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Perceived hunger mediates the relationship between attachment anxiety and emotional eating

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ABSTRACT

Eating is an inherently emotional activity and the attachment system is an emotion regulation system. Individuals with attachment insecurity have less interoceptive awareness and difficulty regulating emotion. Insecurely attached individuals may eat emotionally because they misinterpret internal hunger cues, (i.e. think they are hungry when they are experiencing some other internal, attachment-related state). The current study found a positive association between attachment anxiety and emotional eating. This relationship was mediated by perceived hunger.

1. Introduction

As rates of obesity rise, controlling eating becomes increasingly important for our society (Hill, Catenacci, & Wyatt, 2005). Easy accessibility of food, desire for convenience, and decreasing physical activity all contribute to obesity, but the emotional nature of eating may also be a culprit (Hill, Wyatt, Reed, & Peters, 2003). Eating can be rewarding, comforting, and distracting during stressful times (Greeno & Wing, 1994; Wansink & Payne, 2007). Eating is also very social. We often eat meals together and food is an integral part of celebrations and sad occasions. However, eating to regulate emotion can be maladaptive. For example, most individuals prefer unhealthy food as comfort food (Wansink & Payne, 2007). Considering its social/emotional nature, approaching the study of eating via a social/emotional framework may be informative.

One such framework is attachment theory, developed by Bowlby (1982). Attachment theory asserts that humans are born with an instinctual system which adaptively drives us to maintain and seek proximity to an attachment figure (e.g., mother) for protection during times of danger and distress. Newborn babies are entirely dependent on their caretakers for food and warmth as well as emotion regulation. Caregivers regulate *for* their infants, by soothing and comforting them when upset (Bowlby, 1982). When caregivers respond sensitively and consistently, infants learn that they are capable of getting their needs met. Having a sense of this ability to control their environment helps foster the belief that they are lovable and worthy of attention (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1973). These internalized beliefs contribute to the development of a secure attachment. Later in life, attachment styles are transferred from parental figures to romantic relationships (Hazan & Shaver, 1987). A secure attachment is characterized by positive views of self and other and the belief that one can turn to others for support and those others will be responsive. Secure individuals have a sense that they are competent and capable of regulating their emotions (Mikulincer, Shaver, Sapir-Lavid, & Avihou-Kanza, 2009).

However, early inconsistent or neglectful caregiving results in insecure attachments. There are two dimensions of attachment insecurity: High levels of anxiety and/or avoidance (Bartholomew & Horowitz, 1991; Brennan, Clark, & Shaver, 1998). Attachment anxiety is characterized by a need for emotional closeness, worries of rejection and abandonment, over-dependence on others, negative views of self, positive views of others, and high emotional reactivity. Attachment avoidance is characterized by a need for emotional distance, resistance to trusting and depending on others, positive views of self, negative views of others, and a suppression of emotion.

Although Bowlby stated that it was separate from the feeding system, the attachment system can be viewed as an emotion regulation system, and many individuals eat emotionally to regulate negative emotion (Bowlby, 1982; Kobak & Sceery, 1988; Tice, Bratslavsky, & Baumeister, 2001). It is plausible that eating can become confounded with attachment behavior. Consuming comfort food activates relationship-associated cognitions with close others, and securely attached individuals experience less loneliness when writing about comfort food (Troisi & Gabriel, 2011). Attachment anxiety is significantly

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correlated with disinhibited eating and BMI, and disinhibited eating mediates the relationship between attachment anxiety and BMI (Wilkinson, Rowe, Bishop, & Brunstrom, 2010). An individual who has experienced a history of inconsistent support from attachment figures during distressful times may find food a viable alternative.

A possible mediating link between attachment insecurity and emotional eating could be a misinterpretation of internal cues. Van Strien (2000) found a negative correlation between interoceptive awareness and social insecurity and these factors predicted emotional eating, including ice cream consumption. It is possible that individuals higher on attachment insecurity have less interoceptive awareness incorrectly label internal states as hunger.

Attachment insecurity may be associated with a variety of potentially maladaptive eating behaviors, especially emotional eating. Individuals may eat emotionally because they have trouble interpreting internal states such as hunger. Although these people may be aware that they tend to eat emotionally in general, (i.e. noticing over time that they eat more during stressful transitions or gain weight during difficult times), in the moment they may be less aware of the exact emotional state that their behavior is linked to. The current study hypothesizes that higher levels of attachment insecurity are associated with emotional eating, and that this relationship is mediated by perceived hunger.

2. Method

2.1. Participants and procedures

BMI's of the 97 undergraduates (37 male) ranged from 16 to 35 (M = 23.6, S.D. = 4.24). The sample was ethnically diverse: 11.3% reported African-American, 35.1% Asian, 24.7% Caucasian, 9.3% Hispanic, 6.2% Middle-Eastern and 9.3% other. Ages ranged from 18 to 50 (M = 20.69, S.D. = 4.94). Participants read and signed an informed consent and completed the packet. To reduce the potential for demand characteristics and response sets, precautions were taken: the experimenter left the room, reverse-scored questions were included, and anonymity was emphasized.

2.2. Measures

2.2.1. The Experiences in Close Relationships Questionnaire-Revised

The Experiences in Close Relationships Questionnaire-Revised (ECR-r; Fraley, Waller, & Brennan, 2000) is a 36-item measure of attachment anxiety and avoidance. The ECR-r shows test–retest reliability over a three week period of rs = .90 (Sibley, Fischer, & Liu, 2005). ECR-r scores explained higher levels of variance (30%–40%) of attachment related emotions for social interactions between romantic partners than for those of friends (5%–15%), providing support for validity (Sibley et al., 2005).

2.2.2. The Three Factor Eating Questionnaire

The Three Factor Eating Questionnaire (Stunkard & Messick, 1985) contains three subscales: *restraint*: tendency to restrict food intake (20-item), *disinhibition*: lack of ability to inhibit eating (20-item), and *hunger:* individual's perception of typical hunger level (15-item). The reliabilities for restraint, disinhibition, and hunger are reported as .93, .91, and .85, respectively (Stunkard & Messick, 1985). Validity is evidenced in findings that the disinhibition scale predicts weight change during depression and that there are differences in responses between dieters and free eaters (Stunkard & Messick, 1985). Marcus and Wing found that scores on the disinhibition and hunger subscales correlated with binge eating severity (as cited in Stunkard & Messick, 1985).

2.2.3. The Binge Eating Scale

The Binge Eating Scale (BES; Gormally, Black, Daston, & Rardin, 1982) is a 16-item measure of binge eating tendencies. The BES has demonstrated two week test–retest reliability at levels of r = .87 (Timmerman, 1999). Scores on the BES correlate with subjective and objective binge eating measures at levels of .3 to .4, demonstrating moderate validity (Timmerman, 1999). BES scores are able to discriminate between different severity levels of binge eating (Gormally et al., 1982).

2.2.4. The Emotional Eating Scale

The Emotional Eating Scale (EES; Arnow, Kenardy, & Agras, 1995) is a checklist where participants check off how strong a desire they have to eat when experiencing various emotions. The EES is composed of three subscales measuring the desire to eat when experiencing anxiety (EES-Anx[1]), the desire to eat when experiencing depression (EES-Dep[2]), and the desire to eat when experiencing anger/frustration (EES-Ang[3]) with a two week test-retest reliability of $r = .79$. EES scores are significantly correlated with BES scores and not related to other measures of psychological adjustment (i.e., self-esteem), providing evidence for construct validity (Arnow et al., 1995). These authors found significant correlations between changes in EES scores and BES scores after completion of binge eating treatment, demonstrating criterion validity.

2.2.5. Scales measuring anorexic tendencies and bulimic tendencies

The Eating Attitudes Test (EAT; Garner & Garfinkel, 1979) and The Bulimic Investigatory Test, Edinburgh (BITE; Henderson & Freeman, 1987) measure anorexic and bulimic tendencies, respectively. Scores on the EAT significantly predict anorexic or control group membership, supporting validity (Garner & Garfinkel, 1979). The BITE scale consists of two subscales; symptom and severity. One week test–retest reliabilities of $R = .68$ and $R = .86$ were found for women with and without bulimia, respectively. Scores were able to distinguish between binge eaters and controls (Henderson & Freeman, 1987).

3. Results

3.1. Correlations

Attachment anxiety was significantly correlated with: binge eating ($r = .462$, $p < .001$), disinhibition ($r = .400$, $p < .001$), hunger ($r = .299$, $p < .01$), BMI ($r = .298$, $p < .01$), bulimic symptoms ($r = .392$, $p = .01$), EES-Dep ($r = .289$, $p < .01$), and EES-Anx ($r = .257$, $p < .05$), and marginally significantly correlated with EES-Ang ($r = .194$, $p = .068$). Attachment avoidance was only significantly correlated with hunger ($r = .213$, $p < .05$). A complete report of correlations can be found in Table 1.

3.2. Gender effects

When split by gender, the emotional eating measures remained significant for females but not males. Gender differences were further explored using a MANOVA. The main model demonstrated a significant Wilk's lambda (F (3, 83) = 3.61, $p = .02$) and significant main effect for gender and EES-Dep (F (1, 85) = 6.61, $p = .01$), demonstrating that females reported higher EES-Dep, but not EES-Ang or EES-Anx.

3.3. Mediation analysis

A mediation analysis was conducted to explore the relationship between attachment anxiety, hunger, and emotional eating in accordance with steps outlined by Baron and Kenny (1986). In steps 1 and 2, the predictor (attachment anxiety) is correlated with the outcome variable (emotional eating) and then the mediator (hunger). In steps 3 and 4, the predictor and the mediator are entered into the model. If there is mediation, the relationship between the predictor (attachment anxiety)

[1] EES-Anx: emotional eating when experiencing anxiety.
[2] EES-Dep: emotional eating when experiencing depression.
[3] EES-Ang: emotional eating when experiencing anger.