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The effect of interpersonal rejection on attentional biases regarding thin-ideal and non-thin images: The moderating role of body weight- and shape-based self-worth

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ABSTRACT

Interpersonal dysfunction and weight/shape-based self-worth have been implicated as key constructs for eating disorders, although the relationship between these two concepts is under-researched. This study investigated the moderating role of weight/shape-based self-worth in terms of the impact of interpersonal rejection on attentional bias regarding thin-ideal and non-thin images. Participants were 94 females without an eating disorder, who were exposed to either interpersonal rejection or acceptance (using the Cyberball paradigm), and subsequently assessed in terms of their attentional biases regarding thin-ideal and non-thin images. Results revealed that weight/shape-based self-worth moderated the relationship between interpersonal rejection/acceptance and attentional biases for thin-ideal (but not non-thin) images. Specifically, participants with a greater tendency to base their self-worth on weight/shape demonstrated reduced avoidance of thin-ideal images when rejected relative to those who were accepted. The findings support the role of interpersonal rejection in eliciting attentional disturbances among those with higher body weight/shape-based self-worth.

1. Introduction

Body image is a concept intrinsically linked to eating disorders, with shape and weight concerns featuring among the core diagnostic criteria of these conditions (American Psychiatric Association, 2013). In addition to being of diagnostic relevance, the tendency to evaluate one's self-worth based on one's weight and/or shape has been postulated to be the core psychopathology of eating disorders that works to maintain other eating disorder symptoms. Specifically, in their cognitive-behavioural transdiagnostic model, Fairburn, Cooper, and Shafran (2003) propose that while most individuals evaluate their self-worth in terms of their performance across a number of life domains (e.g., academic performance, relationships with others, and sporting abilities), individuals with eating disorders limit their evaluation of self largely (or even solely) to a single domain — body weight and shape. This over-evaluation of weight and shape leads to abnormal weight control behaviours such as extreme dietary restraint, laxative misuse, and over-exercising, given that self-worth is excessively dependent on having a certain body weight or shape (such as the thin-ideal).

The transdiagnostic model of eating disorders also postulates that interpersonal difficulties comprise a key maintenance factor for eating disorder symptomatology (Fairburn et al., 2003). The mechanisms linking interpersonal dysfunction with eating disorder symptoms are more fully elaborated upon in the interpersonal theory of eating disorders (IPT-ED; Rieger et al., 2010). The IPT-ED model proposes that negative social evaluation, defined as "actual or perceived negative feedback regarding one's value to another individual or group" (Rieger et al., 2010, p. 402), triggers negative self-evaluation and associated affect. IPT-ED further posits that vulnerable individuals engage in eating disorder behaviours in an attempt to overcome these states of negative self-evaluation and related negative affect. According to the model, vulnerable individuals are those who base their self-worth on body weight/shape. For these individuals, challenges to self-esteem have a negative impact on body-esteem (because self- and body-esteem are interconnected), with body dissatisfaction in turn triggering engagement in eating disorder behaviours such as maladaptive weight control behaviours and binge eating. As such, the IPT-ED model posits that weight/shape-based self-worth moderates the relationship between interpersonal rejection and eating disorder symptoms.

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More specifically, the model proposes that only those individuals with elevated levels of weight/shape-based self-worth will engage in eating disorder symptoms when they are interpersonally rejected because their self-esteem is linked to their body-esteem. Conversely, individuals who do not invest their self-worth in their weight or shape will not display eating disorder symptoms when they have been interpersonally rejected, as their self-esteem is not linked with their body-esteem.

To date, only one study has investigated the interaction between weight/shape-based self-worth and interpersonal rejection using an experimental design. In this important study by O'Driscoll and Jarry (2015), participants took part in a face-to-face group discussion on topics relating to university, and were subsequently asked to select two of the four participants from the group with whom they would like to work. All participants were then told that the remainder of the experiment would be completed alone, either because "no other participants chose to work with [you]" (rejection condition) or because "there has been a mistake in assigning [you] to a group" (neutral control condition). It was found that females higher in weight/shape-based self-worth reported significantly *higher* self-esteem and body satisfaction when rejected, compared to their counterparts in the control condition. O'Driscoll and Jarry (2015) proposed that these paradoxical results may be explained by rejected participants' use of self-protective strategies in response to feeling threatened. However, the study also has a potential methodological limitation that may have affected the results. Specifically, rather than entailing a neutral experience, participants in the control condition may have interpreted "there has been a mistake in assigning you to a group... as a result you will complete the rest of the experiment alone" as rejecting since it violated their expectation that they would be completing the study with selected peers.

In addition to avoiding any overtly negative experiences in the control condition when investigating the impact of rejection, research suggests that the control condition should even entail a minimum level of interpersonal acceptance since seemingly neutral interpersonal interactions are interpreted negatively. Specifically, Leary, Haupt, Strausser, and Chokel (1998) conducted four studies in which they tracked changes in self-esteem as a function of varying degrees of interpersonal acceptance and rejection. These studies yielded consistent findings, with reductions in self-esteem occurring not at a mid-point between acceptance and rejection but at moderate levels of acceptance. In other words, people experience neutral reactions from others as rejecting, which Leary et al. (1998) explained as follows: "Because norms dictate that people generally react to others in a civil, mildly positive fashion, people may regard even neutral reactions as indicating displeasure or rejection. Put differently, neutral reactions from others are likely to be interpreted as evidence of latent negativity rather than as true neutrality" (p. 1298).

Thus, to precisely determine the effect that interpersonal rejection has on eating disorder symptoms in vulnerable individuals, the interpersonal rejection condition should be compared with a control condition that is devoid of any negativity and in fact entails a minimum level of acceptance. The Cyberball paradigm is one commonly used and researched method of interpersonal rejection that has been found to induce a temporary reduction in self-esteem under the guise of an online ball-tossing game (Williams, Cheung, & Choi, 2000; Zadro, Williams, & Richardson, 2004). In the rejection condition, participants receive few, if any, ball tosses throughout the game whereas participants in the acceptance (control) condition receive the same number of ball tosses as the other players (Williams et al., 2000). Since participants in the control condition receive neither more nor fewer ball tosses than the other players, it can be seen as entailing a minimum level of acceptance while avoiding perceptions of rejection. The cyberball paradigm has the additional advantage in the eating disorder context of the rejection/acceptance manipulation being devoid of any weight/shape information given that it occurs online with participants represented by icons. This overcomes the limitation of previous research in which interpersonal rejection may have entailed negative feedback regarding one's appearance, such as receiving negative feedback while giving a class presentation (e.g., Smith & Rieger, 2010).

To date, a highly circumscribed array of constructs have been considered when investigating the effect of interpersonal rejection on eating disorder symptoms such as disinhibited eating (e.g., Baumeister, DeWall, Ciarocco, & Twenge, 2005) and body dissatisfaction (e.g., Murray, Rieger, & Byrne, 2016). A growing area of eating disorder research concerns the role of distorted information processing (such as attentional biases) regarding weight, shape, and/or food stimuli as potentially important constructs in eating disorders. An attentional bias occurs when an individual shows consistent and automatic changes in the direction of their attention regarding an aspect of their environment (Williams, Watts, MacLeod, & Mathews, 1997) and, in particular, information in the environment that is disorder salient (Aspen, Darcy, & Lock, 2013). For example, when disorder relevant and control stimuli matched on dimensions other than their meaning (e.g., degree of negativity/positivity) are presented concurrently, an attentional bias occurs when there is preferential processing of the disorder salient stimuli (Eysenck, 1992).

Attentional biases have been found in individuals with diverse forms of psychopathology (e.g., Bar-Haim, Lamy, Pergamin, Bakermans-Kranenburg, & van Ijzendoorn, 2007; Mogg & Bradley, 2005), including eating disorders (Aspen et al., 2013; Faunce, 2002), leading to the conclusion that "there is robust evidence that women with eating disorders display an attentional bias for disorder-salient information" (Aspen et al., 2013, p. 820). The bulk of this research has utilised the modified Stroop task in which participants' reaction times when reading the colour of weight/shape words versus control words are compared. Increased reaction times for the former compared with the latter suggest that the weight/shape words are being preferentially processed. The many studies that have employed the Stroop task in the eating disorders context have been subjected to three meta-analyses (Brooks, Prince, Stahl, Campbell, & Treasure, 2011; Dobson & Dozois, 2004; Johansson, Ghaderi, & Andersson, 2005), with the results and associated effect sizes indicating that women with eating disorders demonstrate a moderate degree of preferential processing of weight/shape words. Non-eating disordered controls have been found to demonstrate a small degree of preferential processing for weight/shape words, with no difference between those with high levels of dietary restraint and healthy controls.

However, a key limitation of the modified Stroop task is that increased colour naming latencies could indicate attention being directed either towards or away from the weight/shape words, which has resulted in researchers using attentional paradigms that provide unambiguous results such as the visual (or dot) probe task. The visual probe task is a measure of attentional bias (Macleod, Mathews, & Tata, 1986) in which participants are required to identify a visual probe that appears following exposure to a pair of stimuli: the target stimulus (e.g., an image of a body) and the control stimulus (e.g., an animal image). The task is designed to establish whether individuals show an attentional bias towards or away from target stimuli. Specifically, if the probe is displayed in the location previously occupied by the target image, then the individual will be faster in detecting this probe if the person was already attending to the target image. Conversely, if the probe is displayed in the location previously occupied by the target image, then the individual will be slower in detecting this probe if the person was attending to the control image. Thus faster response latencies to