

AVERAGE UNIVERSITY STUDENTS' MORAL ASSESSMENTS TOWARDS FEMALES WITH EATING DISORDERS

BY

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Abstract

To examine whether university students rate differently in the moral evaluations of the three major eating disorders (anorexia nervosa, bulimia nervosa, and binge eating disorder). And whether the concept that ‘thinness is associated with highly firm and self-disciplined’ acted as mediators to influence the moral assessment results. 114 university students who could read English filled out three evaluations about AN, BN and BED. Results revealed that AN was viewed as morally superior to both BN and BED, and there was no significant difference between BN and BED in moral evaluation. Moral principle “Firm” significantly affected the moral assessment between AN and BN, while “Self-disciplined” successfully explained the moral differences between AN and BED. Findings suggest young adults know little about the underlying psychopathology of eating disorders, and the stigmatization towards bulimics still exists.

Key words: eating disorder, moral evaluation, self-disciplined, firmness

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1. General Introduction

1.1 Introduction

With advances in psychology and neuroscience, it is increasingly recognized that mental illness is the result of a combination of biological, psychological, and social factors, rather than a manifestation of an individual's “weak will” or “character flaw”. However, not all mental illnesses are treated with empathy, and the stigmatization of eating disorders persists, while Bulimia Nervosa (BN) and Binge Eating Disorder (BED) are more stigmatized than Anorexia Nervosa (AN). In sociocultural contexts where thinness is the ideal, thinness is seen as consistent with good moral character, and people who can control their eating are seen as more self-disciplined. In contrast, bulimics are portrayed as incompetent and choosing to self-degrade (Brelet et al., 2021). Meanwhile, there is little understanding of bulimia and the suffering that people with bulimia face. Evidence suggests that a majority of the public, especially many adolescents and young adults, do not consider bulimia to be a serious mental illness and believe that sufferers are responsible for their illnesses and are not worthy of sympathy (Anderson et al., 2016). These prejudices and stigmatization of BN and BED may lead to patients hiding their condition or refusing to seek professional help, hindering the recovery of bulimic patients.

The purpose of this study was to investigate, in the Chinese cultural context, whether university students would have different perceptions towards AN, BN, and BED on moral assessment. And whether the concept “thinness is related to higher firm and self-discipline” could explain the moral assessment differences in AN, BN, and BED. Moral characters “firmness” and “self-discipline” were specifically measured in this study. Firm was defined as perseverance and the

ability to pursue long-term goals (Duckworth et al., 2007), while self-discipline was characterized as self-control and a sense of responsibility (Zimmerman & Kitsantas, 2014).

1.2 Literature review

1.2.1 Different symptoms of AN, BN and BED

Eating disorders are complex psychological disorders in which a psychiatric disorder triggers pathological eating behavior (Zipfel, 2021). Eating disorders can manifest in a variety of ways, the most significant types of which are Anorexia Nervosa (AN), Bulimia Nervosa (BN), and Binge Eating Disorder (BED). AN is characterized by extreme restriction of food intake and an intense fear of gaining weight. Patients with AN are often below the healthy weight range but continue to perceive themselves as overweight. Patients with BED exhibit recurrent binge eating, consuming large amounts of food in a short period of time and feeling out of control, and are often overweight. The manifestation of BN is recurrent episodes of binge eating followed by compensatory behaviors such as vomiting, misuse of laxatives, or excessive exercise. Individuals are often preoccupied with their weight and body shape, but their weight may remain within or slightly above the normal range (American Psychiatric Association, 2013).

1.2.2 Gender and age discrepancy in eating disorders

Over the past few decades, eating disorders have become an increasingly serious mental illness, with global prevalence estimates of AN 0.21%, BN 0.81%, and BED 2.22% (Quan et al., 2013). Since the second half of the twentieth century, the prevalence of eating disorders in adolescent females has increased, especially for AN (Quan et al., 2013). Data suggests that adolescence through early adulthood is a period of high prevalence for eating disorder behaviors (Sander et

al., 2021), with the majority of individuals diagnosed with eating disorders having their first symptoms before the age of 25. Eating disorders are no longer limited to Europe and the United States. In Asia, the population suffering from eating disorder symptoms is increasing, and the prevalence of eating disorders among high school-aged Chinese girls in Hong Kong is similar to or even higher than that of English and American schoolgirls (Cummins et al., 2005). At the same time, females are much more likely to develop eating disorders than males, with a female-to-male ratio of 4.2 for the lifetime prevalence of any eating disorder (Qian et al., 2013).

1.2.3 *The catalysts of eating disorders*

The development of eating disorders can be caused by a variety of reasons. Socioculturally, social comparison is the first potential influence on the occurrence of eating disorder symptoms (Jackson & Chen, 2007). Mainstream media is keen on promoting an aesthetic of slim women and muscular men (Benowitz-Fredericks et al, 2012). This thin ideal is a well-documented phenomenon that associates beauty with thinness and views a slim figure as an ideal. It is considered a significant risk factor for body image problems, eating disorders, and excessive exercise behaviors (Hawkins et al, 2004). The increasing emphasis on the beauty of thinness and the pursuit of a thin figure makes adolescents increasingly concerned about their body image. Consequently, female undergraduates in Hong Kong are commonly dissatisfied with their physical appearance, reporting higher weight dissatisfaction and more dieting behaviors (Cummins et al., 2005).

However, much of the content that appears on social media promoting ideal body image, healthy eating and exercise may be based on false assumptions, such as the use of editing software and

filters to manipulate photos (Tylka & Hill, 2004). Adolescence is a period characterized by an increased focus on appearance and social acceptance (Gustafsson et al, 2011), and adolescents are easily influenced by media content to compare themselves to the so-called “ideal body” image and thus set more demanding expectations of themselves. For example, adolescent females may restrict food intake to keep losing weight and meet the standards promoted by the media. This internalization of the thinness ideal objectifies the individual's self as an object to be judged by others (Ahadzadeh et al., 2017). This cognitive model typically leads individuals to be overly concerned with appearance while being more vulnerable to negative emotions (e.g., anxiety, depression) (Marks et al., 2020), which in turn triggers extreme behaviors (e.g., extreme dieting or overeating).

Stress is the second-factor affecting body image and eating disorders. Internalized cultural values can prescribe the behavior and image of a particular social group (Gustafsson et al, 2011). When the ideal of thinness is widely publicized, people may expect to see a slimmer image of young women. As a result, young women are not only under pressure from themselves to achieve the “ideal body” image but also from outside sources. Repeated messages from family, social media, and peers describing that they are not thin enough may exacerbate body image dissatisfaction, or people who do not have body image dissatisfaction may perceive that dieting can reduce the social pressure of staying thin (Jackson & Chen, 2007). Negative influences on social expectations and the ways in which individuals respond to these social expectations increase the amount of stress that individuals experience, and stress may stimulate the development of eating disorders in individuals who are dissatisfied with their body image (Sassaroli & Ruggiero, 2005).

Eating disorders are characterized by dietary restrictions, obsessive thoughts about food and the body, compensatory behaviors, and psychological distress (American Psychiatric Association, 2013). Negative emotions are an essential factor affecting eating disorders and are commonly found in binge eaters. Greeno et al. (2000) investigated binge antecedents in women with BED, women with binge eating disorder exhibited depression before binge eating behaviors, and an increase in negative emotions was positively correlated with the onset of binge eating. Common negative emotions include anxiety, depression, and tension. When negative emotions are not well regulated, bulimics use food to comfort and distract attention away from unpleasant feelings, also reduce anxiety about weight gain from binge eating, and release emotions. This disordered eating and extreme compensatory behavior is an approach to escape negative emotions and relieve stress (Dingemans et al., 2017). It has also been found that positive intense emotions (e.g., euphoria) may also trigger a failure of emotion regulation, which in turn leads to binge eating behavior (Dingemans et al., 2017).

1.2.4 Moral Values and Eating Disorders

Eating disorders have been shown to be closely associated with moral values, an ideological viewpoint that can be traced back in Western culture to the Middle Ages, where dieting served as a symbol of asceticism and spiritual purity. In present-day Western society, dieting and thinness are equated with health and are strongly valued (Walsh, 2013). Mortimer (2019) conducted interviews with individuals diagnosed with eating disorders and found that individuals with eating disorders perceived that those diagnosed with anorexia nervosa were morally better than those diagnosed with bulimia nervosa or binge eating disorder. Study participants responded in interviews that AN was the most desirable eating disorder and that people diagnosed with AN

had many admirable traits, such as firmness and determination. In contrast, BN was viewed as deplorable and was associated with laziness and weak willpower. Shame is also a significant factor in evaluating the impact of eating disorders and morality. Restrictive eating behaviors in AN can be done in the company of others, whereas binge eating and hyperventilating behaviors have to be done alone and in secret (Mortimer, 2019). These kinds of hidden behaviors are seen as humiliating by the sufferers themselves, leading to intense feelings of shame and negative self-evaluations (Mortimer, 2019).

Moral principles are the basic norms and standards that guide the behavior of an individual or a group. Often based on social, cultural, religious, or philosophical beliefs, these principles help people determine what is right and what is wrong, which in turn shapes moral judgments and behavioral choices (Scheffler, 2018). This experiment explored whether people would still have different moral evaluations of different kinds of eating disorders in the context of Chinese culture. Therefore, the experiment selected Honest, Broad-minded, Benevolent, Firm, Self-disciplined, Confucian relationalism, Wise, and Respectful, seven moral traits that are highly valued in Chinese culture (Buchtel & Guan, 2024). Two of these moral traits, Firm and Self-disciplined, were specifically examined to see if they acted as mediating variables to explain the relationship between different types of eating disorders and their overall moral scores.

Firm is defined as an individual's tendency to demonstrate perseverance and enthusiasm for long-term goals, which encompasses both consistency of interest (the ability to persist in similar interests over time) and perseverance in effort (the tendency to show diligence despite challenges or difficulties in the pursuit of long-term goals) (Duckworth et al., 2007). Perseverance values

consistent long-term interest and persistence in accomplishing complex tasks and applies to highly demanding environments and situations compared to self-control (Duckworth & Gross, 2014). In the experiment questionnaire, “having an ideal”, “firm” and “perseverance” were used to measure firm.

Self-discipline refers to an individual's conscious self-restraint in controlling his or her behavior, speech, or adherence to rules when unsupervised, emphasizing regularity and restraint, which is the ability to successfully exercise a sense of self-control when forced to take action (Zimmerman & Kitsantas, 2014). In general, individuals express self-discipline in two ways: by (1) doing things they do not want to do but should do, such as completing homework before watching television, and (2) not doing things they want to do but should not do, such as not playing video games in class (Zimmerman & Kitsantas, 2014). In measurement, self-discipline includes aspects of self-control, a sense of responsibility, and willpower (Simsir & Dilmac, 2022), so the experiment questionnaire used “having a sense of responsibility”, “self-discipline” and ‘courtesy’ to measure self-discipline.

1.2.5 Adverse effects of eating disorders

Patients with eating disorders commonly exhibit low self-esteem and low self-satisfaction in their self-assessments (Trallero et al., 2005). They typically have a negative self-assessment of themselves and believe that others tend to assess them negatively as well, even if they are not actually assessed differently by others (Mortimer, 2019). Besides the negative impact of eating disorders on patients' self-assessments, eating disorders usually are accompanied by other health problems. Anxiety and depression are the most common mental disorders that appear in

adolescents (Polanczyk et al., 2015). Both are the most common co-morbid diagnoses in eating disorders, with a positive correlation between the level of anxiety/depression and the severity of eating disorders (Sander et al., 2021).

Many experiments have shown that eating disorder patients perceive themselves as having poor self-control and are dissatisfied with themselves in self-assessments. Different eating disorders have been linked to different levels of self-morality, with AN being associated with thinness and embodying the morality of perfection, perseverance, and hard work. In contrast, BN or BED, is viewed as the opposite of anorexia nervosa and morally undesirable (Mortimer, 2019). However, few experiments have been conducted to examine the morality of eating disorder patients from the perspective of ordinary people. In Linville et al.'s (2012) study of women recovering from eating disorders, participants reported that recovery from eating disorders was heavily influenced by an individual's sense of connection to self and others. Supplementarily, a study by Makri et al. (2022) also found that eating disorders were positively correlated with feelings of loneliness and low levels of social support. Thus, as an essential presence in the recovery of people diagnosed with eating disorders, understanding the general public's perceptions of them can better guide treatment for eating disorders. For example, rather than attributing the overeating behavior of patients with BN and BED to deficits in their personality (e.g., lack of self-discipline), it should be viewed as a psychological disorder that requires formal clinical treatment. The university student population, as the majority of eating disorder patients' peers, is an integral part of the recovery process for eating disorder patients, and positive peer attitudes (e.g., empathy, and nonjudgmental support) are critical protective factors for eating disorder recovery. Therefore, it is crucial to understand the attitudes of university students toward eating disorders to gain insight

into their perceptions of eating disorders and further provide guidance for the prevention of eating disorders in healthy populations as well as for the rehabilitation of patients with eating disorders.

1.3 Hypotheses

In this study, the hypothesis is: 1) university students have discrepancies in moral evaluations between AN, BN, and BED. The general moral assessment of AN is higher than that of BN and BED; 2) the differences between moral assessments can be explained by the concept that thinness is related to higher firmness and self-discipline. The moral characters “firm” and “self-disciplined” serve as mediators that explain the relationship between different eating disorders and moral assessments; 3) the scores of firm and self-disciplined are positively associated with the scores of general moral assessment; 4) AN scores higher on moral characters “Firm” and “Self-discipline” than BN and BED.

2. Methodology

2.1 Methods

An online questionnaire was conducted to test university students’ assessment of females with eating disorders. The experiment tested participants' moral evaluations and impressions of different eating disorders, and whether two specific moral principles, “self-disciplined” and “firm” could be used as mediating variables to explain the relationship between eating disorder types and general morality scores.

2.2 Participants

Based on Pan et al. (2018), a bootstrapping analysis for testing mediation in a two-measure repeated-measures design would require a sample size of $N = 99$, given an intraclass correlation coefficient (ICC) of 0.1 and an effect size of $\beta = 0.26$ (positioned midway between small and medium effect sizes). The study recruited 114 English-literate university students through online social groups and email outreach. Participants all came from Chinese cultural backgrounds and completed the online survey.

2.3 Materials

To assess moral evaluations of different eating disorders among individuals with Chinese cultural backgrounds, this study employed two key measurement tools: four original questions designed to measure general moral judgments and impressions regarding eating disorders, as well as the Short Chinese Moral Character Scale (CMCS). The Short CMCS, adapted from Buchtel and Guan's (2024) research incorporating moral principles from both Beijing and Hong Kong, consists of 25 items evaluating seven culturally significant moral dimensions: Honesty, Broad-mindedness, Benevolence, Firmness, Self-discipline, Confucian relationalism, Wisdom, and Respect.

The complete measurement instrument comprised a 29-item questionnaire using a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). Reliability analysis conducted in SPSS

demonstrated good internal consistency for the scale, with Cronbach's α coefficient reaching .810, indicating satisfactory measurement reliability.

2.4 Procedure

The study used a within-subjects experimental design with one independent variable and two dependent variables. The independent variable consisted of three types of eating disorders: anorexia nervosa (AN), bulimia nervosa (BN), and binge eating disorder (BED). The dependent variables measured were: (1) general moral assessment and (2) overall impression.

Two specific moral character traits, firm and self-discipline, were analyzed independently to investigate potential mediating factors. This separate analysis aimed to determine whether these character traits could explain the relationship between eating disorder types and moral evaluations.

All participants were exposed to all three experimental conditions (AN, BN, and BED), with the order of presentation randomized to ensure that each disorder type appeared equally often in each position across participants.

In the questionnaire, participants first read a statement about one eating disorder (one among three eating disorders, AN, BN, and BDE). Details of the statements can be found in the Appendix. After reading the statement, participants rated one question about general moral assessment (Do you think this person is morally good?), three questions about their impression (Do you have a positive impression of this person; Would you be willing to be friends with this person; Would you admire this person?), and the short CMCS. Each participant was required to read three paragraphs of the statement and make assessments after each one.

3. Results

3.1 Higher General Moral Assessment of AN

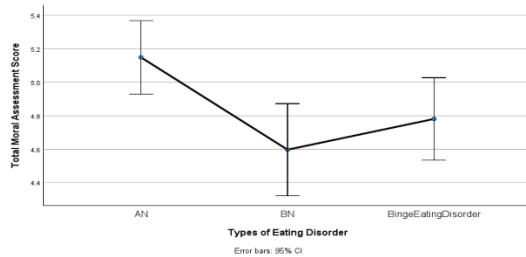


Figure 1: Graph showing the moral assessment scores (and 95% confidence interval) given by participants about AN, BN, and BED.

A one-way repeated measures ANOVA tested whether AN would score higher on total moral assessment than BN and BED. Figure 1 shows the general moral assessment scores given by participants about three types of eating disorders (AN, BN, and BED). The results suggested that AN received consistently higher moral evaluation scores compared to both BN and BED, suggesting that participants perceived AN as morally superior to the other two disorders. Post hoc pairwise comparisons with Bonferroni correction revealed that AN($M = 5.15$, $SE = .112$), was considered as significantly morally better than BN($M = 4.60$, $SE = .139$) and BED($M = 4.78$, $SE = .124$), $F(2, 226) = 6.001$, $p = .003$. However, there was no significant difference in moral assessment between BN and BED, $p = .844$.

3.2 No Differences between the Impression on Three Types of Eating disorders

Another repeated measures ANOVA was conducted to analyze participants' impressions of patients with different eating disorders. The results suggested that there were no significant differences among AN, BN, and BED, $p = .94$.

3.3 Mediation Effect of Moral Characters: firm and self-discipline

As noted earlier, AN scored higher on general moral assessment than BN and BEN, $F(2, 226) = 6.001, p = .003$. To test whether moral principles “firm” and “self-disciplined” could explain the differences in general moral assessment, two bootstrapping mediation analyses between AN and BN and AN and BED were conducted by using Process macro in SPSS. Reliability analyses revealed acceptable to high internal consistency for both moral characters: Firm ($\alpha = .801$), and Self-discipline ($\alpha = .850$).

3.3.1 Self-discipline Explained the Differences in Moral Assessments between AN and BED.

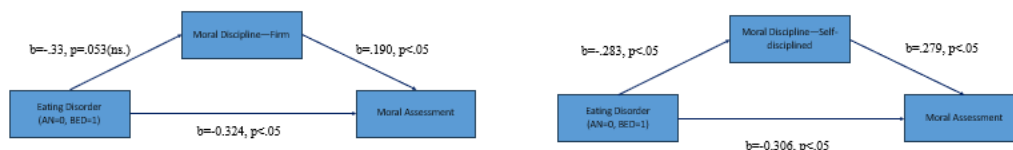


Figure 2: Mediation analysis revealed that self-discipline mediates the moral assessment between AN and BED, but firm could not explain the relationship between moral assessment and AN and BED.

Could the idea “thinness is related to higher self-discipline and firm” explain the differences in moral assessments between AN and BED? The bootstrapping mediation analysis results showed

that self-discipline could successfully explain the differences in general moral assessment between AN and BED, $b = -.283, p = .028$, which supported the hypothesis that AN was considered as more self-discipline than BED. Higher ratings of self-discipline were positively associated with more favorable moral evaluations. Consequently, AN received significantly higher moral assessment scores. However, firm did not demonstrate significant mediating effects, $b = -.33, p = .053$, suggesting firm could not explain the differences in moral assessment between AN and BED.

3.3.2 Firm Explained the Differences in Moral Assessment between AN and BN.

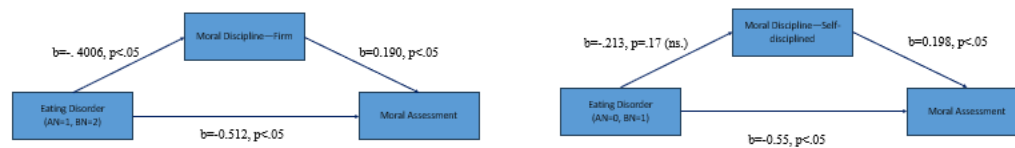


Figure 3: Mediation analysis revealed that firm mediates the moral assessment between AN and BN, but self-discipline could not explain the relationship between moral assessment and AN and BN.

The second bootstrapping mediation analysis tested whether firm and self-discipline could disclose the differences in moral assessment between AN and BN. Compared between AN and BN, could the idea “thinness is related with higher self-discipline and firm” explain the differences in their moral assessments? Analyses showed that firm had a significantly indirect effect that mediated the difference in general moral assessment between AN and BN, $b = -.401, p = .019$, which revealed that AN was considered to have greater firmness than BN. Higher firmness ratings were positively associated with more favorable moral evaluations.

Consequently, AN was regarded to have superior moral assessment scores. However, self-discipline failed to explain the moral differences between AN and BN, $b = -.213, p = .17$.

4. General Discussion

This experiment explored the relationship between eating disorders and moral evaluations.

Regarding overall moral evaluation, the experimental results supported the initial hypothesis that AN was significantly higher than BN and BED in overall moral scores. In the mediation effects test, experimental results supported the initial hypothesis that Frim could explain the difference in moral scores when AN and BN were compared. People with BN are usually in the normal weight range, so it is difficult for people to distinguish them morally by their appearance.

Instead, the discrepancy in the moral assessment of AN and BN may be because people with BN eat large quantities of food and then use unhealthy methods (e.g., vomiting, laxatives, etc.) to expel the food. This type of repeated “mind-altering” behavior is considered to be unfirm. In collectivist cultures (e.g., Chinese culture), it is more likely to receive negative appraisal (Markus & Kitayama, 2019), because it obeys the expectation of being consistent and predictable. Whereas extreme restrictive behaviors in patients with AN are also harmful to health, they may be seen on the surface as a sign of “stability” because they reflect sustained. Though this “stability ” is pathological.

When AN was compared to BED, self-discipline could explain the difference in ethics scores. Possible explanations are people diagnosed with binge eating disorder are usually overweight but still consume large amounts of food. This uncontrollable excess behavior may be seen as a lack of self-control (Major et al., 2014). Meanwhile, being thin is seen as a symbol of self-discipline,

while being overweight is wrongly associated with negative qualities such as lack of persistence (Hesse-Biber et al, 2006).

4.1 Implications

Eating disorders are frequent psychological disorders in current society, with most of the victims being adolescents and young women. Consistent with the misattribution of eating disorders to patients' personal problems found in previous research (Anderson et al., 2016; Mortimer, 2019), this study's results also demonstrate that participants considered BN and BED to have moral problems that resulted in over-eating. However, eating disorders are influenced by a combination of physiological, psychological, and social circumstances. Repeated unsuccessful attempts to regulate eating patterns may contribute to the development of learned helplessness in individuals with BN (Colles et al., 2008). This psychological phenomenon manifests when patients experience persistent failures in controlling bulimic behaviors, gradually internalizing the belief that "I cannot control my appetite". Over time, this cognitive pattern may evolve into a maladaptive self-schema that allows the eating disorder symptoms to persist (Cooper, 2005). This study's findings were consistent with previous studies revealing significant gaps in public understanding of BN's psychopathology. Participants misattributed bulimic behaviors to moral failings, like poor self-discipline and lack of firmness. These attributions reflect what Crisp (2005) discovered the "moralization of eating disorders", as symptoms are misinterpreted through a moral lens rather than being recognized as manifestations of complex biopsychosocial disturbances (Wonderlich et al., 2020). Such misperceptions are particularly concerning because

they may delay help-seeking behaviors or hinder effective treatment engagement for patients (Thompson-Brenner et al., 2013).

This work also highlighted that the stigmatization of people with eating disorders still exists. Past research has revealed that there is a widespread belief that people with eating disorders are responsible for their illnesses (Mond et al., 2006), and more negative traits have been attributed to bulimics, such as laziness and cheating (Brelet et al., 2021). This work revealed that the university student contained the same notion, which was that bulimics have lower morals than the anorexics and that the bulimics are viewed as less resilient and less disciplined than the anorexics. Therefore, this experiment complemented the moral evaluation of different eating disorders by the college student population in Chinese culture. Bulimia is still seen as undesirable considered the moral qualities valued by Chinese culture.

On the other hand, is it possible that the perception of AN as morally superior and the values that associate thinness with self-discipline and perseverance may increase the risk of people who do not have an eating disorder switching to AN? This question needs to take age into account, with the high prevalence of eating disorders occurring in adolescents and young adults. During this period, individuals' self-esteem is in turmoil, along with a strong desire to fit in, and body image issues begin to emerge (Jackson & Chen, 2011). Individuals who are exposed to “thin” messages, may lead to body image distortion and eating disorders through the mediated pathways of social comparison, self-objectification, and internalization of thin ideals (Dane & Bhatia, 2023). Ogden et al. (2020) found that people who viewed body diversity images scored much higher on both body satisfaction and body empathy than those who only viewed thin-figure photos. Exposure to body diversity images positively impacted body friendliness, overall body empathy, and body satisfaction (Ogden et al., 2020). Therefore, society and secondary schools

are recommended to reinforce education about body diversity and body positivity education. At the same time, individuals maintain critical thinking about content on social media platforms and focus on health rather than body image.

4.2 Limitations

In the online questionnaire, each moral character was measured by only three to four questions. Moral characters are relatively complicated and abstract concepts, three to four questions may simplify moral characters and fail to reflect their multidimensionality. At the same time, moral assessment is often accompanied by emotions. Emotions amplify moral judgments, for instance, when participants read the statement “a girl is overweight, but she still consumes a large amount of food”, they may feel disgusted and under the influence of negative emotions that make unwelcomed behavior seem more immoral (Avramova & Inbar, 2013). Therefore, negative feelings may affect people’s moral judgment. In future experiments, multidimensional scales and reverse scoring can be added to provide in-depth measurements of firm and self-discipline. According to the experimental data in this study, there was a high internal consistency between the questions measuring “firm” ($\alpha = .801$) and “self-discipline” ($\alpha = .850$) in the CMCS scale, which indicated that the questions in the scale were highly correlated with each other and that the measurement of the target moral principles was consistent. Therefore, the measurement of “firm” and “self-discipline” was reliable and informative.

Previous research has found that men have harsher attitudes toward people with eating disorders and more negative feelings toward bulimics (Anderson et al., 2016; Brelet et al., 2021). In order to eliminate ethical issues and protect individual privacy, no information about participants was

collected in this study. Consequently, it is hard to tell whether gender exerted a different impact on moral assessments of different types of eating disorders. Future studies are recommended to conduct an in-depth exploration of whether gender has an impact on the evaluation of different eating disorders. Only firm and self-discipline were tested for their mediation effects between types of eating disorders and general moral evaluations. Future studies could investigate more moral characters that are emphasized in Chinese culture, such as Honesty and Confucian relationalism.

5. Conclusion

Eating disorders are increasingly concerning psychopathological issues. Current research suggests these disorders emerge from complex interactions among multiple factors, including social comparison processes, chronic stress exposure (Torres & Nowson, 2007), and difficulties in emotional regulation (Lavender et al., 2015). Our findings align with and extend previous literature by demonstrating how culturally embedded thinness ideologies shape differential university students' moral evaluations of the three primary eating disorder subtypes: anorexia nervosa (AN), bulimia nervosa (BN), and binge eating disorder (BED).

Due to the influence of thinness ideology, AN is seen as more self-disciplined and restrained, while BN and BED relatively embody indulgence. The results of this study suggested that university students tended to view AN as morally superior to both BN and BED, with perseverance and self-discipline being factors that influence the different moral scores of eating disorders. These findings support the theoretical framework suggesting that AN symptoms are culturally reinterpreted as virtues (e.g., self-control), whereas BN and BED behaviors are

misconstrued as moral failures. Notably, study data also revealed concerning gaps in participants' understanding of eating disorder etiology and maintenance factors, along with persistent stigmatization of individuals with bulimic disorders.

Future research should investigate whether these moral evaluation patterns generalize to different age groups and other moral principles. Additionally, experimental investigations of targeted educational interventions to modify these moral perceptions would be valuable. To help people with eating disorders recover and prevent the onset of eating disorders, individuals are advised to maintain critical thinking and positive self-evaluations, while society ought to increase education about healthy eating and diverse aesthetics and reduce the stigmatization of people with eating disorders.

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Appendix

The Assessment Questionnaire

Statements refer to the following reference:

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.

Statement1—Anorexia Nervosa

A very thin girl's body feels hungry, but she is afraid that eating will cause bloating and weight gain. So she restricts her eating to little or no food.

General moral assessment

Do you think this person is morally good?

Strongly Disagree1 Disagree2 Somewhat Disagree3 Neither Agree Nor Oppose4 Agree5
Somewhat Agree6 Strongly agree7

Impression assessment

1. Do you have a positive impression towards this person?
2. Would you be willing to be friends with this person?
3. Would you admire this person?

Strongly Disagree1 Disagree2 Somewhat Disagree3 Neither Agree Nor Oppose4 Agree5
Somewhat Agree6 Strongly agree7

Specific moral principles assessment

Please refer to the following sentences about traits (describing a person's character) to evaluate the character in the statement you are reading. How much do you agree or disagree that the following sentences about character traits should be used to describe her?

Strongly Disagree1 Disagree2 Somewhat Disagree3 Neither Agree Nor Oppose4 Agree5
Somewhat Agree6 Strongly agree7

1. Honesty is very important to her.
2. Behaving honourably is very important to her.
3. Loyalty is very important to her.
4. Trustworthiness is very important to her.
5. Having ideals is very important for her.
6. Perseverance is very important to her.
7. Perseverance is very important to her.

8. Breadth of mind is very important to her.
9. Tolerance is very important to her.
10. Knowing how to forgive is very important to her.
11. Love is very important to her.
12. Compassion is very important to her.
13. Having a conscience is very important for her.
14. Concern for others is very important to her.
15. Self-discipline is very important to her.
16. Courtesy is very important to her.
17. Having a sense of responsibility is very important to her.
18. Being modest in learning is very important to her.
19. Being filial is very important to her.
20. Being grateful is very important to her.
21. Loving her family is very important for her.
22. Being thoughtful is very important for her.
23. Knowing right and wrong is very important for her to know.
24. Being wise is very important for her.
25. Respect for others is very important to her.

Statement2—Binge eating disorder

An overweight girl keeps eating so fast that she hardly stops. Even though her body is getting full and uncomfortable, she continues to put food in her mouth.

General moral assessment

Do you think this person is morally good?

Strongly Disagree¹ Disagree² Somewhat Disagree³ Neither Agree Nor Oppose⁴ Agree⁵
Somewhat Agree⁶ Strongly agree⁷

Impression assessment

4. Do you have a positive impression towards this person?
5. Would you be willing to be friends with this person?
6. Would you admire this person?

Strongly Disagree¹ Disagree² Somewhat Disagree³ Neither Agree Nor Oppose⁴ Agree⁵
Somewhat Agree⁶ Strongly agree⁷

Specific moral principles assessment

Please refer to the following sentences about traits (describing a person's character) to evaluate the character in the statement you are reading. How much do you agree or disagree that the following sentences about character traits should be used to describe her?

Strongly Disagree1 Disagree2 Somewhat Disagree3 Neither Agree Nor Oppose4 Agree5
Somewhat Agree6 Strongly agree7

1. Honesty is very important to her.
2. Behaving honourably is very important to her.
3. Loyalty is very important to her.
4. Trustworthiness is very important to her.
5. Having ideals is very important for her.
6. Perseverance is very important to her.
7. Perseverance is very important to her.
8. Breadth of mind is very important to her.
9. Tolerance is very important to her.
10. Knowing how to forgive is very important to her.
11. Love is very important to her.
12. Compassion is very important to her.
13. Having a conscience is very important for her.
14. Concern for others is very important to her.
15. Self-discipline is very important to her.
16. Courtesy is very important to her.
17. Having a sense of responsibility is very important to her.
18. Being modest in learning is very important to her.
19. Being filial is very important to her.
20. Being grateful is very important to her.
21. Loving her family is very important for her.
22. Being thoughtful is very important for her.
23. Knowing right and wrong is very important for her to know.
24. Being wise is very important for her.
25. Respect for others is very important to her.

Statement3——Bulimia Nervosa

A regular-weight girl eats a lot of food in a short period of time, but after overeating she sticks her finger down her throat and stimulates it hard enough to push the food out of her stomach.

General moral assessment

Do you think this person is morally good?

Strongly Disagree1 Disagree2 Somewhat Disagree3 Neither Agree Nor Oppose4 Agree5
Somewhat Agree6 Strongly agree7

Impression assessment

1. Do you have a positive impression towards this person?

2. Would you be willing to be friends with this person?

3. Would you admire this person?

Strongly Disagree1 Disagree2 Somewhat Disagree3 Neither Agree Nor Oppose4 Agree5
Somewhat Agree6 Strongly agree7

Specific moral principles assessment

Please refer to the following sentences about traits (describing a person's character) to evaluate the character in the statement you are reading. How much do you agree or disagree that the following sentences about character traits should be used to describe her?

Strongly Disagree1 Disagree2 Somewhat Disagree3 Neither Agree Nor Oppose4 Agree5
Somewhat Agree6 Strongly agree7

1. Honesty is very important to her.
2. Behaving honourably is very important to her.
3. Loyalty is very important to her.
4. Trustworthiness is very important to her.
5. Having ideals is very important for her.
6. Perseverance is very important to her.
7. Perseverance is very important to her.
8. Breadth of mind is very important to her.
9. Tolerance is very important to her.
10. Knowing how to forgive is very important to her.
11. Love is very important to her.
12. Compassion is very important to her.
13. Having a conscience is very important for her.
14. Concern for others is very important to her.
15. Self-discipline is very important to her.
16. Courtesy is very important to her.
17. Having a sense of responsibility is very important to her.
18. Being modest in learning is very important to her.
19. Being filial is very important to her.
20. Being grateful is very important to her.
21. Loving her family is very important for her.
22. Being thoughtful is very important for her.
23. Knowing right and wrong is very important for her to know.
24. Being wise is very important for her.
25. Respect for others is very important to her.