

**The Relationship Between Upward Social Comparison Tendency and Weight-Loss
Dieting in College Women: The Influence of Body-Envy and Body-Admiration**

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Abstract

Weight-loss dieting (WLD) is a risk factor for developing eating pathology among college women. Therefore, it is crucial to understand the motivation behind WLD. Previous research has suggested upward social comparison with various manifestations of the so-called thin-ideal in Western societies as an essential factor. However, the mediating mechanisms through which upward social comparisons influence WLD in women are still relatively unknown. The present study aimed to elucidate these mechanisms and hypothesized that upward social comparison tendency affects WLD through both frequencies of body-envy and body-admiration. Specifically, more frequent upward social comparisons were expected to lead to more frequent experiences of both body-envy and body-admiration, increasing the tendency to engage in WLD. However, frequency of body-envy was expected to be a stronger mediator than frequency of body-admiration. Based on previous studies, the effects were predicted to occur independently of body size. To test these hypotheses, a cross-sectional study design was employed to collect data from a convenience sample of German-speaking college women ($N = 239$). The results were in line with the predictions, meaning there was no direct link between upward social comparison tendency and WLD but rather two indirect effects through both frequencies of body-envy and body-admiration. As expected, frequency of body-envy was a stronger mediator, and the effects occurred across all different body sizes. The results suggest that women with a high tendency to compare upward are especially at risk of engaging in extreme WLD and developing an eating disorder through frequent episodes of body-envy and body-admiration. Therefore, they should be the main target of interventions dealing with these emotions.

Keywords: weight-loss dieting, upward social comparison, body-envy, body-admiration, college women, cross-sectional

The Relationship Between Upward Social Comparison Tendency and Weight-Loss Dieting in College Women: The Influence of Body-Envy and Body-Admiration

Research from 2011 found prevalence rates of eating pathology between 9% and 13% among college women. Prevalence rates were especially high for students with Western societal backgrounds (Eisenberg et al., 2011). Previous research has proposed weight-loss dieting (WLD) as a risk factor for developing eating disorders (Patton et al., 1999; Stice et al., 2017). Moreover, WLD seems to be prevalent among college women, with one study revealing that around 57% of the participants indicated engagement in dieting to control weight (Fayet et al., 2012). Further, according to sociocultural theories of eating pathology, WLD is suggested to be primarily a response to upward social comparisons with the pervasive Western thin-ideal (Polivy & Pliner, 2015). However, little research has been done on the mediating processes through which social comparisons motivate WLD. According to contemporary social comparison research, the two emotions of envy and admiration arise in response to upward social comparisons and play a role in promoting WLD (Rentzsch & Gross, 2015; Schindler et al., 2013; van de Ven, 2017; Smith, 2000). With this in mind the current study examines the relative mediating roles of envy and admiration in the body image domain (hereafter referred to as body-envy and body-admiration) on the relationship between upward social comparison tendency and WLD. Specifically, it is proposed that the more frequently women compare upward, the more frequently they will experience body-envy and body-admiration, which in turn increases engagement in WLD. This study will also investigate which of the two emotions is a more potent mediator in this model. The findings of this study could elucidate processes to be targeted in the treatment of eating pathology and make reasons for patients' body-dissatisfaction more concrete.

Social comparison describes a way to make sense of ourselves and the world by gaining information from others around us (Buunk & Gibbons, 2000). Humans have an innate

need to evaluate themselves on various dimensions (e.g., appearance; Festinger, 1954; Gibbons & Buunk, 1999). The social comparison theory by Festinger (1954) posits that social comparisons occur when objective evaluation criteria are unavailable, the domain of comparison is important for the individual, and there are certain agreed-upon standards. People compare themselves to others to assess their own value (Betz et al., 2019), learn where they stand and what is valued in society, and get feedback on the discrepancy from their goals (Diel et al., 2021). Additionally, social comparisons are used to fulfill the need for self-enhancement by gaining insight into how to reach the desired position (Diel et al., 2021). Moreover, this need seems to play a bigger role for humans than accurate self-assessment or having a positive feeling about the self (Collins, 1996). Therefore, people tend to compare themselves to others who are doing somewhat better on the relevant comparison dimension (Gibbons & Buunk, 1999). Consequently, women often compare to other women who are perceived as more attractive by society, i.e., those who are more in line with the thin-ideal (Betz et al., 2019). Due to this drive upward, a discrepancy is perceived between their current and desired state (Festinger, 1954). Specifically, women feel like they cannot live up to this ideal (Betz et al., 2019), and dissatisfaction with their own bodies can arise. Thus, social comparison seems to constitute a central process in women's body image disturbance and eating pathology (O'Brien et al., 2009).

Through social comparisons, women in Western societies learn that it is valued and rewarded by their society to be thin, how far they are away from the ideal, and how to attain it (Ata et al., 2015). According to sociocultural theories of eating disorders like the Tripartite Influence Model (Thompson et al., 1999 as cited in Ata et al., 2015, p. 270), women's body image, social comparison tendencies, acceptance of social norms of appearance, and behavior are shaped by social environmental factors like the media, and interactions with parents and peers. This means that the thin-ideal strongly influences women in Western societies.

However, the base of the thin-ideal is created through media images that are not realistic and unattainable because they are altered by technologies like airbrushing (MacCallum & Widdows, 2016). Although no one can and does live up to it (Coughlin & Kalodner, 2006), the promotion of this ideal sets the process of social comparison in motion (Ata et al., 2015). Women compare themselves to socially idealized others (e.g., top models) to gauge their own position on the appearance dimension. The resulting discrepancy between the ideal and the self promotes the wish to reach this state as well (Morrison et al., 2004).

The engagement in upward social comparisons and the experienced discrepancy between the Western thin-ideal and one's present state result in negative emotions like envy (Lange et al., 2018). Envy occurs when one has to learn that someone else is superior on a dimension important to the self and is characterized by feelings of hostility, inferiority, and resentment (Arnocky et al., 2016). Even though envy is often denied due to social desirability (Foster et al., 1972), it has become clear that it is a universal emotion felt by a great majority of people across cultures (van de Ven et al., 2009). In the body image domain, Arnocky et al. (2016) proposed that for women it is essential to be in accordance with the thin-ideal. Society seems to reward and give status to thin and attractive women by predominantly presenting them in the media. At the same time, it seemingly punishes women deviating from the thin-ideal by avoiding their display. Therefore, they need to work hard to enhance their appearance compared to others (Morrison et al., 2004). However, due to the unreality and unattainability of the thin-ideal (Coughlin & Kalodner, 2006) and the unchangeable superiority of the other, the advantage of the other is perceived as unfair. In response, frustration and negativity arise (Smith, 1999). Notably, some women have a higher tendency to compare upward than others, which leads to more frequent experiences of negative emotions like envy (O'Brien et al., 2009; Rentzsch & Gross, 2015; White et al., 2006). Based on previous research findings, this

study predicts that a higher tendency to compare upward is associated with a higher frequency of experiencing body-envy.

Furthermore, envy is argued to be effective in enhancing a motivation to reduce the discrepancy between the ideal and the self (Lange et al., 2018) by leveling up (van de Ven et al., 2009). A desire to attain greater attractiveness through weight-loss arises from the pain felt over the comparison target's superiority (i.e., thinness; van de Ven, 2017). Arnocky et al. (2016) have shown that when women compare themselves to other women and experience a body-envy evoking discrepancy between themselves and the other, they are motivated to enhance their appearance. Due to the dominant thin-ideal in Western society (Betz et al., 2019), weight-loss desire and behavior are often the consequences of experiencing body-envy (Arnocky et al., 2016). This is because WLD can be understood as a way to move women closer to the thin-ideal. Importantly, contemporary media not only promote the unrealistic thin-ideal but simultaneously communicate that every woman can achieve it. Seemingly, with the correct products and workouts everyone can easily be thin (Yamamiya et al., 2005). This impression of attainability increases motivation (Diel et al., 2021). Consequently, it is hypothesized that with an increasing upward social comparison tendency, body-envy will be experienced more often, which will lead to an increased engagement in WLD.

However, envy is not the only emotion elicited by upward social comparison. Smith et al. (1999) propose that positive feelings can arise as well. Admiration is one such emotion (van de Ven, 2017) and can be conceptualized as a "response to an outstanding role model" (Schindler et al., 2013, p. 100). It is evoked by the positive evaluation of another's features (Archer, 2019) as well as by liking, respecting, accepting, and approving of the other (Schindler et al., 2013). The advantages gained by the outstanding other through their superiority seem deserved (Smith, 2000). Previous research has suggested that people sometimes compare to others whose state is unattainable for the self. This means that when

women are confronted with other women conforming perfectly to the thin-ideal and this state seems currently out of reach, the threat to the self would lead to frustration because of a lack of ability to reduce the difference between the actual and the desired state. Therefore, body-admiration is experienced instead of the negative experience of body-envy (van de Ven et al., 2011). Based on these findings, more frequent upward social comparisons with an outstanding role model are expected to lead to more frequent episodes of body-admiration.

Compared to the view that admiration occurs in response to unattainable states (van de Ven et al., 2011), other authors advocate for admiration in response to attainable ideals (Onu et al., 2016; Smith, 2000). The perfectly slim and toned woman is seen as a role model who is no longer threatening to the self and one's goal attainment but rather serves as an inspiration to pursue one's own goals in the long run (Schindler et al., 2013), and broadens the search for ways to reach them (van de Ven, 2017). Therefore, when women admire others for being thin, they are inspired to fulfill this ideal as well and engage in WLD. Even though admiration might be inspiring (Schindler et al., 2013), there have been conflicting findings on the motivational value of admiration. On the one hand, there are findings indicating that admiration motivates self-improvement (van de Ven, 2017) by encouraging the individual to imitate the other and work harder toward one's own success (Onu et al., 2016). On the other hand, the exact behaviors motivated by admiration are not yet clear and may include others than imitation and direct short-term goal fulfillment (Archer, 2019). With the aim of clarifying the role of admiration, the current study will test the hypothesis that a higher tendency to compare upward leads to more frequent episodes of body-admiration, increasing engagement in WLD.

While both emotions (i.e., body-envy and body-admiration) are expected to mediate the effect of upward social comparison tendency on WLD, the pathway through body-envy is expected to be stronger. Ample research findings are available that support the existence of a

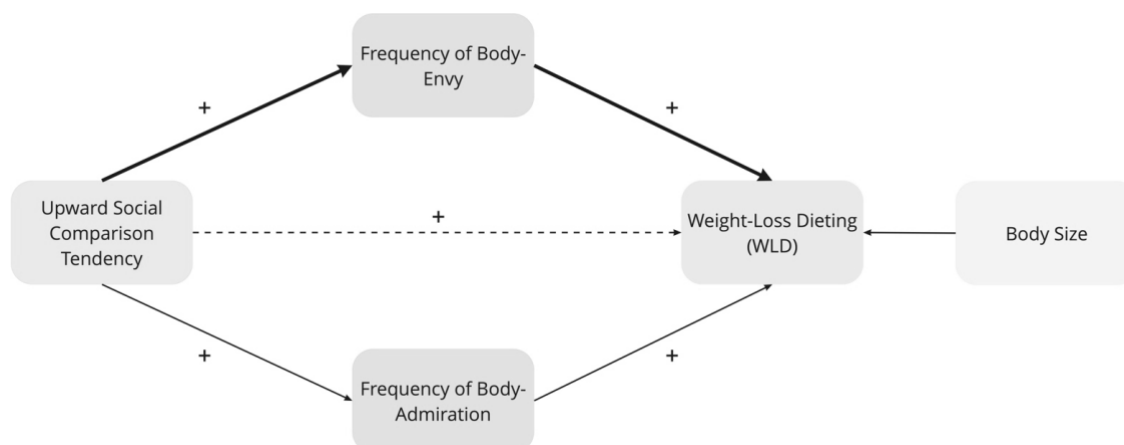
negativity bias. Specifically, negative experiences have a greater motivational potency on the individual than positive ones (Rozin & Royzman, 2001; Baumeister et al., 2001; Goldsmith & Dhar, 2013). This negativity bias is claimed to be evolutionary adaptive as consequences of negative or potentially dangerous events are more critical for survival than consequences of positive, pleasurable events (Carretié et al., 2001). Possible explanations for the greater motivational potency of negative emotions include the observation that negative emotions lead to more thorough information processing. Consequently, it is suggested that the motivation to escape them is greater than the motivation to embrace positive emotions (Baumeister et al., 2001). Similarly, negative thoughts seem to have a higher potency to motivate action than positive ones because they signify a need for change and adaptation to the environment. As a consequence, negative experiences result in better performance (Baumeister et al., 2001). In the realm of body image, women who do not fit in with the thin-ideal are denied rewards like attention and can even be punished with ignorance by society (Morrison et al., 2004). Therefore, emotions like envy and admiration can arise and the motivation to avoid the punishment (i.e., protect the self from something negative) is greater than the motivation to approach the rewards (i.e., enhancing the self with something positive; Baumeister et al., 2001). Furthermore, there is a stronger avoidance of the undesired self compared to an approach to the desired self. This negativity bias makes sense because one bad feature was found to be sufficient to be viewed by others as entirely negative and be punished. Contrarily, attaining the ideal and consistent embodiment of positive qualities are necessary to be perceived as positive and to gain rewards (Baumeister et al., 2001). Van de Ven et al. (2011) propose in their study on the motivational value of envy and admiration that in order for upward social comparisons to motivate change, self-threat and pain in the form of envy are necessary. Derived from these findings, it is hypothesized that the frequency of

body-envy will be a stronger mediator between upward social comparison tendency and WLD than the frequency of body-admiration.

To summarize, it is hypothesized that body-envy and body-admiration are emotions that mediate the effect of upward social comparison tendency on WLD among college women. This group was chosen because college women are especially at risk for disordered eating (Wardle et al., 2006). More specifically, a greater frequency of upward social comparison is expected to be related to more frequent experiences of both body-envy and body-admiration which in turn are associated with more frequent WLD. Moreover, body-envy is expected to have a stronger mediating effect than body-admiration in this model due to the existence of a negativity bias (Baumeister et al., 2001). Additionally, based on previous findings showing that the desire to lose weight and the engagement in WLD does not depend on women's current weight, the hypotheses are expected to be supported independently of participants' body size operationalized as body mass index (BMI; Arnocky et al., 2016; Biener & Heaton, 1995). Figure 1 displays the predicted double mediation model of this study.

Figure 1

Predicted Double Mediation Model with Envy and Admiration as Mediators.



Note. Body Size is controlled for.

Method

Participants

Four hundred and twenty-eight college students initially volunteered to participate in this study through convenience and snowball sampling. The requirements for participation included being a native German-speaking university student identifying as female and having no history of clinically diagnosed eating pathology. One hundred and eighty-nine respondents were excluded from the study due to not meeting the requirements or having incomplete questionnaires, which left a total of 239 participants for statistical analysis. Participants' age ranged from 18 to 46 years ($M = 24.1$, $SD = 3.6$). The BMI of the participants ranged from 15.4 to 42.7 ($M = 22.7$, $SD = 3.9$).

Measures

Weight-Loss Dieting (WLD)

To operationalize WLD, participants were asked to describe their eating behaviors over the past six months on a German version of the 9-item Dieting Intent Scale (DIS) developed by Stice (1998). Items asked about behaviors to lose and maintain weight (e.g., *“Ich zähle Kalorien, um einer Gewichtszunahme vorzubeugen.”* / *“I count calories to try to prevent weight gain.”* *“Ich nehme mir kleine Portionen, in dem Bestreben mein Gewicht zu kontrollieren.”* / *“I take small helpings in an effort to control my weight”*). Answers were given on a 5-point Likert scale ranging from 1 (*nie/never*) to 5 (*immer/always*). Responses were summed to generate an overall score of WLD. Stice (1998) found high internal reliability of $\alpha = .94$ for the DIS. In the current study, internal reliability of the scale was also high ($\alpha = .91$, $\omega = .91$).

Upward Social Comparison Tendency

A German version of the 10-item Upward Physical Appearance Comparison Scale (UPACS) developed by O'Brien et al. (2009) was used to measure upward social comparison tendency in the body image domain. The items assessed whether participants compare themselves to better looking women in several situations (e.g., *“Auf Partys oder anderen Veranstaltungen vergleiche ich meine äußerliche Erscheinung mit dem Äußeren von sehr attraktiven Leuten.”* / *“At parties or other social events, I compare my physical appearance to the physical appearance of the very attractive people.”* *“Ich vergleiche mich eher mit Anderen, die besser aussehen als ich, als mit denen, die es nicht tun.”* / *“I compare myself to those who are better looking than me rather than those who are not”*). Ratings were given on a 5-point Likert scale ranging from 1 (*stimme überhaupt nicht zu/strongly disagree*) to 5 (*stimme voll und ganz zu/strongly agree*). The ratings were summed to generate an overall score on the scale. O'Brien et al. (2009) found the internal reliability of the UPACS to be high ($\alpha = .93$). The current study revealed comparable internal reliability of the scale ($\alpha = .91$, $\omega = .91$).

Frequency of Body-Envy

Frequency of body-envy was measured by a self-constructed 6-item scale measuring the frequency of feelings of envy in the domain of body image. The scale was constructed based on contemporary research on envy (e.g., Smith, 2000; Rentzsch & Gross, 2015). Answers were given on a 5-point Likert scale ranging from 1 (*stimme überhaupt nicht zu/completely disagree*) to 5 (*stimme voll und ganz zu/completely agree*). The scale included items assessing the frequency of experiencing envy towards slimmer and more toned women (e.g., *“Ich neige dazu, mich minderwertig gegenüber Frauen zu fühlen, die schlanker und definierter sind als ich.”* / *“I tend to feel inferior to those women who are slimmer and more toned than me.”* *“Es nervt mich oft, wenn ich Frauen sehe, die schlanker und definierter sind als ich.”* / *“It often annoys me when I see women who are slimmer and more toned than me”*).

The overall score on the scale was constructed by adding up the response values. Internal reliability was shown to be high in this study ($\alpha = .92$, $\omega = .92$).

Frequency of Body-Admiration

The tendency to experience body-admiration was also assessed using a self-constructed 5-item scale based on contemporary research on admiration (e.g., Smith, 2000; Schindler et al., 2013). The items of the scale contained statements about the frequency to feel admiration towards slimmer and more toned women (e.g., *“Ich habe die Tendenz beeindruckt von Frauen zu sein, die perfekt schlank und definiert sind.”*/ *“I have a tendency to be impressed by those women who are perfectly slim and toned.”* *“Ich bin oft respektvoll gegenüber Frauen, die perfekt schlank und definiert sind.”*/ *“I am often respectful toward those women who are perfectly slim and toned”*). The scale utilized a 5-point Likert scale ranging from 1 (*stimme überhaupt nicht zu/completely disagree*) to 5 (*stimme voll und ganz zu/completely agree*) and an overall score was generated by summing up the response values. In the current study, the scale showed acceptable internal reliability ($\alpha = .75$, $\omega = .78$).

Body Size

Body size was operationalized as BMI, calculated using participants' self-reported height and weight. A mean of 22.7 ($SD = 3.9$) was revealed. According to the World Health Organization (2010), this average BMI is in the normal range. Previous studies have found that reported height varies around – 0.04 to 2.53 cm from actual height. Similarly, it was found that weight tends to be underestimated by 0.20 to 3.54 kg. This means that, on average, the self-reported height and weight are similar to the actual data. However, the calculated BMIs cannot be interpreted without caution (Engstrom et al., 2003).

Procedure

Ethical approval for the study was given by the ethics committee of the Faculty of Behavioural and Social Sciences at the University of Groningen. Psychology students conducted the study as part of a bachelor thesis project at the University of Groningen. The first step in constructing the questionnaire was the back-translation of the originally English scales to ensure that the meaning of the English version was sufficiently reflected in the German version (Chen & Boore, 2010). Backtranslation included an initial translation of the questions from English into German by one of the group's German bachelor students, followed by a backtranslation from German into English by another. The students' English proficiency was C1. Preceding the data collection, a pilot study with six participants was employed. It was used to ensure that the flow of the study was as planned and to avoid misunderstanding of the questions. In response to the feedback, some typos were corrected, two confusing words were replaced, and a note asking participants to click further to save their answers was added. Afterward, a link and a QR code were sent through social media (i.e., Facebook groups, Instagram, WhatsApp). Additionally, flyers were distributed at the university. After participants entered the survey on Qualtrics (<https://www.qualtrics.com>), they were informed that the study was about dieting behavior among college women and were asked to give informed consent. After consent was given, the participants had to indicate whether they had previously been diagnosed with an eating disorder and that they were German-speaking university students. Participants were then asked to provide demographic information (i.e., sex, height, weight, age). In case participants indicated having been diagnosed with an eating disorder, being no university student, not identifying as female, or being no native German speaker, they were directed to the end of the survey. The others were directed through the whole questionnaire. After completing the questionnaire, participants had the chance to leave comments and were offered a short "10 Steps to a Positive Body Image"-guide (National Eating Disorders Association, 2021). The survey ended with a statement

thanking the attendees for their participation. There was no compensation given to participants. See Appendix A for the complete German scales used in the questionnaire.

Statistical analysis

The analysis of the predicted double-mediator model was done building on Hayes' (2022) parallel multiple mediator model. The PROCESS macro for SPSS version 26, which uses a percentile bootstrap approach, was applied. Bootstrapping is a method of resampling in which a number of smaller samples is drawn, with replacement, from one bigger sample. The result is a bootstrapping distribution which can be used to calculate confidence intervals and test hypotheses (Hesterberg, 2011). Since this type of resampling estimates the distribution of the population instead of a point estimate, as is the case with a single sampling distribution of the population (Wright et al., 2011), it yields more accurate results and inferences because statistical power is improved (Mackinnon et al., 2004). The bootstrapping method in multivariate regression analysis is robust against non-normality (Wright et al., 2011). For the current analysis, 5000 bootstrap re-samples were used and significance was investigated at the 5% confidence level (i.e., 95% confidence intervals and p-Value cut-offs of .05). Estimates of direct and indirect effects in the parallel multiple mediator model were given by regression coefficients describing the association of the predictors with the outcome variable (Hayes, 2022). The tested parallel multiple mediator model included upward social comparison tendency as the predictor variable, frequency of body-envy and frequency of body-admiration as mediators, and WLD as the outcome variable. Body size was controlled for and added as a covariate.

Results

Preliminary Analysis

Preceding the analysis, the sample was tested on assumptions and outliers. The distribution of the sample appeared to slightly violate the assumption of homoscedasticity (see

Appendix B, Figure B). Therefore, the heteroscedasticity-consistent standard error HC3 by Davidson and MacKinnon (as cited in Hayes & Cai, 2007, p. 713) was applied. The scatterplot (see Appendix B, Figure B) showed no violation of linearity in the data. Multicollinearity was assessed using the variance inflation factor and no issues were detected (see Appendix B, Table B). Following the application of case-wise diagnostics ($> \pm 3$ SD; Wiggins, 2000), one potential multivariate outlier was found. Since the outlying value had a Cook's distance smaller than 1 ($D_{192} = 0.22$), it was not removed from the analysis (Boussiala, 2020).

Descriptive statistics and Pearson correlations of the measured variables are presented in Table 1.

Table 1

Pearson Correlations, Means, and Standard Deviations of the Measured Variables.

	1	2	3	4	5
1. WLD	-				
2. UPACS	.486**	-			
3. Envy	.575**	.741**	-		
4. Admiration	.361**	.480**	.425**	-	
5. BMI	.272**	.077	.251**	.033	-
Mean	18.6	35.9	16.3	17.3	22.7
SD	7.5	7.9	6.3	3.7	3.9

Note. WLD: Weight-Loss Dieting; UPACS: Upward Physical Appearance Comparison Scale; BMI:

Body Mass Index; SD: Standard Deviation

$N = 239$

** $p < .01$.

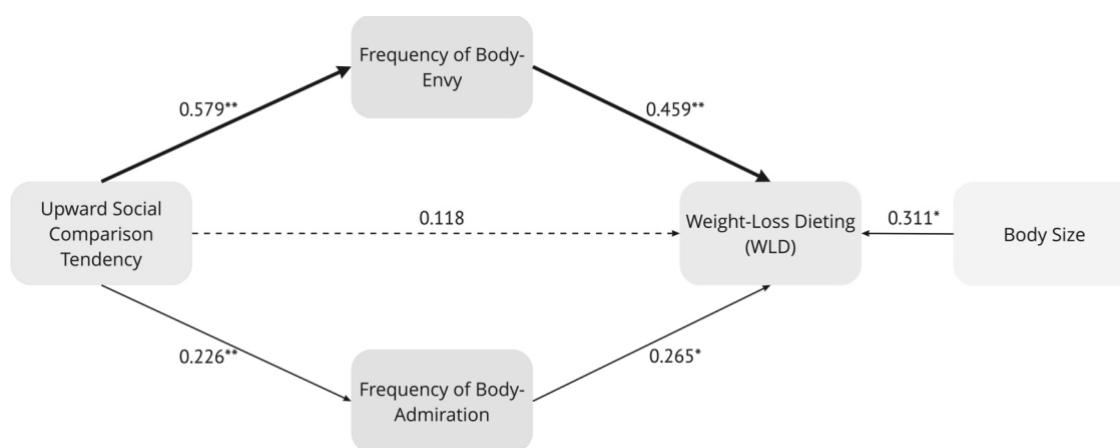
Multiple Mediation Analysis

Using the parallel multiple mediation model analysis by Hayes (2022) to examine how a variable relates to another, the direct and indirect effects of upward social comparison tendency on WLD through the mediators frequency of body-envy and body-admiration were examined. The overall model was found to be significant ($F(4, 234) = 37.510, p < .001$), with 37.40 % of the variance in WLD explained by the model. An overview of the individual effects (i.e., the regression coefficients) can be found in Figure 2.

The total effect (i.e., including the direct and indirect effects) of upward social comparison tendency on WLD was significant ($B = 0.443, SE = 0.051, 95\% \text{ CI } [0.343, 0.543], p < .001$). The direct effect of upward social comparison tendency on WLD was non-significant ($B = 0.118, SE = 0.076, 95\% \text{ CI } [-0.032, 0.267], p = .123$). However, as predicted the indirect effects of upward social comparison tendency on WLD through frequencies of body-envy and body-admiration were found to be significant ($B = 0.266, SE = 0.061, 95\% \text{ CI } [0.152, 0.392]; B = 0.060, SE = 0.028, 95\% \text{ CI } [0.003, 0.114]$ respectively). Consequently, upward social comparison tendency exerts its effect on WLD through the emotions of body-envy and body-admiration. Meaning that a higher tendency to compare upward leads to more frequent experiences of both body-envy and body-admiration, which in turn increase WLD. Additionally, a contrast analysis showed that frequency of body-envy was a significantly stronger mediator between upward social comparison tendency and WLD in this model than frequency of body-admiration ($B_{\text{Contrast}} = 0.206, SE = 0.075, 95\% \text{ CI } [0.069, 0.363]$). Importantly, both mediation pathways occurred when controlling for body size (i.e., across all different body sizes).

Figure 2

Double Mediator Model of the Relationship between Upward Social Comparison Tendency and WLD with Frequencies of Body-Envy and Body-Admiration as Mediator Variables



Note. Shown are coefficients of the individual effects of the variables.

Controlling for Body Size.

** $p < .01$.

* $p < .05$.

Discussion

The present study aimed to clarify how upward social comparison tendency affects WLD in a sample of female college students. Based on previous research on social comparison theory and the thereby triggered emotions, it was hypothesized that body-envy and body-admiration have a mediating function. Additionally, building on previous investigations of the negativity bias, body-envy was predicted to have a stronger mediating effect than body-admiration. Moreover, the effects were predicted to occur independently of body size. The findings support all of these hypotheses.

In line with the predictions, the frequency of body-envy mediated the influence of upward social comparison tendency on WLD. This means that upward social comparison

tendency has its effect on WLD through the experience of body-envy. This finding is consistent with Festinger's (1954) social comparison theory. It proposes that envy arises in response to upward social comparisons and the perceived discrepancy between an ideal and the current self (Lange et al., 2018; van de Ven, 2017). Additionally, it converges with sociocultural theories of eating disorders, which posit that women's body-image and behavior are influenced by social environmental factors like the media and parental and peer interactions (Ata et al., 2015). In the body-image domain feelings of inadequacy and inferiority arise when a woman compares herself to another woman conforming to the beauty standard and perceives her body as deviating from the Western thin-ideal (Arnocky et al., 2016). A discrepancy is perceived because the contemporary thin-ideal is unrealistic and created using techniques like airbrushing to alter the media images (MacCallum & Widdows, 2016). The sentiments of inadequacy, inferiority, and resentment included in body-envy emerge because Western societies seem to reward adherence to the thin-ideal and to even punish non-adherence if the discrepancy is too big (Morrison et al., 2004). The superior position and the consequential advantages of the other woman are seen as unfair and undeserved. This is based on the notion that people should have equality in outcomes (Smith, 2000) and the perception that these idealized women did not work for their advantages themselves but instead gained them using technologies to perfect their appearance (Coughlin & Kalodner, 2006). Similarly, women might feel relatively deprived of certain resources and advantages like prestige and power (Belk, 2011). As women want to avoid punishment like being ignored and get rewards in the form of attention, they work hard to get closer to the thin-ideal through engagement in WLD (Morrison et al., 2004).

Also as predicted, frequency of body-admiration was found to mediate the effect of upward social comparison tendency on WLD. Concretely, upward social comparison tendency exerts its impact on WLD through the emotion of body-admiration. Converging with

prior findings, admiration arises in response to upward social comparisons and elicits feelings of respect and appreciation for an outstanding other (van de Ven, 2017; Onu et al., 2016; Schindler et al., 2013). When women compare themselves to idealized others whose advantages seem deserved (Smith, 2000) and the ideal is perceived as presently out of reach, the comparison target is no longer seen as threatening but instead inspires the women to emulate (Schindler et al., 2013). Being inspired by these personifications of the ideal, women open up to opportunities to reach it as well (van de Ven, 2017). Keeping in mind that the thin-ideal is the dominating beauty standard in Western societies, women tend to be inspired to engage in WLD in an attempt to reach it.

Even though upward social comparison tendency affects WLD through both emotions (i.e., body-envy and body-admiration), the pathway through frequency of body-envy was expectedly stronger than through the frequency of body-admiration. This is in accordance with earlier research on the negativity bias (Baumeister et al., 2001; Rozin & Royzman, 2001). Specifically, negative emotions have a stronger motivational potency for behavioral change (Rozin & Royzman, 2001). The negative experience of body-envy is aimed to be avoided and information is processed more thoroughly in response to it than in response to the positive experience of body-admiration (Baumeister et al., 2001). This is because negative experiences like envy signify a need for quick change (van de Ven, 2017), as is evolutionary adaptive (Carretié et al., 2001). Similarly based on evolutionary advantage, it has been observed that social comparisons drive intrasexual competition for mates. Men prefer women who are attractive because it allegedly signifies fertility and reproductive success (Arnocky et al., 2016). Keeping in mind the thin-ideal of Western society, being attractive means being thin (Morrison et al., 2004). Therefore, women who fail to meet these standards or are worse off than their rivals have a disadvantage in mating. Hence, they are motivated to enhance their appearance compared to others by restricting food intake (Hendrickse et al., 2017). Through

social comparisons with a rival the relative position is determined and negative emotions like body-envy as well as the perception of threat can come up motivating self-enhancing behaviors like WLD. The observation that frequency of body-envy was a stronger mediator in this study suggests that social comparison is more about evoking rivalry and competition than about affiliation (Morgan et al., 2022).

Importantly and as predicted, all the effects occurred over and above body size. Namely, women of all different body sizes were motivated to engage in WLD in response to upward social comparisons and the triggered emotions of body-envy and body-admiration. This includes women who are within or below a healthy weight range. It is important to note that the participants of the study had an average body size within the normal range and even included women in the underweight range (World Health Organization, 2010). These findings are consistent with what was found in earlier studies (e.g., Dalley et al., 2020; Arnocky et al., 2016) and signify how pervasive and unattainable or even physically impossible the thin-ideal is (Brownell, 1991). According to sociocultural theories of eating disorders, women in Western society have internalized an unrealistic and unachievable ideal (Dakanalis et al., 2015).

Taken together, the results could potentially be helpful in treating and preventing eating pathology. Several practical implications can be derived. First, women with a high upward social comparison tendency should be the main target for treatment and prevention of eating pathology. This is because through their frequent experiences of body-envy and body-admiration they seem to be especially at risk of engaging in extreme WLD and ultimately developing an eating disorder (Patton et al., 1999). Second, the focus of intervention could be the specific emotions of body-envy and body-admiration instead of the broad and general construct of body-dissatisfaction. While body-dissatisfaction is about negative feelings about one's own body (Quittkat et al., 2019), specific emotions carry more useful information.

According to Lazarus (1991), emotions provide details about their meaning and cause. In treatment, this implies that by focusing on emotions, the specific causes and meaning of the patient's disturbed body image become clear. Third, the study has shown that not only negative emotions can promote the development of eating pathology, but positive emotions like admiration play a role as well. Therefore, they should also be targeted in treatment. However, as positive emotions are rather embraced than avoided (Phaf et al., 2014) and signal short-term benefits, they could be challenging to deal with in interventions (Weiss et al., 2018). As a solution approach, media literacy interventions are recommended. They target and challenge the thin-ideal in general and teach young women to think critically about media images of idealized others. Ultimately, media literacy interventions can point out how unrealistic and unattainable the thin-ideal is. Eventually, the thin-ideal promoted through all different channels could lose its power (Coughlin & Kalodner, 2006).

The current findings should not be interpreted without recognizing some limitations of this study. Firstly, the study used a cross-sectional design, so causal inferences cannot be drawn. Besides, it only presents a snapshot in time and does not clarify how the relationship between the variables evolves later in life. Longitudinal studies could investigate what role the emotions body-envy and body-admiration play later in life and how predictive earlier tendencies to compare upward are of later comparison tendencies (Caruana et al., 2015). Experimental studies could expose women to images of idealized others (e.g., top models) and explore its causal effect on engagement in upward social comparison and affect (Groesz et al., 2002). Secondly, the sample exclusively included German-speaking female college students. Therefore, generalizability is limited. Even though the choice of the sample makes sense because this population is especially at risk (Wardle et al., 2006), future research could investigate the model in different populations. Replication studies could include men and investigate possible gender differences in response to relevant beauty standards. Additionally,

college women without a history of diagnosed eating pathology might differ from clinical samples. It would be interesting to find out whether the processes of upward social comparisons and the mediators of body-envy and body-admiration play a role for them. Besides, future studies could note participants' ethnicity and assess cultural similarities and differences in response to dominant ideals of appearance. Lastly, samples for replication could include individuals with various educational backgrounds to shed light on the influence of education on body image and associated mechanisms. Thirdly, the Pearson correlation between frequency of body-envy and frequency of body-admiration was found to be moderate in the current study. This could indicate that the two emotions cannot be clearly distinct and admiration might not be purely positive. However, multicollinearity was not high among the variables (see Appendix B, Figure B), and the results can be interpreted rather reliably. Related to this, the present study only focused on benign envy even though research proposes that there is a second form, malicious envy. Future research should focus on distinguishing these emotions and disentangle their differentiated roles in the relationship between upward social comparison and WLD. It could be interesting to investigate whether admiration and benign and malicious envy motivate different behaviors like affiliation, exercising, or harming the comparison target.

To conclude, the current study shows that upward social comparison tendency affects WLD through the emotions of body-envy and body-admiration. Clearly, further investigation is necessary to elucidate the causal links between the variables. And even though replication in a clinical sample is needed, the findings of this study suggest that interventions should focus on women with a high tendency to engage in upward social comparison and on the specific emotions of body-envy and body-admiration. Additionally, it was made clear that the thin-ideal of Western societies is highly pervasive and unattainable, thus influencing virtually

every woman (i.e., despite a small body size). Consequently, challenging this ideal is of great importance.

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Appendix A

Measures

Upward Social Comparison Tendency

Ich vergleiche mich eher mit Anderen, die besser aussehen als ich, als mit denen, die es nicht tun.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll and ganz zu

Ich neige dazu, meine eigene körperliche Attraktivität mit der von Models in Zeitschriften zu vergleichen.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll and ganz zu

Ich ertappe mich dabei, wie ich darüber nachdenke, ob mein eigenes Aussehen mit dem von Models und Filmstars vergleichbar ist.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll und ganz zu

Am Strand oder bei Sportaktivitäten (z.B., Sport, Fitnessstudio etc...) frage ich mich, ob mein Körper so attraktiv ist wie die der Leute, die ich dort mit sehr attraktiven Körpern sehe.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll und ganz zu

Ich neige dazu, mich mit Leuten zu vergleichen, von denen ich denke, dass sie besser aussehen als ich.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll und ganz zu

Wenn ich eine Person mit einem tollen Körper sehe, neige ich dazu, mich zu fragen, wie ich mit ihr mithalten soll.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll und ganz zu

Wenn ich gutaussehende Leute sehe, frage ich mich, wie ich im Vergleich wirke.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll und ganz zu

Auf Partys oder anderen Veranstaltungen vergleiche ich meine äußerliche Erscheinung mit dem Äußeren von sehr attraktiven Leuten.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll und ganz zu

Ich ertappe mich dabei, wie ich mein Aussehen mit Leuten, die besser als ich aussehen, vergleiche.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll und ganz zu

Ich vergleiche meinen Körper mit Leuten, die einen besseren Körper als ich haben.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll und ganz zu

Frequency of Body-envy

Es nervt mich oft, wenn ich Frauen sehe, die schlanker und definierter sind als ich.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll und ganz zu

Ich neige dazu mich unwohl zu fühlen, wenn ich Frauen sehe, die schlanker und definierter sind als ich.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll und ganz zu

Es stört mich oft, wenn ich Frauen sehe, die schlanker und definierter sind als ich.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll und ganz zu

Ich habe die Tendenz, Frauen zu beneiden, die schlanker und definierter sind als ich.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll und ganz zu

Es frisst mich innerlich auf, Frauen zu sehen, die schlanker und definierter sind als ich.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll und ganz zu

Ich neige dazu, mich minderwertig gegenüber Frauen zu fühlen, die schlanker und definierter sind als ich.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll und ganz zu

Ich habe die Tendenz beeindruckt von Frauen zu sein, die perfekt schlank und definiert sind.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll und ganz zu

Ich neige dazu, positive Gefühle gegenüber Frauen, die perfekt schlank und definiert sind, zu haben.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll und ganz zu

Ich bin oft respektvoll gegenüber Frauen, die perfekt schlank und definiert sind.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll und ganz zu

Ich neige dazu, zu denken, dass ein perfekt schlanker und definiert Körper eine große Errungenschaft ist.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll und ganz zu

Ich habe die Tendenz, Frauen zu bewundern, die perfekt schlank und definiert sind.

- ☐ stimme überhaupt nicht zu
- ☐ stimme nicht zu
- ☐ weder noch
- ☐ stimme zu
- ☐ stimme voll und ganz zu

Weight-loss Dieting

Bitte geben Sie in den folgenden Fragen die Antwort an, die Ihr Essverhalten in den letzten 6 Monaten am besten beschreibt.

Manchmal vermeide ich es zu essen, in einem Versuch mein Gewicht zu kontrollieren.

- ☐ nie
- ☐ selten
- ☐ manchmal
- ☐ oft
- ☐ immer

Ich überspringe/versäume Mahlzeiten, in einem Versuch mein Gewicht zu kontrollieren.

- ☐ nie
- ☐ selten
- ☐ manchmal
- ☐ oft
- ☐ immer

Ich esse Diät-Lebensmittel, in dem Bestreben mein Gewicht zu kontrollieren.

- ☐ nie
- ☐ selten
- ☐ manchmal
- ☐ oft
- ☐ immer

Ich zähle Kalorien, um einer Gewichtszunahme vorzubeugen.

- ☐ nie
- ☐ selten
- ☐ manchmal
- ☐ oft
- ☐ immer

Ich esse kalorienarme Lebensmittel, in dem Bestreben eine Gewichtszunahme zu vermeiden.

- ☐ nie
- ☐ selten
- ☐ manchmal
- ☐ oft
- ☐ immer

Manchmal esse ich nur eine oder zwei Mahlzeiten pro Tag, um zu versuchen mein Gewicht zu begrenzen.

- ☐ nie
- ☐ selten
- ☐ manchmal
- ☐ oft
- ☐ immer

Ich halte mich bei Mahlzeiten zurück, um einer Gewichtszunahme vorzubeugen.

- ☐ nie
- ☐ selten
- ☐ manchmal
- ☐ oft
- ☐ immer

Ich nehme mir kleine Portionen, in dem Bestreben mein Gewicht zu kontrollieren.

- ☐ nie
- ☐ selten
- ☐ manchmal
- ☐ oft
- ☐ immer

Ich begrenze die Menge an Nahrung, die ich esse, in einem Versuch mein Gewicht zu kontrollieren.

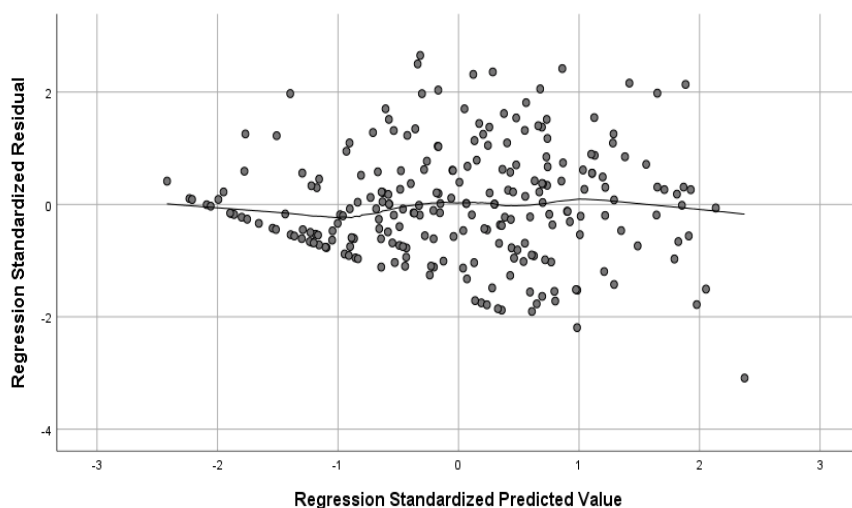
- ☐ nie
- ☐ selten
- ☐ manchmal
- ☐ oft
- ☐ immer

Appendix B

Data Screening

Figure B

Scatterplot of Standardized Predicted Values Vs. Standardized Residuals



Note. Standardized Predicted Values vs. Standardized Residuals are displayed.

A Loess curve is included to facilitate interpretation (Jacoby, 2000).

Table B

Investigation of Multicollinearity

Model		Collinearity Statistics	
		Tolerance	VIF
1	UPAC	.408	2.453
	Envy	.407	2.460
	Admir	.758	1.320
	BMI	.910	1.099

Note. VIF: Variance Inflation Factor; $VIF \geq 10$ indicates possibly harmful multicollinearity (Franke, 2010)