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Do eating behaviours (restraint, uncontrolled and emotional eating) and the general use of emotion regulation strategies (cognitive reappraisal and expressive suppression) predict state body dissatisfaction?

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Abstract

Young girls comparing themselves with thinner women (upward comparison) in social media experience Body Dissatisfaction (BD), which is associated with Disordered Eating Behaviours (DEBs), like Restraint Eating (RE), in an effort to fulfil the thin beauty standards. Recent studies suggest that maladaptive Emotion Regulation Strategies (ERSs) increase BD and DEBS in contrast to the adaptive ones, which can effectively reduce them. However, the researchers in most of these studies instruct ERSs and more recently, researchers who utilised self-report measures have demonstrated controversial results in both studies. Thus, this study adopting a social comparison paradigm, will explore whether the general use of the adaptive Cognitive Reappraisal (CR) and the maladaptive Expressive Suppression and the DEBs of Restraint, Uncontrolled (UE) and Emotional Eating would predict state BD. In addition, the relationships between the predictors will be also explored.

Keywords

Social Comparison, Body Dissatisfaction, Disordered Eating, Emotion Regulation, Cognitive Reappraisal, Restraint Eating

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Introduction

For decades, it has been continuously demonstrated that body image issues are a common dark stain in women's mindset in westernized cultures, where the slim body is idolized [1, 2]. These issues are not merely typical symptoms of Anorexia Nervosa (AN) and Bulimia Nervosa (BN), but they also contribute to these disorders' development, maintenance and relapse [3]. Specifically, Body Dissatisfaction (BD) which can be defined as the "negative subjective evaluations of one's physical body, such as figure, weight, stomach and hips" [4, p. 985], has historically been considered as a fundamental precursor of Eating Disorders (Eds) [5], and until nowadays as the most devastating one [6]. Interestingly, nowadays restriction of food intake has increasingly been adopted globally by healthy young women in an attempt to acquire a slim body that matches the thin standards [7], and social media consumption seems to explain this phenomenon well [8]. In addition, BD is found to mediate the relationship between diet restriction and eating disorders [3], especially in the vulnerable population of female college students [9, 10], and that's why the creation of efficient interventions reducing BD and the tendency to engage in disordered eating behaviours is crucial to prevent the development of eating disorders in this population.

Body Dissatisfaction as a consequence of Social Comparison in the modern world

Numerous studies suggest that young girls' exposure to thin women portrayed in media, like magazines and television the previous years, and in social media nowadays, exert negative effects on their body image [11]. Specifically, Instagram is the most widely used platform for young adult girls [12], where users can follow the lives of their peers, as well as celebrities and influencers, who generally present the most dazzling versions of themselves [13], where with special filters they can intervene in the correction of photos' potential flaws, contributing to the best possible way of self-presentation [14]. Consequently, Instagram is demonstrated as a cornerstone to young people's interpretation of beauty standards [15] and users' exposure to appearance-focused content, independently from the time they spend on it, leads to body dissatisfaction [16].

However, it is evident that it is not the content of photos itself that is deleterious to young girls' body satisfaction, but the factor of upward social comparison. Specifically, Pedalino and Camerini (2022) [13] stated that it is the upward comparison with the context of social media influencers which mediates the relationship between young girls' browsing through this stuff on Instagram and BD, where nowadays women compare their appearance to others' more on social media, than the traditional media, like television and magazines [17]. According to social comparison theory [18], the experience of body dissatisfaction is a consequence of women's comparison with a thinner individual (upward comparison). Specifically, it is stated that those women who have internalised the thin ideal standards, directly acquire the necessary information about their body discrepancy by comparing theirs to an ideal body, which accordingly leads to BD [19]. Tiggemann et al. (2018) [11] also concluded that the BD that young girls experience on Instagram, is independent from the demonstrated likes of the photos, suggesting that it is the body comparison that explains BD rather than the perceived popularity of the girls.

The relationship between Disordered Eating Behaviours and Body Dissatisfaction

BD and its negative feelings are associated with Emotional Eating (EE) [20], which is characterised by people's tendency to overeat when they are emotionally overwhelmed [21]. Particularly, food consumption does not merely occur to fulfil the metabolic human needs, but it can be also specified as a maladaptive analgetic strategy to regulate negative mood [22, 23]. Specifically, palatable foods (high in sugar and fats) like donuts, chocolate, ice-cream, biscuits and crisps are widely known as "comfort foods", due to their instant emotion regulation effects [24, 25]. However, despite its instant and short-term emotion regulation effect, EE may lead to weight gain [25], obesity and other health problems like diabetes mellitus [26] and eating disorders, such as BN [27], when it frequently occurs.

BD is also widely associated with Restraint Eating (RE), which is defined as the cognitive efforts that people apply in order to resist food consumption for weight control [28] and as a result, increased levels of body weight concerns can lead to higher dissatisfaction with weight, which accordingly leads to the use of RE for weight control [29]. Of course, the exposure to thin-ideal media, as well as the perceived discrepancies with these standards, fuels the above mechanism [30]. Again, theorists state that upward appearance comparison has a positive relationship with eating concerns as well as with body image concerns [10, 31]. Specifically, the thoughts of dieting nowadays are more frequently generated when the upward comparisons is through social media browsing than any other traditional media [17].

Unsurprisingly, for years RE has been studied due to its association with obese and overweight individuals [32], because it can efficiently reduce their food intake [33], helping them lose weight due to the negative energy balance that promotes body fat burning, fulfilling medical or social achievements [34]. However, when excessively utilised, RE can lead to macro- and micronutrient deficiencies [35], representing one of the dominating symptoms of Anorexia Nervosa (AN) [36]. Furthermore, RE has been associated with overeating, binge eating, even BN [37], and its relationship with overeating has even promoted advices of healthier eating patterns adoption [38] and anti-dieting movements [37].

It is stated that the higher levels of food consumption of restraint eaters result from their failure to restrain from palatable food consumption in certain conditions, e.g., having eaten a palatable preload that deviates from their diet program, being in an overwhelming mood state, having consumed alcohol, or just being exposed to palatable food stimuli [32].

Thus, under such circumstances, restrained eaters overeat as a result of their cognitive disinhibition [39]. Disinhibition or Uncontrolled Eating (UE), namely individuals' consumption of larger food portions than regularly consumed, due to a loss of control, while accompanied by subjective hunger [40, 41], is connected with fat regain, smoking as a weight regulator, fat gaining after smoking causation, and eating disorders development, like BN and Binge Eating Disorder (BED) [42]. Researchers characterise restraint eaters who demonstrate UE as unsuccessful dieters, distinguishing them from the successful ones, who do not engage in overeating episodes [43, 44, 45]. However, because UE is a different construct than RE, it may occur independently from the existence of the latter [42, 43, 46].

Consequently, unsuccessful dieters demonstrate RE as long as they do not experience other self-control conditions in parallel [28]. Specifically, it is stated that anxiety reduction demands the utilisation of individuals' cognitive resources, and utilised for this purpose, restraint eaters become cognitively drained, failing to cognitively control their biological need to consume foods [47]. Both positive and negative valence emotional states can be a potential disinhibitory factor, because they both represent a more pressing distractor that individuals need to overcome, than the concern of food restriction. However, it is recently stated that disinhibition does not result from emotional states, but from the inefficient emotional regulation strategies that individuals utilise to cope with these emotional states [48].

Emotion Regulation influences both Disordered Eating Behaviours and Body Dissatisfaction

Accordingly, whether young girls will experience negative body image or not, depends on the way they cognitively process the ideal images of others, therefore upward comparison is not necessarily able to elicit negative body image, if young women efficiently cognitively cope with upward comparison [49]. Furthermore, if the negative emotions of BD generated by upward body comparisons are not also efficiently regulated, may lead to disordered eating behaviours [10], which have also been considered as a maladaptive emotion regulation strategy [50]. Specifically, the maladaptive emotion regulation strategies, e.g., rumination, are increasingly demonstrated to increase young girls' BD [49, 51] and disordered eating behaviours [52, 53, 54, 55], in contrast to the use of the adaptive ones, e.g., acceptance, which effectively reduce BD [56, 57, 58, 59] and disordered eating behaviours [54, 60, 61].

The term emotion regulation refers to the attempts of individuals to influence the experience of emotions in themselves or others [62]. Gross and John (2003) [63] focusing on the most widely utilised emotion regulation strategies, highlight Cognitive Reappraisal (CR) and Expressive Suppression (ES). CR is a fundamental strategy of Cognitive Behavioural Therapy [64] where individuals intervene in their thoughts generated by an event, altering them. It is characterised as an adaptive emotion regulation strategy because it efficiently regulates negative emotions and the physiological arousal that the stressful events may cause [65]. On the other hand, ES is used to disguise the behavioural expression of one's feelings experienced due to a negative event, and it is characterised as a maladaptive emotion regulation strategy, because it does not regulate negative emotions [22], and its general use is associated with cognitive and physical exhaustion and interpersonal problems [66]. In respect to the clinical cases of individuals suffering from eating disorders, the literature demonstrates that Anorexia Nervosa and Bulimia Nervosa are strongly positively connected to ES, with the latter being also connected to BED with a medium effect size [67].

However, the influence of emotion regulation strategies on BD and eating behaviours is mainly explored in studies where the experimenters instruct participants to apply them in practise to test their behaviour (e.g. eating palatable foods), or their feelings or thoughts (e.g. these of BD). Specifically, Prefit et al. (2019a) [58] instructed healthy women to either adopt an emotion regulation strategy or not (control) at the end of a body dissatisfaction induction task. The adaptive emotion regulation strategies; either CR or acceptance, were adopted by participants in order to cope with the negative effects of the task. Specifically, this task contained 15 images of thin women collected from fashion magazines with which participants compared themselves while answering the questions; "I would like my body to look like this woman's body", and "This woman is thinner than me" on a 5-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree") for each image. This task has indeed been successfully utilised in previous studies with short variations [11, 51, 56, 57, 59], and in this study both CR and acceptance efficiently helped women to maintain stable levels of body satisfaction and positive affect, extending the literature by showing that CR is as efficient as acceptance, which effects have been well-demonstrated [56, 57, 59].

Similarly, the results are supportive for the use of CR in practise in studies focusing on disordered eating behaviours. Specifically, Taut et al. (2012) [54] exposing participants to a violent movie scene stated that only the 1/3 of the healthy undergraduate students who were instructed to apply CR to alleviate their negative feelings, consumed chocolate and crisps, contrary to the 3/4 of those who applied ES. Additionally, in the study of Reader et al. (2018) [61] when participants applied CR and thought about the long-term health benefits, they both reduced their desire for palatable foods and increased their desire for the healthy ones (vegetables and fruits). Cumulatively, the above results suggest that the use of CR can reduce both the experienced BD and the consumption of palatable foods, as well as individuals' need to consume them, highlighting its efficiency as an intervention. However, Evers, Stok and De Ridder (2010) [52] inducing healthy female undergraduate students with a normal BMI a negative mood showed that the portions of consumed comfort food (chocolate, crisps and biscuits) were not significantly different based on the different use of CR, but instead the participants who consumed bigger portions of comfort foods applied more ES when experiencing negative mood in contrast to those

that applied it less. These results were also replicated when instructions for the use of these two strategies were given, concluding that the increased consumption of comfort foods is simply an outcome of the use of a maladaptive emotion regulation strategy like ES, and the use of CR does not lead to the reduction of comfort foods consumption. This finding is not in line neither with Taut's et al. (2012) [54] nor with Reader's et al. (2018) [61], who both stated that the use of CR in practise reduces food consumption.

Additionally, the use of ES is also associated with the disordered eating behaviour of RE, with restraint eaters who were instructed to apply ES under specific circumstances, showing an increased consumption of palatable foods [53, 55]. Specifically, Hofmann et al. (2007) [53] exposing their participants to a short extract of a film to generate them mutual feelings, stated that those instructed to apply ES and had high scores in RE, consumed more sweets contrary to those with low scores in RE. As a result, based on previous explanations [68], they concluded that the restraint eaters who apply the cognitively costly emotion regulation strategy of ES during an emotionally overwhelming circumstance, they cannot further cognitively control themselves in the sight of a palatable food, leading to disinhibition.

However, controversial results are found in studies measuring the general use of the emotion regulation strategies. For example, McComb & Mills (2021) [49] who focused on young adult girls (18–25 years old), exposed them to 26 Instagram images of two very popular, attractive and thin Caucasian women, following also the forced comparison procedure. However, instead of instructing the participants to adopt a specific cognitive coping strategy, they utilised the Cognitive Emotion Regulation Questionnaire (CERQ) [69] to measure the applied coping styles during the task. They found that young women who scored high in physical appearance perfectionism and engaged more in rumination and catastrophizing, experienced greater BD. However, in this study the use of acceptance did not reduce BD, which is not in line with the result of studies where the researchers instructed its use [51, 56, 57, 59]. On the other hand, more recently, Kiriukhina & Polskaya (2021) [70] utilizing the Emotion Regulation Questionnaire (ERQ) found that women with high scores in trait BD were characterised with higher use of ES and lower use of CR and high levels of negative affect.

Controversial findings about the efficiency of emotion regulation in food consumption reduction also emerge from self-report studies. Specifically, Samuel and Cohen (2018) [71] measuring EE with the DEBQ and merely the negative emotions suppression with the Courtauld Emotional Control scale, (CEC) [72] stated that ES predicted EE's reduction, a phenomenon influenced by age. More analytically, young people between 20 and 40 years old and between 41 and 60 years old showed a negative relationship between ES and EE e.g. individuals belonging to these age groups that perform ES are characterised by a reduced need to consume food for emotional relief purposes. In addition, Luadlai, Liu and Tuicomepee (2018) [73] studying young adults aged between 18 and 24 years old showed that when emotion regulation raises, inhibition raises too, resulting to overeating. However, because they summed the two different emotion regulation strategies of CR and ES, the relationships between these two strategies and eating behaviours were not explored separately, but instead their cumulative use under the prism of emotion regulation. Concluding, they implied that the reduced use of CR and the raised use of ES may explain the above results.

Cumulatively, adaptive emotion regulation strategies, such as CR attenuate BD [58, 70] and reduce comfort foods consumption [54, 61], promoting the notion that adaptive emotion regulation strategies are benefitial for both disordered eating beheaviours treatment and even the prevention of eating disorders' development [67, 74, 75, 76]. On the other hand, maladaptive emotion regulation strategies, like ES are associated with higher BD [70] and do not efficiently minimize food consumption [54], or worst, they increase it in restraint eaters [53, 55]. However, these results are inconsistent, especially when it comes to self-reported measures, i.e., when participants' realistic use of emotion regulation strategies is considered. Therefore, self-report questionnaires measuring the general use of the above emotion regulation strategies (e.g. ERQ) can offer more reliable information in respect to the understanding of target group's profile [71].

The aims of this study

Indeed, young adult girls (18 to 24 years old) is a high risk population engaging in disordered eating behaviours [77], with adolescent girls being the population in most danger [78]. However, little is known about their relationship between the general use of emotion regulation strategies and BD. Thus, based on the state body comparison paradigm of Prefit et al. (2019a) [58], this study focuses on healthy young girls (18-24), however, it measures the general use of CR and ES, instead of instructing them. Because data are ought to be processed as continuous variables [46], this study will explore the relationship between state BD and general use of CR, extending Prefit's et al. (2019a) [58] results, or perpetuating the controversies between the studies measuring emotion regulation strategies under instructions or with self-reports. Additionally, ES will be innovatively explored in a state BD paradigm, since Kiriukhina & Polskaya (2021) [70] have shown its relationship with trait BD. Participants' eating behaviours' (Restraint Eating, Uncontrolled Eating and Emotional Eating) relationship with state BD will be also explored, and whether the general use of CR and ES will better explain young adult girls' state BD. Consequently, eating behaviours, emotion regulation strategies, state body dissatisfaction and mood will be measured and direct results about their relationships will emerge in the same study.

In summary, this study aims to explore the relationship between the eating behaviours of RE, UE and EE and the self-reported general use of emotion regulation strategies of CR and ES with state BD and Mood changes, emerged from a forced comparison task in the population of healthy young adult girls (18-24 years), as well as the relationship between the predictors. The hypotheses of this study are that;

Eating behaviours (RE, UE, EE) and emotion regulation strategies (CR and ES) will predict BD (H1),

Eating behaviours (RE, UE, EE) and emotion regulation strategies (CR and ES) will predict mood changes (H2).

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