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Structural Modeling of Binge Eating Based on Self-Compassion and Impulsivity with the Mediating Role of Emotion Regulation in Male Students with Obesity

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A B S T R A C T

Purpose: This study aimed to model binge eating behavior in obese male university students based on self-compassion and impulsivity, with emotion regulation serving as a mediating variable.

Methods and Materials: The research employed a descriptive-correlational design using structural equation modeling (SEM). The sample consisted of 225 obese male students from Islamic Azad University in Zabol, selected through simple random sampling. Data were collected using four validated self-report instruments: the Binge Eating Scale (Stice et al., 2008), Self-Compassion Scale (Reis et al., 2011), Barratt Impulsiveness Scale (BIS-11), and the Difficulties in Emotion Regulation Scale (DERS; Gratz, 2004). Reliability and validity indices for all instruments were confirmed. Data analysis was performed using SPSS-27 and SmartPLS-3.3.

Findings: The results demonstrated that self-compassion significantly predicted lower levels of binge eating ($\beta = -0.81$, $t = 10.33$, $p < 0.001$), while impulsivity significantly predicted higher binge eating ($\beta = 0.29$, $t = 3.05$, $p < 0.01$). Self-compassion also significantly predicted better emotion regulation ($\beta = -0.59$, $t = 6.76$, $p < 0.001$), whereas impulsivity predicted poorer emotion regulation ($\beta = -0.31$, $t = 3.54$, $p < 0.001$). Emotion regulation significantly mediated the relationship between self-compassion and binge eating ($Z = 9.03$, $p < 0.001$), as well as between impulsivity and binge eating ($Z = 4.71$, $p < 0.001$). The structural model showed a good overall fit, supporting the hypothesized pathways.

Conclusion: The findings highlight the critical role of self-compassion and impulsivity in predicting binge eating behaviors among obese male students, with emotion regulation serving as a key mediating process. Enhancing self-compassion and emotional regulation capacities while addressing impulsive tendencies may reduce maladaptive eating behaviors in this population.

Keywords: *Binge Eating, Self-Compassion, Impulsivity, Emotion Regulation, Obesity, Male Students.*

1. Introduction

Binge eating disorder (BED) has emerged as a major public health concern due to its strong association with obesity, emotional dysregulation, and psychological distress. Among male university students, who often face identity crises, body image pressures, and a lack of adaptive coping strategies, BED has shown a rising trajectory that necessitates urgent scholarly attention. BED is characterized by recurrent episodes of uncontrollable food intake accompanied by feelings of guilt, shame, and distress, yet without compensatory behaviors such as purging, distinguishing it from bulimia nervosa and anorexia nervosa (Biçaker et al., 2024; Vuillier et al., 2024). Studies indicate that the affective underpinnings of eating disorders such as BED are deeply rooted in deficits in self-regulation, self-perception, and emotional reactivity, especially when exacerbated by personality traits like impulsivity and low self-compassion (Breiner et al., 2022; Niafar et al., 2024).

Self-compassion, defined as a kind and nonjudgmental attitude toward oneself during times of failure or emotional distress, has gained considerable attention as a protective factor against maladaptive behaviors, including disordered eating (Paucsik et al., 2023). Several studies have demonstrated that individuals with higher levels of self-compassion tend to exhibit greater emotional regulation capacity, lower impulsivity, and healthier eating behaviors (Ericson et al., 2024; Vogel, 2023). The ability of self-compassion to buffer the effects of emotional stress is especially relevant for populations vulnerable to binge eating, as it can reduce the internalized shame and emotional reactivity that often precede binge episodes (Niafar et al., 2024; Senahi Dashti, 2023). Furthermore, research by Paucsik et al. (2023) supports a mediating role of emotion regulation in the relationship between self-compassion and behavioral outcomes, indicating that emotion regulation may act as the conduit through which self-compassion exerts its protective effects (Paucsik et al., 2023).

In parallel, impulsivity—a multidimensional trait encompassing tendencies toward rapid, unplanned reactions to internal or external stimuli—has been strongly associated with binge eating behaviors. Individuals with high impulsivity often struggle with delaying gratification, resisting urges, and tolerating emotional discomfort, leading to maladaptive eating patterns (Kachooei et al., 2016; Koçak & Çağatay, 2024). Particularly, emotion-focused impulsivity—a subtype involving acting rashly in response to negative emotions—has been identified as a significant predictor of disordered eating in both clinical and non-clinical populations (Hassanzadeh, 2022; Stern et al., 2024). Breiner et al. (2022) found that self-compassion moderated the relationship between emotion-focused impulsivity and dietary restraint, suggesting that fostering self-compassion can mitigate impulsive tendencies that fuel disordered eating (Breiner et al., 2022).

Emotion regulation, defined as the ability to monitor, evaluate, and modulate emotional responses, has been increasingly recognized as a central mechanism in the onset and maintenance of eating disorders (Ericson et al., 2024; Mohammadi et al., 2022). Difficulties in emotion regulation are common among individuals with BED, particularly in males who may lack culturally acceptable avenues for emotional expression and stress management (Kwan & Dodd, 2024; Li et al., 2024). Research by Stern et al. (2024) highlights how impaired emotion regulation is prevalent not only in BED but also in restrictive and avoidant eating disorders. Additionally, studies have suggested that the mediating role of emotion regulation between self-compassion and psychological outcomes extends to eating behaviors, with implications for intervention and prevention (Mokhlasi, 2023; Nikooseresht & Shomali Eskoee, 2021).

The theoretical model guiding this study integrates self-compassion, impulsivity, and emotion regulation to explain variance in binge eating behavior among obese male students. The rationale for this model is supported by prior findings indicating that self-compassion negatively correlates with binge eating and positively with adaptive emotion regulation strategies, while impulsivity exhibits the opposite pattern (Fadaei Chafi, 2023; Fazeli, 2022). This triadic model assumes that self-compassion and impulsivity are distal predictors that influence binge eating both directly and indirectly through emotion regulation. Thus, emotion regulation functions as a psychological mediator, explaining how personality traits and affective dispositions translate into behavioral outcomes.

Moreover, recent literature has emphasized the role of cultural and developmental factors in shaping these dynamics. For instance, in Iranian and Middle Eastern contexts, where emotional expression in men is often stigmatized, maladaptive emotion regulation strategies may be more prevalent, contributing to higher rates of BED among male populations (Kargar, 2023; Mohammadi et al., 2022). Similarly, early adverse experiences, such as childhood trauma or neglect, have been shown to disrupt the development of emotional competencies and increase vulnerability to impulsive behaviors and disordered eating

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(Koçak & Çağatay, 2024; Mokhlasi, 2023). In this regard, the present study contributes to a growing body of culturally contextualized research on emotion regulation and eating pathology.

Another important dimension of this study is its focus on male university students with obesity, a population that is understudied yet increasingly at risk. While much of the eating disorder literature has historically focused on females, recent evidence suggests that men may exhibit distinct psychological pathways leading to binge eating. For example, Chioma and Sulong (2022) emphasize the role of compatibility and emotional fulfillment in men's well-being, which may relate to emotional eating as a maladaptive coping mechanism in the absence of such fulfillment (Chioma & Sulong, 2022). Similarly, Niafar et al. (2024) reported that emotional reactivity significantly mediated the relationship between self-compassion and body image dissatisfaction among female students with BED, suggesting that this model may be extended to males with similar vulnerabilities (Niafar et al., 2024).

Given this empirical backdrop, the current study aims to investigate a structural model of binge eating in obese male university students based on self-compassion and impulsivity, with emotion regulation as the mediating variable.

2. Methods and Materials

2.1. Study Design and Participants

This study is applied in terms of its objective and descriptive-correlational with a structural equation modeling (SEM) approach in terms of its nature and methodology. The statistical population consisted of all male students with obesity at the Islamic Azad University of Zabol, totaling 435 individuals. Since the methodology of SEM closely resembles some aspects of multiple regression analysis, the principles used for determining sample size in multiple regression can also apply to SEM. In multiple regression analysis, the ratio of the number of observations to the number of independent variables should not fall below five. Otherwise, the generalizability of the regression equation is compromised. A more conservative ratio of 10 observations per independent variable has been suggested by Halinski and Feldt (1970) and Miller and Kunce (1973). From the perspective of James Stevens (1995) and Kline (1990), a ratio of 15 observations per predictor variable using the standard least squares method is considered a sound rule of thumb. Therefore, in SEM methodology, the sample size can generally range from 5 to 15 observations per measured variable: ($5Q < n < 15Q$), where Q represents the number of observed variables or questionnaire items, and n is the sample size. It should be noted that the sample size should not fall below 200 participants. Considering the number of variables—15 subscales across four questionnaires—the maximum sample size was calculated as $15 \times 15 = 225$. Accordingly, a sample size of 225 was selected using a simple random sampling method.

2.2. Measures

Binge Eating Questionnaire: The Binge Eating Questionnaire was developed by Stice et al. (2008). It consists of 3 subscales designed to assess symptoms of anorexia nervosa, bulimia nervosa, and binge eating disorder, and it facilitates diagnosis at both clinical and subclinical levels. The scale distinguishes among seven diagnostic categories: anorexia nervosa, bulimia nervosa, binge eating disorder, subthreshold anorexia nervosa, subthreshold bulimia nervosa, subthreshold binge eating, and no diagnosis. Items 1–4 are scored on an 8-point Likert scale from 0 to 7, measuring body image attitudes. Higher scores indicate poorer body image perception. Item 5 is answered with Yes or No. Items 6–14 are answered with Yes, No, or “I don't know” and assess loss of control in eating, excessive food intake, and social avoidance behaviors. Item 7 assesses average weekly binge episodes over the past six months (0–7 days), and item 8 measures the same over the past three months (0–14 days). Items 15–18 assess compensatory behaviors (e.g., self-induced vomiting, laxative use, fasting, or excessive exercise) in the past three months (0–14 times). Item 19 records weight in kilograms, item 20 records height in meters, item 21 assesses missed menstruation over the past three months, and item 22 asks about the use of birth control pills (Yes/No). Scoring can be manual or computerized; in this study, computerized scoring was used to determine one of the seven diagnostic categories. The questionnaire demonstrates strong criterion, predictive, and convergent validity. Test-retest reliability and internal consistency are also acceptable (Stice et al., 2004). This scale compares well with structured psychiatric interviews such as the Structured Clinical Interview for DSM-III-R (SCID), and its test-retest kappa coefficients for diagnosing eating disorders range from 0.80 to 0.90 (Pike et al., 2009). Cronbach’s alpha was reported as 0.87 for normal-weight and 0.83 for overweight samples (Wagner, 2011).

E-ISSN: 2980-9681

Self-Compassion Questionnaire (Reis et al., 2011): This questionnaire includes 26 items measuring three dimensions: self-kindness vs. self-judgment (2 items each), common humanity vs. isolation (2 items each), and mindfulness vs. over-identification (2 items each). Items are rated on a 5-point Likert scale from 1 (Almost Never) to 5 (Almost Always), with higher scores indicating greater self-compassion. Items 1, 4, 8, 9, 11, and 12 are reverse scored. Shahbazi et al. (2015) used the 12-item short form developed by Reis et al. (2011) to measure self-compassion across six subscales. The Cronbach's alpha for the overall scale was reported as 0.91. Cronbach's alpha for the subscales were as follows: self-kindness (0.83), self-judgment (0.87), common humanity (0.91), isolation (0.88), mindfulness (0.92), and over-identification (0.77). The questionnaire shows satisfactory concurrent and convergent validity.

C) Barratt Impulsiveness Scale (Barratt et al., 1995): The self-report Barratt Impulsiveness Scale-11 (Patton, Stanford, & Barratt, 1995) was used. It contains 30 items rated on a 4-point Likert scale (1 = Never, 2 = Rarely, 3 = Often, 4 = Always). The scale measures three dimensions: non-planning impulsivity (items 1, 5, 7, 9, 10, 12, 17, 19, 25), motor impulsivity (items 2, 3, 8, 11, 13, 14, 16, 18, 20, 21, 22, 24), and cognitive impulsivity (items 4, 6, 15, 23). Cognitive impulsivity refers to difficulty tolerating complexity and resisting immediate decisions. Motor impulsivity indicates acting without forethought, and non-planning impulsivity reflects a lack of future orientation in behavior. All items are positively scored. In the validation study by Javid et al. (2012), the number of items was reduced to 25 by removing five items with factor loadings below 0.30. The reliability of the scale and its subcomponents was reported as acceptable, and its validity was also confirmed.

D) Difficulties in Emotion Regulation Scale (Gratz, 2004): This scale was developed by Gratz et al. in 2004 and is a self-report measure designed to comprehensively assess emotion regulation difficulties beyond existing tools. It includes 36 items rated on a 5-point Likert scale from 1 (Almost Never) to 5 (Almost Always). The scale measures six dimensions: non-acceptance of emotional responses, difficulties engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. Higher scores indicate greater difficulties in emotion regulation. Gratz et al. (2004) reported a Cronbach's alpha of 0.96 for the full scale and between 0.83 and 0.95 for the subscales. In Iran, psychometric properties of the Persian version were examined and approved by Besharat and Bazazian (2016), with test-retest reliability ranging from 0.79 to 0.91 after one week. Construct and convergent validity were confirmed through factor analysis.

2.3. Data Analysis

Both descriptive and inferential statistics were used for data analysis. Descriptive statistics included mean, frequency tables, charts, standard deviation, and variance. Inferential statistics were analyzed using SPSS 20 and SmartPLS through structural equation modeling.

3. Findings and Results

Table 1 presents the statistical indicators of the research variables, including mean, standard deviation, minimum, and maximum:

Table 1

Descriptive Statistics of Research Variables

Variable	Mean	SD	Min	Max
Self-Kindness	5.67	2.26	2	10
Self-Judgment	4.09	2.45	2	10
Common Humanity	5.13	2.34	2	10
Isolation	6.87	5.23	2	10
Mindfulness	4.09	2.11	2	10
Over-Identification	6.39	5.41	2	10
Self-Compassion (Total)	32.24	5.41	12	60
Non-Planning Impulsivity	24.23	4.67	10	50
Motor Impulsivity	13.67	4.89	15	75
Cognitive Impulsivity	22.26	5.03	5	25
Impulsivity (Total)	59.16	18.98	30	159
Adaptive Emotion Regulation	63.15	12.89	21	105
Maladaptive Emotion Regulation	49.18	8.76	15	75

E-ISSN: 2980-9681

Emotion Regulation (Total)	112.33	71.43	36	180
Anorexia Nervosa	12.47	4.55	0	28
Bulimia Nervosa	13.89	5.21	0	28
Binge Eating Disorder	15.76	5.72	0	28
Eating Disorder (Total)	42.12	19.62	0	84

As seen in Table 1, the descriptive statistics for the self-compassion variable show a mean of 32.24. Based on the questionnaire scoring, a score between 25 and 48 indicates a moderate level of self-compassion. The descriptive statistics for impulsivity reveal a mean of 59.16, indicating a moderate level. For emotion regulation, the mean is 112.33; scores between 90 and 120 suggest a high level of emotion regulation. The mean for eating disorder is 42.12, where a score between 40 and 84 implies a high level of disordered eating.

Table 2

Correlation Coefficients Between Research Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Self-Kindness	0.70																	
2. Self-Judgment	0.67	0.80																
3. Common Humanity	0.51	0.47	0.89															
4. Isolation	0.51	0.54	0.51	0.93														
5. Mindfulness	0.30	0.32	0.34	0.27	0.92													
6. Over-Identification	0.65	0.58	0.72	0.57	0.38	0.63												
7. Self-Compassion (Total)	0.73	0.46	0.78	0.53	0.33	0.64	0.78											
8. Non-Planning Impulsivity	0.82	0.48	0.84	0.57	0.37	0.71	0.81	0.85										
9. Motor Impulsivity	0.75	0.46	0.60	0.82	0.64	0.50	0.62	0.86	0.88									
10. Cognitive Impulsivity	0.56	0.83	0.75	0.90	0.33	0.33	0.55	0.50	0.88	0.86								
11. Impulsivity (Total)	0.73	0.51	0.81	0.89	0.59	0.60	0.39	0.32	0.63	0.86	0.89							
12. Emotion Regulation (Total)	0.85	0.30	0.83	0.80	0.81	0.57	0.51	0.50	0.71	0.96	0.89	0.91						
13. Adaptive Regulation	0.80	0.65	0.79	0.72	0.85	0.63	0.40	0.29	0.58	0.68	0.87	0.93	1.00					
14. Maladaptive Regulation	0.56	0.83	0.75	0.39	0.65	0.33	0.55	0.50	0.88	0.56	0.83	0.75	0.90	1.00				
15. Binge Eating Disorder	0.56	0.38	0.75	0.90	0.65	0.33	0.55	0.50	0.55	0.56	0.83	0.75	0.90	0.65	0.56			
16. Anorexia Nervosa	0.56	0.60	0.39	0.31	0.49	0.33	0.55	0.50	0.52	0.56	0.83	0.75	0.90	0.65	0.56	0.83		
17. Bulimia Nervosa	0.56	0.83	0.75	0.53	0.65	0.33	0.55	0.50	0.88	0.56	0.83	0.75	0.90	0.65	0.56	0.83	0.75	
18. Compulsive Overeating	0.39	0.45	0.44	0.40	0.39	0.33	0.60	0.50	0.38	0.56	0.83	0.75	0.34	0.51	0.56	0.62	0.75	0.90

The results in Table 2 indicate that there are significant correlations among the research variables, providing sufficient justification for the use of structural equation modeling (PLS) and path analysis. Based on the table, the

E-ISSN: 2980-9681

square roots of the average variance extracted (written on the matrix diagonal) are greater than the correlations between each construct and other constructs. Therefore, this criterion also meets an acceptable threshold. According to these two criteria, the constructs in the study possess adequate discriminant validity.

Figure 1

Path Coefficients in the Structural Equation Model

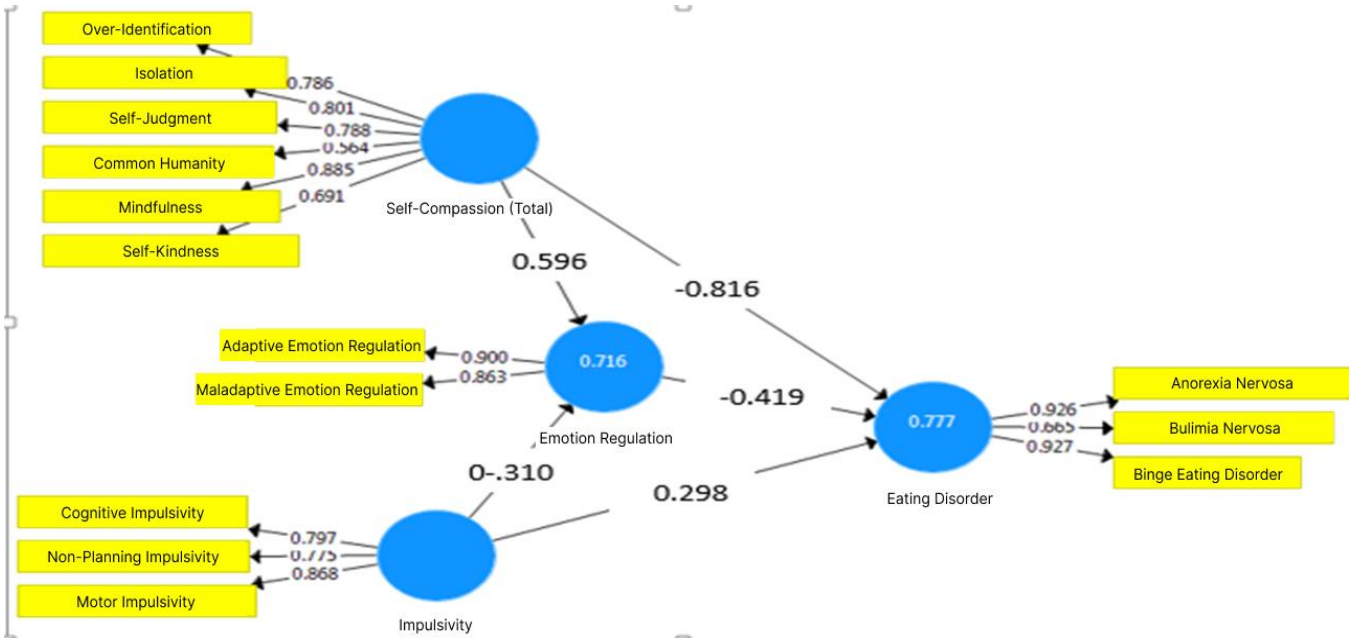
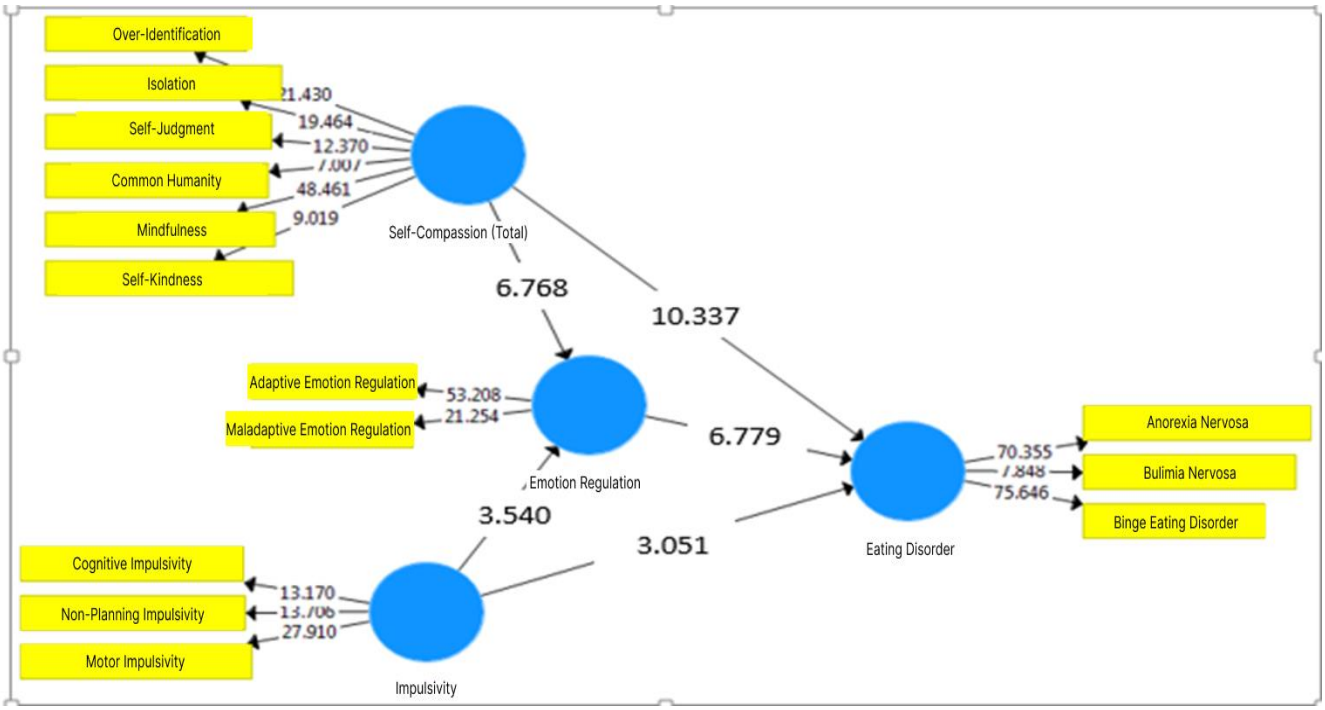


Figure 2

Critical Ratios in the Structural Equation Model



E-ISSN: 2980-9681

Table 3

Structural Equation Modeling (SEM) Results

Pathway	Mean	Standard Deviation	Critical Ratio (t)	Standardized Coefficient
Self-Compassion → Binge Eating	0.03	0.020	10.33	-0.81
Impulsivity → Binge Eating	0.04	0.031	3.05	0.29
Self-Compassion → Emotion Regulation	0.06	0.021	6.76	-0.59
Impulsivity → Emotion Regulation	0.09	0.030	3.54	-0.31
Emotion Regulation → Binge Eating	0.10	0.080	6.77	-0.41

To examine this hypothesis, the Sobel test was used. The results of this test are presented below.

Table 4

Sobel Test Results for Mediating Effects

Pathway	Test Statistic (Z)	Standard Error	p-value
Self-Compassion → Emotion Regulation → Binge Eating	9.03	0.05	0.001
Impulsivity → Emotion Regulation → Binge Eating	4.71	0.09	0.001

According to the Sobel test results, the obtained Z-value of 9.03 exceeds the critical value of 1.96. Therefore, it can be stated that at the 95% confidence level, the mediating role of emotion regulation in the relationship between self-compassion and binge eating is statistically significant.

Likewise, the Z-value of 4.71 for the path from impulsivity through emotion regulation to binge eating is greater than 1.96, indicating that the mediating role of emotion regulation in the relationship between impulsivity and binge eating is also significant at the 95% level.

Based on the analysis of Figures 2 and 3, the prediction of binge eating based on self-compassion in male students with obesity is statistically significant. The standardized coefficient in Figure 1 shows a negative and significant value of -0.81, and according to Figure 2, this effect is significant with a t-value of 10.33.

Similarly, the prediction of binge eating based on impulsivity in obese male students is significant. The standardized coefficient in Figure 1 indicates a positive and significant value of 0.29, with a corresponding t-value of 3.05 in Figure 2.

The prediction of emotion regulation based on self-compassion is also significant, with a standardized coefficient of 0.59, positive and meaningful, and a t-value of 6.76 in Figure 2.

The prediction of emotion regulation based on impulsivity is statistically significant as well. The standard coefficient is -0.31 (negative and significant), with a t-value of 3.54, confirming the effect as shown in Figure 1.

Finally, the prediction of binge eating based on emotion regulation is also statistically significant. Figure 1 indicates a negative and significant standardized coefficient of -0.41, supported by a t-value of 6.77 in Figure 2.

4. Discussion and Conclusion

The present study aimed to structurally model binge eating in obese male university students based on self-compassion and impulsivity, with emotion regulation as a mediating variable. The findings revealed that self-compassion had a significant and negative predictive relationship with binge eating, while impulsivity had a significant and positive relationship with this behavior. Additionally, emotion regulation significantly mediated the effect of both self-compassion and impulsivity on binge eating. These findings suggest that emotional self-regulation plays a pivotal role in either buffering or exacerbating the psychological processes that lead to maladaptive eating behaviors in this population.

The negative predictive relationship between self-compassion and binge eating is consistent with a growing body of literature emphasizing the protective role of self-compassion in disordered eating. Individuals with higher levels of self-compassion are more likely to exhibit resilience when experiencing emotional distress and are less likely to resort to binge eating as a maladaptive coping mechanism (Breiner et al., 2022; Ericson et al., 2024). Self-compassion, which encompasses self-kindness, mindfulness, and recognition of shared human experience, enables individuals to respond to personal failure without

E-ISSN: 2980-9681

harsh self-judgment—thus decreasing the likelihood of engaging in compensatory behaviors such as emotional or binge eating (Paucsik et al., 2023; Senahi Dashti, 2023). This aligns with findings by Niafar et al. (2024), who demonstrated that emotional reactivity mediated the relationship between self-compassion and body image concerns in individuals with binge eating disorder, highlighting the broader emotional scaffolding through which self-compassion exerts its influence.

Similarly, the positive predictive relationship between impulsivity and binge eating supports previous research indicating that impulsivity—particularly in the form of poor inhibitory control and emotional impulsiveness—contributes significantly to the etiology and maintenance of binge eating behaviors (Kachooei et al., 2016; Koçak & Çağatay, 2024). Impulsive individuals may struggle to delay gratification or to manage emotional discomfort effectively, leading to episodes of uncontrolled eating in an attempt to self-soothe. The findings of the current study confirm these theoretical assertions, demonstrating that greater impulsivity is associated with a heightened likelihood of engaging in binge eating. This is consistent with findings by Stern et al. (2024), who found that emotion regulation difficulties are common in individuals with restrictive and avoidant eating disorders, particularly among those with elevated impulsivity traits.

One of the most critical findings of the present research is the mediating role of emotion regulation in the relationship between self-compassion and binge eating, as well as between impulsivity and binge eating. Emotion regulation difficulties have been extensively implicated in eating pathology and are thought to serve as a central mechanism linking emotional distress and maladaptive coping behaviors such as binge eating (Mohammadi et al., 2022; Nikooseresht & Shomali Eskoee, 2021). The mediating effect found in this study aligns with previous literature, such as the work of Ericson et al. (2024), who demonstrated that emotion regulation significantly mediated the relationship between self-compassion and subjective well-being in adults. It also echoes findings from Paucsik et al. (2023), who emphasized the importance of emotion regulation strategies in mediating the effects of psychological traits on behavior. These results affirm the notion that individuals with high self-compassion are more capable of regulating their emotions, which in turn reduces their tendency toward binge eating. Conversely, those high in impulsivity tend to exhibit poorer emotional regulation, leading to more frequent binge eating episodes.

The emotion regulation mechanism also appears to intersect with cultural expectations and gender norms, particularly among men in collectivistic societies such as Iran, where expressing emotional vulnerability may be discouraged (Kargar, 2023; Mokhlasi, 2023). This cultural dynamic may intensify the emotional burden on obese male students, who not only face stigma related to body image but also lack accessible outlets for emotional expression. The inability to articulate emotional needs or seek social support can escalate internal distress, thereby increasing reliance on maladaptive coping strategies such as binge eating (Kwan & Dodd, 2024; Li et al., 2024). As the findings suggest, emotion regulation is not merely an intrapersonal ability but also a socially and culturally influenced construct that mediates the impact of internal psychological traits on external behaviors.

Additionally, the findings support multidimensional conceptualizations of binge eating as not only a behavioral issue but also a product of psychological deficits in self-regulation and emotional functioning. For instance, the dual contribution of both a protective trait (self-compassion) and a risk factor (impulsivity) suggests that interventions targeting binge eating should adopt a balanced approach that both enhances positive psychological capacities and reduces maladaptive tendencies. This dual-pathway model is consistent with the work of Vogel (2023), who explored the role of mindfulness and self-compassion in dialectical behavior therapy (DBT) for binge eating, highlighting how these components can be strategically used to promote emotional balance and behavioral regulation.

From a developmental perspective, these results resonate with the findings of Fadaei Chafi (2023), who emphasized adolescence and young adulthood as critical periods for intervention in obesity-related behaviors. As male university students fall within this developmental window, addressing binge eating at this stage could potentially yield long-term benefits in both psychological and physical health. Furthermore, the results support the notion that early emotional difficulties, such as those arising from childhood trauma or neglect, could predispose individuals to both impulsivity and emotion regulation difficulties, setting the stage for later eating pathology (Koçak & Çağatay, 2024; Mokhlasi, 2023).

Despite the valuable insights this study offers, several limitations must be acknowledged. First, the research design was cross-sectional, which restricts the ability to infer causal relationships between variables. While structural equation modeling provides a robust analytical framework,

E-ISSN: 2980-9681

longitudinal designs would offer stronger evidence for the directional effects proposed. Second, the study relied entirely on self-report instruments, which may introduce biases such as social desirability or recall inaccuracy, particularly when measuring sensitive variables like binge eating. Third, the sample was restricted to obese male university students from a single geographical region, potentially limiting the generalizability of the findings to other populations, including females, adolescents, or individuals from different cultural contexts.

Future studies should consider longitudinal or experimental designs to validate the causal pathways among self-compassion, impulsivity, emotion regulation, and binge eating. Such studies would help determine whether changes in self-compassion and emotion regulation over time predict changes in binge eating behavior. Moreover, qualitative approaches could be employed to explore the lived experiences of individuals with BED, offering richer contextual insight into emotional and behavioral mechanisms. Expanding the sample to include diverse populations, such as female students, adolescents, or non-clinical individuals with subclinical symptoms, would further strengthen the applicability and scope of the findings. Future research might also investigate the neurobiological underpinnings of these psychological pathways, particularly the role of brain regions involved in impulse control and emotion regulation.

Based on the findings of this study, clinical interventions for binge eating disorder in obese male students should prioritize the development of self-compassion and the improvement of emotion regulation strategies. Incorporating mindfulness-based techniques, compassion-focused therapy, and DBT modules into treatment protocols may enhance emotional resilience and reduce the impulsive urges that drive binge eating episodes. University counseling centers and wellness programs should offer targeted psychoeducational workshops addressing these themes, especially for at-risk male populations who may not seek traditional mental health services. Promoting emotional literacy, encouraging open discussion about male body image, and integrating emotion regulation training into health curricula could collectively mitigate the risk of developing binge eating behaviors in this vulnerable demographic.

Authors' Contributions

All authors significantly contributed to this study.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the study and participated in the research with informed consent.

References

Biçaker, E., Trolio, V., Miller, A. E., Zhu, L. Y., White, C., & Racine, S. E. (2024). Affective processes underlying restrictive eating in atypical anorexia nervosa: Comparisons to anorexia nervosa and bulimia nervosa using ecological momentary assessment. *International Journal of Eating Disorders*, *57*(4), 879-891. https://doi.org/10.1002/eat.24134

Breiner, C. E., Scharmer, C., Zon, C., & Anderson, D. (2022). The moderating role of self-compassion on the relationship between emotion-focused impulsivity and dietary restraint in a diverse undergraduate sample. *Eating behaviors*, *46*, 101650. https://doi.org/10.1016/j.eatbeh.2022.101650

Chioma, R. U., & Sulong, R. M. (2022). Relationship Between Compatibility, Leisure and Marital Satisfaction among Married Nigerians. *Social Sciences*, *12*(10), 2652-2663. https://doi.org/10.6007/IJARBSS/v12-i10/15588

Ericson, S. M., Gallagher, J. P., Federico, A. J., Fleming, J. J., Froggatt, D., Eleid, A., Finn, B. M., Johnston, K., & Cai, R. Y. (2024). Does emotion regulation mediate the relationship between self-compassion and subjective well-being? A cross-sectional study of adults living in the United States. *Journal of Health Psychology*, *29*(8), 863-876. https://doi.org/10.1177/13591053231209668

Fadaei Chafi, M. (2023). The golden opportunity of adolescence for reducing body fat percentage in obese boys through aerobic exercise and a low-calorie diet. *Journal of Exercise*

E-ISSN: 2980-9681

Physiology, *17*(57), 92-112. https://spj.ssrc.ac.ir/article_3879_en.html

Fazeli, S. (2022). *The relationship between anxiety sensitivity and resilience, with emotional regulation as a mediator, in binge eating disorder among young adults aged 18-25* Islamic Azad University of Medical Sciences, Tehran, Faculty of Medicine].

Hassanzadeh, F. (2022). Comparing the effectiveness of self-awareness, empathy, and interpersonal relationships training on marital impulsivity among married students at Islamic Azad University, Shahrebabak Branch. *Journal of Psychology and Educational Sciences in the Third Millennium*, *13*(11), 328-345. https://www.pejournal.ir/fa/downloadpaper.php?pid=132&rid=15&p=A

Kachooei, M., Hasani, J., & Amrollahi Nia, M. (2016). A comparison of impulsivity and emotion regulation difficulties in overweight women with and without binge eating disorder. *Iranian Journal of Clinical Psychology*, *10*(4), 23-32. https://ijem.sbmu.ac.ir/article-1-2012-en.html

Kargar, M. (2023). *Predicting symptoms of binge eating disorder and body dysmorphia based on childhood trauma: The mediating role of psychological flexibility and self-compassion* University of Ardakan, Faculty of Psychology and Educational Sciences].

Koçak, Z., & Çağatay, S. E. (2024). Childhood traumas and emotional eating: The mediating role of self-esteem, and emotion dysregulation. *Current Psychology*, 1-9. https://doi.org/10.1007/s12144-024-05953-2

Kwan, M. Y., & Dodd, D. (2024). Social cognition and bulimic symptoms in male undergraduate students: The conditional effect of emotion dysregulation. *European Eating Disorders Review*, *32*(6), 1220-1226. https://doi.org/10.1002/erv.3120

Li, W., Wang, Y., Wang, J., Wang, M., Liu, J., Chen, Q., Yang, Z., Li, Z., Wu, G., Wang, Z., Zhang, P., & Tang, L. (2024). Bulimia nervosa selectively reshapes the structure and intrinsic function of anterior insula subregions associated with cognition-emotion integration. *Journal of affective disorders*, *362*, 529-535. https://doi.org/10.1016/j.jad.2024.07.051

Mohammadi, F., Mohammadi, A., Esmaili Sudarjani, I., Nosrati, M., & Bazzi, M. (2022). The role of emotion regulation in explaining emotional eating disorder in adolescents with obesity: The mediating role of mentalization. *Rooyesh-e Ravanshenasi Journal*, *11*(5), 23-32. https://frooyesh.ir/article-1-3689-en.html

Mokhlasi, S. (2023). *Path analysis of the relationship between perfectionism and binge eating disorder with anxiety as a mediator in female university students* Khayyam University, Faculty of Literature and Humanities].

Niafar, G., Moghtader, L., Asadi Mojreh, S., & Mehregan, B. (2024). The mediating role of emotional reactivity between self-compassion and body image concerns in binge eating disorder among female university students. *Journal of Health Promotion Management*, *13*(4), 3-18. https://jhpm.ir/article-1-1752-fa.html

Nikooseresht, T., & Shomali Eskoee, A. (2021). Presenting a structural model for predicting binge eating disorder based on stress and emotional regulation with the mediation of mental dissociation. *Ravish-e Ravanshenasi Journal*, *10*(6), 63-96. https://frooyesh.ir/browse.php?a_id=2259&slc_lang=en&sid=1&printcase=1&hbnr=1&hmb=1

Paucsik, M., Nardelli, C., Bortolon, C., Shankland, R., Leys, C., & Baeyens, C. (2023). Self-compassion and emotion regulation: testing a mediation model. *Cognition and Emotion*, *37*(1), 49-61. https://doi.org/10.1080/02699931.2022.2143328

Senahi Dashti, N. (2023). *The mediating role of assertiveness in the relationship between self-compassion and self-control* Islamic Azad University, Marvdasht Branch, Faculty of Educational Sciences and Psychology].

Stern, C. M., Graver, H., McPherson, I., Gydus, J., Kambanis, P. E., Breithaupt, L., Burton-Murray, H., Zayas, L., Eddy, K. T., Thomas, J. J., & Becker, K. R. (2024). Difficulties in Emotion Regulation in Avoidant/Restrictive Food Intake Disorder. *International Journal of Eating Disorders*, *57*(11), 2156-2166. https://doi.org/10.1002/eat.24281

Vogel, E. (2023). *Exploring Treatment Mechanisms in Dialectical Behavior Therapy for the Treatment of Binge Eating: Mindfulness and Self-Compassion* Palo Alto University].

Vuillier, L., Wang, Z., Hassan, S., Harrison, A., Somerville, M. P., & He, X. (2024). Emotional overload in bulimia nervosa: an ERP study of emotion processing and regulation. https://doi.org/10.21203/rs.3.rs-4886296/v1

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