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You are What You Think:

The Impacts of Body Weight Perception in Young Adolescent Women

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Abstract

While research suggests a multifactorial array of contributors to adolescent obesity including lack of physical activity, dietary behaviors, psychosocial factors including the perception of being overweight and body dissatisfaction have been more recently associated with unhealthy weights, unhealthy behaviors and amplified risk of obesity. At an all girl's private college preparatory middle and high school in Los Angeles, amid a competitive and rigorous academic environment, students face additional pressure to succeed and strive for perfection. Although body weight perception can be used to identify students who are at risk for eating disorders at the middle and high school levels, the tool is underutilized in the school setting. Consequently, while health professionals including a school nurse and school psychologist are present, the school community lacks understanding of body weight perception and proactive response for students identified with eating disorders. The implementation of an eating disorder screening tool measuring for body weight perception for young women in grades 7-12, (12 to 18 years) would help further the school community's understanding of body weight perception and help ensure that students with eating disorders seek professional help. This project would improve the school community's understanding of eating, successfully connect at-risk students with eating disorders to professional help and create a follow-up program for at-risk students identified by the school nurse and/or school psychologist. Weight perception could serve as a key indicator for the school nurse to screen, and support students with eating disorders.

Keywords: body weight perception, obesity, eating disorders, students, adolescents

You are What You Think: The Impacts of Body Weight Perception in Young Adolescent Women

In national studies which measured body mass index (BMI) at or above sex-specific 95th percentile by means of the United States Centers for Disease Control and Prevention's (CDC) growth projections, the prevalence of obesity between 2011 and 2014 among children and adolescents was 17%, with extreme obesity at 5.8% (Ogen et. al, 2016). From 2014 to 2016, the rates of childhood obesity doubled, with more than one third of American adolescents and children ages 2-19 being overweight or obese (Ogen et. al, 2016). While research suggests a multifactorial array of contributors to adolescent obesity including lack of physical activity, dietary behaviors, psychosocial factors including the perception of being overweight and body dissatisfaction have been more recently associated with unhealthy weights, unhealthy behaviors and amplified risk of obesity (Cuypers et. al, 2012).

At an all girl's private college preparatory middle and high school in Los Angeles, amid a competitive and rigorous academic environment, students face additional pressure to succeed and strive for perfection. Although body weight perception can be used to identify students who are at risk for eating disorders at the middle and high school levels, the tool is underutilized in the school setting. Consequently, while health professionals including a school nurse and school psychologist are present, the school community lacks understanding of body weight perception and proactive response for students identified with eating disorders.

The implementation of an eating disorder screening tool measuring for body weight perception for young women in grades 7-12, (12 to 18 years) would help further the school community's understanding of body weight perception and help ensure that students with eating disorders seek professional help. This project would improve the school community's understanding of eating, successfully connect at-risk students with eating disorders to professional help and create a follow-up program for at-risk students identified by the school nurse and/or school psychologist.

Background

Sirirassamee et al. (2018) examined the correlation between (1) weight perception and body mass index (BMI), (2) prevalence of weight misperception among genders, and (3) weight perception and weight-related behaviors. Gender disparities in diet and physical activity were recognized. In their research among adolescents, females were more likely to incorrectly perceive themselves as overweight, while males more frequently misinterpreted themselves as underweight. The gender disparity among incorrect weight perception suggests that weight perception is common among both adolescent boys and girls, however, the young adult's psychological understanding of one's weight in particular may provide school nurses a more robust approach for further education and implications to the young adolescent. Additionally, weight misperception, which is outlined as the disagreement between a person's actual weight and their self-interpretation of his or her weight can be a strong predictor of body dissatisfaction, irrespective of the person's actual weight status (Knowlwa et al., 2015). The purpose of this paper is to review the literature surrounding the impact body weight perception has on the adolescent woman's physical wellbeing and the implications this may have on the school nursing practice moving forward. The PICOT question for the purposes of this paper is: (P) In United States adolescent women ages 13-18, (I) how can body weight perception education for school staff (C) compared to the standard of care which does not include the screening of body weight perception (O) improve the recognition of and referral to the school nurse and/or psychologist for additional screening and intervention (T) within six months?

BMI is utilized as a form of screening for students who may be over or underweight, and based on this classification, are routed to resources provided by the school nurse. Additionally, BMI is taught in the classroom via high school health curriculum, but further collaboration and efforts to include other key identifiers such as body weight perception are not currently utilized.

Research shows that body weight perception varies vastly among racial, gender, and age lines, and can have long lasting impacts of psychological distress (Sirirassamee et al. 2018). At an all girl's private college preparatory middle and high school in Los Angeles, eating disorders are prevalent in the school community among students. While there is a school nurse and a school psychologist who have

attempted to properly connect students with eating disorders to resources, there is a significant need for identifying students who could benefit from further follow up pertinent to this. Moreover, there is a lack of universal school wide screening tool across interdisciplinary professionals for the potential of what could cause or further unfold into an eating disorder for a student. Thus, while the staff at the all girl's private college preparatory middle and high school in Los Angeles has attempted to encourage students with eating disorders to seek professional health, there is a gap between the best use of current resources and the unique identification of those students.

Search Methodology

Using the primary search term "body weight", the secondary search term "perception", and the tertiary term "weight" in the CINAHL Complete database, yielded 195 articles. Refining results to peer reviewed articles in the English language published in the last 20 years, this yielded 170 results. Limiting the age of study participants to the adult subgroup between ages 19-44 was performed in an attempt to focus on the population of this paper's PICOT question. Excluding studies among older adults over the age of 44, this refined search yielded 90 results. Limiting the search to publications in the last 10 years in an attempt to find research that accommodated for recent data, this yielded 86 results. Scaling down studies to those in the United States yielded 73 results. Of these 73 results, 62 were conducted among females and 33 among males. The yielding of more articles for females than males, suggests a significant gap in data between genders, with females being studied more than males.

Contemporary studies were selected in an attempt to address that while obesity has been a major problem in the United States, it continues to grow exponentially. Moreover, among young adults, body weight perception can play an especially significant role and factor in the psychological distress of young adults, including depression.

Integrated Review of the Literature

Racial, Ethnic, Age and Gender Disparities Among Body Weight Perception

Interpreting self-reported race and ethnicity data from the National Health and Nutrition Examination Survey (NHANES) from 1999 to 2006, Dorsey et al (2009) gathered data including BMI calculations through interviews and physical examination including measurement of height and weight for non-pregnant adults ages 20 and above ($n=4431$). Participants were asked to classify their weight as “overweight”, “underweight” or “about the right weight” prior to being weighed. Researchers found that weight misperception varied among BMI groups, but generally, approximately 40% of underweight participants and overweight participants thought they were “about the right weight.” Additionally, about eight percent of obese participants believed they were “about the right weight.” However, the most notable discrepancies and findings were among the racial, ethnic and gender differences in weight misperceptions. Among healthy weight adults, non-Hispanic black individuals were more prone to consider themselves underweight in comparison to non-Hispanic white participants. A greater portion of healthy weight males considered themselves underweight, and more healthy weight women perceived themselves as being “overweight” compared to men. Among healthy weight females, non-Hispanic white participants were more likely to consider themselves “overweight” than non-Hispanic black participants. Using the Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) Tool (2012), this observational study was determined as Level III evidence with high quality because of its varied participant sample group from diverse racial groups, and age categories.

In a longitudinal evidence-based study by Gaylis et. al (2019), associations between body weight perception, BMI, physical activity, and food choices in Southern California male and female adolescents were studied. Of the participants in the healthy BMI category ($n=1,212$), 52.7% observed themselves to be fit while 23.5% perceived themselves as overweight. Of participants who were overweight or obese based on BMI, 66.2% perceived themselves as overweight, whereas 28.9% perceived themselves as fit. This study supports that young adults do not accurately perceive their body weight, and about one fourth of those in the healthy BMI category continued to incorrectly identify themselves as overweight, whereas almost a third of those within the overweight or obese category believed themselves to be fit. Using the JHNEBP

Tool (2012), this observational study was determined as Level III evidence, with high quality because of the clear description of the study population, and clear detailing of study methodology and design.

Additional Contributing Factors in Body Weight Perception

In one cross-sectional study using data from a large sample size of more than 70,000 students, Fan et al. (2014) assessed overweight misperception, and found that BMI and Grade Point Average (GPA) are suggestive predictors of how adolescent students perceive their weight. The study results also supported that overweight misinterpretation is linked with psychosocial and health risk factors. Factors including BMI, school performance and being sexually active were also suggestive identifiers of overweight misperception, with findings that propose females are more likely to have false positive overweight perception, while males exhibit a greater probability of false negative perception. Additionally, non-overweight adolescents with greater school performance were less likely to incorrectly perceive themselves as overweight, and overweight students with better GPAs were more prone to accurately perceive their overweight status than participants with reduced school performances. It was rated a Level III using the JHNEBP Tool (2012) because of its transparency, and conscientious research process.

Association between Body Weight Perception and Psychological Distress

Atlantis et al. (2007), in their cross-sectional study, an association between weight perception and psychological distress was supported. In this study, overweight and underweight perceptions were found to be significant factors correlating to medium and high psychological distress occurrence among men and women. The study findings propose that overweight perception rather than obesity is connected with psychological distress and include that most published literature relating to obesity and psychological morbidity may be due to clinical classification of weight status alone which have not previously accounted for weight perception.

Al Mamun et al.'s (2007) longitudinal study observed whether adolescents' measured BMI and self or mother's perception of weight status at age 14 would be correlated with depression at age 21. The findings established that both young adult males and female who perceived themselves as overweight at age 14 had more mental health complications at age 21, when paralleled to those who perceived themselves

as their correct weight early on. This suggest that the perception of being overweight during adolescence is a significant risk factor for depression in both young adult males and females, and thus should be considered a possible means for preventative interventions earlier on during adolescence as it can be inferred as a predictor of depression in later adulthood. It was rated a Level III using the JHNEBP Tool (2012) evidence with high quality because of its clear description of data collection, and ultimate results that were relevant to the aims of the study but suggested the impact that weight perception have on the overall impact on mental health among young adults.

Analysis of Information Gleaned from Literature

When comparing data from these studies, particularly during young adulthood, women are considerably more prone to see their weight as challenging, misidentify their weight status, and to attempt to lose weight when compared to men with similar BMI's (Sirirassamee et al., 2018). Moreover, the literature suggests significant inconsistencies in body weight perception, or perception of BMI across racial, ethnic, age, and gender lines. Healthy weight women, and adolescents more often perceived themselves as being "overweight" compared to men in the literature and non-overweight adolescents with better school performances were less likely to mistakenly perceive themselves as overweight. Overweight students with higher average GPAs were more likely to appropriately perceive their overweight status than those with reduced school performances.

This suggests that while BMI may be an indicator for weight, and a numerical way to categorize an individual as overweight or obese, this does not account for the person's perception of their own weight and leaves little to no room for how their interpretation of their weight can help or significantly hurt their long-term outcomes, not only on their physical but also mental wellbeing. Additionally, as supported by Al Mamun et al. (2007), young adults who perceived themselves as overweight at an adolescent, are deemed to have more mental health problems compared to those who perceived themselves as the right weight early on. The literature suggests that the perception of being overweight during adolescence is a significant risk factor for depression in both young adult men and women, and weight perception is so often misinterpreted at this age, across racial, gender, and other lines.

Clinical implications or call to change practice

Medical providers continue to use BMI as an indicator for obesity and implement interventions based on the readings, to monitor and understand health related outcomes. Literature suggests that body weight perception has the capacity to influence but varies drastically between certain groups, genders, races, and intentions. Moreover, a better understanding of what goes into weight perception could encourage more robust and tailored school-based nursing interventions, education, and programming so as not solely based on BMI and targeted interventions in response to it. An individual's perception of their weight could be a pivotal starting point to screen and support a person's physical and mental wellbeing.

Discussion

Current core curriculum at the middle school and high school level uses BMI as a strategy to mitigate obesity risk factors in the form of education for students but does not account for their perception of their weight status. Students under California State standards in grades seven and eight are to be able to explain how to use a BMI score as a tool for assessing general health but are not provided further information of the implications this may also have on mental health and well-being (Madsen & Linchey, 2012). As part of California State Standards, the school nurse is given tools and resources to calculate a student patient's BMI. However, only students who are classified as underweight, overweight, or obese receive follow up care.

Summary

If follow up or teaching is completed by the school nurse, this is often only in response to a student's outlier BMI based on height and weight, but not necessarily geared toward the patient's understanding or perception. Teaching body weight perception which is unique to the adolescent's understanding and perception of their weight, could help encourage healthier physical and mental health. Weight perception could serve as a key indicator for the school nurse to screen, and support students with eating disorders.

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