The relative associations of shape and weight over-evaluation, preoccupation, dissatisfaction, and fear of weight gain with measures of psychopathology: An extension study in individuals with anorexia nervosa

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ABSTRACT

Recent research has demonstrated that certain components of body image (i.e., shape and weight over-evaluation, preoccupation, and dissatisfaction) in secondary school students shared a distinct clinical significance because of their differential relation to measures of psychopathology. The present study aimed to replicate and extend on these findings by examining the distinctiveness of these body image constructs, in addition to a fear of weight gain, in individuals with anorexia nervosa (AN)—a disorder this is facilitated and maintained by extreme body image concerns. Treatment-seeking females with AN (n = 124) completed a questionnaire battery that measured these constructs. Findings demonstrated that once any shared variance between body image components was removed in regression analyses, fear of weight gain was the only unique predictor of eating disorder psychopathology (e.g., dietary restraint and compulsive exercise), while over-evaluation and preoccupation were the only unique predictors of general psychopathology (e.g., depressive and anxiety symptoms). Overall, these findings demonstrate certain components of body image may operate differently in AN, and reinforce previous calls to consider and assess for distinct facets of body image in this population.

1. Introduction

Although body image concerns are not an essential diagnostic criteria for anorexia nervosa (AN), theoretical models and diagnostic schemes have highlighted the importance of distinct components of body image in AN (American Psychiatric Association, 2013, p, 340). Body image concerns in eating disorders including AN may be conceptualised as either perceptual or attitudinal in nature, both of which are hypothesized to play a key role in maintaining many other features of eating disorders (e.g., binge eating, dietary restriction, starvation syndrome; Fairburn, 2008; Garner & Garfinkel, 1982). Whereas a perceptual disturbance concerns the inability for one to assess their body shape accurately, an attitudinal disturbance concerns the subjective negative appraisal of one's body and the overvalued ideals about the personal implications of weight and shape (Garner & Garfinkel, 1982).

Common attitudinal disturbances discussed in the literature include shape and weight over-evaluation, preoccupation, dissatisfaction, and fear of weight gain.

These attitudinal components have been shown to operate differently in terms of their specificity to eating disorders, their relationship with eating disorder psychopathology, and their diagnostic significance (Fairburn, Cooper, & Shafran, 2003). For example, shape and weight over-evaluation, a diagnostic criterion for bulimia nervosa (BN), is hypothesized to be the core psychopathology of all eating disorders (Fairburn, 2008). Over-evaluation is a stable construct exclusive to eating disorders (Fairburn et al., 2003). It is distinct from other components of body image, such as dissatisfaction and preoccupation, insofar as dissatisfaction and preoccupation fluctuate throughout the day and are experienced by non-clinical groups (Cooper & Fairburn, 1993).

Despite the distinction between these body image constructs,
researchers have typically discussed and/or assessed them as if they were interchangeable (Mitchison et al., 2017).

Research has sought to examine the clinical significance of these distinct components of body image in individuals with eating disorders. For example, a recent meta-analysis reported robust relationships between shape and weight over-evaluation and impairments in psychological functioning in binge-eating disorder and BN cases (Linardon, 2016). A previous meta-analysis also found that cases with AN who exhibited a fear of weight gain reported significantly greater levels of eating disorder psychopathology than cases with AN who did not exhibit a fear of weight gain (Thomas, Vartanian, & Brownell, 2009).

Over-evaluation and dissatisfaction have also been shown to differentially relate to improvements in psychosocial impairment in BN, with changes in over-evaluation shown to relate with self-esteem improvement, and changes in dissatisfaction shown to relate with improvements in depression (Cooper & Fairburn, 1993). Although few studies have tested the impact of body image components in eating disorders, some researchers have shown that a related construct in rumination (i.e., persistent and repetitively dwelling on symptoms of distress) around weight, shape, and eating predicted psychopathology over and above over-evaluation in individuals with eating disorders (Wang, Lydecker, & Grilo, 2017). Together, these findings suggest that these different components of body image show a unique clinical significance in eating disorders.

Mitchison et al. (2017) examined the unique relationships between over-evaluation, preoccupation, and dissatisfaction on measures of psychopathology in male and female high school students. At a bivariate level, they found each component of body image to be significantly related to dietary restraint, binge eating frequency, and psychological distress in boys and girls. However, differences between these body image components were evident in multivariate analyses that controlled for the other body image components. For females, preoccupation emerged as the most potent predictor of disordered eating and psychological distress, and preoccupation mediated the effects of over-evaluation and dissatisfaction on the selected outcomes. For boys, over-evaluation, preoccupation, and dissatisfaction were equal contributors to the prediction of disordered eating and psychological distress. These findings led Mitchison et al. (2017) to conclude that these components of body image were distinct and should thus not be used interchangeably. The authors also argued that knowledge of body image would be further enhanced by research studying these distinct components in clinical samples.

The current study examined whether the findings of Mitchison et al. (2017) would replicate in individuals with AN. We also aimed to extend on their findings by including a fear of weight gain into the multivariate analyses. Thus, our objective was to examine the relative associations of over-evaluation, preoccupation, fear of weight gain, and dissatisfaction on measures of disordered eating (dietary restraint, compulsive exercise) and general psychopathology (depressive and anxiety symptoms) in AN.

### 2. Method

#### 2.1. Participants and procedure

Participants were females ($n = 124$) with a diagnosis of AN who were referred for treatment at the Body Image and Eating Disorder Treatment Recovery Service (BETRS) in Melbourne. The service has been described elsewhere (Newton, Bosanac, Mancuso, & Castle, 2013). Diagnoses were determined after comprehensive assessment by specialist clinicians under the guidance of the team of Consultant Psychiatrists. Data were collected upon initial presentation as part of a larger assessment protocol. The mean age of participants was 27.11 ($SD = 9.55$), and the mean BMI was 16.32 ($SD = 1.75$). The majority of the participants were Caucasian (72%), with some participants identifying as European (8.1%), Aboriginal and Torres Strait Islander (2.4%), East Asian (2.4%), and "other" (4%). The remaining 11.1% did not provide their ethnicity. Ethics approval and informed consent was obtained.

#### 2.2. Measures

Internal consistency data for included measures are provided in Table 1. Note that internal consistency could not be calculated for preoccupation, fear of weight gain, and compulsive exercise frequency, as these variables were assessed with one item.

#### 2.2.1. **Body image**

The Eating Disorder Examination Questionnaire (EDE-Q) was used to assess shape and weight over-evaluation, preoccupation, and dissatisfaction (Fairburn & Beglin, 1994). Over-evaluation was assessed via two items ("has your [1] weight [2] shape influenced how you feel about yourself as a person?"). Scores on each item were averaged to create a composite score. Dissatisfaction was also assessed via two items ("how dissatisfied have you been with your [1] weight or [2] shape"). Scores are also averaged to create a composite score. Over-evaluation and dissatisfaction items are rated along a seven point scale, ranging from zero (not at all) to six (markedly). Preoccupation ("has thinking about your shape or weight made it very difficult or you to concentrate on things you are interested in?") and fear of weight gain ("have you had a definite fear that you might gain weight?") were assessed with a single item, rated along a seven point scale, ranging from zero (no days) to six (everyday). These items have been used in several studies (Linardon, 2016; Linardon & Mitchell, 2017; Mond et al., 2013).

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**Table 1**

Means, standard deviations, and Spearman correlations between study variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over-evaluation</td>
<td>0.54*$^\text{***}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Dissatisfaction</td>
<td>0.41*$^\text{***}$</td>
<td>0.24*$^\text{***}$</td>
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<tr>
<td>Preoccupation</td>
<td>0.42*$^\text{***}$</td>
<td>0.26*$^\text{***}$</td>
<td>0.43*$^\text{***}$</td>
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<tr>
<td>Fear of weight gain</td>
<td>0.34*$^\text{***}$</td>
<td>0.51*$^\text{***}$</td>
<td>0.96*$^\text{***}$</td>
<td>0.61*$^\text{***}$</td>
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<tr>
<td>Dietary restraint</td>
<td>0.32*$^\text{***}$</td>
<td>0.14</td>
<td>0.21</td>
<td>0.32*$^\text{***}$</td>
<td>0.21</td>
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<tr>
<td>Compulsive exercise frequency</td>
<td>0.39*$^\text{***}$</td>
<td>0.31</td>
<td>0.38*$^\text{***}$</td>
<td>0.31*</td>
<td>0.23*</td>
<td>0.06</td>
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<tr>
<td>Depressive symptoms</td>
<td>0.46*$^\text{***}$</td>
<td>0.36*$^\text{***}$</td>
<td>0.37*$^\text{***}$</td>
<td>0.38*</td>
<td>0.23*</td>
<td>0.56*</td>
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<tr>
<td>Anxiety symptoms</td>
<td>0.62*$^\text{***}$</td>
<td>0.91*</td>
<td>0.86</td>
<td>0.86</td>
<td>0.91</td>
<td>0.85</td>
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</tr>
</tbody>
</table>

*Note: Cronbach’s alpha not provided for preoccupation, fear of weight gain, and compulsive exercise as these were assessed through a single item.*

$^*$ $p < 0.05$.

$^*$ $p < 0.01$.

$^*$ $p < 0.001$.
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