

**Disentangling Relationships Between Upward Social Comparison Tendency, Body Envy  
and Covert Narcissism on College Women's Dieting Frequency:  
A Moderated Mediation Analysis**

Olivia Czeschka

S3906477

Department of Psychology, University of Groningen

PSB3E-BT15: Bachelor Thesis

Group 2122\_2a\_12

Supervisor: Dr. Simon E. Dalley

Second evaluator: Anne Kuschel

In collaboration with: Nina Schoonbeek, Layla Goralski, Luisa Schade,  
and Liana Drakopoulou.

July 09, 2022

*A thesis is an aptitude test for students. The approval of the thesis is proof that the student has sufficient research and reporting skills to graduate but does not guarantee the quality of the research and the results of the research as such, and the thesis is therefore not necessarily suitable to be used as an academic source to refer to. If you would like to know more about the research discussed in this thesis and any publications based on it, to which you could refer, please contact the supervisor mentioned.*

### **Abstract**

Despite the well-researched link between upward physical appearance comparison tendency (UPACT) and weight-loss dieting (WLD), there is limited research on factors that might mediate and moderate this association beyond body dissatisfaction. This study used contemporary sociocultural theory to explore the relationship between UPACT, body envy, covert narcissism, and WLD in a sample of German college women. The first hypothesis explored whether body envy would mediate the relationship between upward physical appearance comparison tendency and weight-loss dieting, such that higher UPACT would be associated with more WLD through more frequent episodes of body envy. The second hypothesis stated that covert narcissism would moderate this mediation pathway, where the relationship between UPACT and WLD through the frequency of body envy would be stronger for women high on narcissism. All effects were expected to occur while controlling for Body Mass Index (BMI). A computer-based questionnaire was administered to an initial sample of 427 college women. After indicating their age, height, and weight, they also completed measures of UPACT, body envy, covert narcissism, and WLD. A bootstrap analysis using PROCESS models 1, 4 and 7 by Hayes (2018) found support for the proposed moderated mediation model. These findings offer insight into the motivational mechanisms behind weight-loss dieting, potentially shedding light on how to prevent and treat eating pathologies.

*Keywords:* Sociocultural Theory, Upward Social Comparison, Body Envy, Covert Narcissism, Weight-Loss Dieting

## **Disentangling Relationships Between Upward Social Comparison Tendency, Body Envy and Covert Narcissism on College Women's Dieting Frequency:**

### **A Moderated Mediation Analysis**

“Every 62 minutes at least one person dies as a direct result from an eating disorder.”

(Eating Disorder Coalition, 2016, p. 1)

Within the female population aged 18 to 29 approximately 40% indicate that they engage in weight-loss dieting (WLD), compared to 19% of men (Serdula et al., 1994). This number was even higher in a survey amongst college women in the US, with 83% who indicated that they diet for weight control (Malinauskas et al., 2006). Unfortunately, WLD can have severe consequences, considering that young girls, who engage in moderate to extreme dieting, are 5 to 18 times more likely to develop an eating disorder - compared to girls who never dieted (Golden et al., 2016). According to contemporary research and theory, WLD is more often than not a result of a comparison with various manifestations of the so called thin-ideal (Killen et al., 1996). Indeed, women who have the tendency to upward physical appearance comparisons (UPACT) seem more likely to engage in frequent WLD (O'Brien et al., 2009). However, research rarely investigated variables that could possibly mediate the link between UPACT and WLD beyond the role of body dissatisfaction (Stice, 2002). According to contemporary social comparison theory (O'Brien et al., 2009), specific negative upward comparison emotions may be a potent motivator. This study will, therefore, examine the possible role of body-related envy as a mediating emotion between UPACT and weight-loss dieting within a sample of German college women (see Figure 1). Further, it will investigate whether Covert Narcissism, a personality variable associated with both higher levels of social comparison and envy, could moderate this mediation pathway (Jin et al., 2018).

## **Sociocultural Theory of Weight-Loss Dieting**

During the 20<sup>th</sup> century, the prevalence of eating disorders and the idealization of the thin body image has been continuously increasing in Western cultures, suggesting that there might be a connection between these two variables (Keel & Forney, 2013). Sociocultural theory tries to explain this phenomenon by exploring how cultural values, like the thin ideal, can influence individual values and behaviour (Ata et al., 2015). In the context of women's body image disturbances is a pervasive thin ideal, communicated through the media, considered a sociocultural risk factor for disordered eating (Culbert et al., 2015). Reasons as to why that body ideal is so powerful in western society might be for example: thin-ideal internalization, advantages women expect from looking slim, and social pressure (Halliwell & Harvey, 2006). Since it promotes thinness as the most attractive and aesthetic standard for women, different body-improving strategies, like weight-loss dieting, can be the consequence (Ata et al., 2015). However, these factors do not seem to directly relate to body improvement strategies, such as weight-loss dieting. Instead, previous research suggested that sociocultural influences on disordered eating could predominantly impact young women through a process of social comparison (Fitzsimmons-Craft, 2011; Thompson et al., 1999).

## **The link between Upward Social Comparison and Weight-Loss Dieting**

Social comparison is an innate human behaviour and means that humans compare to other humans in an attempt to make sense of themselves and the world around them (Buunk & Gibbons, 2000). Festinger (1954) already proposed in his social comparison theory that humans have an innate drive to gather information about the self by comparing to other individuals. Yet, most people do not simply compare themselves to everyone but instead orient toward inferior or superior others. Downward or upward comparisons can have different consequences, whereby the former often results in a boost of self-worth and the latter in more negative evaluations of the self (O'Brien et al., 2009). Although social comparisons are common among humans, some women tend to orient more often to situations in which

they can compare themselves to other women; they show an Upward Social Comparison Tendency (USCT). Gibbons and Buunk (1999) called it a personality disposition and suggested that individuals, who show this disposition, care more about people's behaviour and appearance, and actively search for comparison situations.

In modern times comparing is often also providing information about what appearance is rewarded and valued in culture, which traits a woman should invest in to promote her sexual attractiveness for possible mates, and how she could achieve that (Arnocky et al., 2016). Inspired by the Western thin body ideal promoted by media and society, many young girls are motivated to set appearance goals for themselves (Culbert et al., 2015). Accordingly, the tendency to upward social comparisons related to physical appearance is becoming highly relevant since it informs women about their current state of being compared to other more attractive and thinner women (O'Brien et al., 2009). Such being the case, UPACT (Thompson et al., 1999) and the resulting goal to look like the thin ideal (Culbert et al., 2015) can motivate many women to engage in dangerous compensatory strategies, such as WLD.

Despite the well-researched connection between UPACT and WLD, questions remain about possible factors that could mediate this relationship beyond the role of body dissatisfaction (Ata et al., 2015; O'Brien et al., 2009). What is known is that the risk increases for women to engage in body-improving strategies, like WLD, when negative emotions arise in response to a detected discrepancy between their current and ideal self (Dalley et al., 2019). These findings also fit with contemporary social comparison theory, suggesting that envy, as a strong negative emotion, could play an essential mediating role (O'Brien et al., 2009).

### **The Mediating Effect of Body Envy**

Envy can be defined as a strong negative emotion characterized by feelings of inferiority to another person in one or more characteristics (Rentzsch & Gross, 2015). It occurs when individuals make an upward social comparison and therefore perceive a gap between their current self and another person (Rentzsch & Gross, 2015). Sometimes it is also

referred to as a cluster of emotions (e.g., shame, jealousy, envy) that expresses strong negative feelings toward another person perceived as a rival at that moment (Smith & Kim, 2007). For envy to arise, the person compared to must be seen as relevant to the self, but the attribute compared to, at the same time, has to be perceived as unattainable (Krizan & Johar, 2012).

But how can envy foster dieting behaviour in women? For the sake of understanding the mechanism behind it, it is helpful to see why women envy other women with thinner bodies in the first place. Literature suggests that traits that appear advantageous for one woman might indicate positive outcomes in certain situations (e.g. mating competitions) and are thus, accompanied by other women's envy and desire to gain this advantage as well (Smith & Kim, 2007). When it comes to body image, women seem to especially experience body envy when they compare themselves to other more attractive women (DePriore et al., 2012). An explanation for these findings might be that women feel pressure to adhere to the societal thinness norm since violating it could result in the denial of rewards or even social exclusion (Morrison et al., 2004). From an evolutionary perspective, one of these rewards that may be denied when not looking like the ideal is finding a sexual partner for reproduction. Accordingly, if a woman notices a discrepancy between her current appearance and the cultural standard, this could lead to feelings of inferiority and sadness (i.e. envy). As a result, she might feel motivated to improve her body to make herself look more sexually appealing to future mates (Arnocky et al., 2016). That is consistent with previous research which found that an association between appearance comparisons and envy affected various self-improvement behaviours, such as exercising frequency in college students (Pila et al., 2014) or the willingness to use dietary pills (Arnocky et al., 2016).

Therefore, it becomes apparent that more frequent upward comparisons increase the risk of a negative self-evaluation (i.e., the discrepancy between current/ideal self), which might increase the frequency of envy (Rentzsch & Gross, 2015). The unpleasantness of envy could, in turn, increase a woman's wish to get closer to the envied other by improving her

physical appearance, also referred to as “levelling up” (Rentzsch & Gross, 2015, p. 544). One improvement strategy could be through weight-loss dieting since women can, thereby, change their physical appearance and reduce the gap between their current physical self and their ideal self - in this case, a thinner, more attractive self (Dalley et al., 2019). And as today's media creates the impression that every woman can achieve that slimmer self, the motivation for self-improvement increases even more (Diel et al., 2021). Accordingly, the first hypothesis explores the mediation pathway in which a higher upward physical appearance comparison tendency is thought to increase the frequency of body envy, which in turn leads to an increase in weight-loss dieting (see Figure 1).

Yet, it appears that some women are more susceptible to sociocultural influences (i.e., body ideals) that could predispose them to develop eating disorders (Culbert et al., 2015). Specifically, differences in personality seem to influence the susceptibility to the thin ideal, which might offer an explanation as to why not all individuals tend to weight-loss dieting despite being confronted with the same idealized body image (Culbert et al., 2015). It may, therefore, be valuable to identify personality traits that might exacerbate the mediation pathway from UPACT via body envy on WLD for some women more than for others.

### **The Moderating Effect of Covert Narcissism**

In this regard, the study examined the moderating effect of vulnerable (or covert) narcissism on the relationship between UPACT and body envy (see Figure 1). Previous research has demonstrated that narcissists are particularly likely to worry about their physical appearance and status and therefore, compare themselves more to other people, and also increasingly engage in self-enhancement behaviours such as weight-loss dieting (Jin et al., 2018). This study has focused on one specific type, covert narcissism, since previous research has demonstrated that the grandiose narcissist (overt narcissist), due to an inflated ego, is less likely to experience envy (Krizan & Johar, 2012).

Covert narcissism, referred to as vulnerable narcissism (Hendin & Cheek, 1997), expresses itself through increased neuroticism, low self-esteem, and an increased perception of vulnerability (Krizan & Johar, 2012). Interestingly, people with low self-esteem appear particularly likely to engage in upward comparisons (Rentzsch & Gross, 2015). This is in line with previous research suggesting that women high on covert narcissism orient more frequently towards appearance comparisons since their self-esteem is so fragile and low that they worry particularly often about their body image (Jin et al., 2018). The anxiety about their physical appearance makes them feel particularly threatened by the unattainability of the thin ideal, so that every comparison is experienced as highly negative and increases the wish to improve their body (Jin et al., 2018). That suggests that covert narcissists are more prone to use upward physical appearance comparisons due to their intense feelings of inadequacy and worry over their appearance. Consequently, these constant comparisons with others perceived as better or more attractive than the self can possibly lead to more frequent experiences of body envy (Krizan & Johar, 2012).

Narcissism and envy are highly interconnected, which becomes noticeable by studying the diagnostic criteria for a narcissistic personality disorder (NPD) within the Diagnostic Statistical Manual (DSM) (Krizan & Johar, 2012). The DSM-V lists, among other criteria, a high tendency to be envious as a symptom of people with NPD (American Psychiatric Association, 2013). Besides the link between narcissism and envy in clinical samples, envy was also shown to arise in non-clinical samples (Jin et al., 2018). The authors Krizan and Johar (2012) demonstrated in their study that a dispositional tendency to feel envy is particularly likely to stem from “narcissistic vulnerability” (p. 1416). They further suggested that individuals high on vulnerable (covert) narcissism make their self-esteem highly dependent on the comparison to others, which could stem from their wish to be admired by others. Due to their low self-esteem, they often find themselves in social comparison situations in which they perceive other women as better or more attractive than themselves

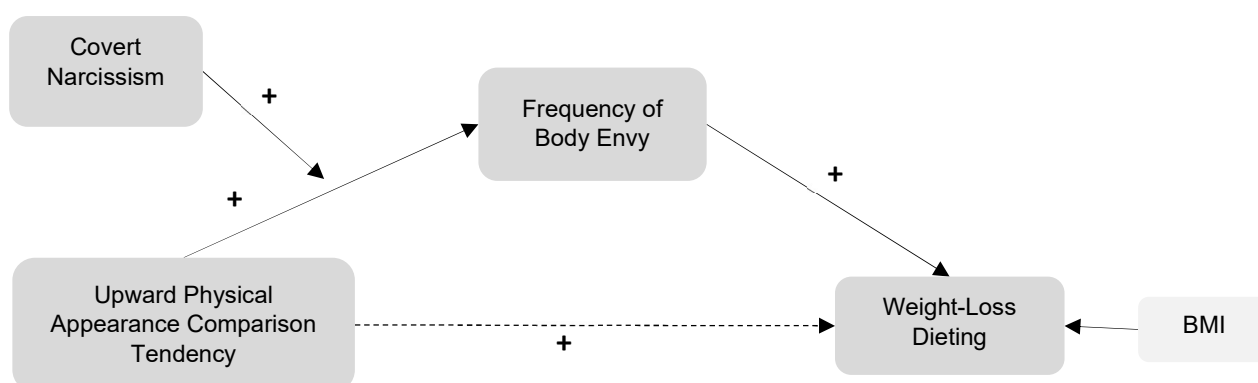


(Krizan & Johar, 2012). And since the media is promoting particularly unrealistic and unattainable body ideals, these women might feel even more threatened in upward social comparison situations, which could make them more likely to notice a discrepancy between their own bodies and the ideal, increasing the frequency for body envy (Krizan & Johar, 2012). As such, the second hypothesis is that women high on covert narcissism tend to compare more frequently upwards, which causes them to feel body-related envy more often, resulting in more frequent weight-loss dieting.

In summary, the first hypothesis of this study explores whether body envy will increase the relationship between an upward physical appearance comparison tendency and weight-loss dieting. Secondly, it is hypothesized that this effect will be stronger in women with a vulnerable narcissistic personality. To test these hypotheses, survey data of college women are studied since this particular demographic seems prone to engage in dieting (Malinauskas et al., 2006). Expected is also that the predicted moderated mediation model will occur over and above the influence of Body Mass Index, as previous research has suggested that even women within the normal range of body size can be affected by WLD and disordered eating (Dalley et al., 2019; Tiggemann, 2011).

### Figure 1

#### *Proposed Moderated Mediation Model*



*Note.* The relationship between UPACT, body envy and WLD, moderated by covert narcissism, with Body Mass Index (BMI) as a control variable.

## Method

### Participants

Participants were recruited using the convenience and snowball sampling methods, by distributing a link and QR code via social media and friends. They were required to identify as female, native German speakers studying at a university without any history of an eating disorder. A total of 427 responses were collected. However, 188 responses had to be excluded. Specifically, 108 participants needed to be removed because the requirements could not be met - the data set contained  $n = 319$  responses. Additionally, 80 responses were deleted due to missing data, resulting in a total of 239 participants that were included in the statistical analysis. The age range is from 18 to 46 years ( $M = 24.2$ ,  $SD = 3.6$ ), with a Body Mass Index (BMI) ranging from 15.4 to 42.7 ( $M = 22.7$ ,  $SD = 3.9$ ).

### Measures

All measures in this study got translated from English scales, developed by previous researchers (see below), into German. To ensure the correct translation of the items, a back-translation process was used. During this process, all scales for UPACT, frequency of body envy, covert narcissism and WLD were translated from English into German and then back from German into English. All researchers involved in the translation process have been native German speakers with an English proficiency of C1. Appendix A provides a complete overview of the German questions used in this study.

#### *Upward Physical Appearance Comparison Tendency (UPACT)*

Upward social comparison tendency was operationalized in this study as the predictor variable upward physical appearance comparison tendency. To measure it, the Upward Physical Appearance Comparison Scale (UPACS) developed by O'Brien et al. (2009) was used and translated into German ( $\alpha = .907$ ,  $\Omega = .906$ ). The scale contained 10 items such as: "I find myself thinking about whether my own appearance compares well with models and movie stars" ("Ich ertappe mich dabei, wie ich darüber nachdenke, ob mein eigenes Aussehen

mit dem von Models und Filmstars vergleichbar ist.”). A five-point Likert Scale was used, spanning from ‘‘I don’t agree at all’’ (‘‘stimme überhaupt nicht zu’’) to ‘‘I totally agree’’ (‘‘stimme voll und ganz zu’’).

### ***Frequency of Body Envy***

The mediator variable of the model was measured with the Body Envy Frequency Scale ( $\alpha = .915$ ,  $\Omega = .917$ ). The scale has been self-constructed in English, based on contemporary theory of envy as presented by Smith and Kim (2007) and Rentzsch and Gross (2015), and was later translated into German. The measure consisted of 5 items with a five-point Likert Scale spanning from ‘‘strongly disagree’’ (‘‘stimme überhaupt nicht zu’’) to ‘‘strongly agree’’ (‘‘stimme voll und ganz zu’’). One example is: ‘‘It often annoys me when I see women who are slimmer and more toned than me’’ (‘‘Es nervt mich oft, wenn ich Frauen sehe, die schlanker und definierter sind als ich.’’).

### ***Covert Narcissism***

To operationalize the moderator variable, the Hypersensitive Narcissism Scale (HSNS) scale by Hendin and Cheek (1997) was used and translated into German ( $\alpha = .772$ ,  $\Omega = .772$ ). The scale consists of 10 items with a five-point Likert Scale, spanning from ‘‘very uncharacteristic or untrue, strongly disagree’’ (‘‘sehr uncharakteristisch oder nicht wahr’’) to ‘‘very characteristic or true, strongly agree’’ (‘‘sehr charakteristisch oder wahr’’). Items are for example: ‘‘I often interpret the remarks of others in a personal way.’’ (‘‘Ich interpretiere die Bemerkungen Anderer oft auf eine persönliche Art und Weise.’’).

### ***Weight-Loss Dieting (WLD)***

To operationalize the outcome variable, participants were asked to describe their eating behaviours for the past 6 months on the 9-item Dieting Intention Scale developed by Stice (1998). The scale was also translated from English into German. The answer options ranged on a 5-point Likert Scale from ‘‘never’’ (‘‘nie’’) to ‘‘always’’ (‘‘immer’’). The scale showed an internal reliability of  $\alpha = .908$  ( $\Omega = .909$ ). One example of an item is: ‘‘I sometimes

avoid eating in an attempt to control my weight.” (“Manchmal vermeide ich es zu essen, in einem Versuch mein Gewicht zu kontrollieren.”).

### ***Body Size***

To determine participants Body Mass Index, self-reported height and weight was used (see Table 1). Knowing that self-reported and actual measures might differ, the data were still considered useful since research revealed only a 1- 3% variation in indicated and actual height and weight (Bowman & DeLucia, 1992).

### **Procedure**

This study was conducted by Psychology Bachelor students - as part of a Bachelor thesis project at the University of Groningen. The study consisted of an online survey, and no compensation has been offered for completion. The study was approved by the Ethics Committee of the Department of Psychology at the University of Groningen, and ethical treatment of the participants was ensured. The participation was voluntary and anonymous. Before starting the initial data collection, a back-translation process was applied, where all items were translated into German and back into English. Further, a pilot study has been run, with  $n = 6$  participants from the social environment of the researchers that contributed to the adjustment of a few questions to ensure correct understanding of the items. Subsequently, a link and QR code were distributed through social media, for example, on Facebook groups and Instagram, and via snowball sampling. At the beginning of the online survey, participants had to give consent to the study, followed by some general questions: which gender they identify with (female, male, other), whether they study at a university (yes, no), whether they are a native German speaker (yes, no) and whether they had a history of an eating disorder (yes, no). After each of the first questions, participants who did not meet the requirements were directed to the end of the survey and saw a short “10 steps to a positive body image” guide. If all requirements were met, the participants continued with a few general questions about their age, height, and weight, followed by the UPAC scale and scales about Envy

frequency, Narcissism and Dieting frequency. The same guide to a positive body image got displayed following the completion of the questionnaire and the chance to leave a comment. The survey ended with a statement thanking the attendees for their participation.

### **Statistical Analysis**

The predicted moderated mediation model (see Figure 1) was tested in SPSS using the PROCESS macro (version 27) bootstrapping method, as suggested for model testing by Hayes (2018). This method proves to be robust against non-normality violations (Hayes, 2018). Specifically, bootstrapping offers a computer-based approach to avoid drawing unrealistic conclusions from the collected data by creating thousands of resamples of the original sample to ensure accurate distribution of the variables (Wright et al., 2011).

To analyse the predicted moderated mediation model, a piecemeal approach was applied (Muller et al., 2005) that examined the mediation pathway (model 4 by Hayes (2018)) and moderation pathway (model 1 by Hayes (2018)) first independently. To estimate all parameters at once, model 7 for moderated mediation analyses got applied (Hayes, 2018). The mediation, moderation, and moderated mediation effects were determined using the default of 5000 bootstrap samples with a 95% confidence interval. The performed analyses resulted in an index for the proposed moderated mediation. Statistics for the indirect effect and different levels of the moderator variable (i.e.,  $-1SD$ , Mean,  $+1SD$ ) were also provided. Controlling for BMI as a covariate, the model included UPACT as an independent-, body envy as a mediator-, narcissism as a moderator-, and WLD as a dependent variable.

## **Results**

### **Preliminary Analysis**

First, multivariate outliers, defined as cases with an  $SD$  higher than  $\pm 3$ , were identified using a case wise diagnostic (Wiggins, 2000). While controlling for BMI, SPSS suggest one case as an outlier. However, after calculating the Cook's distance, it was

concluded to keep this case since it was, with  $D_i = 0.22$ , not exceeding the suggested threshold for influential cases of  $D_i \leq 1$  (Cook & Weisberg, 1982).

### **Assumption Checks**

The bootstrapping method was used to analyse the proposed moderated mediation model. This method was shown to be robust against non-normality violations (Hayes, 2018). To control for possible violations of heteroscedasticity, the Huber White (HCO) Test was used (Hayes & Cai, 2007). Homoscedasticity and linearity were checked by making a residual plot, and no major violation were found (see Appendix B for Figure B1). The Durbin-Watson statistic was applied to assess the independence of errors, considered relevant in linear regression models. Since it was under 2.0 (see Appendix B for Table B1), the independence of errors has been proven (Schreiber-Gregory et al., 2018). And lastly, multicollinearity was tested, which occurs when the variables in a linear regression model highly correlate with each other (Shrestha, 2020). The Variance Inflation Factor (VIF) for every predictor variable was calculated in SPSS (see Appendix B for Table B2). Since all values were between  $1 < VIF < 5$ , only moderate correlation was present, indicating no multicollinearity between the predictors (Shrestha, 2020).

### **Statistical Analysis**

A piecemeal approach was used to assess whether moderated mediation occurred (Muller et al., 2005). Following this approach, the predicted indirect effects and moderation pathways are first analysed independently using model 4 and model 1, respectively. Subsequently, the overall results of the moderated mediation are interpreted using model 7, which estimates all parameters concurrently (Hayes, 2018). For Pearson's correlations and descriptive analyses of the measured variables, see Table 1 below.

**Table 1***Pearson Correlations, Means, and Standard Deviations of the Measured Variables*

	1	2	3	4	5
1. WLD <sup>1</sup>	-				
2. UPACT <sup>2</sup>	.48**	-			
3. Body Envy <sup>3</sup>	.58**	.74**	-		
4. Narcissism <sup>4</sup>	.25**	.31**	.44**	-	
5. BMI <sup>5</sup>	.26**	.08	.25**	.10	-
Mean	18.7	36.0	16.4	28.3	22.7
SD <sup>6</sup>	7.6	7.9	6.3	6.2	3.9

*Note.* Presented are unstandardized correlation coefficients for each variable.

<sup>1</sup>WLD: weight-loss dieting; <sup>2</sup>UPACT: upward physical appearance comparison tendency;

<sup>3</sup>Body Envy: frequency of body envy; <sup>4</sup>Narcissism: covert narcissism; <sup>5</sup>BMI: Body Mass

Index; <sup>6</sup>SD: standard deviation

\*\*  $p < .01$ .

### Mediation Analysis

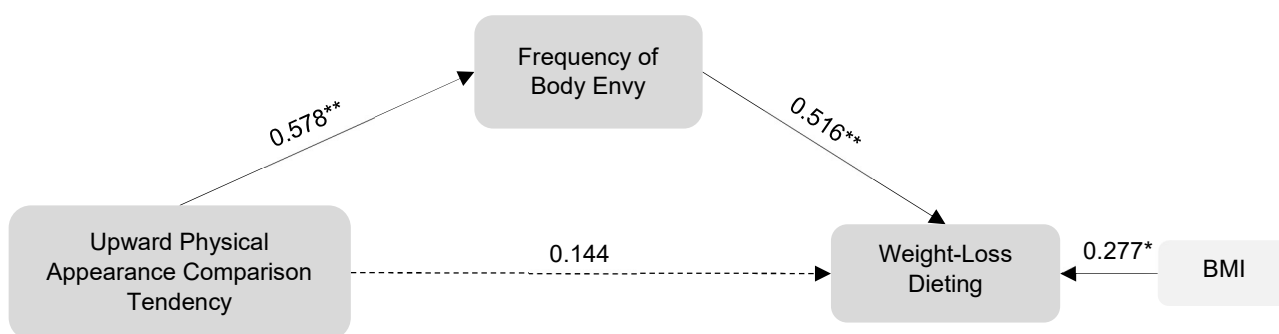
Applying Hayes (2018) model 4, first the predicted indirect effect was examined following the piecemeal approach (Muller et al., 2005) to determine whether upward physical appearance comparison tendency indirectly affects weight-loss dieting through body envy, while controlling for Body Mass Index (BMI). In line with the prediction, an overall significant mediation model was found ( $F(3, 235) = 50.13, p < .001$ ), whereby 35% of the variance in WLD was explained by UPACT and envy (see Figure 2). More significant direct effects were found for UPACT on body envy ( $B = 0.578, SE = 0.032, 95\% CI [0.515, 0.640], p < .001$ ), for body envy on WLD ( $B = 0.516, SE = 0.106, 95\% CI [0.307, 0.725], p <$

.001), and for BMI on WLD ( $B = 0.277$ ,  $SE = 0.129$ , 95%  $CI [0.022, 0.532]$ ,  $p = .03$ ).

Although no direct effect was found for UPACT on WLD, the indirect effect was significant ( $B = 0.298$ ,  $SE = 0.064$ , 95%  $CI [0.175, 0.427]$ ).

## Figure 2

### Mediation Pathway



*Note.*  $N = 239$ . Envy is mediating the relationship between UPACT and WLD while controlling for Body Mass Index (BMI). Indicated are the beta coefficients of the variable's relationships.

\* $p < 0.05$ , \*\* $p < 0.001$

## Moderation Analysis

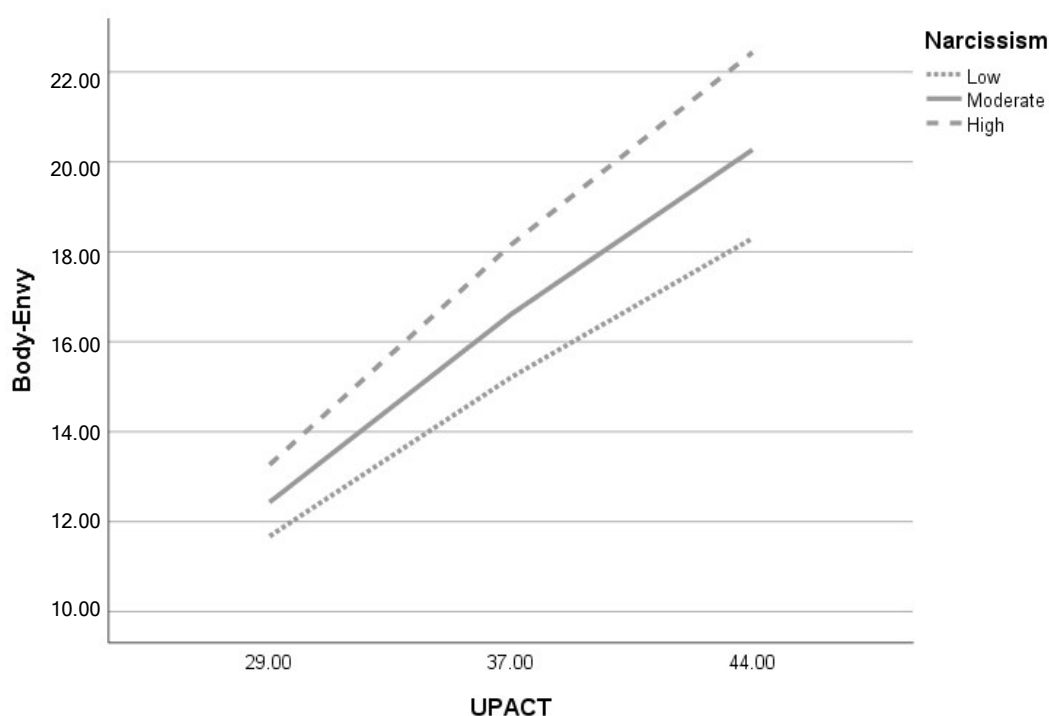
Following the piecemeal approach (Muller et al., 2005) the second step of the analysis examined whether covert narcissism moderates the relationship of UPACT on the frequency of body envy, while controlling for BMI. After applying Hayes (2018) model 1, a significant moderation model was found ( $F(4, 234) = 135.60$ ,  $p < .001$ ), with 64% of the variance explained by the predictors. The results indicated only one significant main effect, one for BMI ( $B = 0.284$ ,  $SE = 0.075$ ,  $t(238) = 3.77$ ,  $p < .001$ ). Furthermore, there was a significant interaction effect of UPACT and narcissism ( $B = 0.014$ ,  $SE = 0.005$ ,  $t(238) = 2.87$ ,  $p = 0.004$ ). As predicted, and as visualized in Figure 3, the relationship between UPACT and body envy significantly increased by increasing levels of covert narcissism, from low ( $-1SD$ ;  $B = 0.442$ ,



$SE = 0.040, p < .001$ ) to moderate ( $Mean; B = 0.523, SE = 0.031, p < .001$ ) to high ( $+1SD; B = 0.612, SE = 0.045, p < .001$ ).

**Figure 3**

*Moderation Effect*



*Note.* Visualized is the interaction between upward physical appearance comparison tendency (UPACT) and low, average, and high levels of covert narcissism on their relationship with body envy. The graph presents the values in unstandardized data. Body Mass Index was the control variable.

**Moderated Mediation Analysis**

In the final step, the predicted moderated mediation was analysed through Hayes's (2018) model 7. As explained by Hayes (2015) the index of the moderated mediation, is depicted by the slope of the line that illustrates the relationship between covert narcissism, the moderator variable, and the indirect effect. A significant overall model was found ( $B = 0.007,$

$SE = 0.003$ , 95%  $CI [0.002, 0.013]$ ). Confirming the hypotheses, it can be consequently said that the frequency of body envy mediates the association between upward physical appearance comparison tendency and weight-loss dieting across increasing levels of covert narcissism. A closer examination of the moderated mediation revealed, that the conditional indirect effect of UPACT on WLD through body envy was significant at increasing levels of covert narcissism, from low ( $-1SD$ ;  $B = 0.228$ ,  $SE = 0.051$ , 95%  $CI [0.135, 0.332]$ ) to moderate ( $Mean$ ;  $B = 0.270$ ,  $SE = 0.058$ , 95%  $CI [0.162, 0.386]$ ) to high ( $+1SD$ ;  $B = 0.315$ ,  $SE = 0.070$ , 95%  $CI [0.185, 0.459]$ ).

### Discussion

Expanding on research about women's body image concerns and social comparison theory (Buunk & Gibbons, 2000; O'Brien et al., 2009), this study predicted that body envy will mediate the relationship between upward physical appearance comparison tendency and weight-loss dieting, in a sample of female college students. In line with the literature (Arnocky et al., 2016; Buunk & Gibbons, 2000) body envy was expected to arise in upward social comparisons due to a detected discrepancy between current and ideal self, which motivates women to weight-loss dieting. Moreover, it was hypothesized that covert narcissism would moderate this mediation pathway, such that with increasing covert narcissism, the effect of UPACT on body envy would increase as well. Consistent with previous research (Krizan & Johar, 2012) covert narcissism was predicted to be a moderator since these women were shown to compare more often but their self-esteem seemed to be more easily threatened by thinner women, increasing the frequency of envy. Additionally, these effects were expected to occur over-and-above the influence of Body Mass Index (BMI). It can be concluded that the results of the research support all predictions.

The significant moderated-mediation model in this study is consistent with contemporary research since socio-cultural theories within the body image domain explain that women are highly affected by cultural body ideals (O'Brien et al., 2009). Especially

considering that the thin ideal present in western society can serve as an unachievable standard to which many women compare (Culbert et al., 2015). Following this, the significant finding that upward social comparison relates to weight-loss dieting is in line with previous research (Culbert et al., 2015), explaining that frequent comparisons with the thin ideal can increase the social pressure on a woman to look like that ideal. A way to achieve that for many women might be weight loss through dieting (Culbert et al., 2015). In addition, the tendency to compare upwards to these thinner ideals can lead women to noticing a discrepancy between their current physical appearance and the cultural body ideal, resulting in negative feelings such as envy (Rentzsch & Gross, 2015). The finding that body envy can mediate the link between upward social comparisons and body-improving strategies, as dieting, is also in line with earlier findings, as research by, for example, Arnocky et al. (2016) demonstrates. Lastly, these effects seem to occur more often in some women than others, which further corresponds with research suggesting that personality traits such as narcissism can moderate dieting behaviour in women (Jin et al., 2018). This is especially of interest since the form of narcissism considered in this study, covert (vulnerable) narcissism, has also been linked to a higher tendency to compare upwards and to more envious behaviour (Krizan & Johar, 2012). As the literature suggested, particularly the traits of this vulnerable narcissistic personality characterize individuals who engage in risky compensatory strategies, like weight-loss dieting, in response to upward social comparisons (Killen et al., 1996).

Looking at the broader picture, it appears that women high on upward physical appearance comparison and covert narcissism seem particularly likely to experience frequent episodes of body envy and as result engage in more frequent weight-loss dieting. Women high on covert narcissism are characterized by a very fragile and low self-esteem that makes them worry a lot about their personal body image, making them more vulnerable to the threats perceived by the unattainability of the thin ideal (Jin et al., 2018). Specifically, women high on the vulnerable type of narcissism appear to be exceptionally susceptible to the influences

of the thin body ideal because of their repeated comparing with other women in order to regulate their self-esteem (Jin et al., 2018). More so, these women tend to react in a more envious manner to upward comparisons and, therefore, feel more frequently the need for body improvement strategies, like weight-loss dieting (Krizan & Johar, 2012).

Adding to the literature, the finding that body envy can be a potent motivator for weight-loss dieting in young women can be considered of therapeutic importance since it demonstrates that emotions, and not mere body dissatisfaction, can affect dieting behaviour. By finding that UPACT has an interaction effect with covert narcissism, this study not only shows that individual differences, such as personality, might play a crucial role in social comparisons but also that UPACT does not directly affect weight-loss dieting but rather through emotions like body envy and personality differences. Lastly, the fact that results occurred beyond the influence of BMI, asserts the position that the thin ideal in our society is pervasive to the point that every woman, regardless of her body size, can feel the need to improve her body through dieting. Therefore, it could be of therapeutic importance to identify women who score high on upward physical appearance comparison tendency and covert narcissism and to develop intervention strategies that primarily target these personality types at risk.

### **Practical Implication**

To discourage women from engaging in risky compensatory strategies such as WLD, it can be helpful to target the relationship women have with their own bodies (Tylka & Wood-Barcalow, 2015). Because, whereas upward comparisons and feelings of envy could be considered an adaptive evolutionary strategy to ensure reproduction in the past, in modern times, these behaviours can have fatal consequences. Today, the cultural images women compare themselves to offer an unrealistic ideal of what is considered attractive in society, making it impossible to achieve (Arnocky et al., 2016). Perhaps by educating already young women in media literacy interventions about the unattainability of the thin ideal and the

unrealistic bodies pictured by the media, the negative effects of the comparisons to this ideal could be at least partially reduced (Jeong et al., 2012). Additionally, self-compassion interventions can be offered that support women in establishing a body image that is characterised by appreciation and respect for their own bodies (Tylka & Wood-Barcalow, 2015). Promoting a positive body image could specifically help women that are high in covert narcissism since research showed that many of these women show lower satisfaction with their bodies because of their low self-esteem and constant worry over their body image (Jin et al., 2018). This finds support in previous research which showed that women with a positive body image were less likely to be negatively affected by sociocultural influences promoting weight-loss strategies, probably because they can remind themselves more easily of their bodies' positive aspects (Tylka & Wood-Barcalow, 2015). Offering a combination of self-compassion with media literacy interventions could possibly decrease the envy that results out of unrealistic social comparisons, reducing women's perceived need for weight-loss dieting.

### **Limitations and Recommendations for Future Research**

Nevertheless, the findings have to be taken while considering a few limitations. The first limitation of this study has been the mere focus on gathering correlational data, as these designs make it impossible to draw conclusions about the directionality of the relationships between the variables (Cole & Maxwell, 2003). Therefore, the cross-sectional design of this study does not offer conclusions about possible causal relationships, which, however, could be a good starting point for future research, for example, by developing experiments. Secondly, this study was conducted in a highly western culture which hinders generalizability to non-western countries. The reason is that previous research suggested that the sociocultural influences on women and their compensatory strategies can differ across cultures (Ata et al., 2015). In order to explore whether this relationship would hold beyond the influence of western body ideals, future research could focus on generating data from other populations of interest. Similarly, the focus on college women can limit the generalizability of the findings to

the whole age-range present in society. Even though this study focused on a population at risk - college women seem to be particularly likely to engage in compensatory strategies like weight-loss dieting (Malinauskas et al., 2006) - it cannot rule out whether the link between UPACT and body envy could change with increasing age (Arnocky et al., 2016). Further, this study intended to measure the pain experienced by envy. However, considering that the measured body envy resulted for many women in increased WLD, the resulting action tendency for upward improvement could be understood as benign envy (Crusius et al., 2020). Whereas this form of envy results in an inclination to level up, the second form, malicious envy, is more characterized by animosity against superior women and the tendency to level others down (Crusius et al., 2020). Both behaviours stem from upward comparisons and in response to feelings of inferiority. However, since the latter consists of rather derogating behaviours against other women instead of improving one's own body, it might be interesting to explore whether malicious envy could act as a possible buffer against WLD.

## **Conclusion**

Findings of the present study point to body envy, as a potent mediator in the relationship between upward physical appearance comparison tendency and weight-loss dieting. This relationship is exacerbated by covert narcissism, with women high on this personality trait appearing to engage in more upward physical appearance comparisons, resulting in more frequent experiences of body envy. The influences on weight-loss dieting persisted over-and-above Body Mass Index, which indicates that the thin ideal in our society is so pervasive but at the same time so far out of reach and unrealistic that every woman, regardless of her body size, can feel the need to improve her body. Such being the case, it is highly important to target women of a variety of body sizes, but with a high tendency to upward physical appearance comparisons and high scores on covert narcissism, to reduce risky compensatory strategies like weight-loss dieting and with it reduce the chance for the development of eating disorders in the future.

## References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders IV: American Psychiatric Association* (5th ed.).  
<https://doi.org/10.1176/appi.books.9780890425596>
- Arnocky, S., Perilloux, C., Cloud, J. M., Bird, B. M., & Thomas, K. (2016). Envy Mediates the Link Between Social Comparison and Appearance Enhancement in Women. *Evolutionary Psychological Science*, 2(2), 71–83. <https://doi.org/10.1007/s40806-015-0037-1>
- Ata, R. N., Schaefer, L. M., & Thompson, J. K. (2015). Sociocultural Theories of Eating Disorders. In L. Smolak & M. P. Levine (Eds.), *The Wiley handbook of eating disorders* (pp. 269–282). John Wiley & Sons.  
<https://doi.org/10.1002/9781118574089.ch21>
- Bowman, R. L., & DeLucia, J. L. (1992). Accuracy of self-reported weight: A meta-analysis. *Behavior Therapy*, 23(4), 637-655. [https://doi.org/10.1016/S0005-7894\(05\)80226-6](https://doi.org/10.1016/S0005-7894(05)80226-6)
- Buunk, B. P., & Gibbons, F. X. (2000). Toward an Enlightenment in Social Comparison Theory. In J. Suls & L. Wheeler (Eds.), *Handbook of Social Comparison: Theory and Research* (pp. 487–499). Springer US. [https://doi.org/10.1007/978-1-4615-4237-7\\_22](https://doi.org/10.1007/978-1-4615-4237-7_22)
- Cole, D. A., & Maxwell, S. E. (2003). Testing Mediational Models With Longitudinal Data: Questions and Tips in the Use of Structural Equation Modeling. *Journal of Abnormal Psychology*, 112(4), 558–577. <https://doi.org/10.1037/0021-843X.112.4.558>
- Cook, R. D., & Weisberg, S. (1982). Criticism and Influence Analysis in Regression. *Sociological Methodology*, 13, 313. <https://doi.org/10.2307/270724>
- Crusius, J., Gonzalez, M. F., Lange, J., & Cohen-Charash, Y. (2020). Envy: An Adversarial Review and Comparison of Two Competing Views. *Emotion Review*, 12(1), 3–21.  
<https://doi.org/10.1177/1754073919873131>

- Culbert, K. M., Racine, S. E., & Klump, K. L. (2015). Research Review: What we have learned about the causes of eating disorders - a synthesis of sociocultural, psychological, and biological research. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *56*(11), 1141–1164. <https://doi.org/10.1111/jcpp.12441>
- Dalley, S. E., Vidal, J., Buunk, A. P., Schmitt, S., Haugwitz, A.-C. von, Kinds, N. A., & Vlasma, A. (2019). Disentangling relations between the desirability of the thin-ideal, body checking, and worry on college women's weight-loss dieting: A self-regulation perspective. *Eating Behaviors*, *34*, 101312. <https://doi.org/10.1016/j.eatbeh.2019.101312>
- DelPriore, D. J., Hill, S. E., & Buss, D. M. (2012). Envy: functional specificity and sex-differentiated design features. *Personality and Individual Differences*, *53*(3), 317–322. <https://doi.org/10.1016/j.paid.2012>.
- Diel, K., Grelle, S., & Hofmann, W. (2021). A motivational framework of social comparison. *Journal of Personality and Social Psychology*, *120*(6), 1415–1430. <https://doi.org/10.1037/pspa0000204>
- Eating Disorder Coalition. (2016). *Facts About Eating Disorders: What The Research Shows*. The Eating Disorder Coalition for Research, Policy & Action. [http://eatingdisorderscoalition.org.s208556.gridserver.com/couch/uploads/file/fact-sheet\\_2016.pdf](http://eatingdisorderscoalition.org.s208556.gridserver.com/couch/uploads/file/fact-sheet_2016.pdf)
- Festinger, L. (1954). A Theory of Social Comparison Processes. *Human Relations*, *7*(2), 117–140. <https://doi.org/10.1177/001872675400700202>
- Fitzsimmons-Craft, E. E. (2011). Social psychological theories of disordered eating in college women: Review and integration. *Clinical Psychology Review*, *31*(7), 1224–1237. <https://doi.org/10.1016/j.cpr.2011.07.011>



- Gibbons, F. X., & Buunk, B. P. (1999). Individual differences in social comparison: Development of a scale of social comparison orientation. *Journal of Personality and Social Psychology*, *76*(1), 129–142. <https://doi.org/10.1037/0022-3514.76.1.129>
- Golden, N. H., Schneider, M., & Wood, C. (2016). Preventing Obesity and Eating Disorders in Adolescents. *Pediatrics*, *138*(3). <https://doi.org/10.1542/peds.2016-1649>
- Halliwell, E., & Harvey, M. (2006). Examination of a sociocultural model of disordered eating among male and female adolescents. *British Journal of Health Psychology*, *11*(Pt 2), 235–248. <https://doi.org/10.1348/135910705X39214>
- Hayes, A. F. (2015). An Index and Test of Linear Moderated Mediation. *Multivariate Behavioral Research*, *50*(1), 1–22. <https://doi.org/10.1080/00273171.2014.962683>
- Hayes, A. F. (2018). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. (Vol. 51). Guilford Publications.
- Hayes, A. F., & Cai, L. (2007). Using heteroskedasticity-consistent standard error estimators in ols regression: an introduction and software implementation. *Behavior Research Methods*. *Behavior Research Methods*, *39*(4), 709–722. <https://doi.org/10.3758/BF03192961>
- Hendin, H. M., & Cheek, J. M. (1997). Assessing Hypersensitive Narcissism: A Reexamination of Murray's Narcism Scale. *Journal of Research in Personality*, *31*(4), 588–599. <https://doi.org/10.1006/jrpe.1997.2204>
- Jeong, S.-H., Cho, H., & Hwang, Y. (2012). Media Literacy Interventions: A Meta-Analytic Review. *The Journal of Communication*, *62*(3), 454–472. <https://doi.org/10.1111/j.1460-2466.2012.01643.x>
- Jin, S. V., Ryu, E., & Muqaddam, A. (2018). Dieting 2.0! Moderating effects of Instagrammers' body image and Instafame on other Instagrammers' dieting intention. *Computers in Human Behaviour*, *87*, 224–237. <https://doi.org/10.1016/j.chb.2018.06.001>

- Keel, P. K., & Forney, K. J. (2013). Psychosocial risk factors for eating disorders. *The International Journal of Eating Disorders, 46*(5), 433–439.  
<https://doi.org/10.1002/eat.22094>
- Killen, J. D., Taylor, C. B., Hayward, C., Haydel, K. F., Wilson, D. M., Hammer, L., Kraemer, H., Blair-Greiner, A., & Strachowski, D. (1996). Weight concerns influence the development of eating disorders: A 4-year prospective study. *Journal of Consulting and Clinical Psychology, 64*(5), 936–940. <https://doi.org/10.1037//0022-006x.64.5.936>
- Krizan, Z., & Johar, O. (2012). Envy divides the two faces of narcissism. *Journal of Personality, 80*(5), 1415–1451. <https://doi.org/10.1111/j.1467-6494.2012.00767.x>
- Malinauskas, B. M., Raedeke, T. D., Aeby, V. G., Smith, J. L., & Dallas, M. B. (2006). Dieting practices, weight perceptions, and body composition: A comparison of normal weight, overweight, and obese college females. *Nutrition Journal, 5*, 11.  
<https://doi.org/10.1186/1475-2891-5-11>
- Morrison, T. G., Kalin, R., & Morrison, M. A. (2004). Body-Image Evaluation and Body-Image Investment Among Adolescents: A test of Sociocultural and Social Comparison Theories. *Adolescence, 39*(155), 571–592.
- Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology, 89*(6), 852–863. <https://doi.org/10.1037/0022-3514.89.6.852>
- O'Brien, K. S., Caputi, P., Minto, R., Peoples, G., Hooper, C., Kell, S., & Sawley, E. (2009). Upward and downward physical appearance comparisons: Development of scales and examination of predictive qualities. *Body Image, 6*(3), 201–206.  
<https://doi.org/10.1016/j.bodyim.2009.03.003>

- Rentzsch, K., & Gross, J. J. (2015). Who Turns Green with Envy? Conceptual and Empirical Perspectives on Dispositional Envy. *European Journal of Personality, 29*(5), 530–547. <https://doi.org/10.1002/per.2012>
- Schreiber-Gregory, D., Jackson, H. M., & Bader, K. (2018). Logistic and Linear Regression Assumptions: Violation Recognition and Control. [https://analytics.ncsu.edu/sesug/2018/SESUG2018\\_Paper-247\\_Final\\_PDF.pdf](https://analytics.ncsu.edu/sesug/2018/SESUG2018_Paper-247_Final_PDF.pdf)
- Serdula, M. K., Williamson, D. F., Anda, R. F., Levy, A., Heaton, A., & Byers, T. (1994). Weight control practices in adults: Results of a multistate telephone survey. *American Journal of Public Health, 84*(11), 1821–1824. <https://doi.org/10.2105/AJPH.84.11.1821>
- Shrestha, N. (2020). Detecting Multicollinearity in Regression Analysis. *American Journal of Applied Mathematics and Statistics, 8*(2), 39–42. <https://doi.org/10.12691/ajams-8-2-1>
- Smith, R. H., & Kim, S. H. (2007). Comprehending envy. *Psychological Bulletin, 133*(1), 46–64. <https://doi.org/10.1037/0033-2909.133.1.46>
- Stice, E. (1998). Relations of restraint and negative affect to bulimic pathology: a longitudinal test of three competing models. *International Journal of Eating Disorders, 23*(3), 243–260. [https://doi.org/10.1002/\(sici\)1098-108x\(199804\)23:3<243::aid-eat2>3.0.co;2-j](https://doi.org/10.1002/(sici)1098-108x(199804)23:3<243::aid-eat2>3.0.co;2-j)
- Stice, E. (2002). Risk and maintenance factors for eating pathology: A meta-analytic review. *Psychological Bulletin, 128*(5), 825–848. <https://doi.org/10.1037//0033-2909.128.5.825>
- Thompson, J. K., Heinberg, L. J., Altabe, M., & Tantleff-Dunn, S. (1999). *Exacting beauty: Theory, assessment, and treatment of body image disturbance*. American Psychological Association.

Tylka, T. L., & Wood-Barcalow, N. L. (2015). What is and what is not positive body image?

Conceptual foundations and construct definition. *Body Image, 14*, 118–129.

<https://doi.org/10.1016/j.bodyim.2015.04.001>

Wiggins, B. C. (2000). *Detecting and Dealing with Outliers in Univariate and Multivariate*

*Contexts*. Educational Resources Information Center (ERIC).

Wright, D. B., London, K., & Field, A. P. (2011). Using Bootstrap Estimation and the Plug-in

Principle for Clinical Psychology Data. *Journal of Experimental Psychopathology,*

*2*(2), 252–270. <https://doi.org/10.5127/jep.013611>

## Appendix A

### Measures of the Variables

This appendix consists of all scales and corresponding items used within this study. That also applies to example questions mentioned in the method section of this thesis.

#### Upward Physical Appearance 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 and 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 and 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 and 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 and 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 and 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 and 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 and 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 and 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

### **Covert Narcissism**

---

Ich bin ungern in einer Gruppe, außer ich weiß, dass mich mindestens einer der Anwesenden schätzt.

- sehr uncharakteristisch oder nicht wahr
- uncharakteristisch
- neutral
- charakteristisch
- sehr charakteristisch oder wahr

Ich interpretiere die Bemerkungen Anderer oft auf eine persönliche Art und Weise.

- sehr uncharakteristisch oder nicht wahr
- uncharakteristisch
- neutral
- charakteristisch
- sehr charakteristisch

Ich habe schon genug mit mir selbst zu tun, ohne auch noch über die Probleme Anderer nachzudenken.

- sehr uncharakteristisch oder nicht wahr
- uncharakteristisch
- neutral
- charakteristisch
- sehr charakteristisch oder wahr

Insgeheim bin ich verärgert oder genervt, wenn andere Leute mit ihren Problemen zu mir kommen und mich um meine Zeit und um mein Verständnis bitten.

- sehr uncharakteristisch oder nicht wahr
- uncharakteristisch
- neutral

- charakteristisch
- sehr charakteristisch oder wahr

Ich bin schnell ganz und gar in meine eigenen Interessen verwickelt und vergesse dabei die Existenz Anderer.

- sehr uncharakteristisch oder nicht wahr
- uncharakteristisch
- neutral
- charakteristisch
- sehr charakteristisch oder wahr

Ich habe das Gefühl, dass sich mein Temperament, von dem der Meisten unterscheidet.

- sehr uncharakteristisch oder nicht wahr
- uncharakteristisch
- neutral
- charakteristisch
- sehr charakteristisch

Ich mag es nicht, die Anerkennung für eine Leistung mit anderen zu teilen.

- sehr uncharakteristisch oder nicht wahr
- uncharakteristisch
- neutral
- charakteristisch
- sehr charakteristisch oder wahr

Wenn ich einen Raum betrete, werde ich oft unsicher und habe das Gefühl, dass die Augen der Anderen auf mich gerichtet sind.

- sehr uncharakteristisch oder nicht wahr
- uncharakteristisch
- neutral
- charakteristisch
- sehr charakteristisch oder wahr

Meine Gefühle werden leicht durch Spott oder kränkende Bemerkungen Anderer verletzt.

- sehr uncharakteristisch oder nicht wahr
- uncharakteristisch
- neutral
- charakteristisch
- sehr charakteristisch oder wahr

Ich kann komplett in Gedanken über meine persönlichen Angelegenheiten, meine Gesundheit, meine Sorgen und meine Beziehungen zu anderen versinken.

- sehr uncharakteristisch oder nicht wahr
- uncharakteristisch
- neutral
- charakteristisch
- sehr charakteristisch oder wahr

### **Weight-Loss Dieting**

---

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

### **10 Steps to a Positive Body Image**

---

1) Schätzen Sie, was ihr Körper alles tun kann. Jeden Tag bringt ihr Körper Sie ihren Träumen näher. Feiern Sie all die tollen Dinge, die ihr Körper für sie tut – laufen, tanzen, atmen, lachen, träumen, etc.

2) Erstellen Sie eine Top-10 Liste der Dinge, die Sie über sich selbst mögen – Dinge, die nicht darauf bezogen sind, wie viel Sie wiegen oder wie Sie aussehen. Lesen Sie diese Liste oft. Ergänzen Sie die Liste, wenn ihnen mehr Dinge einfallen, die Sie über sich mögen.

3) Erinnern Sie sich daran, dass wahre Schönheit nicht nur aus dem Äußeren besteht. Wenn Sie sich mit sich selbst und dem, was Sie sind, wohlfühlen, tragen Sie sich mit einem Gefühl von Selbstbewusstsein, Selbstakzeptanz und Offenheit, dass Sie schön macht, unabhängig davon, ob Sie körperlich wie ein Supermodel aussehen.

4) Betrachten Sie sich als ganze Person. Wenn Sie sich im Spiegel oder in Gedanken sehen, konzentrieren Sie sich nicht auf bestimmte Körperteile. sehen Sie sich so, wie Sie von anderen gesehen werden wollen - als ganze Person.

5) Umgeben Sie sich mit positiven Menschen. Es ist einfacher, sich mit sich selbst und seinem Körper wohlzufühlen, wenn Sie sich mit anderen umgeben, die Sie unterstützen und die erkennen, wie wichtig es ist, sich selbst so zu mögen, wie Sie von Natur aus sind.

6) Schalten Sie die Stimmen in Ihrem Kopf ab, die Ihnen sagen, dass Ihr Körper nicht in Ordnung ist oder dass Sie ein schlechter Mensch sind. Sie können diese negativen Gedanken mit positiven überwältigen. Wenn Sie das nächste Mal anfangen, sich selbst zu kritisieren, bauen Sie sich mit ein paar schnellen Bestätigungen wieder auf, die für Sie funktionieren.

7) Tragen Sie Kleidung, die bequem ist und in der Sie sich wohlfühlen. Arbeiten Sie mit Ihrem Körper, nicht gegen ihn.

8) Werden Sie zu einem kritischen Betrachter von sozialen und medialen Botschaften. Achten Sie auf Bilder, Slogans oder Einstellungen, die Ihnen ein schlechtes Gefühl in Bezug auf sich selbst oder Ihren Körper geben. Protestieren Sie gegen diese Botschaften: Schreiben Sie einen Brief an den Werbetreibenden oder antworten Sie auf das Bild oder die Botschaft.

9) Tun Sie etwas Schönes für sich - etwas, das Ihrem Körper zeigt, dass Sie ihn zu schätzen wissen. Nehmen Sie ein Schaumbad, nehmen Sie sich Zeit für ein Nickerchen, suchen Sie sich einen ruhigen Platz im Freien, um zu entspannen.

10) Nutzen Sie die Zeit und Energie, die Sie vielleicht damit verbracht haben, sich über Essen, Kalorien und Ihr Gewicht Gedanken zu machen, um etwas zu tun, um anderen zu helfen. Manchmal kann das Eingehen auf andere Menschen dazu beitragen, dass Sie sich selbst besser fühlen und eine positive Veränderung in unserer Welt bewirken.

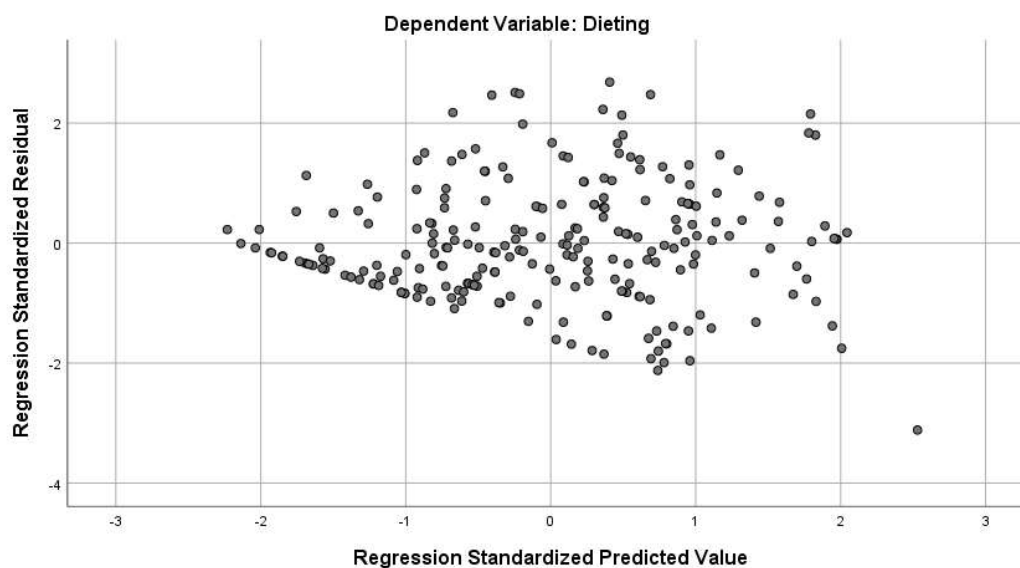
## Appendix B

### Additional Statistical Tables and Figures

This appendix consists of the remaining tables and figures used during the statistical analyses, as mentioned in the preceding text.

#### Figure B1

##### *Homoscedasticity Assumption Check*



*Note.*  $N = 239$ . Depicted is the Residual Plot created in SPSS for the outcome variable weight-loss dieting to check for violations of linearity and homoscedasticity.

#### Table B1

##### *Linear Regression Assumption Check*

Model <sup>1,2</sup>	R	R <sup>2</sup>	Durbin-Watson
1	.60	.36	1.926

*Note.*  $N = 239$ . SPSS Output for the linear regression analysis with the Durbin-Watson test, checking for the independence of errors.

<sup>1</sup> Predictors: upward physical appearance comparison tendency, body envy, covert narcissism, and Body Mass Index; <sup>2</sup> Outcome variable: weight-loss dieting.

**Table B2***Variance Inflation Factor (VIF)*

	Tolerance	VIF
UPACT <sup>1</sup>	.44	2.26
Narcissism <sup>2</sup>	.80	1.25
Envy <sup>3</sup>	.37	2.68
BMI <sup>4</sup>	.92	1.09

*Note.* Output for the collinearity statistics of the predictor variables, to assess whether or not multicollinearity occurred. Weight-loss dieting was included as the outcome variable.

<sup>1</sup> UPACT: upward physical appearance comparison tendency; <sup>2</sup> Narcissism: covert narcissism;

<sup>3</sup> Envy: frequency of body envy; <sup>4</sup> BMI: Body Mass Index.