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Psychosocial variables and self-rated health in young adult obese women

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ABSTRACT

Aim: The aim of this study is to describe relationships among self-rated health, stress, sleep quality, loneliness, and self-esteem, in obese young adult women.
Background: Obesity has steadily increased among young adults and is a major predictor of self-rated health.
Methods: A sample of 68 obese (BMI 30 or higher, mean 35), young (18–34 years, mean 22) adult women were recruited from a health center. Survey data were gathered and analyzed using descriptive and bivariate procedures to assess relationships and group differences.
Results: Scores reflected stress, loneliness, poor sleep quality, and poor self-esteem. There were positive correlations among stress, loneliness, and sleep quality and, a high inverse correlation between loneliness and self-esteem. Those who ranked their health as poor differed on stress, loneliness, and self-esteem when compared to those with rankings of good/very good.
Conclusions: Assessing and addressing stress, loneliness, sleep quality and self-esteem could lead to improved health outcomes in obese young women.

Over the years obesity has steadily increased among adolescents and young adults. Furthermore, 40% of obese children and 70% of obese adolescents will become obese adults (Ogden, Carroll, Kit, & Flegal, 2012). In this study, it is proposed that stress, sleep quality, loneliness, and self-esteem are holistic indicators associated with self-rated health status for young adult women with a body mass index (BMI) of 30 and above, which indicates obese status.

1. Self-rated health

Self-rated health is a widely used measure of health and an indicator of personal health. It is determined by asking persons to evaluate their health on a five-point scale of poor, fair, good, very good, and excellent. Jylha (2009) asserts that health belongs in the realm of everyday discourse and the rating of health represents a general understanding of what health is for the person and offers a unique and valuable holistic indicator of health status.

Obesity has been associated with self-rated health among individuals over 18 years of age (Prosper, Moczulski, & Qureshi, 2009). These researchers determined that obesity is a major predictor of self-rated health and demonstrated that obese individuals had threefold greater odds of reduced self-rated health status. In a study of 1894 young adults in which self-rated health was the outcome, obesity was associated with poor self-rated health among young adults (OR 2.69, $p = .002$). The authors concluded that self-rated health can be viewed as appropriate for assessment of health in young adults (Kestila, Marrelin, Rahkkonen, Harkamen, & Koskinen, 2009). Bauldry, Shanahan, Boardman, Miech, and Macmillan (2012) studied age graded patterns of health in 15,701 adolescents transitioning to young adulthood using self-rated health as the outcome variable (Bauldry et al., 2012). Subjects ranged in age from 24 to 33 years and those who were obese had significantly lower measures ($b = -0.455$) of self-rated health than normal weight subjects. Furthermore, self-rated health remained stable for normal weight subjects but, for those in the obese group, there was a steady decline in self-rated health over time until age 34. These authors concluded that obesity has a negative effect on self-rated health.

2. Obesity and psychosocial variables

Women who are stressed have an increased risk for obesity (Chen & Qian, 2012). Their study was based on a national survey of 112,716 adults 18 years and older who answered questions about self-perceived stress and bodyweight. Women who were extremely stressed had a higher prevalence of obesity (OR 1.44) compared

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with women who were not stressed. Cortisol levels, perceived stress, and obesity were studied in 78 women ages 24–72 (Farag et al., 2008). Obese women reported the highest level of stress ($p = .07$) and a major portion of the cortisol variation was predicted by BMI.

In a study of 496 young adults (mean age 27) sleep duration (less than 6 hours) was a strong and significant predictor of obesity (OR .5, $p = .01$) (Hasler et al., 2004). In a cross-sectional study of 410 women who were 18–28 years old and short sleepers (less than 6 hours); sleep restriction was associated with a higher BMI. Subjects who slept less than 6 hours were more likely to be overweight and obese ($p = .0001$) (Haghighatdoost, Karimi, Esmaillzadeh, & Azadbakht, 2012). Time in bed and obesity were associated among young adults age 18–25 years (Hart, Larose, Fava, James, & Wing, 2013). They found that less than 6 hours of sleep per night was related to increased BMI ($p = .01$).

In a survey of 1289 adults, lonely persons had a higher BMI than non-lonely people (Lauder, Mummery, Jones, & Caperchione, 2006). A higher proportion of the lonely group were obese ($n = 246$; 61.8%) than in the not lonely group ($n = 415$; 53.8%). In a classic study (Schumaker, Krejci, & Small, 1985) of 68 obese and 64 non obese persons, the researchers found that obese women ($M = 41.9$) scored significantly higher ($p = .05$) on loneliness than non obese women ($M = 33.8$). Self-esteem was inversely correlated with body image dissatisfaction ($r = .408$, $p = .001$) in a study of 79 obese women (Matz, Foster, Faith, & Wadden, 2002). In a study of 49 young adults, an inverse relationship between self-esteem and BMI ($r = 0.70$, $p = .05$) was found (Singleton, Bienemy, Hutchinson, Dellinger, & Rami, 2011).

The psychosocial variables of perceived stress, sleep quality, loneliness and self-esteem have not been studied as a cluster of variables in a sample of young adult women with a BMI > 30. The purpose of this study was to describe relationships among psychosocial variables and self-rated health status in a sample of obese young adult women. The questions guiding the study were the following:

1. What are the relationships among the variables of perceived stress, sleep quality, loneliness, and self-esteem among obese young adult women?
2. What are the differences in perceived stress, sleep quality, loneliness, and self-esteem for obese young adults who rate health as poor/fair and those who rate health as good/very good?

3. Method

This study took place in a university student health center in northern West Virginia. Analyses are reported from data that were collected from 68 subjects over a 15 month period. The convenience sample of 68 obese young adult women was recruited using notices placed in the student health center. Inclusion criteria were: students 18 years or older, a BMI of 30 or higher, and attendance for a preventive health care visit at the Student Health Center. Members of the research team employed by the clinic identified potential participants who met the inclusion criteria and offered them the opportunity to participate with a prescribed verbal script.

Data were gathered in a setting where the participants completed pen and paper surveys. Upon completion, the participant gave the packet containing the surveys to a member of the research team who recorded the BMI. Upon completion of the survey, the study participant received a movie ticket. The study was approved by the West Virginia University Institutional Review Board and was deemed exempt having no more than minimal risk.

4. Measures

4.1. Demographics

Demographic characteristics gathered were age and BMI. The BMI compares height to weight and provides an indicator of body fatness. A BMI of 19 to 24 is normal, 25 to 29 is overweight, 30 to 39 is obese, and 40 to 54 is extreme obesity. For this study, participants with BMI of 30 or above were included. Measures of study variables included self-rated health, perceived stress, sleep quality, loneliness, and self-esteem.

4.2. Self-rated health

Self-rated health was determined by asking persons to evaluate their health on a five-point Likert scale of poor, fair, good, very good, and excellent. Self-rated health is a spontaneous assessment that represents what health is for the person (Bailis, Segall, & Chipperfield, 2003). In this study, the dichotomization of this variable was driven by prior studies of self-rated health. The scores on self-rated health were dichotomized to identify two major groups: those with a rating of poor/fair and those with a rating of good/very good. This approach is consistent with the work of Goodwin et al. (2006) who found differences in diet based on self-rated health group. They described the dietary intake of vegetables and total fat to be higher ($p = .01$) in adolescents in the poor/fair group when compared to the good/very good group (Goodwin et al., 2006). It was concluded that splitting the measure of self-rated health into two groups offered a clearer understanding of how the groups differed on positive and negative responses regarding self-rated health status.

4.3. Perceived stress

Stress was measured using the perceived stress scale (Cohen & Williamson, 1991). It is a 10 item tool designed to measure the degree to which an individual perceives life situations as uncontrollable, unpredictable, and overloading. Scores range from 0 to 44 where a higher score indicates greater perceived stress. The scale was determined to be reliable based on Cronbach's alpha coefficients of .89 in a sample of U.S. college students and convergent validity was supported with a correlation of .87 between the perceived stress scale and a measure of anxiety (Roberti, Harrington, & Storch, 2006).

4.4. Loneliness

Loneliness was measured using the Revised UCLA loneliness scale (Russell, Peplau, & Cutrona, 1980). Scores range from 20 to 80 and a higher score indicates increased loneliness. The scale has high internal consistency ($\alpha = 0.89–0.94$) and adequate test–retest reliability ($r = .73$). Concurrent validity was confirmed with significant correlations between the Beck Depression Inventory ($r = .62$), and the Costello–Comrey Anxiety ($r = .32$) (Russell et al., 1980).

4.5. Self-esteem

Self-esteem was measured using the Rosenberg Self-esteem Scale (Rosenberg, 1979). He describes adequate reliability and validity of a global measure of self-esteem for both adult men and women. Test retests using the scale over 2 weeks demonstrated correlations of .85 and .88 demonstrating very good reliability. Construct validity was determined by relating the scale to peer group reputation among high school seniors. Those with high self-esteem scores were more likely to obtain high peer-group ratings of peers. The score range on the 10 item scale is 0–30 where higher scores indicate higher self-esteem (Rosenberg, 1979).

4.6. Sleep quality

Sleep was determined using the Pittsburgh Sleep Quality Index which assesses sleep over a 1 month interval (Buysse, Reynolds, Monk, Berman, & Kupfer, 1989). It consists of 19 self-rated items. The global score has a range of 0–21 where higher scores indicate poorer