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Social anxiety and disordered eating: The influence of stress reactivity and self-esteem

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ABSTRACT

While previous research indicates a strong link between social anxiety and disordered eating, more research is needed in order to understand the mechanisms that underlie this relationship. Given that stress is often implicated in disordered eating, it was hypothesised that ones reaction to stress (i.e. stress reactivity) would mediate the relationship between social anxiety and disordered eating. Similarly, given that low self-esteem is commonly reported in both those with social anxiety and eating disorders, it was hypothesised that self-esteem would also mediate the relationship between social anxiety and disordered eating. In order to test this, an online survey measuring social anxiety, disordered eating, stress reactivity and self-esteem, was administered to 282 participants in the community, aged between 18 and 35 years. Results showed that self-esteem and a reactivity to stress during social conflict – but not during negative social evaluations – partially mediated the relationship between social anxiety and disordered eating. These findings demonstrate that low self-esteem and interpersonal conflict are powerful mechanisms that can maintain eating disorder psychopathology in those who are socially anxious. This highlights the importance of ensuring that these mechanisms are sufficiently addressed in eating disorder prevention and treatment programs.

1. Introduction

The relationship between social anxiety and disordered eating is well-documented. Several studies have reported positive correlations between symptoms of social anxiety and disordered eating in clinical and community samples (Grabhorn, Stenner, Stangier, & Kaufhold, 2006; Hinrichsen, Wright, Waller, & Meyer, 2003; Levinson & Rodebaugh, 2012; McLean, Miller, & Hope, 2007; Menatti, DeBoer, Weeks, & Heimberg, 2015; Wonderlich-Tierney & Vander Wal, 2010). Studies on clinical samples have reported high rates of comorbidity between social anxiety disorder (SAD) and eating disorders. For instance, Kaye, Bulik, Thornton, Barbarich, and Masters (2004), reported that out of 672 individuals with an eating disorder, approximately 20% met criteria for SAD. This appears to be much higher than in community samples, where the lifetime and 12-month prevalence of SAD were estimated to be approximately 12.1% and 7.1%, respectively (Ruscio et al., 2008). Further, SAD is the most common anxiety disorder experienced in individuals with eating disorders, and studies have reported the lifetime prevalence of SAD to be around 39% and 17% among individuals with Anorexia Nervosa (Halmi et al., 1991) and Bulimia Nervosa (Brewerton et al., 1995), respectively. According to retrospective research, SAD is purported to precede the onset of eating disorders, prompting some researchers to argue that SAD is an important risk factor for eating disorder onset (Bulik, Sullivan, Fear, & Joyce, 1997). The significance of SAD in individuals with eating disorders is further underscored by the fact that symptoms of social anxiety has been shown to predict client disengagement during eating disorder treatment (Goodwin & Fitzgibbon, 2002).

Some theoretical perspectives, such as Interpersonal theory and Emotion Regulation theory, offer explanation to the link between social anxiety and disordered eating. According to Interpersonal theory, relationship difficulties may result in emotional distress, and therefore, binge eating may be used as a coping mechanism to alleviate such distress (Ansell, Grilo, & White, 2012). Similarly, Emotion Regulation theory suggests that disordered eating represents a maladaptive behavioural response, employed to reduce heightened emotions (Hilt, Hanson, & Pollak, 2011; Polivy & Herman, 1993). While restrictive eating may reduce negative affect by allowing a sense of control to be gained (Hatch et al., 2010; Lask, 2000), binge eating may be used as a means to temporarily numb negative emotions (Hilt et al., 2011). Therefore, consistent with the Transdiagnostic theory of eating disorders, it is believed that regardless of the specific symptoms present,

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all eating disorders have similar underlying psychopathology (Fairburn, Cooper, & Shafran, 2003).

However, despite both theory and research indicating a clear link between social anxiety and disordered eating, limited research has tested mediation models to understand the mechanisms that may be responsible for this relationship. Research has pointed toward the role of fear of negative evaluations (Levinson & Rodebaugh, 2012; Menatti et al., 2015), emotional suppression (McLean et al., 2007), shame (Grabhorn et al., 2006), and emotional coping strategies (Hinrichsen et al., 2003; Wonderlich-Tierney & Vander Wal, 2010) as factors that might explain this relationship. However, Menatti et al. (2015) noted that further research exploring mediating mechanisms is required to fully understand the cognitive and behavioural processes implicated in social anxiety and disordered eating.

The extent to which one interprets external situations as harmful or unmanageable, known as stress reactivity (Scholtz, Yim, Zoccola, Jansen, & Schulz, 2011), may potentially mediate the relationship between social anxiety and disordered eating. Disordered eating often emerges during, or is exacerbated by, stressful situations (e.g., transition to university, interpersonal conflict, puberty onset), particularly in individuals who have difficulty dealing with negative affect and stress (Barker & Galambos, 2007; Delinsky & Wilson, 2008; Klump, Perkins, Burt, McGue, & Iacono, 2007; Lieberman, Gauvin, Bukowski, & White, 2001). Moreover, experimental research has shown that inducing interpersonal stress via provoking feelings of loneliness and rejection, which are characteristic of those with social anxiety, led to an increase in disordered eating behaviours and cognitions in individuals with bulimia nervosa (Tuschen-Caffier & Vögele, 1999). Considering that disordered eating may function to regulate negative emotions in individuals with elevated levels of social anxiety, it is therefore plausible that this relationship depends, at least in part, on individual differences to stress reactivity (Hinrichsen et al., 2003). According to Scholtz et al. (2011), stress reactivity in social situations can either be in result of social evaluations (i.e. losing self-confidence in response to negative social evaluations) and social conflict (i.e. feeling upset and annoyed in response to social conflict or criticism). However, no studies to our knowledge have investigated how both forms of stress reactivity might mediate the relationship between social anxiety and disordered eating.

Self-esteem might also be another variable underlying the relationship between social anxiety and disordered eating. Self-esteem refers to a person's level of self-acceptance, which stems from an appraisal of global self-worth, attractiveness, competence, and ability to achieve one's own aspirations (Robson, 1988). Self-esteem is significantly lower in individuals with eating disorders relative to controls (Fairburn et al., 2003), and several studies have reported negative relationships between self-esteem and disordered eating, in both clinical and community samples (Lampard, Byrne, McLean, & Fursland, 2011; Lampard, Tasca, Balfour, & Bissada, 2013; Shea & Pritchard, 2007). Indeed, self-esteem is purported to be a powerful maintaining mechanism of eating disorder psychopathology, where it has been shown to exacerbate shape and weight concerns and dietary restraint (Fairburn et al., 2003). It is also well-known that self-esteem is impaired in individuals with elevated levels of social anxiety (Clark & Wells, 1995). A persistent negative view of the self, according to the cognitive model of SAD (Clark & Wells, 1995), is a major reason why socially anxious individuals interpret social situations as threatening. Consistent with this, Obeid, Bucholz, Boerner, Henderson, and Norris (2013) found that in a sample of 344 females with an eating disorder, social anxiety had a negative relationship with perceived global self-worth. Therefore, it is likely that global negative self-evaluation is a primary force maintaining symptoms of disordered eating in individuals who are socially anxious.

Indeed, Obeid et al. (2013) and many other researchers (e.g. Grabhorn et al., 2006; Kaye et al., 2004) utilised clinical samples in investigating the relationship between SAD and disordered eating. Therefore, research utilising a non-clinical population is warranted, given the functional impact of subclinical disordered eating on individuals (Lewinsohn, Striegel-Moore, & Seeley, 2000). Therefore, this study aimed to explore whether reactivity to stress in social settings and self-esteem mediate the link between social anxiety and disordered eating in a community sample. It is hypothesised that higher levels of social anxiety would predict higher levels of disordered eating through a higher reactivity to stress and low self-esteem. It is hypothesised that reactivity to stress during both social evaluations and social conflict would mediate the relationship between social anxiety and disordered eating.

2. Method

2.1. Participants

Data was analysed from 282 online community participants. There were 226 females (*Mage* = 22.26, *SD* = 3.71) and 56 males (*Mage* = 24.57, *SD* = 4.53). Ages ranged between 18 and 35 years. This age range was selected given that research has suggested that this period is when the onset of eating disorder psychopathology is most common (Hudson, Hiripi, Pope, & Kessler, 2008). The majority of participants (86%) reported that they lived in Australia.

2.2. Measures

2.2.1. Social anxiety

Social anxiety was assessed through the Liebowitz Social Anxiety Scale (LSAS; Liebowitz, 1987).There are two subscales (social anxiety, social avoidance), with each comprising of 24 items that are ranked on a four-point scale, ranging from zero to three. All items are summed to produce a total social anxiety score. Higher scores indicate higher levels of social anxiety, with a score below 30 indicating that SAD is unlikely. For those who met diagnosis of SAD, mean scores were found to range between 63 and 78 (Heimberg et al., 1999). The reliability and validity of the LSAS has been established (Heimberg et al., 1999). The LSAS demonstrated excellent reliability for the current study (Cronbach's $\alpha = 0.95$).

2.2.2. Disordered eating

The 26-item Eating Attitudes Test was used to assess disordered eating (EAT-26; Garner & Garfinkel, 1979). Items are ranked on a six-point scale, ranging from zero (*never*, *rarely*, *sometimes*) to three (*always*). A total EAT-26 score is computed by summing all items and higher scores reflect greater disordered eating severity. A score of 20 or over is considered to be a high score, indicative of significant concerns regarding eating and body weight and shape. The reliability and validity of the EAT-26 has been documented (Garner, Olmsted, Bohr, & Garfinkel, 1982) and the EAT-26 demonstrated good reliability in the current study (Cronbach's $\alpha = 0.84$).

2.2.3. Stress reactivity

The social evaluations and social conflict subscales of the Perceived Stress Reactivity Scale (PSRS; Scholtz et al., 2011) were used in the current study. Both subscales are comprised of five items, each ranked on a three-point scale. Items are summed to produce a subscale score, with higher scores indicating higher levels of perceived stress reactivity. Mean scores in a community sample aged between 26 and 60, have been found to range between 3 and 4 for the social evaluations subscale, and 5–6 for the social conflict subscale (Scholtz et al., 2011). Acceptable reliability and validity has been demonstrated (Scholtz et al., 2011). In the current sample, the social evaluations and social conflict subscales showed the following levels of reliability, respectively: Cronbach's $\alpha = 0.63$ and Cronbach's $\alpha = 0.70$.