Full-time		82.78
Gender: Female		90.73
Race: White		79.47
Income (\$)		
10,000–49,999		24.48
50,000–99,999		39.16
>100,000		36.36

(range: 0–180), indicating mid-range levels of confidence resisting eating in various situations and emotional states.

Tables 2 and 3 report the associations between the sociodemographic variables and the BES and the WEL scales. At baseline, linear regression analyses re-

vealed that having fewer years of education ( $b = -.44$ ,  $p = .04$ ) and being nonwhite ( $b = 3.18$ ,  $p = .03$ ) were associated with higher scores on the Availability subscale of the WEL, a subscale that measures being capable of resisting foods when they are readily available. Being nonwhite was also associated with higher scores on the Social Pressure subscale ( $b = 3.80$ ,  $p = .01$ ) and total scores on the WEL ( $b = 13.96$ ,  $p = .02$ ). Table 4 describes the racial differences in mean scores on the WEL and the BES. On average, nonwhite participants had a mean score ( $\pm SD$ ) of  $19.29 \pm 8.40$  on the Availability subscale, compared with a score of  $16.11 \pm 7.07$  among white participants. On the Social Pressure subscale, nonwhite participants had a mean score of  $25.32 \pm 7.44$ , compared with a score of  $21.53 \pm 7.65$  among white participants. And finally, when examining the mean total WEL score, nonwhite participants had a score of  $115.23 \pm 29.37$ , compared with  $101.27 \pm 29.70$  among white participants. However, there were

**Table 2: Associations between Sociodemographic Predictors and the Binge Eating Scale**

Predictors	<i>b</i>	<i>p</i>
Age	-0.09	.09
Education (years)	-0.13	.53
Employment (full-time)	-0.59	.69
Income (\$)		
10,000–49,999	-0.23	.91
50,000–99,999	0.38	
Race: Nonwhite	-2.51	.07
Gender: Female	2.79	.14

**Table 3: Associations between Sociodemographic Predictors and Weight Efficacy Lifestyle Questionnaire (WEL)**

Predictor	WEL Availability		WEL Negative Emotions		WEL Physical Discomfort		WEL Positive Activities		WEL Social Pressure		WEL Total	
	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>
	Age	0.05	.41	-0.06	.35	-0.09	.11	-0.04	.47	0.03	.62	-0.11
Education (years)	-0.44	.04*	-0.15	.54	-0.22	.28	-0.29	.15	-0.33	.15	-1.42	.11
Employment: Full-time	-0.33	.84	-0.05	.98	1.70	.27	2.10	.15	0.28	.87	3.69	.57
Income (\$)												
10,000–49,999	2.66	.11	1.23	.58	1.46	.59	0.16	.15	0.36	.96	5.88	.35
50,000–99,999	-0.55		-0.64		0.12		-2.20		-0.10		-3.37	
Race: Nonwhite	3.18	.03*	3.08	.07	2.63	.07	1.27	.36	3.80	.01*	13.96	.02*
Gender: Female	0.84	.69	-1.71	.46	-0.02	.99	-0.08	.97	0.97	.66	-0.01	1.00

\* $p < .05$ .

**Table 4: Racial Differences in the Binge Eating Scale (BES) and the Weight Efficacy Lifestyle Questionnaire (WEL)**

Variable	White <i>M (SD)</i>	Nonwhite <i>M (SD)</i>	Range of Possible Scores
Baseline			
BES	15.83 (6.65)	13.32 (7.17)	0–48
WEL availability	16.11 (7.07)	19.29 (8.40)*	0–36
WEL negative emotions	15.60 (8.21)	18.68 (8.24)	0–36
WEL social pressure	21.53 (7.65)	25.32 (7.44)*	0–36
WEL physical discomfort	23.37 (6.98)	26.00 (7.23)	0–36
WEL positive activities	24.67 (6.79)	25.94 (6.85)	0–36
WEL total	101.27 (29.70)	115.23 (29.37)*	0–180
Six months			
WEL total	111.66 (32.65)	106.50 (30.83)*	
12 months			
WEL total	111.74 (33.05)	107.16 (39.16)	

\* $p < .05$ .

no significant associations found between age, gender, employment, income, and score of the WEL. Also, no significant associations were found between any of the sociodemographic variables and score of the BES.

At six and 12 months, WEL total score was associated with percent weight change ( $p < .001$ ). Moreover, after controlling for race and time, WEL total score was still associated with percent weight change ( $p < .001$ ). There was a significant difference in the change of percent adjusted WEL score between white and nonwhite participants at six months ( $p = .01$ ); the percent change in WEL score from baseline was  $-7.18$  percent (for nonwhite participants) versus  $+17.84$  percent (for white participants) ( $p = .01$ ). At 12 months, the percent change in WEL score was  $+3.98$  percent for nonwhite participants versus  $+1.95$  percent for white participants; this, however, was only marginally significant ( $p = .07$ ). Overall, white participants achieved a significantly greater percentage ( $p = .04$ ) of weight loss ( $-9.51$  percent) than nonwhite participants ( $-5.42$  percent) from the duration in the study (0 to 12 months).

## DISCUSSION

We conducted a secondary analysis of baseline, six-month, and 12-month data from a 12-month weight loss intervention study so that we could examine the racial and socioeconomic differences in binge eating behaviors and level of eating self-efficacy (WEL score) among the adult participants. At baseline, our results indicate that possessing fewer years of education was associated with more confidence in resisting eating when food is available. Moreover, being nonwhite was associated with higher scores on the Availability and Social Pressure subscale of the WEL, and with a higher total score of the WEL. In short, being nonwhite was associated with being confident that you can resist eating in varied situations and in different emotional states at baseline.

However, over six and 12 months, we observed two different patterns for WEL score among nonwhite and white participants. Among nonwhite participants, we observed a significant decrease in the total WEL score at six months, with a slight increase at 12 months. In contrast, among white participants, the total WEL score increased at six months, and was maintained through 12 months. By the end of the intervention (12 months), white participants were able to achieve a higher percentage of weight loss.

Traditionally, self-efficacy is known to be an important component of success in behavioral weight loss programs. Past research has found that improvement in self-efficacy over time is associated with greater weight loss (Warziski et al., 2008; Wingo et al., 2013). However, among nonwhite samples, the role of self-efficacy in weight loss is mixed. For example, among samples of overweight and obese Hispanic women in behavioral weight loss programs, self-efficacy improved over time and some modest weight loss was achieved. Self-efficacy, however, was not consistently associated with weight loss (Vincent, McEwen, Hepworth, & Stump, 2014; Walker et al., 2012). On the contrary, among samples of overweight and obese African American women, having higher baseline self-efficacy did not lead to significant weight loss and was even associated with weight gain (Martin, Dutton, & Brantley, 2004; Murphy & Williams, 2013).

In light of the current literature and consistent with our observed results, we must consider the possibility that instead of being predictive of future significant weight loss, higher eating self-efficacy among nonwhite participants may be more of a proverbial red flag—a behavior that may warrant future attention. Past evidence suggests that nonwhite participants perceiving a high level of self-efficacy at baseline may be indicative of less experience with weight loss attempts or overconfidence in their ability to change their eating habits (Martin et al., 2004; Murphy & Williams, 2013). During their initial attempts at weight loss, many people have high hopes about their ability to make future lifestyle changes. This confidence, however, may reflect limited awareness of all that factors into making healthy lifestyle changes.

When we examine high levels of pretreatment self-efficacy through the lens of the broader obesity literature, evidence points to additional challenges among nonwhite people to achieving significant weight loss at six months. Growing evidence highlights the presence of reported differences between obesity recognition in white and nonwhite people (Johnson, Bouchard, Newton, Ryan, & Katzmarzyk, 2009; Sivalingam et al., 2011). Among white people, there is greater likelihood of self-reported obesity and identifying its association with related comorbid conditions and mortality. However, among nonwhite people, specifically African Americans, there is less recognition of obesity as a health problem. In fact, higher obesity prevalence in one's own ethnic or gender group may have a normalizing effect, and may

further complicate one's ability to recognize obesity and its health-related risks (Sivalingam et al., 2011).

Contrary to our hypothesis, our study found that participants with fewer years of education were more confident in their ability to resist eating when food was available and present within their respective environments. Historically, researchers have discovered poorer health behaviors have been found to be concentrated among those with less education (Harper & Lynch, 2007). There is far less evidence, however, of the relationship between education and self-perception to change health behaviors. Some of this confidence may be similar to the confidence that was seen among nonwhite people and, again, may reflect less pressure or less experience with engaging in health behaviors. Moreover, the daily hassles of life (for example, cooking, child rearing, running errands) may be more time-intensive among those who are less educated and have fewer resources available.

Our findings indicate a nonsignificant relationship between race, socioeconomic factors, and binge eating behaviors within our sample. These results may be associated with the relatively low endorsement of binge eating symptoms found within our sample. However, based on existing evidence, binge eating is typically present among individuals participating in weight loss interventions, and has been reported at rates of 15 percent to 30 percent (Burmeister, Hinman, Koball, Hoffmann, & Carels, 2013; Pacanowski, Senso, Oriogun, Crain, & Sherwood, 2014). Our participants may have underreported their binge eating behaviors as measured by the BES. In addition, the limited size of our nonwhite sample may have made it difficult to detect any significant results.

### **Implications for Social Work Practice**

It is becoming increasingly apparent that a further investigation of the cultural and environmental dynamics behind eating choices and behaviors is necessary among nonwhite people due to the noted higher rates of obesity. Future research is needed to fully understand the meaning of the high self-efficacy that was observed among nonwhite participants at baseline to make eating behavior changes, considering it was not maintained throughout the intervention. If our preliminary assertions are correct, and these higher levels of confidence are more reflective of lack of experience or preparation for weight management efforts, more work is needed to position racial and ethnic minorities to achieve success within weight loss interventions. Social workers have the opportunity to design

interventions that recognize cultural and environmental barriers, but still work to empower participants to use their internal and community resources to make positive health change.

In addition, we must consider that the observed decrease in self-efficacy among nonwhite people may also reflect the use of an intervention that may or may not have been culturally relevant. Traditionally, social workers have not had an active voice in the decisions made about future strategies for the treatment of overweight and obesity. The results of this study, however, may provide additional empirical support to continue the development of tailored interventions for specific treatment of obesity among racial and ethnic minorities, and those of low SES. With the passing of the *Patient Protection and Affordable Care Act* (P.L. 111-148), social workers are gaining increased opportunities to participate in integrated health teams, and may be uniquely positioned to provide culturally relevant care to vulnerable populations who may be most affected by the obesity epidemic. The assessment and treatment of disordered eating behaviors affecting overweight and obesity in racial and ethnic minorities may be an optimal place for social workers to assist medical professionals.

### **Limitations and Future Research**

Limitations of this study include the small nonwhite sample. In addition, this study used self-report measures to assess binge eating and eating self-efficacy; the use of these measures may increase the risk of recall bias, social desirability bias, and errors in self-observation. Strengths of the study include the use of well-established questionnaires that have been validated among nonwhite samples (Dutton et al., 2004; Kelly et al., 2012).

In conclusion, the results of this study reveal higher baseline levels of self-efficacy among nonwhite participants or those with less years of education in our sample to resist eating in various circumstances and while experiencing various emotional states. However, among nonwhite participants, these baseline levels of self-efficacy were not maintained throughout the intervention. Self-efficacy was associated with percent weight change, and among white participants, self-efficacy increased over time (zero to 12 months). Overall, white participants achieved a larger percent weight change than nonwhite participants by the end of the 12-month intervention. Future research should examine associations between self-efficacy and weight change in a more diverse sample

of weight loss participants. Moreover, investigations on the dynamics affecting the development of self-efficacy are warranted and may provide valuable information to aid in the tailoring of weight management interventions to racial and ethnic minorities and those of low SES. **HSW**

## REFERENCES

- Airhihenbuwa, C. O., Kumanyika, S., Agurs, T. D., Lowe, A., Saunders, D., & Morssink, C. B. (1996). Cultural aspects of African American eating patterns. *Ethnicity & Health, 1*(3), 245–260. doi:10.1080/13557858.1996.9961793
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.
- Burke, L. E., Shiffman, S., Siewiorek, D., Smailagic, A., Kriska, A., Ewing, L. I., et al. (2016). Triggers of temptation and urges do not change during a 12-month behavioral intervention for weight loss [Poster presentation]. *Circulation, 133*(Suppl.), AP251. Retrieved from [http://circ.ahajournals.org/content/133/Suppl\\_1/AP251.abstract?sid=fb01e578-644f-45e5-b224-2f03d320f56c](http://circ.ahajournals.org/content/133/Suppl_1/AP251.abstract?sid=fb01e578-644f-45e5-b224-2f03d320f56c)
- Burmeister, J. M., Hinman, N., Koball, A., Hoffmann, D. A., & Carels, R. A. (2013). Food addiction in adults seeking weight loss treatment: Implications for psychosocial health and weight loss. *Appetite, 60*(1), 103–110. doi:10.1016/j.appet.2012.09.013
- Chang, M. W., Nitzke, S., Guilford, E., Adair, C. H., & Hazard, D. L. (2008). Motivators and barriers to healthful eating and physical activity among low-income overweight and obese mothers. *Journal of the American Dietetic Association, 108*, 1023–1028. doi:10.1016/j.jada.2008.03.004
- Clark, M. M., Abrams, D. B., Niaura, R. S., Eaton, C. A., & Rossi, J. S. (1991). Self-efficacy in weight management. *Journal of Consulting and Clinical Psychology, 59*, 739–744.
- Dutton, G. R., Martin, P. D., Rhode, P. C., & Brantley, P. J. (2004). Use of the Weight Efficacy Lifestyle Questionnaire with African American women: Validation and extension of previous findings. *Eating Behaviors, 5*, 375–384.
- Finkelstein, E. A., Trogon, J. G., Cohen, J. W., & Dietz, W. (2009). Annual medical spending attributable to obesity: Payer- and service-specific estimates. *Health Affairs, 28*(5), w822–w831. doi:10.1377/hlthaff.28.5.w822
- Flegal, K. M., Carroll, M. D., Kit, B. K., & Ogden, C. L. (2012). Prevalence of obesity and trends in the distribution of body mass index among US adults, 1999–2010. *JAMA, 307*, 491–497. doi:10.1001/jama.2012.39
- Flegal, K. M., Carroll, M. D., Ogden, C. L., & Curtin, L. R. (2010). Prevalence and trends in obesity among US adults, 1999–2008. *JAMA, 303*, 235–241. doi:10.1001/Journal of the American Medical Association.2009.2014
- Gormally, J., Black, S., Daston, S., & Rardin, D. (1982). The assessment of binge eating severity among obese persons. *Addictive Behaviors, 7*, 47–55.
- Harper, S., & Lynch, J. (2007). Trends in socioeconomic inequalities in adult health behaviors among U.S. states, 1990–2004. *Public Health Reports, 122*(2), 177–189.
- Hudson, J. I., Hiripi, E., Pope, H. G., Jr., & Kessler, R. C. (2007). The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication. *Biological Psychiatry, 61*, 348–358. doi:10.1016/j.biopsych.2006.03.040
- James, D. C. (2004). Factors influencing food choices, dietary intake, and nutrition-related attitudes among African Americans: Application of a culturally sensitive model. *Ethnicity & Health, 9*(4), 349–367. doi:10.1080/1355785042000285375
- Jeffery, R. W., Baxter, J., McGuire, M., & Linde, J. (2006). Are fast food restaurants an environmental risk factor for obesity? *International Journal of Behavioral Nutrition and Physical Activity, 3*, 2. doi:10.1186/1479-5868-3-2
- Johnson, W. D., Bouchard, C., Newton, R. L., Jr., Ryan, D. H., & Katzmarzyk, P. T. (2009). Ethnic differences in self-reported and measured obesity. *Obesity (Silver Spring), 17*(3), 571–577. doi:10.1038/oby.2008.582
- Kelly, N. R., Mitchell, K. S., Gow, R. W., Trace, S. E., Lydecker, J. A., Bair, C. E., & Mazzeo, S. (2012). An evaluation of the reliability and construct validity of eating disorder measures in white and black women. *Psychological Assessment, 24*, 608–617. doi:10.1037/a0026457
- Marques, L., Alegria, M., Becker, A. E., Chen, C. N., Fang, A., Chosak, A., & Diniz, J. B. (2011). Comparative prevalence, correlates of impairment, and service utilization for eating disorders across US ethnic groups: Implications for reducing ethnic disparities in health care access for eating disorders. *International Journal of Eating Disorders, 44*, 412–420. doi:10.1002/eat.20787
- Martin, P. D., Dutton, G. R., & Brantley, P. J. (2004). Self-efficacy as a predictor of weight change in African-American women. *Obesity Research, 12*, 646–651. doi:10.1038/oby.2004.74
- McLaren, L. (2007). Socioeconomic status and obesity. *Epidemiologic Reviews, 29*, 29–48. doi:10.1093/epirev/mxm001
- Murphy, P. J., & Williams, R. L. (2013). Weight-loss study in African-American women: Lessons learned from project take HEED and future, technologically enhanced directions. *Permanente Journal, 17*(2), 55–59. doi:10.7812/TPP/12-094
- National Institute of Diabetes and Digestive and Kidney Diseases. (2012). *Overweight and obesity statistics* (NIH Publication No. 04–4158). Retrieved from <http://www.niddk.nih.gov/health-information/health-statistics/Documents/star904z.pdf>
- Ogden, C. L., Lamb, M. M., Carroll, M. D., & Flegal, K. M. (2010). *Obesity and socioeconomic status in adults: United States, 2005–2008* (Data Brief 50). Hyattsville, MD: National Center for Health Statistics.
- O’Neill, S. K. (2003). African-American women and eating disturbances: A meta analysis. *Journal of Black Psychology, 29*(1), 3–16.
- Pacanowski, C. R., Senso, M. M., Oriogun, K., Crain, A. L., & Sherwood, N. E. (2014). Binge eating behavior and weight loss maintenance over a 2-year period. *Journal of Obesity, Article 249315*. doi:10.1155/2014/249315
- Palmeira, A. L., Teixeira, P. J., Branco, T. L., Martins, S. S., Minderico, C. S., Barata, J. T., et al. (2007). Predicting short-term weight loss using four leading health behavior change theories. *International Journal of Behavioral Nutrition and Physical Activity, 4*, 14. doi:10.1186/1479-5868-4-14
- Patient Protection and Affordable Care Act, P.L. 111-148, 124 Stat. 119 (2010).
- SAS (Version 9.3) [Computer software]. (2011). Cary, NC: SAS Institute Inc.
- Shin, H., Shin, J., Liu, P. Y., Dutton, G. R., Abood, D. A., & Ilich, J. Z. (2011). Self-efficacy improves weight loss in overweight/obese postmenopausal women during a

- 6-month weight loss intervention. *Nutrition Research*, 31, 822–828. doi:10.1016/j.nutres.2011.09.022
- Sivalingam, S. K., Ashraf, J., Vallurupalli, N., Friderici, J., Cook, J., & Rothberg, M. B. (2011). Ethnic differences in the self-recognition of obesity and obesity-related comorbidities: A cross-sectional analysis. *Journal of General Internal Medicine*, 26, 616–620. doi:10.1007/s11606-010-1623-3
- Sobal, J., & Stunkard, A. J. (1989). Socioeconomic status and obesity: A review of the literature. *Psychological Bulletin*, 105(2), 260–275.
- Taylor, J. Y., Caldwell, C. H., Baser, R. E., Faison, N., & Jackson, J. S. (2007). Prevalence of eating disorders among blacks in the National Survey of American Life. *International Journal of Eating Disorders*, 40(Suppl. 3), S10–S14. doi:10.1002/eat.20451
- Taylor, J. Y., Caldwell, C. H., Baser, R. E., Matusko, N., Faison, N., & Jackson, J. S. (2013). Classification and correlates of eating disorders among blacks: Findings from the National Survey of American Life. *Journal of Health Care for the Poor and Underserved*, 24(1), 289–310. doi:10.1353/hpu.2013.0027
- Timmerman, G. M. (1999). Binge Eating Scale: Further assessment of validity and reliability. *Journal of Applied Biobehavioral Research*, 4, 1–12.
- Turk, M. W., Sereika, S. M., Yang, K., Ewing, L. J., Hravnak, M., & Burke, L. E. (2012). Psychosocial correlates of weight maintenance among black & white adults. *American Journal of Health Behavior*, 36, 395–407. doi:10.5993/ajhb.36.3.10
- Vincent, D., McEwen, M. M., Hepworth, J. T., & Stump, C. S. (2014). The effects of a community-based, culturally tailored diabetes prevention intervention for high-risk adults of Mexican descent. *Diabetes Educator*, 40(2), 202–213. doi:10.1177/0145721714521020
- Walker, L. O., Sterling, B. S., Latimer, L., Kim, S. H., Garcia, A. A., & Fowles, E. R. (2012). Ethnic-specific weight loss interventions for low-income postpartum women: Findings and lessons. *Western Journal of Nursing Research*, 34, 654–676.
- Warziski, M. T., Sereika, S. M., Styn, M. A., Music, E., & Burke, L. E. (2008). Changes in self-efficacy and dietary adherence: The impact on weight loss in the PREFER study. *Journal of Behavioral Medicine*, 31(1), 81–92. doi:10.1007/s10865-007-9135-2
- Wingo, B. C., Desmond, R. A., Brantley, P., Appel, L., Svetkey, L., Stevens, V. J., & Ard, J. D. (2013). Self-efficacy as a predictor of weight change and behavior change in the PREMIER trial. *Journal of Nutrition Education and Behavior*, 45, 314–321. doi:10.1016/j.jneb.2012.12.004
- Yanovski, S. Z. (2003). Binge eating disorder and obesity in 2003: Could treating an eating disorder have a positive effect on the obesity epidemic? *International Journal of Eating Disorders*, 34(Suppl. 1), S117–S120. doi:10.1002/eat.10211

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