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Desire thinking: A risk factor for binge eating?

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ABSTRACT

In the current study we explored the role of desire thinking in predicting binge eating independently of Body Mass Index, negative affect and irrational food beliefs. A sample of binge eaters ($n = 77$) and a sample of non-binge eaters ($n = 185$) completed the following self-report instruments: Hospital Anxiety and Depression Scale, Irrational Food Beliefs Scale, Desire Thinking Questionnaire, and Binge Eating Scale. Mann–Whitney *U* tests revealed that all variable scores were significantly higher for binge eaters than non-binge eaters. A logistic regression analysis indicated that verbal perseveration was a predictor of classification as a binge eater over and above Body Mass Index, negative affect and irrational food beliefs. A hierarchical regression analysis, on the combined sample, indicated that verbal perseveration predicted levels of binge eating independently of Body Mass Index, negative affect and irrational food beliefs. These results highlight the possible role of desire thinking as a risk factor for binge eating.

1. Introduction

1.1. Binge eating: the role of negative affect and irrational food beliefs

One of the most common symptoms in eating disorders is binge eating which appears to be highly prevalent in the general population (lifetime prevalence of approximately 2.0% for men and 3.5% for women; Lavender, De Young, & Anderson, 2011; Luce, Crowther, & Pole, 2008). Binge eating is also frequently associated with distress, impairment regarding its uncontrollability, and perceived weight-related consequences (Fairburn et al., 2007; Striegel, Bedrosian, Wang, & Schwartz, 2012). If symptoms of binge eating persist and become perseverative they may qualify for binge eating disorder (DSM-5; 2013).

A large body of evidence supports the notion that negative affect, in particular depression, is the most common antecedent of binge eating (e.g., Deaver, Miltenberger, Smyth, Meidinger, & Crosby, 2003; Haedt-Matt & Keel, 2011; Meno, Hannum, Espelage, & Douglas, 2008; Saules et al., 2009; Spoor et al., 2006; Stice, 2001; Stice, Akutagawa, Gaggar, & Agras, 2000). It has also been hypothesised that binge eating functions as a negative reinforcer, or coping strategy, for aversive states by providing temporary relief and distraction (Arnow, Kenardy, & Agras, 1992; Heatherton & Baumeister, 1991, Polivy & Herman, 1993; Wiser & Telch, 1999).

More recently it has also been suggested that irrational beliefs people hold about food may play a central role in the activation of binge eating as a coping strategy for regulating negative affect (Osberg, Poland, Aguayo, & MacDougall, 2008). Irrational food beliefs are cognitively distorted and unhealthy attitudes and beliefs pertaining to food. Osberg et al. (2008) have found that the degree of endorsement of irrational food beliefs is strongly associated with first semester weight gain, recent weight gain, and poor weight loss maintenance in university students. These beliefs are also associated with bulimic symptoms in both university and community samples (Osberg et al., 2008; Wang, Worsley, & Cunningham, 2009). More recent research has also demonstrated that the priming of irrational food beliefs may mediate binge eaters' tendencies to select high fat foods when under stress (Osberg & Eggert, 2012).

1.2. Desire thinking: a possible contributor to binge eating?

A recent line of research has explored the overlap between Binge Eating Disorder and addictive behaviours (see Schreiber, Odlaug, & Grant, 2013 for a review). Binge Eating Disorder was shown to share phenomenological aspects with addictive behaviours, including similar neurobiological pathway activation and urges to engage in targeted activity (bingeing episodes) that result in distress and impairment. Recent research has suggested that 'desire thinking' may be involved

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in the escalation of urges to engage in addictive behaviours (Kavanagh, May, & Andrade, 2009; Caselli & Spada, 2010). Desire thinking has been conceptualised as a conscious and voluntary cognitive process — a form of cognitive elaboration — aimed at orienting to prefigure images, information and memories about positive target-related experience (Kavanagh, Andrade, & May, 2004, 2005; Caselli & Spada, 2010). The target of desire thinking may be an activity, an object, or a state, for which people feel desire (Kavanagh et al., 2009). We define desire as the awareness of a preference that intrudes in consciousness in the form of a positive target-related automatic thought, memory or bodily sensation.

Desire thinking can be considered a trait which requires positive target-related experience (in terms of gratification or personal goal achievement) to be gradually established as a routine activated in response to one or more targets. Evidence indicates that desire thinking is multi-dimensional in nature and consists of two subcomponents: imaginal prefiguration and verbal perseveration components (Caselli & Spada, 2011). The imaginal prefiguration component (e.g. "I imagine myself doing the desire activity") refers to the allocation of attentional resources to target-related information and a multi-sensory elaboration in the form of anticipatory positive imagery or positive target-related memories recall. The verbal perseveration component (e.g. "When I begin to think about the desired activity I find it difficult to stop") refers to prolonged self-talk regarding worthwhile reasons for engaging in target-related activities and their achievement. Desire thinking is a form of extended thinking and shares with worry and rumination a self-focused attentional orientation and a perseverative nature (Caselli & Spada, 2013). Contrary to worry and rumination, however, desire thinking involves the following: (1) a greater degree of imagery-based elaboration; (2) a more concrete focus on decision-making and planning instrumental behaviour rather than abstract thinking; and (3) different emotional (e.g. craving vs. anxiety or depression) and behavioural (e.g. approach vs. avoidance) outcomes.

Desire thinking appears to be a transdiagnostic process, with subjective reports indicating that this experience is qualitatively similar across a range of targets, including alcohol, food, soft drinks and tobacco (May, Andrade, Panabokke, & Kavanagh, 2004; Caselli & Spada, 2010). Research has also demonstrated that desire thinking facets are active during a craving episode in individuals with alcohol abuse, nicotine dependence and problematic gambling (Caselli & Spada, 2010). In addition, desire thinking has been found to have a significant effect on craving across a range of addictive behaviours in a community sample (Caselli, Soliani, & Spada, 2013), predict craving in alcohol abusers independently from level of alcohol use (Caselli & Spada, 2011), and play a role across the continuum of various addictive behaviours controlling for gender, age, negative affect and craving (Caselli, Ferla, Mezzaluna, Rovetto, & Spada, 2012; Caselli, Nikčević, Fiore, Mezzaluna, & Spada, 2012; Fernie et al., 2014; Spada, Caselli, Slaifer, Nikčević, & Sassaroli, 2014).

No research, to date, has investigated the possible link between desire thinking and binge eating. Two lines of reasoning suggest that desire thinking may be linked to binge eating: (1) it has been shown to have transdiagnostic features; and (2) it is a form of cognitive elaboration demonstrated to predict behaviour independently of negative affect and belief systems, and related forms of cognitive elaboration in the form of rumination and worry have been linked to eating disorders (e.g. Meyer, Miller, Metzger, & Borkovec, 1990; Startup et al., 2013; Sternheim et al., 2012). We thus hypothesised that desire thinking would be associated to binge eating and that this association would be independent of three key predictors of binge eating: Self-reported Body Mass Index, negative affect and irrational food beliefs. We proceeded firstly by examining the independent contribution of desire thinking towards category membership as a binge eater, and secondly by investigating the independent contribution of desire thinking as a predictor of levels of binge eating in a combined sample of binge eaters and non-binge eaters.

2. Methods

2.1. Participants

Two hundred and sixty-two participants (43 male) were recruited into this study, with a mean age of 28.0 years (SD 8.5; range 13 to 62). Using a cut-off of 17 on the Binge Eating Scale (BES; Gormally, Black, Daston, & Rardin, 1982) 185 participants were classified as non-binge eaters and 77 as binge eaters. Nineteen participants had sought psychological help for an eating disorder in the past year, 38 participants were currently in psychological therapy for an eating disorder, and 205 had never received psychological therapy for an eating disorder.

2.2. Procedure

Ethics approval for the study was obtained from an Italian university ethics board. The participants were recruited from e-mail contacts in a viral-like fashion, starting from the University of Pavia (Italy) mailing list (570 past and present students of the Department of Psychology). The participants who received the e-mail request to visit the study website were also asked to forward the address to individuals in their e-mail contacts and ask those individuals to do the same.

The first page of the study website explained the purpose of the study: "To investigate the relationship between mood, beliefs, desire and eating". The participants were then directed, if consenting to participate in the study, to a second page containing basic demographic questions and the self-report instruments. Once both were completed participants were again informed that, should they consent to participate in the study, they should click on the "Submit" button. Once participants had clicked on "Submit", their data was forwarded to a generic postmaster account. This ensured that participants' responses were anonymous. All participants were then debriefed. If on clicking "Submit", participants had omitted to respond to any items a window would appear informing them of this. Their data would not be e-mailed until all items were responded to. This ensured that only completed data were used for the analysis. A second submission from the same IP address was not allowed so as to avoid multiple submissions from the same participant.

2.3. Measures

2.3.1. Self-reported Body Mass Index (SR-BMI)

SR-BMI scores (weight in kg/height in m^2) were calculated by asking the participants to provide their height in centimetres and weight in kilogrammes.

2.3.1.1. Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983). The HADS consists of 14 items, 7 assessing anxiety and 7 assessing depression. The anxiety factor includes items such as "I get a sort of frightened feeling as if something horrible is about to happen". The depression factor includes items such as "I feel as if I am slowed down". Higher scores represent higher levels of anxiety and depression. Overall, the scale possesses good validity and reliability (Caci et al., 2003; Herrmann, 1997; Mykletun, Stordal, & Dahl, 2001; Zigmond & Snaith, 1983). HADS was chosen as a measure of emotion because it is widely used in both clinical and non-clinical research samples across a variety of domains in psychopathology including smoking (e.g. Wagena, van Amelsvoort, Kant, & Wouters, 2005; Alati et al., 2004). The scale has been validated in Italian (Costantini et al., 1999).

2.3.1.2. Irrational Food Beliefs Scale (IFBS; Osberg et al., 2008). The IFBS consists of 57 items, 41 of which are contained in the irrational food beliefs subscale, assessing cognitive distortions and inappropriate attitudes and beliefs about food such as "food is my only source of pleasure" and "food is a good way to lift depression". We administered only the irrational food beliefs subscale. Higher scores represent higher