Assessing eating disorder and weight preoccupation risk in female students

Samantha Ramsay, Laurel J Branen, Miranda L Snook

Obsession with weight has been identified as a significant problem in modern society, particularly among young women. Similarly, the phenomena of weight and shape preoccupation have been recognised as preliminary behaviours to the development of eating disorders. This study aimed to identify the current incidence of, and factors associated with, weight preoccupation, shape preoccupation, and eating disorder risk in female US university students aged 18 to 23 years. An online study was used and the findings demonstrated that 31% of respondents identified themselves as weight-preoccupied and 33% as shape-preoccupied. Overall, the study found that asking students whether they are weight-preoccupied could be an initial step in early intervention for those at risk of developing an eating disorder.

KEYWORDS:
Weight preoccupation ■ Eating disorders ■ Dieting ■ Shape preoccupation

Modern society places a lot of pressure on individuals to be thin and to fight obesity (Bailey and Ricciardelli, 2010; Flegal et al, 2010). However, with this pressure comes the potential for increased body dissatisfaction (Veldhuis et al, 2012), which can result in individuals becoming preoccupied with their weight and shape.

The prevalence of obesity has become a national health concern in the US, prompting greater promotion of the need to maintain a healthy weight (Flegal et al, 2010; Tubbs, 2000). While necessary for public health, in some individuals these messages may run the risk of contributing to an obsession with attaining a specific weight (Neumark-Sztainer, 2005; O’Dea, 2005). Similarly, the influence of social media may contribute to an expectation of ‘thinness’ and may affect young adults’ body satisfaction, again triggering a preoccupation with weight and shape (van den Berg et al, 2007).

Weight preoccupation is defined as spending too much time thinking about one’s weight — shape preoccupation on the other hand is defined as spending too much time thinking about one’s body shape (Tubbs, 2000).

The prevalence of weight and shape preoccupation is a concern, particularly as excessive weight preoccupation can negatively impact nutritional status (Yanover and Thompson, 2008), and often precedes the development of an eating disorder (Killen et al, 1994). For example, adolescents who frequently weigh themselves may also demonstrate unhealthy eating habits, such as food restriction and missing meals, which affect their nutrient intake (Friend et al, 2012). Similarly, body size perception is related to dieting frequency, with women who perceive their figure as ‘larger’ dieting more often (Ackard et al, 2002).

A higher body mass index (BMI) is positively associated with weight and shape preoccupation and dieting or exercising to lose weight (Colabianchi et al, 2006). In addition, individuals who perceive themselves as being overweight are more likely to be negatively preoccupied with their body image (Park and Beaudet, 2007). The relationship between BMI and the risk of developing an eating disorder is mediated by body dissatisfaction (when body dissatisfaction is involved, the association between BMI and the risk of developing an eating disorder becomes stronger). In addition, all the indicators of body dissatisfaction, weight and shape perceptions were the most influential mediators (Lynch et al, 2008).

An individual’s personality traits, such as perfectionism, and any personality disorders, such as narcissism, may also be associated with weight preoccupation (Davis et al, 1997), and higher levels of stress have been associated with a dysfunctional body image, lower self-esteem, and greater depressive symptoms (Murray et al, 2011), which may increase the risk of weight preoccupation.

Some young women’s ability to cope with life events can be related to weight, as demonstrated by Denisoff and Endler (2000), who identified that the perceived stress (whether it be from work or family circumstances) was associated with an increase in some women’s preoccupation with their weight. Denisoff and Endler (2000) concluded that the fewer coping skills a women has increases the likelihood that she will be preoccupied with her weight (Denisoff and Endler, 2000). Also, individuals who perceive themselves to be physically attractive are more likely to...
be preoccupied with their weight and shape (Davis et al, 2001; Gingras et al, 2004; Colabianchi et al, 2006).

In comparison to men, women are more likely to be preoccupied with their shape (Kittler et al, 2007) and weight and to engage in disordered eating behaviours (Afifi-Soweid et al, 2002). Women in university settings have also demonstrated weight and shape preoccupation (Branen, 1989; Tubbs, 2000), body dissatisfaction (Cash et al, 2004), and disordered eating behaviours (Taylor et al, 2006).

In one study, increasingly unhealthy attitudes about eating and weight meant that females who had lost or gained weight had higher rates of restrained eating, body dissatisfaction and ‘drive for thinness’, as well as being at greater risk of developing more serious eating disorder behaviours (Provencher et al, 2009).

Also, female students’ concerns related to eating, weight, and shape typically do not resolve or remit during the traditional university age period (18 to 23 years) (Cain et al, 2010).

AIMS OF THE STUDY

Previous research had identified the prevalence and rise of weight and shape preoccupation in university students (Branen, 1989; Tubbs, 2000). However, the purpose of this study was:

- To identify the incidence of weight preoccupation
- To identify the associated factors influencing weight preoccupation
- To identify whether there is a relationship between weight preoccupation and the risk of developing an eating disorder in female students aged 18 to 23 years.

METHODS

A validated questionnaire entitled ‘Women and their weight’ was adapted from the 79-item questionnaire used in previous research (Branen, 1989; Tubbs, 2000).

The questionnaire included 40 questions from the Eating Attitudes Test (EAT-40), a valid and reliable self-report questionnaire originally developed as a screening tool in the assessment of eating disorders (Garner and Garfinkel, 1979; Garner et al, 1982).

‘In comparison to men, women are more likely to be concerned with their shape.’

The EAT-40 has since been updated to EAT-26 (Garner et al, 1982). However, the authors’ questionnaire used the EAT-40 to maintain consistency with the original. The questionnaire gathered information on:

- Whether participants identified themselves as being preoccupied with weight or shape
- Dieting history
- Minimum and maximum weights since age 15 years
- Extent to which friends and family members influenced dieting behaviours
- Ideal weight
- Exercise habits
- Diagnosis of an eating disorder
- Influence of media
- Any past teasing about weight.

The questions were composed based on recommendations by Salant and Dillman (1994).

Participants

A random selection of 10% of all female students aged 18 to 23 years and enrolled full-time at the authors’ university in the spring of 2010 were contacted to participate in the study (n=430).

Procedure

The selected students were emailed a covering letter explaining the purpose of the study, a link to the online survey, and an offer to be included in a draw for a university book shop gift card. All participants were sent two follow-up emails reminding them to complete the questionnaire.

Data analysis

The EAT section of each questionnaire was scored to obtain a total EAT score (Garner and Garfinkel, 1979). BMI standards were used to classify participants as underweight, normal weight or overweight. Items were ranked on a scale ranging from 1 (‘not at all’) to 5 (‘extremely’).

Participants were asked, ‘Do you feel that you spend too much time thinking about your weight, or in other words, are you preoccupied by your weight?’

- Participants who responded 4 (‘very much’) or 5 (‘extremely’) were classified as weight-preoccupied
- Participants who answered 1 (‘not at all’), 2 (‘slightly’), or 3 (‘moderately’) were classified as non-weight-preoccupied.

Participants were also asked, ‘Do you feel that you spend too much time thinking about your shape, or in other words, are you preoccupied by your shape?’ Those who responded 4 (‘very much’) or 5 (‘extremely’) were classified as shape-preoccupied.

Data were analysed using Statistical Package for Social Sciences (SPSS version 18) with a significance level of p<0.05. T-tests were used to compare the characteristics of self-identified weight-preoccupied and non-weight-preoccupied women, as well as differences in EAT scores, BMI, and other continuous variables. Factors associated with weight-preoccupied and non-weight-preoccupied women were identified using chi-square tests.

RESULTS

Of the 430 students contacted, 33% responded to the survey (n=121). The mean age of the respondents was 20±1.39 years:

- Thirty-one percent (n=38) of women considered themselves to be weight-preoccupied
- Thirty-three per cent (n=40) considered themselves to be shape-preoccupied.

Perhaps unsurprisingly, weight preoccupation was associated with shape preoccupation, with the majority (n=32) of self-identified weight-preoccupied women also self-identifying as shape-preoccupied. Only six of the weight-preoccupied women did not consider themselves to be shape-preoccupied. Similarly,
According to their EAT scores, self-identified weight preoccupation was greater concern with body weight—actual BMI and desired BMI of the preoccupied groups (weight-preoccupied and non-weight-preoccupied) was significantly different in the mean desired BMI, but there was a no significant difference in the mean BMI between weight-preoccupied and non-weight-preoccupied groups. There was no significant difference in the mean BMI between weight-preoccupied and non-weight-preoccupied groups.

There was no significant difference between EAT scores and reported weight preoccupation status. Regardless of whether they were weight-preoccupied or not, women desired an average BMI of 21. Participants who stated they had a lower weight at age 15 years were less likely to be weight-preoccupied.

**Eating attitudes test scores**

The characteristics of self-identified weight-preoccupied and non-weight-preoccupied respondents can be found in Table 1. The weight-preoccupied participants’ mean EAT score of 24.67 ± 11.58 was significantly higher (t = 6.7, df = 113, p < 0.001) than non-weight-preoccupied participants’ mean EAT scores (11.78 ± 8.47) (Table 1). A higher score on the EAT suggests participants in this study accurately self-identified weight preoccupation according to their EAT scores.

**Body mass index**

There was no significant difference in mean BMI between weight-preoccupied and non-weight-preoccupied groups. There was no significant difference in the mean desired BMI, but there was a significant difference between the actual BMI and desired BMI of the weight-preoccupied and non-weight-preoccupied groups (Table 1). The mean difference between the actual BMI and desired BMI was 4.48 pounds for the weight-preoccupied group and 2.54 pounds for the non-weight-preoccupied group. Both groups desired a weight loss between two and four pounds, irrespective of their weight preoccupation status.

Regardless of whether they were weight-preoccupied or not, women desired an average BMI of 21.

Table 1: Characteristics of self-identified weight-preoccupied and non-weight-preoccupied respondents

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Weight-preoccupied (n=38) (mean ± SD)</th>
<th>Non-weight-preoccupied (n=83) (mean ± SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>22.45 ± 19.53</td>
<td>22.45 ± 19.53</td>
</tr>
<tr>
<td>EAT Score</td>
<td>24.67 ± 11.58*</td>
<td>11.78 ± 8.47</td>
</tr>
<tr>
<td>Body mass index (BMI)</td>
<td>25.37 ± 6.97</td>
<td>23.83 ± 5.54</td>
</tr>
<tr>
<td>Desired BMI</td>
<td>21.43 ± 3.12</td>
<td>21.54 ± 3.18</td>
</tr>
<tr>
<td>Difference in BMI/desired BMI</td>
<td>4.48 ± 4.43*</td>
<td>2.54 ± 3.4*</td>
</tr>
<tr>
<td>Minimum weight (pounds)</td>
<td>133.06 ± 24.47*</td>
<td>124.21 ± 17.69*</td>
</tr>
<tr>
<td>Maximum weight (pounds)</td>
<td>161.24 ± 5.03</td>
<td>147.24 ± 43.52</td>
</tr>
<tr>
<td>Age when weight concern began</td>
<td>12.21 ± 3.31</td>
<td>13.42 ± 3.34</td>
</tr>
</tbody>
</table>

*p<0.05

In this study, those individuals who identified themselves as weight-preoccupied scored significantly higher on the EAT scores. Furthermore, the association between EAT scores and reported weight preoccupation indicates that individuals can identify weight preoccupation in themselves.

In anorexia nervosa and bulimia nervosa there is usually denial about the eating-disordered behaviour. This denial appears to be absent in those who are preoccupied with their weight, suggesting that clinicians do not need a specific instrument to assess weight and shape preoccupation — individuals can simply be asked whether they are preoccupied with their weight or shape.

Weight and shape preoccupation have been associated with a higher BMI (Lynch et al, 2008), as well as being identified in individuals who want to lose weight or who are dieting (Colabianchi et al, 2006). However, in this study no statistical differences were found in BMI between weight-preoccupied and non-weight-preoccupied individuals, suggesting that the phenomena of weight and shape preoccupation may not be about weight itself, but rather about a person’s perceptions of their weight (Park and Beaudet, 2007).

In this study, those women whose current BMI was further from their desired BMI were more likely to be weight-preoccupied. This backs up previous research, which found that women who perceive their current weight to be far from their desired weight demonstrate more dieting behaviours and weight and shape preoccupation (Colabianchi et al, 2006). In addition, women who were not preoccupied with their weight had been a significantly lower minimum weight since age 15, suggesting that weighing more as a teenager prompted women to continue their preoccupation with weight into young adulthood.

**DISCUSSION**

The phenomena of weight and shape preoccupation have been recognised as preliminary behaviours in the development of eating disorders (Killen et al, 1994).

In this study, weight preoccupation was associated with shape preoccupation, and similar percentages of women who identified themselves as weight-preoccupied (31%) were also shape-preoccupied (33%) — this indicates that the two accompany each other, as demonstrated in previous research (Tubbs, 2000).

Killen et al (1994) identified the relationship between weight and shape preoccupation and the onset of eating disorder symptoms. In addition, the risk for developing an eating disorder was greater when weight preoccupation was combined with other personality factors, such as perfectionism or narcissism (Davis et al, 1997).

**Table 2**

- Age when weight concern began (years) 12.21 ± 3.31 13.42 ± 3.34
- Maximum weight (pounds) 161.24 ± 5.03 147.24 ± 43.52
- Difference in BMI/desired BMI 4.48 ± 4.43* 2.54 ± 3.4*
The study found that weight and shape preoccupation certainly interfere with an individual’s life. Weight preoccupation was associated with poor self-image, feeling fat, and reduced satisfaction with present weight, all of which are influenced by perceived physical attractiveness (Davis et al, 2001; Gingras et al, 2004; Colabianchi et al, 2006).

Furthermore, weight preoccupation has the potential to interfere with one’s life — stress and coping can act as mediators to weight preoccupation, where perceived stress reinforces the relationship between variables like BMI and weight preoccupation (Denisoff and Endler, 2000; Murray et al, 2011).

The social environment also impacts an individual’s body satisfaction (Blowers et al, 2003; Bailey and Ricciardelli, 2010). In the study, female friends were identified as having a significant influence on weight preoccupation, as was comparing oneself to other females.

In a university setting, primary contact with friends can reinforce socio-cultural factors around food, including where students eat; what they eat; how they eat; and how they perceive their bodies — all of which can result in an individual’s internalisation of the desire to be thin (Blowers et al, 2003).

Compounding the influence of the women’s social environment is the media’s impact on weight preoccupation (Veldhuis et al, 2012). Magazines, television commercials and films often depict disproportionate female body shapes and lower sizes than those typically found in healthy women, all of which has been identified as an influence on weight and shape preoccupation.

Weight preoccupation among women at the authors’ university rose between 1989 and 1996 (Branen, 1989), but slightly declined between 1999 and 2010. Using a similar sample of university students in 1989, 25% of the female students ages 18 to 23 years were found to be preoccupied with their weight (Branen, 1989). This rose to 35% in 1996 and declined slightly to 31% in 2010.

Weight and shape preoccupation can lead to poor dietary intake, unhealthy weight loss practices (Yanover and Thompson, 2008), by Branen (1989) and more commonly identified as ‘body dissatisfaction’ (Blowers et al, 2003; Bailey and Ricciardelli, 2010).

Individuals who are not just concerned about weight, but also about body shape, can place themselves at additional risk, for example engaging in excessive exercise coupled with dieting.

### STUDY LIMITATIONS

Although participants were randomly selected, results from this study cannot be generalised and further research is needed to examine the phenomena of weight and shape preoccupation in other geographical settings and with different age groups. While the prevalence of weight and shape preoccupation has decreased in the last decade, additional research is needed to determine if this trend will continue or whether it will increase with the continued efforts to address obesity in the US (Flegal et al, 2010).

### CONCLUSION

Weight and shape preoccupation can lead to poor dietary intake, unhealthy weight loss practices (Yanover and Thompson, 2008),

### Table 2: Relationship of weight preoccupation status and various factors (n=116)

<table>
<thead>
<tr>
<th>Factors</th>
<th>x²</th>
<th>df</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teased about being overweight</td>
<td>6.77</td>
<td>4</td>
<td>0.148</td>
</tr>
<tr>
<td>Teased about being underweight</td>
<td>7.58</td>
<td>4</td>
<td>0.108</td>
</tr>
<tr>
<td>Weight gain changed self-image</td>
<td>16.57</td>
<td>4</td>
<td>0.002**</td>
</tr>
</tbody>
</table>

Influence of others on dieting

<table>
<thead>
<tr>
<th>Factors</th>
<th>x²</th>
<th>df</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother</td>
<td>5.46</td>
<td>4</td>
<td>0.243</td>
</tr>
<tr>
<td>Father</td>
<td>6.06</td>
<td>5</td>
<td>0.301</td>
</tr>
<tr>
<td>Sister(s)</td>
<td>2.6</td>
<td>5</td>
<td>0.761</td>
</tr>
<tr>
<td>Brother(s)</td>
<td>4.68</td>
<td>5</td>
<td>0.456</td>
</tr>
<tr>
<td>Girlfriend(s)</td>
<td>13.22</td>
<td>5</td>
<td>0.021*</td>
</tr>
<tr>
<td>Boyfriend(s)</td>
<td>4.22</td>
<td>5</td>
<td>0.519</td>
</tr>
<tr>
<td>Presently feel fat</td>
<td>15.88</td>
<td>3</td>
<td>0.001**</td>
</tr>
<tr>
<td>Comparing body to other females</td>
<td>18.92</td>
<td>4</td>
<td>0.001**</td>
</tr>
<tr>
<td>Satisfaction with present weight</td>
<td>30.45</td>
<td>4</td>
<td>0.000***</td>
</tr>
<tr>
<td>Media influence on feelings about body</td>
<td>14.97</td>
<td>4</td>
<td>0.005**</td>
</tr>
<tr>
<td>How often weight on mind</td>
<td>45.61</td>
<td>4</td>
<td>0.000***</td>
</tr>
<tr>
<td>Weight preoccupation interferes with life</td>
<td>46.8</td>
<td>3</td>
<td>0.000***</td>
</tr>
<tr>
<td>Diagnosed with eating disorder</td>
<td>5.04</td>
<td>2</td>
<td>0.08</td>
</tr>
<tr>
<td>Shape preoccupation</td>
<td>69.88</td>
<td>4</td>
<td>0.000***</td>
</tr>
</tbody>
</table>

* = p < 0.05, ** = p < 0.01, *** = p < 0.001

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Five-minute test

Answer the following questions about this article, either to test the new knowledge you have gained or to form part of your ongoing practice development portfolio.

1. What is weight/shape preoccupation?
2. Name some of the crucial factors that can contribute to weight/shape preoccupation.
3. What are some of the symptoms of body dissatisfaction?
4. Can you explain the media’s impact on weight/shape preoccupation?
5. Can you detail one intervention that may aid your future practice?
and the development of an eating disorder (Kilen et al., 1994). However, prevention programmes generally target anorexia nervosa and bulimia nervosa rather than weight and shape preoccupation.

This study demonstrates the potential use of self-identified weight and shape preoccupation as an approach to early intervention for individuals at risk of developing an eating disorder. The study found that simply asking students whether they are weight-preoccupied could be an initial step in early intervention for those suspected of being at-risk of developing an eating disorder. JCN

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Obession with weight has been identified as a significant problem in modern society, particularly among young women.

The phenomena of weight and shape preoccupation have been recognised as preliminary behaviours to the development of eating disorders.

This study aimed to identify the current incidence of weight and factors associated with weight preoccupation, shape preoccupation, and eating disorder risk in female US university students aged 18 to 23 years.

Overall, the study found that asking students whether they are weight-preoccupied could be an initial step in early intervention for those at-risk of developing an eating disorder.


