Attitudes of Health Majors Toward Obese Persons

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Abstract

The purpose of this research was to investigate weight bias among health majors at one southwest regional university. The Attitudes Toward Obese Persons (ATOP) scale was completed by a convenience sample of 184 health majors. ATOP scores were found to be significantly lower than the midpoint (60) of the scale, \( M = 56.68, s = 16.75, t(183) = -2.69, p < .01 \), indicating more negative attitudes toward obese persons. Women held more negative attitudes than men, \( F(1,182) = 4.04, p < .05, M_{\text{women}} = 54.06, M_{\text{men}} = 58.99 \). In addition, correlational analyses revealed that among men, the higher the Body Mass Index (BMI), the more positive attitudes there were towards obese persons, \( r(96) = .31, p < .01 \). However, among women, there was no relationship between BMI and ATOP score; the trend was in the opposite direction, \( r(85) = -.10, p > .05 \). Implications of these findings included the development of curriculum to increase awareness of weight bias in existing health-related curricula.
Introduction

Despite growing recognition of obesity as a major health concern, obesity rates continue to reach epidemic proportions and referenced by some as the last “socially acceptable” form of discrimination (Puhl & Heuer, 2009). Stigmatization of obese individuals has led to social disadvantages that extend beyond the home to include the workplace, educational systems, and even the health care industry (O’Brien, Puhl, Latner, Mir, & Hunter, 2010; Puhl & Heuer, 2010). As first responders in fighting this epidemic, health professionals hold key positions within the community to increase public awareness and education about weight stigma. However, there is an alarming amount of research that validates the existence of anti-fat biases among health-related professionals toward obese persons and children (Puhl & Heuer, 2009). Such biases have been shown to increase susceptibility for despair, anxiety, and suicidal tendencies among obese persons (Rudd Center, 2008) and more likely to develop eating disorders, avoid physical activity and less likely to seek health-related services (Gatineau & Dent, 2011; Waumsley, 2011). Of concern, weight bias has also been documented among students in health-related disciplines (O’Brien et. al., 2010; Puhl & Heuer, 2009; Vroman & Cote, 2011). Therefore, the purpose of this study was to investigate weight bias among health majors at one southwest regional university.

Methods

Participants

All participants in the study were classified as undergraduate health majors at one southwest regional university. The participants in this study were comprised of 184 health majors with a relatively equal distribution of females ($n = 86; 47\%$) and males ($n = 98; 53\%$). Ages ranged from 18 to 44 years with a mean of 21.03 ($SD = 2.63$). Most of the participants reported
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their ethnicity to be Caucasian \((n = 155; 84\%); \) others identified as African American \((n = 13; 7\%); \) or ‘other’ \((n = 16; 9\%); \) Appropriate for the study, upper-classmen were overrepresented (freshmen: \(n = 18; 11\%; \) sophomores: \(n = 43; 22\%; \) juniors: \(n = 60; 33\%; \) and seniors: \(n = 63; 34\%); \) APA Ethical Guidelines were strictly followed.

**Materials and Procedures**

Students were provided with a consent form which doubled as the introductory letter stating the purpose and procedures of the study. Participation was voluntary, and the study was reviewed and approved by the author’s university institutional review board. Participants completed a series of demographic questions to include current year of study, gender, race, age, and height/weight (BMI) and the ATOP, which was designed to measure explicit attitudes toward obese persons. The ATOP scale has been validated as one of the main instruments for the psychometric measure of attitudes about obesity with alpha reliability ranges between .80 and .84 (Allison, Basile, & Yuker, 1991; Rudd Center, 2012). The 20-item survey used a 6-point Likert-format scale anchored from -3 (strongly disagree) to 3 (strongly agree). Participants responded to the statements by marking each item from 1 to 3 and placing a minus or plus sign (- or +) to indicate whether or not they strongly agree or strongly disagree. Total scores ranged from 0 to 120 with lower scores indicative of more negative attitudes towards obese persons.

**Statistical Analysis**

Statistical Package for the Social Sciences (SPSS) version 19.0 was used to analyze the data. A one-sample \(t\)-test was used to compare each participant’s ATOP score with the midpoint of the scale to determine if the participants, on average, held a negative bias toward obese persons. In order to explore the relationship between ATOP bias and demographic characteristics, analyses of variance (ANOVAs) to measure nominal level data and correlations
to measure interval level data were used. ATOP bias was compared between men and women, among ethnicities and current year of study using ANOVAs. Pearson correlations were used to examine the relationship between ATOP bias, BMI, and age.

**Results**

Body Mass Index (BMI) was calculated based on participants’ reported height and weight (specifically, weight in kilograms divided by the square height in meter, CDC, 2014). The BMI of participants was classified using guidelines provided by the National Heart, Lung and Blood Institute (NIH, 2013). Very few of the participants were classified as underweight (BMI < 18.5; \( n = 3, 2\% \)), nearly half of the participants were healthy weight (BMI 18.5 to 24.9; \( n = 84, 46\% \)), over one-third were overweight (BMI 25.0 to 29.9; \( n = 67, 36\% \)), and 16% were obese (BMI of 30 to \( \geq 40; n = 30 \)). The mean BMI of participants was 25.85 with a standard deviation of 4.97.

Responses to the 20 items on the ATOP scale were entered into SPSS (version 19). Following instructions by Allison and Baskin (2009), the coder multiplied the response to the following questions by -1 (to reverse score): Questions 2 through 6, questions 10 through 12, questions 14 through 16, and questions 19 through 20, and then added 60 to determine each participant’s ATOP score. ATOP scores ranged from 29 to 110. To determine if, as a group, health majors had a weight bias, a one-sample t-test was performed to compare students’ responses with the midpoint of the scale. According to the one-sample \( t \)-test, participants’ scores were statistically significantly lower than the midpoint (60) of the scale, \( M = 56.68, SD = 16.75, t(183) = -2.69, p < .01 \), indicating more negative attitudes toward obese persons.

An ANOVA showed no statistically significant differences in attitudes toward obese people among Caucasians, African American, and ‘other,’ \( F(2, 181) = .80, p > .05 \). In addition, an ANOVA showed no significant differences occurred among freshman, sophomores, juniors,
or seniors, $F(3, 180) = .53, p > .05$. Lastly, the correlational analysis revealed no significant relationship between age and ATOP score, $r(183) = .06, p > .05$.

However, an ANOVA revealed more negative attitudes about obese persons among women than men, $M$-women $= 54.06, M$-men $= 58.99, F(1,182) = 4.04, p < .05$. In addition, a correlational analysis revealed a significant correlation between attitudes toward obese persons and BMI, $r(182) = .18, p < .02$, such that the higher a participant’s BMI, the more positive the participant’s attitudes were toward obese persons. Correlational analyses were calculated separately for men and women. Among men, the higher the BMI, the more positive attitudes were towards obese persons, $r(96) = .31, p < .01$. However, among women, there was no relationship between BMI and ATOP score; the trend was in the opposite direction, $r(85) = -.10, p > .05$.

Individual items in the ATOP scale revealed that negative attitudes and stereotypical assumptions were identifiable within each the following ATOP categories (Allison et al., 1991, p. 604): (a) different personality- attribution of negative or different personality characteristics or inferior abilities of obese persons, (b) social difficulty- perception that obese persons either experience or produce social problems, (c) and self-esteem- judgment of how obese persons perceive and evaluate themselves. In particular, lower self-esteem, dissatisfaction with self, unhappiness, shame, sexual unattractiveness, and poorer health revealed a stronger bias among the participants. However, positive attitudes with regard to personality characteristics, sociability, and self-esteem were reported. Table 1 presents the means and standard deviations for each item on the ATOP scale.
Table 1
Mean and Standard Deviation Ratings of ATOP Items

<table>
<thead>
<tr>
<th>ATOP Items</th>
<th>M**</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obese people are as happy as non-obese people.</td>
<td>2.48</td>
<td>1.81</td>
</tr>
<tr>
<td>Most obese people feel they are not as good as other people.*</td>
<td>2.26</td>
<td>1.72</td>
</tr>
<tr>
<td>Most obese people are more self-conscious than other people.*</td>
<td>1.42</td>
<td>1.73</td>
</tr>
<tr>
<td>Obese workers cannot be as successful as other workers.*</td>
<td>3.63</td>
<td>1.91</td>
</tr>
<tr>
<td>Most non-obese people would not want to marry anyone who is obese.*</td>
<td>2.71</td>
<td>1.83</td>
</tr>
<tr>
<td>Severely obese people are usually untidy.*</td>
<td>2.92</td>
<td>1.85</td>
</tr>
<tr>
<td>Obese people are usually sociable.</td>
<td>3.76</td>
<td>1.53</td>
</tr>
<tr>
<td>Most obese people are not dissatisfied with themselves.</td>
<td>2.11</td>
<td>1.58</td>
</tr>
<tr>
<td>Obese people are just as self-confident as other people.</td>
<td>2.35</td>
<td>1.65</td>
</tr>
<tr>
<td>Most people feel uncomfortable when they associate with obese people.*</td>
<td>4.41</td>
<td>1.51</td>
</tr>
<tr>
<td>Obese people are often less aggressive than non-obese people.*</td>
<td>3.28</td>
<td>1.71</td>
</tr>
<tr>
<td>Most obese people have different personalities than non-obese people.*</td>
<td>3.45</td>
<td>1.87</td>
</tr>
<tr>
<td>Very few obese people are ashamed of their weight.</td>
<td>1.66</td>
<td>1.65</td>
</tr>
<tr>
<td>Most obese people resent normal weight people.*</td>
<td>3.35</td>
<td>1.74</td>
</tr>
<tr>
<td>Obese people are more emotional than non-obese people.*</td>
<td>3.24</td>
<td>1.65</td>
</tr>
<tr>
<td>Obese people should not expect to live normal lives.*</td>
<td>4.46</td>
<td>1.67</td>
</tr>
<tr>
<td>Obese people are just as healthy as non-obese people.</td>
<td>.84</td>
<td>1.48</td>
</tr>
<tr>
<td>Obese people are just as sexually attractive as non-obese people.</td>
<td>1.64</td>
<td>1.79</td>
</tr>
<tr>
<td>Obese people tend to have family problems.*</td>
<td>3.95</td>
<td>1.56</td>
</tr>
<tr>
<td>One of the worst things that could happen to a person would be for him to become obese.*</td>
<td>3.11</td>
<td>2.32</td>
</tr>
</tbody>
</table>

*These items were reverse scored.

**3 was added to the responses for the individual items so that the scale ranged from 0 to 5 (rather than -3 to 3).

Discussion

In this study, health majors on average scored below the midpoint of the ATOP scale indicating more negative attitudes toward obese persons. Of significance, ATOP scores, on average, were found to be relatively lower than those reported in previous studies (Allison et al., 1991; Crerand et. al., 2007; Swami, Pietschnig, Stieger, Tov’ee, & Voracek, 2010), indicating a higher level of bias toward obese persons. ATOP bias did not differ among ethnicities or current year of study. ATOP bias was not related to age. However, women were more biased than men.
Among men, the higher the BMI, the more positive attitudes were towards obese persons. Among women, there was no relationship between BMI and attitudes. These findings are similar to other studies which reported conflicting results among these variables (Hebl & Turchin, 2005; Puhl & Brownell, 2006).

In reviewing the scores of individual items, a higher level of bias was reported among items measuring self-esteem, satisfaction with self, happiness, pride, sexual attractiveness, and health. These findings are similar to other studies (Puhl & Heuer, 2009; Vroman & Cote, 2011) which measured students’ attitudes toward obese persons. However, neutral to more positive scores were reported for other items. This suggests that while health majors may not ascribe to some of the negative stereotypes about obese persons, they are more likely to attribute more neutral to positive responses, hence potentially being unaware that they hold negative associations.

**Conclusion**

Consensus of studies examining weight bias in a variety of health-related fields (Creel & Tillman, 2011; Persky & Eccleston, 2011) concur that educational content specific to weight stigma is missing from the majority of health-related disciplines in higher education. As a result, the lack of reform to address this emerging issue has the potential to hinder the quality of care provided to obese persons. Given the moderate level of weight bias present in the current sample of health majors, it seems warranted to increase education and awareness of weight bias in existing health-related curricula.

**Implications**

Several experimental studies (O’Brien et al., 2010; Poustchi, Saks, Piasecki, Hahn, & Ferrante, 2013; Swift et al., 2013) have illustrated the effectiveness of a variety of strategies...
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toward the reduction of weight bias within the health-related settings. These studies have provided evidence in support of educational interventions that emphasized self-assessment and awareness of weight bias, perceptions of, and causes related to, obesity, and bias free treatment approaches as being effective in reducing weight bias. Weight bias awareness curriculum, such as the one presented in the Appendix (Boss, 2015), may help bridge the gap by providing a deeper understanding of weight bias among health majors and ways to further improve training strategies and educational measures toward the treatment of obese persons within the health-related disciplines.
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References


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Appendix

Overview of Weight Bias Awareness Curriculum

Learning Objectives:
- Identify and interpret personal attitudes toward obese persons.
- Assess the effect of weight bias in the health-related disciplines.
- Review policy and legal statutes surrounding weight discrimination.
- Critique the media’s role in shaping the public’s understanding and attitudes toward obesity and weight loss.
- Investigate current literature on weight related terminology and language preference of obese persons.
- Evaluate research based intervention strategies to reduce weight bias and apply findings to practice in the classroom/lab settings.

Self-Assessment Unit focuses on personal attitudes and biases toward obese individuals. This unit includes:
- Self-Assessment Surveys (ATOP and IAT)
- Analysis and Reflection of Self-Assessment Surveys
- Guided Group Discussion Questions

Awareness Unit addresses implicit and explicit bias in the home, school, and health care setting and their implication on obese persons. This unit includes:
- Prevalence of Weight Bias
- Videos (weight bias at home and school and weight bias in health care)
- Guided Group Discussion Questions
- Research Article Assignment

Perceptions of Obesity Unit discusses obese persons perceptions of, implications associated with, and legal issues surrounding discrimination of obese persons. This unit includes:
- Obese Persons Reports of Bias
- Causes of Obesity
- Portrayal of the Media Towards Obese Persons
- Weight Terminology and Language Preference
- Policy and Legal Solutions to Weight Discrimination

Bias-Free Treatment Unit provides students with a variety of effective strategies to use to minimize the instance of weight bias when interacting with obese persons. This unit includes:
- Strategies for Health-Related Professionals
- Weight Loss Counseling Strategies
- Internet Resources

Evaluation Unit offers students the opportunity to reflect upon learned experiences and provide feedback about the integration of weight bias curriculum in program course(s). This unit includes:
- Self-Reflection PPT and Feedback Survey

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