Brief research report

Body image inflexibility mediates the relationship between body image evaluation and maladaptive body image coping strategies

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A B S T R A C T

Body image inflexibility, the unwillingness to experience negative appearance-related thoughts and emotions, is associated with negative body image and eating disorder symptoms. The present study investigated whether body image inflexibility mediated the relationship between body image evaluation and maladaptive body image coping strategies (appearance-fixing and experiential avoidance) in a college and community sample comprising 156 females aged 18–51 years (M = 22.76, SD = 6.96). Controlling for recruitment source (college vs. community), body image inflexibility fully mediated the relationship between body image evaluation and maladaptive body image coping strategies. Results indicated that an unwillingness to experience negative appearance-related thoughts and emotions is likely responsible for negative body image evaluation’s relationship to appearance-fixing behaviours and experiential avoidance. Findings support extant evidence that interventions that explicitly target body image inflexibility, such as Acceptance and Commitment Therapy, may have utility in treating body dissatisfaction in nonclinical populations.

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Introduction

Body image is a multidimensional construct reflecting the cognitive, behavioural, and emotional aspects of physical appearance (Cash, 2011). The construct comprises two core facets: evaluation and investment (Cash, Melnyk, & Hrabosky, 2004b). Body image evaluation refers to a person’s evaluative thoughts and beliefs about their physical appearance (e.g., the degree of satisfaction or dissatisfaction with their body). Body image investment denotes the cognitive and behavioural importance that an individual places on their appearance and their motivation to manage or enhance their appearance.

The cognitive-behavioural model of body image (Cash, 2011) proposes that specific situational cues or contextual events (e.g., looking at oneself in the mirror) activate the processing of appearance-related cognitions and emotions. When body image thoughts and feelings are experienced as unwanted or distressing, individuals tend to engage in three coping strategies: (a) experiential avoidance, which refers to attempts to avoid situations, cognitions, or emotions that are construed as threatening; (b) appearance-fixing, which comprises efforts to alter or correct the aspects of an individual’s appearance perceived as flawed; and (c) positive rational acceptance, which consists of mental and behavioural activities that emphasise the use of positive self-care or rational self-talk and the acceptance of one’s experiences (Cash, Santos, & Williams, 2005). Whereas positive rational acceptance is an adaptive coping strategy, experiential avoidance and appearance-fixing are maladaptive coping strategies that temporarily reduce aversive appearance-related cognitions and emotions (Cash et al., 2005). Maladaptive coping strategies negatively reinforce body image dissatisfaction and perpetuate body image distress (Cash, 2011).

The performance of maladaptive behaviours in response to distressing body image-related thoughts or emotions described in the cognitive-behavioural model of body image (Cash, 2011) is similar to the body image inflexibility construct (Sandoz, Wilson, Merwin, & Kellum, 2013) in Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999). Body image inflexibility occurs when an individual is unwilling to experience unwanted appearance-related private events (i.e., thoughts, emotions, and bodily sensations) and attempts to alter the form or frequency of these experiences (Sandoz et al., 2013). It has found to be elevated amongst individuals with eating disorders (Manlick, Cochran, & Koon, 2013).

Body image inflexibility and body image coping strategies are conceptually different constructs. In particular, body image inflexibility reflects the extent a person attempts to change the
form, frequency, or situational sensitivity of unwanted appearance-related private events (Sandoz et al., 2013). In contrast, coping strategies are a measure of how often a person engages in certain content-specific behavioural strategies to cope with distressing appearance-related situations. Body image inflexibility therefore focuses on the function and context of behaviour, whereas maladaptive body image coping strategies focus on the frequency and content of behaviour (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). As a result, the ACT model considers the potential consequences of body image inflexibility strategies, including experiential avoidance and appearance-fixing behaviours, problematic rather than the form or frequency of appearance-related thoughts, emotions, and bodily sensations per se (Hayes et al., 1999; Sandoz et al., 2013).

In the ACT literature, an inability or unwillingness to experience unwanted private events (labelled psychological inflexibility) has been shown to mediate the relationship between dysfunctional cognitions and negative behavioural and affective outcomes (Kashdan, Barrios, Forsyth, & Steger, 2006). This is consistent with recent research demonstrating that body image inflexibility partially mediates the relationship between disordered eating cognitions and eating disorder behaviours in nonclinical samples (Ferreira, Trindade, & Martinho, 2015; Timko, Juarascio, Martin, Faherty, & Kalodner, 2014; Wendell, Masuda, & Le, 2012). These findings suggest that the relation of disordered eating cognitions to disordered eating behaviours may be established in part through inflexible and avoidant cognitive and behavioural patterns specific to perceived body image.

The above research taken together suggests that the relationship between negative body image cognitions and negative behavioural outcomes may be mediated by body image inflexibility. Therefore, the aim of the present study was to examine whether body image inflexibility mediated the relationship between body image evaluation and maladaptive body image coping strategies (i.e., appearance-fixing and experiential avoidance) in a nonclinical college and community sample of women.

Method

Participants

Participants were 156 females, ranging in age from 18 to 51 years (M = 22.76, SD = 6.96, interquartile range = 20–25). Of the participants, 131 resided in Australia (84.0%), nine in North America (5.8%), 11 in Europe (7.1%), five in Asia (3.2%), and one in Africa (0.5%). For relationship status, 119 (76.3%) reported being single, 26 (16.7%) were dating or cohabitating, seven (4.5%) were married, and four (2.6%) were separated or divorced. For employment status, 87 (55.8%) were students, 41 (26.3%) were employed part-time, 23 (14.7%) were employed full-time, and five (3.2%) were unemployed or disabled. For highest educational attainment, 82 (52.6%) reported having completed high school, 47 (30.1%) reported having an undergraduate degree, 15 (9.6%) reported having a postgraduate qualification, and 12 (7.7%) reported having a vocational training qualification.

Procedure

The Human Research Ethics Committee at Swinburne University, Melbourne, Australia approved all recruitment and study procedures. Most participants (n = 115, 73.8%) were first year undergraduate psychology students at Swinburne University in Melbourne, Australia, who were participating in exchange for course credit. The remainder of the data was collected from participants recruited through advertisements posted on online body image forums and Facebook pages (n = 41, 26.3%). All measures were completed through an online survey supported by Opinio. Participants entered the survey through a web address that was posted in study advertisements. All individuals participated in the study on a voluntary basis and their anonymity was assured. As detailed in the study information, a mandatory response was required for the self-report measures and informed consent of participants was implicit upon the submission of completed questionnaires. To prevent duplicate responses, only one survey could be submitted from a single IP address.

Measures

Body image evaluation. The present study used the 7-item Appearance Evaluation (AE) subscale from the Multidimensional Body-Self Relations Questionnaire (Brown, Cash, & Mikulka, 1990; Cash, 2000) to assess participants’ self-appraisal of their physical appearance. Respondents indicate the extent to which they agree with each item on a 5-point scale, ranging from 1 (definitely disagree) to 5 (definitely agree). A sample item is “I like my looks the way they are.” Lower scores indicate more negative evaluative body image. Scores on the AE subscale have demonstrated high internal consistency, and strong convergent, discriminant, and construct validity amongst college students (Brown et al., 1990). Cronbach’s alpha was .91 in the present study.

Maladaptive body image coping strategies. The Appearance Fixing (AF) and Experiential Avoidance (EA) subscales of the Body Image Coping Strategies Inventory (Cash et al., 2005) were used to assess maladaptive body image coping strategies after perceived body image threats. The 10-item AF subscale measures coping strategies directed at altering appearance by covering, camouflaging, or correcting the perceived defect and also contains items pertaining to reassurance seeking, imaginative strategies, and appearance comparisons. A sample item is “I do something to try to look more attractive.” The 8-item EA subscale assesses coping strategies directed at avoiding or escaping distressing body image situations or experiences. It contains items pertaining to cognitive avoidance, behavioural avoidance, and comfort eating. A sample item is “I try to tune out my thoughts and feelings.” Respondents indicate the extent to which they engage in the particular coping strategy on a 4-point scale, ranging from 0 (definitely not like me) to 3 (definitely like me), and subscale items are averaged. Higher scores indicate greater use of the respective coping strategy. Scores on the AF and EA subscales have evidenced good internal consistency, and construct and convergent validity amongst college student samples (Cash & Grasso, 2005; Cash et al., 2005). In the present study, Cronbach’s alpha was .91 for the AF subscale and .69 for the EA subscale.

Body image inflexibility. Body image inflexibility was assessed using the Body Image–Acceptance and Action Questionnaire (BIAAAQ; Sandoz et al., 2013), which is a 12-item measure of the extent to which an individual actively contacts perceptions, thoughts, beliefs, and feelings about his or her body without directly attempting to change their intensity, frequency, or form. A sample item is “To control my life, I need to control my appearance.” Respondents rate the truth of each statement as it applies to them on a 7-point scale, ranging from 1 (Never True) to 7 (Always True). The BIAAAQ yields one composite score, calculated by the sum of its 12 items. Higher scores indicate a greater reluctance to experience, and more efforts to modify, cognitive processes related to one’s body image. Scores on the BIAAAQ have demonstrated good internal consistency and construct validity amongst college student samples (Sandoz et al., 2013). Cronbach’s alpha was .91 in the present study.
Table 1
Descriptive statistics and zero-order correlations between all variables.

<table>
<thead>
<tr>
<th></th>
<th>MBSRQ-AE</th>
<th>BI-AAQ</th>
<th>BICSI-AF</th>
<th>BICSI-EA</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBSRQ-AE</td>
<td>-</td>
<td>-0.62*</td>
<td>-0.50**</td>
<td>-0.44***</td>
</tr>
<tr>
<td>BI-AAQ</td>
<td>-</td>
<td>-</td>
<td>0.71**</td>
<td>0.63***</td>
</tr>
<tr>
<td>BICSI-AF</td>
<td>-</td>
<td>-</td>
<td>-0.46***</td>
<td>-</td>
</tr>
<tr>
<td>BICSI-EA</td>
<td>-</td>
<td>1.02</td>
<td>0.96</td>
<td>0.47</td>
</tr>
<tr>
<td>M</td>
<td>2.84</td>
<td>44.22</td>
<td>1.73</td>
<td>1.02</td>
</tr>
<tr>
<td>SE</td>
<td>0.08</td>
<td>1.36</td>
<td>0.05</td>
<td>0.04</td>
</tr>
<tr>
<td>SD</td>
<td>0.96</td>
<td>17.01</td>
<td>0.68</td>
<td>0.47</td>
</tr>
</tbody>
</table>

Note: N = 156; MBSRQ-AE = Multidimensional Body-Self Relations Questionnaire—Appearance Evaluation; BI-AAQ = Body Image Acceptance and Action Questionnaire; BICSI = Body Image Coping Strategies Inventory; AF = Appearance Fixing; and EA = Experiential Avoidance.

*p < .001.

Data Analysis

The nonparametric bootstrap (Efron & Tibshirani, 1993) procedure described by Preacher and Hayes (2008) was used to conduct a series of mediation analyses while controlling for age. Bootstrapping is recommended over the popular Baron and Kenny (1986) method for testing the magnitude and statistical difference of mediation effects (Shrout & Bolger, 2002). While the Baron and Kenny approach has been criticised for high Type I error and low statistical power, the bootstrap method does not require a normal sampling distribution, and it has the best balance of Type I error and statistical power (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). As recommended by Preacher and Hayes, 5000 bootstrap samples were drawn with replacement from the original sample (N = 156) to calculate the mean unstandardised indirect effect, direct effect, and total effect as well as 95% bias-corrected and accelerated (BCa) confidence intervals (CIs) for the mediation analyses. Given that this approach produces an asymmetrical confidence interval, an exact p-value is unable to be calculated. Therefore, if the respective confidence interval did not overlap zero, then the effect was considered statistically significant at the .05 level.

Results

Means, standard errors, standard deviations, and the zero-order correlation coefficients are presented in Table 1. Preliminary analyses indicated that the college and community samples differed with respect to age and appearance evaluation ratings. The remaining analyses therefore controlled for recruitment source (i.e., college vs. community).

Mediation Analyses

Appearance evaluation had a significant total effect on appearance-fixing (B = −0.36, 95% CI [−0.46, −0.24], p < .05), a non-significant direct effect (B = −0.07, 95% CI [−0.19, 0.05], p > .05), and a significant indirect effect through body image inflexibility (B = −0.29, 95% CI [−0.39, −0.20], p < .05), controlling for recruitment source. This pattern of results suggests that body image inflexibility fully mediated the relationship between appearance evaluation and appearance-fixing coping strategies. The path diagram with standardised coefficients is presented in Fig. 1A.

Experiential avoidance had a significant total effect on appearance-fixing (B = −0.21, 95% CI [−0.29, −0.13], p < .05), a non-significant direct effect (B = −0.04, 95% CI [−0.13, 0.04], p > .05), and a significant indirect effect through body image inflexibility (B = −0.18, 95% CI [−0.25, −0.12], p < .05), controlling for recruitment source. This pattern of results suggests that body image inflexibility fully mediated the relationship between appearance evaluation and experiential avoidance coping strategies. See Fig. 1B for the path diagram with standardised coefficients.

Discussion

The present study examined whether body image inflexibility mediated the relationship between body image evaluation and maladaptive body image coping strategies in a nonclinical college and community sample. Body image inflexibility was found to fully mediate the relationship between body image evaluation and appearance-fixing behaviours and experiential avoidance behaviours, respectively.

This pattern of results is consistent with both the ACT framework (Hayes et al., 1999; Kashdan et al., 2006; Sandoz et al., 2013) and with previous research examining eating disorder symptoms (Ferreira et al., 2015; Timko et al., 2014; Wendell et al., 2012). It is also a novel finding in that this mediation effect was demonstrated for body image cognitions and dysfunctional behaviours that are general and not specific to eating disorders. This suggests that the relationship between negative body image evaluation and these maladaptive coping strategies is established through inflexible and avoidant cognitive and behavioural patterns specific to perceived body image (Sandoz et al., 2013). That is, individuals who are more likely to be unwilling to experience negative self-evaluation of their appearance may also be more likely to engage in maladaptive coping behaviours.

The results of the present study must be interpreted in the context of several limitations. The female-only sample comprising mainly college students is the main limitation, given that there...
are gender differences in the body areas of concern and in the use of avoidance and safety-seeking behaviours in nonclinical samples (e.g., Cash, Phillips, Santos, & Harbosity, 2004a). In addition, the body mass index (BMI) of participants was not obtained, and it has been shown to moderate the relationship between body image inflexibility and disordered eating symptoms (Hill, Masuda, & Latzman, 2013). Furthermore, the BI-AAQ (Sandoz et al., 2013) has recently been criticized on conceptual grounds, and its use should be limited to a "preliminary gauge" of the body image inflexibility construct (Webb, Wood-Barcalow, & Tylka, 2015, p. 133). Additional research is therefore required using gender-balanced samples, where assessments include BMI and more psychometrically sound measures of body image inflexibility, such as the recently developed Body Image Psychological Inflexibility Scale (Callaghan, Sandoz, Darrow, & Feeney, 2015).

The cross-sectional and correlational design is the main limitation of the present study, and therefore causal inferences cannot be made. Although there were significant associations between the variables, the causal direction of the relations cannot be assumed in non-experimental designs. A stronger examination of this research question could use a longitudinal design to prospectively determine whether appearance evaluation at Time 1 predicts body image inflexibility at Time 2, and then whether body image inflexibility at Time 2 predicts maladaptive coping strategies at Time 3 (see Halliwell, 2015).

Despite these limitations, the present findings and related research (Ferreira et al., 2013; Timko et al., 2014; Wendell et al., 2012) suggest that the presence of negative body image cognitions may not be directly related to avoidant cognitive and behavioural strategies. Rather, an inability or unwillingness to experience negative appearance-related cognitions in conjunction with active attempts to change their form or frequency may be associated with maladaptive body image coping strategies (Cash et al., 2005; Sandoz et al., 2013). This finding has implications for the treatment of body image concerns, suggesting a need to integrate interventions targeting body image inflexibility into current cognitive-behavioural treatment protocols. Mindfulness and acceptance-based interventions for body image, including ACT (Hayes et al., 1999), explicitly address body image inflexibility and may have utility in treating body image concerns in nonclinical populations and in individuals with psychiatric disorders characterised by body image dissatisfaction, including body dysmorphic disorder and eating disorders. Indeed, the need to target body image inflexibility is recognised in a fairly recent cognitive-behavioural treatment protocol for body dissatisfaction (Cash, 2008). This protocol incorporates mindfulness and acceptance-based strategies for negative body image cognitions and dysfunctional behavioural coping strategies.

Acknowledgement

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References


