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Mindfulness mediates the relation between disordered eating-related cognitions and psychological distress

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ABSTRACT

The present study investigated whether mindfulness mediates the relation between disordered eating-related cognitions and negative psychological outcomes within a non-clinical college sample. Disordered eating-related cognitions were positively associated with general psychological ill-health and emotional distress in interpersonal contexts and inversely related to mindfulness. Mindfulness, which was also inversely related to general psychological ill-health and emotional distress, was found to partially mediate the relations between disordered eating-related cognitions and the two predicted variables.

1. Introduction

People in the Western society generally endorse disordered eating-related cognitions. These cognitions include, but are not limited to, perceived importance of having an ideal weight and shape as a means of achieving self-acceptance, self-control over diet and weight, and acceptance by others (Cooper, Cohen-Tovee, Todd, Wells, & Tovee, 1997; Fairburn, 2008; Mizes et al., 2000). In both clinical and non-clinical samples, research has shown that these cognitions are associated not only with symptoms of eating disorders (EDs), but also with negative psychological outcomes non-specific to EDs, such as functional impairment and general psychological ill-health (Bohn et al., 2008; Masuda, Price, Anderson, & Wendell, 2010; Stice, Killen, Hayward, & Taylor, 1998).

Recent literature seems to suggest that disordered eating-related cognitions do not necessarily lead to greater psychological distress, however (e.g., Brannan & Petrie, 2008). For example, mindfulness-based cognitive behavior therapies, such as Mindfulness-Based Cognitive Therapy (MBCT; Segal, Teasdale, & Williams, 2004), state that psychological distress is attributed mainly to a maladaptive way of experiencing or responding to the negative cognitions and associated events. According to these interventions, when "negative" thoughts and feelings are experienced non-judgmentally as mental events, rather than as the absolute truth of one's life, maladaptive and avoidance-based coping strategies, which often exacerbate psychological distress further, are unlikely to occur.

1.1. Mindfulness

The construct of mindfulness seems particularly relevant in the present research context. Mindfulness has become one of the most widely studied topics in clinical psychology over the past several years because of its link to greater psychological health (e.g., Baer, 2006). Although the conceptualization of mindfulness varies among researchers and practitioners, it is often defined as a process of enhanced attention to and nonjudgmental awareness of present moment experience (Brown & Ryan, 2003).

Research shows that mindfulness, when conceptualized in this way, is inversely related to a wide range of negative psychological outcomes, including depression and anxiety (Brown & Ryan, 2003), general psychological distress (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006), and emotional distress in stressful interpersonal contexts (Beitel, Ferrer, & Cecero, 2005). Additionally, evidence seems to suggest a possible inverse link between mindfulness and disordered eating-related cognitions (Lavender, Jardin, & Anderson, 2009). Furthermore, a study suggests that mindfulness may potentially mediate the link between disordered eating-related cognitions and psychological distress (Masuda et al., 2010).

1.2. Present study

The purpose of the present study was to investigate whether mindfulness mediates the link between disordered eating-related cognitions and negative psychological outcomes. One of the predicted variables was general psychological ill-health, a good indicator of general psychopathology (e.g., Bond & Bunce, 2000). The other variable was emotional distress in stressful interpersonal situations. This variable was selected because issues around disordered-eating

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spectrum concerns are often stressful and interpersonal in nature (Fairburn, 2008). Given existing literature (e.g., Masuda et al., 2010), it was hypothesized that mindfulness at least partially mediates the link between conviction of disordered eating-related cognitions and the two predicted variables.

2. Method

2.1. Participants

The study was conducted at a large, public 4-year university in Georgia. Participants were recruited from undergraduate psychology courses through a web-based research participant pool. Seven hundred ninety five college undergraduates completed a survey package, with a mean completion time for the instrument of 30 min (SD = 14.80). Those who completed the survey in less than 15 min or more than 45 min were excluded from the sample because of the questionable validity of their responses. The sample used in the current study consisted of 625 participants (n_{Female} = 485). The age of the participants ranged from 16 to 48 (M = 20.40, SD = 4.20). The present sample was diverse ethnically, with 42% (n = 260) identifying as European American, 31% (n = 195) identifying as African American, 12% (n = 75) identifying as Asian American/Pacific Islander, 6% (n = 40) identifying as Hispanic American, 9% (n = 54) identifying as bicultural or other, and one individual identifying as Native American.

2.2. Measures

The following measures were used to assess disordered eating-related cognitions, mindfulness, general psychological ill-health, and emotional distress in interpersonal settings.

2.2.1. Disordered eating-related cognitions

The Mizes Anorectic Cognitions Questionnaire-Revised (MAC-R; Mizes et al., 2000) is a 24-item self-report questionnaire designed to assess distorted cognitions related to all eating disorders. These cognitions are the fear of weight gain (e.g., "If I don't establish a daily routine, everything will be chaotic, and I won't accomplish anything"), the importance of being thin or attractive to be socially accepted ("No one likes fat people; therefore, I must remain thin to be liked by others"), and self-esteem based on controlled eating habits and weight gain ("If my weight goes up, my self-esteem goes down"). Each item is scored on a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with a total score derived from the sum of all responses. Total scores range from 24 to 120, with higher scores indicating greater disordered eating-related cognitions. In a previous study with clinical samples of various eating disorders (Mizes et al., 2000), an alpha coefficient for the MAC-R total was .90.

2.2.2. Mindfulness

The Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) is a 15-item, self-report measure, which is designed to assess the frequency of mindlessness, the opposite of the construct of mindfulness, over time (e.g., "It seems I am running automatic without much awareness of what I'm doing"). Participants rate the degree to which they function mindlessly in daily life, using a six-point Likert scale ranging from 1 (*almost always*) to 6 (*almost never*). Total scores range from 15 to 90, with higher scores denoting greater mindfulness. The MAAS has good internal consistency (i.e., Cronbach's α), ranging from .82 to.87 (Brown & Ryan, 2003).

2.2.3. General psychological ill-health

The General Health Questionnaire-12 (GHQ-12; Goldberg, 1978) is a 12-item measure of overall general psychological ill-health. Using a 4-point Likert scale format, (Banks et al., 1980), participants rate the frequency of behavioral and psychological stressors, ranging from 0 (*not at all*) to 3 (*much more than usual*). The total score is derived from the sum of all responses, ranging from 0 to 36, with higher scores indicating greater psychological ill-health. A recent study with a non-clinical college sample has shown an adequate internal consistency of the measure (Cronbach's α = .87; Masuda, Price, Anderson, Schmertz, & Calamaras, 2009).

2.2.4. Emotional distress in stressful interpersonal and emergency situations

The Interpersonal Reactivity Index-Personal Distress (IRI-PD; Davis, 1983) is a 7-item subscale that measures feelings of personal anxiety and uneasiness during tense interpersonal contexts on a 5-point scale, ranging from 0 (*does not describe me well*) to 4 (*describes me very well*). Total scores are derived from the sum of all responses, ranging from 0 to 28, with higher scores indicating greater emotional distress. A recent study with a non-clinical college sample revealed that the subscale has satisfactory internal consistency (Cronbach's α = .75; Masuda et al., 2009).

2.3. Procedure

Participants who enrolled in the study were asked to complete an anonymous web-based survey. Participants voluntarily provided demographic information and completed the measures.

3. Results

Prior to data analyses, gender was examined as a potential moderator of the relations among disordered eating-related cognitions, mindfulness, and negative psychological outcomes. Results failed to reveal gender as a moderating variable, however. For this reason, gender was omitted from the analyses. Descriptive statistics and correlations among the variables are shown in Table 1. Disordered eating-related cognitions were positively related to general psychological ill-health and emotional distress in stressful interpersonal contexts and negatively related to mindfulness. Mindfulness was negatively related to general psychological ill-health and emotional distress in stressful interpersonal contexts.

3.1. Mindfulness as a mediator of the relation between disordered eating-related cognitions and emotional distress and general psychological ill-health

Based on the guidelines of Baron and Kenny (1986), linear regression analyses were conducted to examine whether mindfulness mediates the relation between disordered eating-related cognitions and two dependent variables, emotional distress in stressful and interpersonal settings and general psychological ill-health. As shown in Table 1, the previously discussed correlations established a significant A path, between disordered eating-related cognitions and mindfulness, and a significant B path, between mindfulness and both

Table 1
Means, standard deviations, coefficient alphas, and zero-order relations between all variables.

	1	2	3	4
1. Disordered eating-related cognitions (MAC-R)	–	−.31*	.35*	.24*
2. Mindfulness (MAAS)		–	−.38*	−.26*
3. General psychological ill-health (GHQ-12)			–	.26*
4. Emotional distress (IRI-PD)				–
M	58.45	58.45	12.60	12.65
SD	15.23	12.55	6.63	4.84
α	.90	.89	.89	.75

N = 625, *p < .01. MAC-R = Mizes Anorectic Cognitions Questionnaire-Revised, MAAS = Mindful Attention and Awareness Scale, GHQ = General Health Questionnaire, IRI-PD = Interpersonal Reactivity Index-Personal Distress.