Examining Mediators of the Relation Between Self-Concept Clarity and Body Dissatisfaction and Disordered Eating

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Abstract

Self-concept clarity, appearance contingent self-worth, and appearance-related social comparison have been shown to be correlated with body dissatisfaction and disordered eating. In the current study, we examine associations between these constructs and test four mediation models for appearance contingent self-worth and appearance-related social comparison as mediators of the relationship between self-concept clarity and body dissatisfaction and disordered eating. Using two waves of data collection, undergraduate females (N = 441 at Time 1; N = 237 at Time 2) completed online surveys of the study’s core constructs at points separated by approximately 14 months. Aligned with our hypotheses, we found significant correlations between self-concept clarity, appearance contingent self-worth, and appearance-related social comparison and eating disorder symptoms. Mediation analyses indicated that appearance contingent self-worth partially mediated the relationship between self-concept clarity and both body dissatisfaction and disordered eating. Additionally, appearance-related social comparison partially mediated the relationship between self-concept clarity and body dissatisfaction and fully mediated the relationship between self-concept clarity and disordered eating. Future research should examine if these findings extend to broader demographic groups. Future work could also extend the present models to test relationship contingent self-worth and other areas of social comparison, such as eating and exercise comparisons as mediators. Clinical implications include the potential for disordered eating interventions targeting a decrease in appearance contingent self-worth or appearance-related social comparisons.

Keywords: appearance contingent self-worth, appearance-related social comparison, body dissatisfaction, disordered eating, mediation, self-concept clarity
Examining Mediators of the Relation Between Self-Concept Clarity and Body Dissatisfaction and Disordered Eating

In the United States, 9% of the population—approximately 28.8 million people—will suffer from an eating disorder in their lifetime (National Association of Anorexia Nervosa and Associated Disorders, 2021). A common eating disorder, anorexia nervosa, is second only to opioid overdose as the deadliest mental illness, cited as the direct cause of 10,200 American deaths per year—one death every 52 minutes (National Association of Anorexia Nervosa and Associated Disorders, 2021). Among the eating disorders included in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) are anorexia nervosa, bulimia nervosa, binge eating disorder, and other specified eating or feeding disorders. Across these eating disorder diagnoses is a tendency toward overvaluation of the self based on weight or shape, motivating the individual to seek to change or control aspects of oneself (American Psychiatric Association, 2013). The present study focuses on constructs related to evaluations of the self more broadly and eating disorder pathology. In particular, we examine self-concept clarity in relation to body dissatisfaction and disordered eating, testing pathways involving other self-related constructs (appearance contingent self-worth and appearance-related social comparison) as putative mediators.

Overview of Eating Disorders

Anorexia nervosa (AN) is characterized by restricted energy intake that results in significantly low body weight, fear and avoidance of weight gain—often in the form of food restriction and excessive exercise—despite already low weight, and often a severe disturbance in perception of one’s own body (American Psychiatric Association, 2013). Bulimia nervosa (BN) is characterized by recurrent episodes of binge eating (consumption of objectively large amounts
of food within a discrete period, accompanied by feelings of lack of control) and recurring inappropriate compensatory behaviors directed at preventing weight gain (such as self-induced vomiting, misuse of laxatives, fasting, or excessive exercise; American Psychiatric Association, 2013). Both AN and BN are characterized by an undue influence of one’s weight and body shape on the person’s self-evaluation (American Psychiatric Association, 2013). Binge eating disorder (BED) is similar to BN, except that the individual does not regularly engage in compensatory behaviors that prevent weight gain (American Psychiatric Association, 2013). Binge eating episodes are marked by significant distress and often feelings of disgust, depression, and guilt (American Psychiatric Association, 2013). Other specified feeding or eating disorders (OSFED) as defined in the DSM-5 encompasses atypical or subthreshold cases of AN, BN, or BED.

Based on data from the National Comorbidity Survey, the median age of onset is 21 years old for BED and 18 years old for AN and BN (U.S. Department of Health and Human Services). The lifetime prevalence of AN is three times higher for females than males, five times higher for females than males for BN, and twice as high for females than males for BED (U.S. Department of Health and Human Services). Thus, a sample of female undergraduate students aged around the age of median onset is a pertinent population in which to study eating disorders and related variables. It is important to note that body dissatisfaction is a consistently robust risk factor and primary determinant in the development and maintenance of eating disorders (Fallon et al., 2014; Vartanian, 2016). Whereas body image refers to an individual’s body-related self-perceptions and attitudes, body dissatisfaction involves holding negative self-perceptions and attitudes towards one’s own body (Fallon et al., 2014). Various other factors have also been demonstrated as important to eating disorder etiology, including personality traits and conceptualizations of the self (Perry et al., 2008).
Across all eating disorder diagnoses, core behavioral symptoms indicate beliefs or perceptions of oneself as flawed (Bardone-Cone et al., 2020). Considering that disordered eating behaviors are driven by a desire to change or control aspects of oneself, it follows that eating disorders are inextricably linked to an individual’s identity and self-perceptions, or their self-concept. The self-concept refers to the cognitive schema of knowledge and evaluative components about the self that guides an individual’s processing of self-relevant information (Campbell et al., 1996). Knowledge components about the self include an individual’s beliefs about specific attributes or traits, roles, values, or personal goals, whereas evaluative components refer to the attitudes held regarding one’s self-beliefs, including self-esteem (Campbell et al., 1996). In this work, we focus on self-concept clarity in relation to body dissatisfaction and disordered eating.

**Self-Concept Clarity**

Although self-concept clarity has been much less examined than other self-related concepts (e.g., self-esteem), existing research of its relevance to eating pathology is compelling. Self-concept clarity is defined as the extent to which the elements within an individual’s self-concept are clearly and confidently defined, internally consistent, and remain stable over time (Butzer & Kuiper, 2006; Campbell et al., 1996). It is important to note that clarity of one’s self-concept is theoretically independent of the contents of the self-concept itself. Thus, it holds no valence on its own, and attributes held within a self-concept do not determine the level of self-concept clarity (Campbell et al., 1996; see also Bardone-Cone et al., 2020). Self-concept clarity is thought to be associated with resilience and wellbeing, and research has shown that self-concept clarity mediates the relation between stress and wellbeing (Vartanian et al., 2016). Numerous studies have demonstrated that self-concept clarity is negatively correlated with body
dissatisfaction and disordered eating (Vartanian & Dey, 2013; Vartanian et al., 2016; Vartanian et al., 2018). Researchers have found the relationship between low self-concept clarity and disordered eating to be mediated by both thin-ideal internalization and low self-esteem, independently (Perry et al., 2008; Vartanian, 2009; Vartanian et al., 2013; Vartanian et al., 2016).

**Other Self-Related Constructs**

*Appearance Contingent Self-Worth*

Contingent self-worth refers to a person’s belief that their self-worth is largely dependent upon their ability to succeed in a specific domain (Crocker & Knight, 2005). Contingencies of self-worth serve as sources of both motivation and psychological vulnerability, becoming domains in which people attempt to validate their abilities or qualities in pursuit of self-esteem (Crocker & Knight, 2005). Similar to general goal-striving, contingencies of self-worth have self-regulatory consequences as people seek to achieve success and avoid failure in domains on which self-worth is contingent (Crocker & Knight, 2003). Thus, if a person fails to prove their abilities in a highly contingent domain, their self-esteem will likely suffer. People may vary in the specific contingencies of self-worth that they must satisfy to have high self-esteem, including appearance, academic success, or relationships, for example (Crocker & Knight, 2003).

Most eating disorder research involving contingent self-worth has focused on the appearance-specific domain. Appearance contingent self-worth is the degree to which one believes that their self-worth depends on fitting into societal standards of beauty and attractiveness (Bardone-Cone et al., 2020). Thus, it is outwardly defined and requires external validation to affirm one's sense of self (Bardone-Cone et al., 2020). Past research has indicated a positive correlation between appearance contingent self-worth and disordered eating among men and women (Sanchez & Crocker, 2005). Appearance contingent self-worth has also been shown
to be a maintenance factor for compulsive body control behaviors and extreme dieting, increasing the risk of eating disturbances and binge eating (Lampard et al., 2013). In terms of the population under study, it is essential to note that females, in particular, are often evaluated based on physical appearance, making them more likely to subsequently evaluate themselves in the appearance domain (Crocker & Knight, 2003). Furthermore, a recent study showed that women who engage in body image avoidance behaviors have higher appearance contingent self-worth than controls (Stapleton et al., 2017). Appearance-based identification and the tendency to over-evaluate one's appearance are higher in individuals with low self-concept clarity, while also serving as risk factors for and diagnostic criteria of eating disorders (American Psychiatric Association, 2013; Lampard et al., 2013; Vartanian, 2009; Vartanian et al., 2016).

**Appearance-Related Social Comparison**

Social comparison researchers have long theorized that one reason individuals compare themselves with others might be a lack of certainty in their own abilities, especially in the absence of objective standards—thus, other people become the standard of comparison (Butzer & Kuiper, 2006). Studies have shown that a greater tendency to engage in general social comparison predicts the presence of eating disorder symptoms (Corning et al., 2006). While social comparisons can be made in several domains, appearance-based social comparisons have been the focus of eating disorder research. Numerous studies have demonstrated a negative correlation between self-concept clarity and appearance comparisons; those with lower self-concept clarity tend to make more frequent appearance comparisons (Butzer & Kuiper, 2006; Vartanian & Dey, 2013; Vartanian et al., 2018).

Studies have also demonstrated an association between appearance comparison and body image concerns, which in turn show associations with disordered eating (Vartanian et al., 2018).
More directly, associations have been found between appearance-related social comparisons and the presence of eating disorder symptoms (Corning et al., 2006; Myers & Crowther, 2009). Furthermore, body-specific appearance social comparison appears to be significantly associated with eating disorder symptoms even after controlling for both self-esteem and depressive symptoms (Hamel et al., 2012). In general, studies have indicated that social comparison’s correlation with body dissatisfaction is more robust in women and inversely related to age (Myers & Crowther, 2009). Additionally, meta-analyses have supported an association between disordered eating and higher levels of general and appearance-related social comparison in undergraduates (Hamel et al., 2012). Social comparison’s frequency among younger women makes it an applicable construct to measure in our undergraduate female sample.

**Application of Mediation Models**

Self-concept clarity has been examined in mediation models with disordered eating or body image concerns as the dependent variable and various constructs as putative mediators. Mediation work is important since it provides clues to pathways between self-concept clarity and disordered eating/body dissatisfaction, elucidating the mechanics of relationships and thus informing prevention and intervention efforts. As an example of data-supported mediation models, the relationship between low self-concept clarity and body dissatisfaction/body image concerns has shown to be mediated by thin-ideal internalization (Vartanian, 2009; Vartanian, 2013). That is, being unclear or uncertain in one’s own identity (low self-concept clarity) promotes greater internalization of societal standards, which then leads to greater body dissatisfaction. Global self-esteem has also mediated this relationship, such that an unclear self-concept contributes to low self-esteem, increasing disordered eating behaviors (Perry et al., 2008). While previous studies have demonstrated the relationship between self-concept clarity
and body dissatisfaction or disordered eating to be mediated by internalization of the thin-ideal and low self-esteem, previous literature has yet to test mediation models for appearance contingent self-worth or appearance-related social comparison.

Based on existing associations between self-concept clarity and both appearance contingent self-worth and appearance-related social comparison, as well as cited correlations among self-concept clarity, body dissatisfaction, and disordered eating, we propose that appearance contingent self-worth and appearance-related social comparison will mediate the relationship between self-concept clarity and the eating disorder symptoms of body dissatisfaction and disordered eating. Because individuals with low self-concept clarity have poorly defined notions of who they are, low self-concept clarity may serve as a risk factor for increased external validation seeking, and thus the likelihood of developing an eating disorder via appearance-related self-concept pathways.

**Purpose of the Present Study**

The first aim of this study is to provide descriptive statistics through correlations among the core constructs of self-concept clarity, appearance contingent self-worth, and appearance-related social comparison with body dissatisfaction and disordered eating. As these variables have been associated in previous studies, these findings will serve to replicate past research. We hypothesize that self-concept clarity will be significantly negatively correlated with body dissatisfaction and disordered eating, and that the proposed mediators of appearance contingent self-worth and appearance-related social comparison will be significantly positively correlated with body dissatisfaction and disordered eating.

Extending this work in a novel direction, our second aim uses a longitudinal study design to test new mediation models involving self-concept clarity. We will examine appearance
contingent self-worth as a mediator of the relationship between self-concept clarity and body dissatisfaction and disordered eating (two separate mediation models), hypothesizing that low self-concept clarity will predict greater body dissatisfaction and disordered eating by increasing appearance contingent self-worth. We will also examine appearance-related social comparison as a mediator of the relationship between self-concept clarity and body dissatisfaction and disordered eating, hypothesizing that low self-concept clarity will predict greater body dissatisfaction and disordered eating by increasing appearance-related social comparison.

Method

Participants

Undergraduate females \((N = 441)\) enrolled in introductory psychology courses at a large, public university in the Southeast were recruited to participate in a study of peers and body image. Of this initial sample (Time 1), 352 (79.8%) agreed to be contacted for follow-up research planned for approximately one year later (Time 2). Of the individuals willing to be recontacted, 237 (67.3%) participated in Time 2, a mean 14.05 months \((SD = 0.82 \text{ months; range: 11.89-15.85 months})\) after their participation at Time 1. Thus, 53.7% of the original 441 participants (Time 1) completed Time 2.

The age range of participants was 17 to 24 years, with a mean age of 18.71 years \((SD = 1.01)\) at Time 1 \((N = 441)\) and a mean age of 18.70 years \((SD = 1.02)\) for those who completed both Time 1 and Time 2 \((N = 237)\). The majority of Time 1 participants identified as non-Hispanic Caucasian/White (73.2%), with 9.1% identifying as African American/Black, 8.0% as Hispanic/Latinx, 5.0% as Asian, 0.2% as Pacific Islander, 0.2% as other race or ethnicity, and 4.3% as multiple race/ethnicities. For those completing both Time 1 and Time 2, 69.1% of participants identified as non-Hispanic Caucasian/White, 7.6% as African American/Black,
11.4% as Hispanic/Latinx, 5.5% as Asian, and 6.4% as multiple race/ethnicities. Calculations utilizing participants’ self-reported current weight and height indicated an average body mass index (BMI) of 22.39 kg/m² ($SD = 3.73$) at Time 1 and an average BMI of 22.27 kg/m² ($SD = 3.36$) for participants who completed both Time 1 and Time 2. To measure socioeconomic status, we obtained highest attained parental education from participants, with a mean of 17.01 years ($SD = 2.67$) at Time 1 and a mean of 17.13 years ($SD = 2.71$) for those who completed both Time 1 and Time 2, comparable to about one year of post-baccalaureate education.

**Procedures**

At each of the two time points, approximately 14 months apart, a link to a survey and consent form was emailed to the participants, followed by a phone call from a research assistant to identify critical aspects of the consent form and answer any questions regarding the study. After participants provided consent electronically, they were directed to questionnaires to complete remotely. Questionnaires were presented in a specific order, taking 45–60 minutes to complete at Time 1 and 30–45 minutes to complete at Time 2, since some of Time 2’s questionnaires were subsets of those at Time 1. Participants earned course credit for completing the survey at Time 1 and a $5 gift certificate to either a coffee shop or discount department store (participants’ choice) at Time 2. This study was reviewed and approved by the university’s Institutional Review Board.

**Measures**

**Self-Concept Clarity**

Self-concept clarity was measured using the Self-Concept Clarity Scale (SCCS), a 12-item self-report questionnaire assessing the extent to which the individual has a well-defined, coherent, and stable sense of self (Campbell et al., 1996). Participants responded to each item
(e.g., “My beliefs about myself seem to change very frequently,” “I seldom experience conflict between the different aspects of my personality”) on a 5-point Likert scale from 1 = strongly disagree to 5 = strongly agree, with higher summed scores (after reverse coding, as needed) indicating a greater degree of self-concept clarity (Campbell et al., 1996). The SCCS has previously demonstrated good psychometrics via criterion validity and test-retest reliability in university samples (Campbell et al., 1996) as well as internal consistency among undergraduate females (a = .87; Vartanian & Dey, 2013). The SCCS’s construct validity has been demonstrated by its strong negative correlations with body dissatisfaction and disordered eating in numerous studies (Vartanian & Dey, 2013; Vartanian et al., 2016; Vartanian et al., 2018). Additionally, the SCCS has been positively correlated with the consistency of self-views (r = 0.31; Campbell et al., 1996). In the present study, the coefficient alpha of the SCCS was .91 at Time 1. (Coefficient alphas presented in this paper are based on the sample who completed both Time 1 and Time 2.)

**Appearance Contingent Self-Worth**

Appearance contingent self-worth was measured using the appearance subscale of the Contingencies of Self-Worth Scale (Crocker et al., 2003). The subscale includes five items (e.g., “My sense of self-worth suffers whenever I think I don’t look good”) rated on a 7-point Likert scale from 1 = strongly disagree to 7 = strongly agree (Crocker et al., 2003). Responses to the five items were averaged to create an overall score, with higher scores indicating a greater dependency of self-worth on one’s appearance. This subscale has displayed good internal consistency (a = .83) and 3-month test-retest reliability (r = .75) in mixed-gender undergraduate samples (Crocker et al., 2003). Construct validity for female college students has been demonstrated by a strong positive correlation between contingent self-worth based on physical attractiveness and eating disturbances (Bailey & Ricciardelli, 2010). In the present study, the
coefficient alpha of the Contingencies of Self-Worth Scale appearance subscale was .77 at Time 1.

**Appearance-Related Social Comparison**

Appearance-related social comparison was measured using the Body Comparison Orientation subscale of the Body, Eating, and Exercise Comparison Orientation Measure (BEECOM; Fitzsimmons-Craft et al., 2012). This subscale measures an individual’s propensity to engage in body-related comparisons and consists of six items (e.g., “When I see a peer who is wearing revealing clothing, I have thoughts of how my own body compares”) that are rated on a 7-point Likert scale ranging from 1 = never to 7 = always (Fitzsimmons-Craft et al., 2012). Responses to the six items are summed to create a total score, with higher scores indicating more frequent body-related social comparisons. Construct validity in samples of college women is demonstrated by strong positive correlations between the BEECOM total and subscale scores and measures of body dissatisfaction and eating disturbance (Fitzsimmons-Craft et al., 2012). Test–retest reliability for the Body Comparison Orientation subscale was determined by calculating correlation coefficients between scores at the first and second administrations of the BEECOM subscale ($r = .85$; Fitzsimmons-Craft et al., 2012). Additionally, Fitzsimmons-Craft and colleagues (2012) found excellent internal consistency for the Body Comparison Orientation subscale of the BEECOM ($a = .94$) in a sample of college women. In the present study, the coefficient alpha of the Body Comparison Orientation BEECOM subscale was .93 at Time 1.

**Body Dissatisfaction**

Body dissatisfaction was measured by a combination of the Weight Concern and Shape Concern subscales of the Eating Disorder Examination-Questionnaire (EDE-Q; Fairburn & Beglin, 2008), which address dissatisfaction and concerns with weight or shape in the last 28
days. The scale of 12 items was coded from 0 to 6, with average scores calculated and higher scores indicating greater body dissatisfaction and weight/shape concerns. Previous literature has indicated that all subscales of the EDE-Q are reliable and valid measures among undergraduate women (Luce et al., 2008; Luce & Crowther, 1999). The Weight Concern and Shape Concern subscales specifically have support for good internal consistency in samples of college women ($\alpha = .89–.93$; Luce & Crowther, 1999). In the present study, the coefficient alpha of the combined Weight Concern and Shape Concern subscales was .95 at both Time 1 and Time 2.

**Disordered Eating**

Disordered eating was measured by the Eating Attitudes Test-26 (EAT-26), containing 26 items rated on a 6-point Likert scale from 1 = never to 6 = always (Garner et al., 1982). As suggested by Garner et al. (1982), responses of 1, 2, and 3 were scored as “0,” while responses of 4, 5, or 6 were scored as “1,” “2,” or “3.” All items were summed, with higher scores indicative of greater eating pathology. The EAT-26 has support as a valid measure of disordered eating outcomes in clinical groups and as a valid screening tool in non-clinical research settings (Garner et al., 1982). The internal consistency of the EAT-26 is excellent for individuals who meet the criteria for AN ($\alpha = .90$; Garner et al., 1982). In the present study, the coefficient alpha of the EAT-26 was .87 at Time 1 and .86 at Time 2.

**Analytic Strategy**

For our first aim, we used data obtained at Time 1 ($N = 441$) to run correlational analyses with the independent variables of self-concept clarity, appearance contingent self-worth and appearance-related social comparison, and the dependent variables of body dissatisfaction and disordered eating. For our second aim, testing mediation models, we used data from both points of data collection. When examining appearance contingent self-worth as a mediator, we used
self-concept clarity (independent variable) and appearance contingent self-worth (mediator) data from Time 1, drawing data for body dissatisfaction and disordered eating (dependent variables) from Time 2. When examining appearance-related social comparison as a mediator, we used self-concept clarity (independent variable) and appearance-related social comparison (mediator) data from Time 1, drawing data for body dissatisfaction and disordered eating (dependent variables) from Time 2. Mediation models were tested using path analysis, with a total of four models being tested to account for the two putative mediators and the two dependent variables.

Results

Attrition Analyses

The results of attrition analyses comparing Time 1-only participants to those who participated in both time points can be found in Table 1. The participant groups did not differ significantly in terms of the demographics of age ($t(435) = .16; p = .871$), BMI ($t(435) = .74; p = .457$), or highest parental education ($t(439) = -1.00; p = .320$). These groups were also not significantly different in terms of the independent variable of self-concept clarity ($t(414) = .49; p = .623$) or the mediators of appearance contingent self-worth ($t(439) = .22; p = .829$) or appearance-related social comparison ($t(417) = .59; p = .557$), or the dependent variables of body dissatisfaction ($t(438) = 1.10; p = .272$) or disordered eating ($t(387) = 1.60; p = .110$). However, the groups did differ in terms of distribution of race/ethnicity with a higher proportion of non-completers (77.9%) identifying as Caucasian than completers (69.1%; $\chi^2(1, N = 440) = 4.39, p = .036$). Given completers were similar to non-completers on all core study variables and assessed demographic variables aside from race/ethnicity, attrition concerns are minimal.

Descriptive Analyses (Aim 1)
The means and standard deviations of core study variables at Time 1 are depicted in Table 2 and their correlations are depicted in Table 3. All correlations between core variables were statistically significant and demonstrated the expected relationships. As predicted, self-concept clarity at Time 1 was significantly negatively correlated with body dissatisfaction ($r = -0.47; p < .001$) and disordered eating ($r = -0.37; p < .001$). Appearance contingent self-worth was significantly positively correlated with body dissatisfaction ($r = 0.49; p < .001$) and disordered eating ($r = 0.47; p < .001$). Notably, appearance-related social comparison was highly positively correlated with both body dissatisfaction ($r = 0.71; p < .001$) and disordered eating ($r = 0.60; p < .001$).

**Mediation Analyses (Aim 2)**

The mediation estimates for both the indirect pathways (through mediators) and direct pathways are depicted in Table 4. As predicted, models for both mediators indicated significant mediation effects on the relationship between self-concept clarity and the dependent variables, body dissatisfaction and disordered eating.

**Appearance Contingent Self-Worth as Mediator**

As illustrated in Figure 1, the model with body dissatisfaction as the dependent variable indicated a significant indirect effect, with appearance contingent self-worth mediating 39.7% of the relationship between self-concept clarity and body dissatisfaction ($\beta = -0.03; SE = 0.01; p < .001$). As illustrated in Figure 2, the model with disordered eating as the dependent variable also indicated a significant indirect effect, with appearance contingent self-worth mediating 44.3% of the relationship between self-concept clarity and disordered eating ($\beta = -0.12; SE = 0.03; p < .001$).

**Appearance-Related Social Comparison as Mediator**
As illustrated in Figure 3, the model with body dissatisfaction as the dependent variable indicated a significant indirect effect, with appearance-related social comparison mediating 68% of the relationship between self-concept clarity and body dissatisfaction ($\beta = -.05; SE = .01; p < .001$). Finally, as illustrated in Figure 4, the model with disordered eating as the dependent variable indicated the strongest indirect effect, with appearance-related social comparison mediating 77.5% of the relationship between self-concept clarity and disordered eating ($\beta = -.19; SE = .04; p < .001$). Because the direct effect of self-concept clarity on the dependent variable of disordered eating ($\beta = -.06; SE = .06; p = .345$) was non-significant in this mediation model, results indicate that appearance-related social comparison fully mediated the relationship between self-concept clarity and disordered eating.

**Discussion**

The present study sought to assess pathways through which self-concept clarity impacts body dissatisfaction and disordered eating in an undergraduate female population. The first aim provided descriptive statistics through correlations among the core constructs of self-concept clarity, appearance contingent self-worth, and appearance-related social comparison with body dissatisfaction and disordered eating. As predicted, our findings replicated past research, indicating a significant negative correlation between self-concept clarity and body dissatisfaction and disordered eating. Additionally, as expected, appearance contingent self-worth and appearance-related social comparison were significantly positively correlated with body dissatisfaction and disordered eating. The correlations between appearance-related social comparison and the dependent variables were more substantial than those between appearance contingent self-worth and the dependent variables. These trends may be partly explained by the fact that the mean score for appearance contingent self-worth was relatively high in proportion to
the possible range of scores. This might indicate the presence of appearance contingent self-worth in the broader population, beyond just samples high in body dissatisfaction or disordered eating.

The study’s second aim focused on testing four novel mediation models of self-concept clarity’s effect on body dissatisfaction and disordered eating. As predicted, both mediators of appearance contingent self-worth and appearance-related social comparison at least partially mediated the relationship between self-concept clarity and the dependent variables. Overall, appearance-related social comparison appears to be a stronger mediator of the relationship between self-concept clarity and both body dissatisfaction and disordered eating than appearance-contingent self-worth. Most strikingly, results indicated that appearance-related social comparison fully mediated the relationship between self-concept clarity and disordered eating, suggesting that low self-concept clarity predicts greater disordered eating by increasing appearance-related social comparison. The mediation findings presented here are robust given their alignment with the traditional approach by Baron and Kenny, in addition to the significance of indirect effects that Preacher and Hayes’ contemporary model emphasizes (Preacher & Hayes, 2004).

**Strengths and Limitations**

A major strength of this study is that, to the best of our knowledge, this is the first study examining appearance contingent self-worth and appearance-related social comparison as mediators of the relationship between self-concept clarity and body dissatisfaction and disordered eating. Another strength is the collection of data at two time points, which allowed us to use a longitudinal approach, needed to adequately test mediation. The online, self-report data collection format may have served as both a strength and limitation. As a strength, it may have
elicited more genuine responses from participants than had the survey been completed in a less anonymous format. However, any self-report measure introduces the possibility of bias due to the subjective nature of the responses. Another limitation of this study is generalizability due to the narrow age range and female-only, majority Caucasian sample from, on average, highly educated families. These findings may be limited to samples of undergraduate females, thus future work should examine samples of different ages and genders as well as clinical samples. Future research should also attempt to collect a more racially balanced sample. An additional limitation is that the groups of participants completing only Time 1 versus both Time 1 and Time 2 studies differed by race/ethnicity, with a higher proportion of non-completers identifying as Caucasian than completers.

Implications

Theoretical Implications

The correlations presented here support related findings from prior research and align with relevant theories on self-related constructs’ associations with eating pathology. The mediation analyses add statistical evidence to the body of knowledge regarding mediating factors of the relationship between self-concept clarity and body dissatisfaction/disordered eating. Prior to this study, thin-ideal internalization and low self-esteem were the only constructs explicitly shown to mediate the relationship between self-concept clarity and disordered eating. Present findings indicate that both appearance contingent self-worth and appearance-related social comparison play a crucial role in how self-concept clarity impacts these outcomes. In particular, the finding that low self-concept clarity increases disordered eating through an increase in appearance-related social comparison is especially robust.

Clinical Implications
Assessing and discovering potential avenues to decrease body dissatisfaction and treat eating pathology are critical steps toward improving patient outcomes. While current treatments are effective for many patients, additional avenues need to be explored. For instance, relapse rates for anorexia and bulimia have been reported around 36% and 35%, respectively (Eating Recovery Center, 2019). The constructs assessed in the present study are critical to include in designing new interventions, given their relatedness to relapse. A strong link between body image and self-esteem, body dissatisfaction, and feeling like one’s self-worth is tied to appearance (i.e., appearance-contingent self-worth) have all been cited as critical risk factors increasing susceptibility for relapse (Eating Recovery Center, 2019).

Because appearance contingent self-worth and appearance-related social comparison mediated the relationship between self-concept clarity and body dissatisfaction and disordered eating, it might be prudent to focus on these pathways in clinical efforts to treat and prevent disordered eating. For example, intervening to disrupt low self-concept clarity motivating a reliance on appearance contingent self-worth or appearance-related social comparison could contribute downstream to less body dissatisfaction and disordered eating. Targeting either appearance contingent self-worth or appearance-related social comparisons, the mechanism by which low self-concept clarity appears to influence eating disorder symptoms, could be a fruitful avenue to pursue. Prevention efforts may use these findings as psychoeducation for those at risk for body dissatisfaction or disordered eating, to help illustrate these pathways to body dissatisfaction and disordered eating and how they could be altered.

**Future Directions**

Future research should expand the current study to broader demographics to see if the same effects are present in different population subgroups. Additionally, given prior findings that
both appearance and relationship contingent self-worth have roles in moderator models to predict increased disordered eating (Bardone-Cone et al., 2017), extending the present mediation models to include relationship contingent self-worth would further advance our understanding of pathways from self-concept clarity to eating disorder symptoms. Future research should also expand mediation analyses to test other areas of social comparison such as eating and exercise comparisons, which past work has found to be correlated with body dissatisfaction and disordered eating (Fitzsimmons-Craft et al., 2014). Given that these findings and prior research have now identified four mediators of the relationship between self-concept clarity and disordered eating (appearance contingent self-worth, appearance-related social comparison, thin-ideal internalization, self-esteem), future research could jointly examine these mediators to identify the most robust pathways. It could also be interesting to assess whether focusing on the direction of social comparisons (i.e., upward versus downward) results in differing effects or changes the strength of mediation compared to simply assessing the frequency of comparisons as done in the present study.

Conclusion

Body dissatisfaction and disordered eating are critical issues that negatively impact mental health in our society. As previously stated, body dissatisfaction has consistently proven to be a robust risk factor for and determinant of the development and maintenance of eating disorders (Fallon et al., 2014; Vartanian, 2016). Although past research on self-concept clarity is much less prevalent than on other self-related constructs (e.g., self-esteem), prior research links it to eating pathology. Previous studies have assessed constructs associated with disordered eating (e.g., thin-ideal internalization and low self-esteem) as mediators of the relationship between self-concept clarity and disordered eating. To our knowledge, this is the first study to examine
appearance contingent self-worth and appearance-related social comparison as mediators of the relationships between self-concept clarity and both body dissatisfaction and disordered eating. As expected based on theory and prior research, both constructs were shown to partially mediate these relationships, with appearance-related social comparison fully mediating the relationship between self-concept clarity and disordered eating. The current findings suggest that targeting appearance contingent self-worth and appearance-related social comparison, given these are pathways between low self-concept clarity and eating disorder symptoms, in prevention and treatment efforts may mitigate risk for the development, increase, or relapse of disordered eating. More research is necessary to determine if the effects present in this study are generalizable to a broader population and determine if interventions explicitly designed to target key variables would effectively reduce body dissatisfaction and disordered eating in clinical populations.

Acknowledgments

This study was conducted under the mentorship of my thesis advisor, Dr. Bardone-Cone. I would like to thank and acknowledge Dr. Anna Bardone-Cone for her assistance throughout the entire process, especially in sharing the data set and developing the hypotheses explored in the present thesis. I would also like to thank and acknowledge Dr. Patrick Harrison for his instruction and assistance in conducting and presenting the mediation analyses. Lastly, I would like to thank Ale Miller for her collaboration in designing and developing the study and formatting the write-up.
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<table>
<thead>
<tr>
<th>Variable</th>
<th>Completers</th>
<th>Non-Completers</th>
<th>t-test</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>18.70 (1.02)</td>
<td>18.72 (0.99)</td>
<td>t(435) = .16</td>
<td>.871</td>
</tr>
<tr>
<td>Body Mass Index</td>
<td>22.27 (3.36)</td>
<td>22.54 (4.12)</td>
<td>t(435) = .74</td>
<td>.457</td>
</tr>
<tr>
<td>Highest Parental Education</td>
<td>17.13 (2.71)</td>
<td>16.87 (2.63)</td>
<td>t(439) = -1.00</td>
<td>.320</td>
</tr>
<tr>
<td>Self-Concept Clarity</td>
<td>37.25 (9.67)</td>
<td>37.71 (9.47)</td>
<td>t(414) = .49</td>
<td>.623</td>
</tr>
<tr>
<td>Appearance Contingent Self-Worth</td>
<td>5.11 (0.96)</td>
<td>5.13 (0.92)</td>
<td>t(439) = .22</td>
<td>.829</td>
</tr>
<tr>
<td>Appearance-Related Social Comparison</td>
<td>26.25 (8.25)</td>
<td>26.72 (8.13)</td>
<td>t(417) = .59</td>
<td>.557</td>
</tr>
<tr>
<td>Body Dissatisfaction</td>
<td>2.26 (1.63)</td>
<td>2.42 (1.56)</td>
<td>t(438) = 1.10</td>
<td>.272</td>
</tr>
<tr>
<td>Disordered Eating</td>
<td>7.57 (8.20)</td>
<td>9.11 (10.69)</td>
<td>t(387) = 1.60</td>
<td>.110</td>
</tr>
</tbody>
</table>

*Note:* Means and (standard deviations) presented. Completers were participants who participated in both Time 1 and Time 2 (N = 237), Non-Completers were those who only participated in Time 1 (N = 204).
**Table 2**  
*Descriptive Statistics for Core Study Variables at Time 1*

<table>
<thead>
<tr>
<th>Construct</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Concept Clarity</td>
<td>416</td>
<td>37.46</td>
<td>9.57</td>
</tr>
<tr>
<td>Appearance Contingent Self-Worth</td>
<td>441</td>
<td>5.12</td>
<td>0.94</td>
</tr>
<tr>
<td>Appearance-Related Social Comparison</td>
<td>419</td>
<td>26.47</td>
<td>8.19</td>
</tr>
<tr>
<td>Body Dissatisfaction</td>
<td>440</td>
<td>2.33</td>
<td>1.59</td>
</tr>
<tr>
<td>Disordered Eating</td>
<td>389</td>
<td>8.27</td>
<td>9.44</td>
</tr>
</tbody>
</table>

*Note.* Possible ranges for the constructs were as follows: Self-Concept Clarity (12–60), Appearance Contingent Self-Worth (1–7), Appearance-Related Social Comparison (6–42), Body Dissatisfaction (0–6), Disordered Eating (0–78).
Table 3

*Correlations Between Core Study Variables at Time 1*

<table>
<thead>
<tr>
<th>Variable</th>
<th>SCC</th>
<th>ACSW</th>
<th>ARSC</th>
<th>BD</th>
<th>DE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Concept Clarity (SCC)</td>
<td>–</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appearance Contingent Self-Worth (ACSW)</td>
<td>-.43***</td>
<td>–</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appearance-Related Social Comparison (ARSC)</td>
<td>-.47***</td>
<td>.54***</td>
<td>–</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body Dissatisfaction (BD)</td>
<td>-.47***</td>
<td>.49***</td>
<td>.71***</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Disordered Eating (DE)</td>
<td>-.37***</td>
<td>.47***</td>
<td>.60***</td>
<td>.70***</td>
<td>–</td>
</tr>
</tbody>
</table>

*Note.*** p < .001.*
Table 4

Indirect and Direct Effects of Mediation Models

<table>
<thead>
<tr>
<th>Path</th>
<th>Effect</th>
<th>β</th>
<th>SE</th>
<th>95% CI</th>
<th>% Mediation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCC &gt; Appearance CSW &gt; BD</td>
<td>Indirect</td>
<td>-.03***</td>
<td>.01</td>
<td>-.04, -.01</td>
<td>39.7</td>
</tr>
<tr>
<td></td>
<td>Direct</td>
<td>-.04***</td>
<td>.01</td>
<td>-.06, -.02</td>
<td>60.3</td>
</tr>
<tr>
<td>SCC &gt; Appearance CSW &gt; DE</td>
<td>Indirect</td>
<td>-.12***</td>
<td>.03</td>
<td>-.18, -.06</td>
<td>44.3</td>
</tr>
<tr>
<td></td>
<td>Direct</td>
<td>-.15*</td>
<td>.06</td>
<td>-.27, -.04</td>
<td>55.7</td>
</tr>
<tr>
<td>SCC &gt; Appearance-Related SC &gt; BD</td>
<td>Indirect</td>
<td>-.05***</td>
<td>.01</td>
<td>-.06, -.03</td>
<td>68.0</td>
</tr>
<tr>
<td></td>
<td>Direct</td>
<td>-.02*</td>
<td>.01</td>
<td>-.04, -.00</td>
<td>32.0</td>
</tr>
<tr>
<td>SCC &gt; Appearance-Related SC &gt; DE</td>
<td>Indirect</td>
<td>-.19***</td>
<td>.04</td>
<td>-.26, -.12</td>
<td>77.5</td>
</tr>
<tr>
<td></td>
<td>Direct</td>
<td>-.06</td>
<td>.06</td>
<td>-.17, -.06</td>
<td>22.5</td>
</tr>
</tbody>
</table>

Figure 1

The Mediating Effect of Appearance Contingent Self-Worth on the Relationship Between Self-Concept Clarity and Body Dissatisfaction

Self-Concept Clarity → Appearance Contingent Self-Worth → Body Dissatisfaction

Percent Mediation: 39.7%
Model $R^2 = 40.2$

Indirect Effect: -.03 (.01)***
Direct Effect: -.04 (.01)***

Note. *** $p < .001$
Figure 2

*The Mediating Effect of Appearance Contingent Self-Worth on the Relationship Between Self-Concept Clarity and Disordered Eating*

- Appearance Contingent Self-Worth
- Percent Mediation: 44.3%
- Model $R^2 = 36.4$
- Indirect Effect: -0.12 (0.03)**
- Direct Effect: -0.15 (0.06)*

*Note. * $p < .05$, ** $p < .001$*
Figure 3

The Mediating Effect of Appearance-Related Social Comparison on the Relationship Between Self-Concept Clarity and Body Dissatisfaction

Self-Concept Clarity

Appearance-Related Social Comparison

- .44 (0.05)***

Percent Mediation: 68.0%
Model $R^2 = 54.6$

Body Dissatisfaction

Indirect Effect - .05 (.01)***
Direct Effect - .02 (.01)*

Note. * $p < .05$, *** $p < .001$
Figure 4

The Mediating Effect of Appearance-Related Social Comparison on the Relationship Between Self-Concept Clarity and Disordered Eating

Percent Mediation: 77.5%
Model $R^2 = 44.0\%$

Indirect Effect = .19 (.04)***
Direct Effect = -.06 (.06)

Note: *** p < .001