



The correlation between early maladaptive schemas and body image concern: The mediating role of self-compassion and emotion regulation in women

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Abstract

Introduction: The current study aimed to explore the relationship between early maladaptive schemas and body image concern and the mediating role of self-compassion and emotion regulation in women.

Materials and Methods: The statistical population of this descriptive and correlational study included all women aged 18 to 45 in Mashhad, Iran, who completed the questionnaires from 2022 to 2023. The convenient sampling method was used to select 400 people completed the Young Schema Questionnaire (YSQ), Body Image Concern Inventory (BICI), Self-Compassion Scale (SCS), and Emotion Regulation Questionnaire (ERQ). We analyzed the data through Pearson's correlation coefficient and path analysis.

Results: The findings revealed a significant and negative correlation between the total score of body image concern and reappraisal, alongside a significant and positive correlation between the total score of body image concern and emotional suppression. Additionally, a significant and negative relationship was observed between the total scores of self-compassion and body image concern ($P < 0.05$).

Conclusion: We revealed that self-compassion and emotion regulation variables can serve as crucial mediators in the impact of early maladaptive schemas on body image concern, leading to a reduction in the effect of early maladaptive schemas on body image with increased self-compassion and enhanced emotion regulation.

Keywords: Body image, Early maladaptive schemas, Emotional regulation, Self-compassion

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Introduction

Today, worrying about body image has become a mental preoccupation of many people (1). The term body image refers to people's attitudes and beliefs about their body (2), which can be about weight or other body parts (3), which is highly influenced by social and cultural factors (4) and it may cause psychological damage in people (5). Among the factors that can affect body image concerns are initial inconsistent schemas (6). Early maladaptive schemas are harmful emotional and cognitive patterns formed in the mind at the beginning of growth and development that are repeated throughout life and affect the interpretation of a person's experiences and relationships with others (7, 8). Young and his colleagues (9) believe that early maladaptive schemas originate from the failure of the five basic emotional needs during childhood. These needs include a secure attachment to others, self-management, adequacy, identity, freedom to express needs and healthy emotions, spontaneity, fun, realistic limits, and self-control (10).

The findings from numerous studies indicate an existing relationship between early maladaptive schemas and body image concerns. For instance, Esmaeilnia et al. (6) concluded that early maladaptive schemas positively correlate with body image concerns. Abedi et al. (12) discovered a positive and significant correlation between early maladaptive schemas (apart from emotional deprivation, abandonment/instability, unity/social exclusion, and self-sacrifice) and all five schema domains and body image concerns.

Various factors are presumed to impact the type and strength of the relationship between early maladaptive schemas and body image concerns. Among these factors are emotional discipline and self-pity. Emotion regulation refers to employing thoughts and behaviors that are effective in people's emotions and can be conscious or unconscious, fleeting memories, behavioral or cognitive. Cognitive regulation of emotion cannot be observed, but behavioral regulation of emotion can be seen in a person's obvious behavior and is fleeting (13). On the other hand, emotional regulation has problems that include deficiencies in awareness, understanding, and acceptance of emotions, the inability to behave adaptively during negative emotions, and the inability to use appropriate strategies (14). Activation of early maladaptive schemas leads to people experiencing high levels of unpleasant emotions, which causes them to

lose their emotional management. Therefore, emotion regulation plays a crucial role in adapting to emotions and facing unpleasant situations, and the implementation of adaptive emotion regulation strategies also significantly reduces the effects of early maladaptive schemas (15).

It is indicated that emotion regulation can moderate early maladaptive schemas. By creating ineffective non-adaptive strategies and emotion regulation, early maladaptive schemas cause the emergence of negative beliefs and feelings toward oneself. Consequently, since emotion regulation is one of every person's emotional characteristics, individuals experiencing difficulties in emotion regulation are at a higher risk of developing mental health issues (17,18).

Moreover, a correlation between emotion regulation and body image concern can also be possible. In this regard, Momeñe et al. (19) identified the impulse control problem as the only significant dimension (among all the dimensions of emotion regulation difficulties) that had a positive and significant indirect effect on body dissatisfaction. Similarly, the study by Prefit et al. (20) acknowledged the relationship between emotion regulation and body image concern.

On the other hand, self-compassion means compassion, patience, kindness, and self-understanding, and it helps to transform negative feelings into a more positive state (21). The results of several studies indicate that self-compassion is directly related to body dissatisfaction (22). Self-compassion can reduce negative beliefs related to body image and act as a protective factor (23). Gilbert and Irons (24) demonstrated that instilling self-compassion in individuals could effectively eliminate self-shame, self-criticism, and self-condemnation (themes that are also present in maladaptive schemas) (25). Other researchers also concluded that there is a relationship between early maladaptive schemas and self-compassion in people who stigmatize themselves (26). Faustino et al. indicated that mindfulness, self-compassion, and unconditional self-acceptance can predict the regulation of psychological needs and mediate the relationship between emotional schemas and psychological needs (27). Therefore, investigating this issue becomes very important, especially given the mentioned issues and the spread of concern about body image in women. In this context, especially based on the

research of Jung et al. the average level of body image concerns in wealthy West Asian women is higher than the global average (28). Also, this concern increases with age in both women and men (29). The prevalence of this problem in the adult community is about 0.39% (30).

Considering that such a study has yet to be conducted in Iran, the present study aimed to explore the relationship between early maladaptive schemas and body image concerns with mediating role of self-compassion and emotion regulation in women.

Materials and Methods

The present study was descriptive and correlational regarding its fundamental purpose and method. The population included all women aged 18 to 45 in Mashhad, Iran, who completed the questionnaires from 2022 to 2023. The convenient sampling method was used. As per the 2016 census data, the number of women in Mashhad-Iran was reported to be 1,497,360. Hence, this study chose a sample size of 400 women aged between 18 and 45 based on the guidelines provided by Morgan's table.

Research instruments

A) Young Schema Questionnaire (YSQ): In this tool, each schema has five items (this questionnaire measures all eighteen schemas) arranged on a six-point Likert scale (completely false to completely true). The short form of 90 questions used in this study has been standardized in Iran by Yousefi et al. The validity and reliability of this questionnaire were examined on a sample of 579 people in two stages. This study assessed the validity using Cronbach's alpha and dichotomization methods, resulting in 0.91 and 0.86 for the entire sample, 0.87 and 0.84 for girls, and 0.84 and 0.81 for boys, respectively. The results of Cronbach's alpha coefficient for the whole scale were obtained as 0.95 and for the subscales of abandonment/instability 0.92, mistrust/abuse 0.91, emotional deprivation 0.90, defectiveness/shame 0.88, social isolation/alienation 0.89, dependence/incompetence 0.86, vulnerability to harm or illness 0.94, enmeshment/trapped 0.95, failure 0.90, entitlement/grandiosity 0.93, insufficient self-control and self-discipline 0.89, subjugation 0.87, self-sacrifice 0.88, approval seeking/attention seeking 0.89, negativity/pessimism 0.94, emotional inhibition 0.95, unrelenting standards/extreme fault-finding 0.88 and punitiveness 0.92. All

obtained coefficients indicate high internal consistency of the questions (31).

B) Body Image Concern Inventory Scale (BICI): This scale was designed by Littleton, Axsom, and Pury and consists of 19 items with scores ranging from 1 (never) to 5 (always), totaling between 19 and 95. The higher score indicated the higher body image concern. The validity of this questionnaire was checked using the internal consistency method, and its alpha coefficient was calculated as 0.93 (32). Convergent validity has also been obtained according to the correlation coefficient of this tool with the Padua inventory obsessive-compulsive questionnaire (0.62) and the eating disorders questionnaire (0.40) (33). Moreover, Basak-Nejad and Ghaffari reported the validity of this questionnaire as 0.95 based on internal consistency and using Cronbach's alpha (34). Also, Gadakzadeh et al. confirmed the validity of the Persian version of this questionnaire to be 0.85 while also asserting a high reliability with a Cronbach's alpha of 0.90 (35).

C) Emotion Regulation Questionnaire (ERQ): This questionnaire was developed by Gross and John and consists of 10 items, with two subscales of reappraisal (6 items) and emotional suppression (4 items). Answers are classified on a Likert scale from strongly disagree to agree strongly. After three months, the Cronbach's alpha coefficient was established at 0.79 for reappraisal, 0.73 for emotional suppression, and 0.69 for the overall scale (13). The Persian version of this questionnaire was standardized in Iranian culture by Qasimpour et al. The validity of the scale in this study is based on the internal consistency method (with Cronbach's alpha ranging from 0.6 to 0.81). The validity of the mentioned questionnaire is reported through principal component analysis by using varimax rotation, the correlation between the two subscales (0.13), and satisfactory criterion validity (36).

D) Self-Compassion Scale – Short Form (SCS-SF): It has 12 items and developed by Raes et al. The long scale was created in 2003 with 26 items. This questionnaire is composed of 6 two-way factors consisting of self-kindness (items 2 and 6), self-judgment (items 11 and 12), common humanity (items 5 and 10), isolation (items 4 and 10), mindfulness (items 3 and 7) and over-identification (items 1 and 9) which are scored on a 5-point Likert scale from 1= completely disagree to 5= completely agree.

Higher scores reflect greater levels of self-compassion. Additionally, the internal consistency of this scale was calculated to be 0.86 via Cronbach's alpha method (37). Khanjani et al. verified this scale in Iran, resulting in a Cronbach's alpha coefficient of 0.86 and a test-retest reliability coefficient of 0.90 (38). The data were analyzed through correlation testing, path analysis, and statistical software such as AMOS 24 and SPSS 26.

Results

In the present study, 400 people participated. Among them, 227 (56.8%) were single, 162 (40.5%) were married, and 11 (2.8%) were

divorced. In terms of employment, 193 people (48.3%) were employed, and 207 people (51.8%) were housewives. In terms of age, the mean age was 27.62 years. Table 1 presents the descriptive indices associated with the research variables and the subscales related to each. The skewness and elongation indices of all obvious variables were between -2 and 2, which indicates the normality of the distribution of the variables and their suitability for path analysis. Furthermore, univariate outliers were identified through a plot box before conducting the relevant analysis, and the results showed no outliers in the data.

Table 1. Mean and standard deviation of research variables

Variable	Subscale	Mean	Standard deviation	Skewness	Elongation
Early maladaptive schemas	Disconnection/rejection	64.76	22.85	0.48	-0.34
	Impaired autonomy/performance	53.32	17.20	0.53	-0.10
	Orientation to others	29.66	10.10	0.41	-0.24
	Hypervigilance/inhibition	32.79	9.69	0.09	-0.38
	Impaired limits	33.86	8.96	-0.03	-0.23
	Total score of maladaptive schemas	214.41	59.69	0.29	-0.34
Self-Compassion	Self-kindness	6.60	1.86	-0.36	-0.49
	Self-judgment	6.15	2.03	0.04	-0.61
	Common humanity	6.63	1.80	-0.37	-0.34
	Isolation	6.25	2.05	-0.03	-0.76
	Mindfulness	6.69	1.84	-0.41	-0.46
	Over-identification	6.16	2.05	0.05	-0.88
	Total score of self-compassion	38.49	7.76	-0.05	-0.06
Emotion regulation	Reappraisal	23.82	8.90	-0.15	-0.76
	Emotional suppression	15.86	7.21	0.03	-1.15
Body image concern	Shame/discontent	23.13	9	0.98	0.53
	Concern about appearance	20.03	7.49	0.41	-0.44
	Total score of body image concern	43.16	15.59	0.75	0.10

In contrast, in addition to the assumption of normality, the Durbin-Watson statistic (DW=2.14) was utilized to assess the independence of errors, with results confirming the establishment of this assumption. Moreover, the assumption of multiple collinearity was examined by using tolerance statistics and the Variance Inflation Factors (VIF), and the results showed that none of the tolerance values were

higher than one and none of the variance inflation values were higher than 10, which indicates the validity of this assumption. The evaluation of the sample size adequacy index (0.89) and Bartlett's sphericity index (df= 105 and $P < 0.01$) demonstrated the fulfillment of essential criteria for path analysis. Subsequently, the findings related to the measurement models of the research variables are presented (Table 2).

Table 2. Correlation coefficient of the examined variables

Variable	Shame/discontent		Concern about appearance		Total score of body image	
	Correlation	P	Correlation	P	Correlation	P
Disconnection/rejection	0.53	0.001	0.36	0.001	0.48	0.001
Impaired autonomy/performance	0.54	0.001	0.38	0.001	0.50	0.001
Orientation to others	0.36	0.001	0.27	0.001	0.34	0.001
Hypervigilance/inhibition	0.41	0.001	0.31	0.001	0.39	0.001
Impaired limits	0.45	0.001	0.39	0.001	0.45	0.001
Total score of maladaptive schemas	0.56	0.001	0.41	0.001	0.52	0.001
Variable	Emotional suppression					
	Reappraisal	Correlation	P			
Disconnection/rejection	-0.16	0.001				
Impaired autonomy/performance	-0.19	0.001				
Orientation to others	-0.14	0.001				
Hypervigilance/inhibition	-0.13	0.001				
Impaired limits	-0.20	0.001				
Total score of maladaptive schemas	-0.19	0.001				
Variable	Self-compassion					
	Reappraisal	Correlation	P			
Disconnection/rejection	-0.52	0.001				
Impaired autonomy/performance	-0.60	0.001				
Orientation to others	-0.46	0.001				
Hypervigilance/inhibition	-0.48	0.001				
Impaired limits	-0.49	0.001				
Total score of maladaptive schemas	-0.60	0.001				
Variable	Shame/discontent		Concern about appearance		Total score of body image	
	Reappraisal	Correlation	P	Correlation	P	Correlation
Reappraisal	-0.40	0.001	-0.40	0.001	-0.42	0.001
Emotional suppression	0.65	0.001	0.59	0.001	0.66	0.001
Variable	Shame/discontent		Concern about appearance		Total score of body image	
	Reappraisal	Correlation	P	Correlation	P	Correlation
Self-kindness	-0.20	0.001	-0.12	0.016	-0.17	0.001
Self-judgment	-0.50	0.001	-0.41	0.001	-0.48	0.001
Common humanity	-0.13	0.008	-0.07	0.13	-0.11	0.024
Isolation	-0.46	0.001	-0.37	0.001	-0.44	0.001
Mindfulness	-0.14	0.004	-0.10	0.041	-0.13	0.009
Over-identification	-0.51	0.001	-0.46	0.001	-0.51	0.001
Total score of self-compassion	-0.50	0.001	-0.39	0.001	-0.48	0.001

The results of Pearson's correlation coefficient in Table 2 showed that there was a positive and significant relationship between the total score of body image and disconnection/rejection, impaired autonomy /performance, orientation to others, hypervigilance/ inhibition, impaired limits and the total score of early maladaptive schemas. Moreover, a positive and significant relationship existed between the shame/ discontent component and disconnection/ rejection, impaired autonomy/ performance, orientation to others, hypervigilance/inhibition, impaired limits, and the total score of early maladaptive schemas. In addition, there was a

positive and significant relationship between concern about appearance and disconnection/rejection, impaired autonomy/ performance, orientation to others, hypervigilance/ inhibition, impaired limits, and the total score of early maladaptive schemas. Furthermore, there was a positive and significant relationship between the emotional suppression component and disconnection/rejection, impaired autonomy / performance, orientation to others, hypervigilance/inhibition, impaired limits, and the total score of early maladaptive schemas. In addition, there was a negative and significant relationship between the reappraisal

component and disconnection/rejection, impaired autonomy / performance, orientation to others, hypervigilance/ inhibition, impaired limits, and the total score of early maladaptive schemas. Moreover, there was a negative and significant relationship between the self-compassion component and disconnection/rejection, impaired autonomy/ performance, orientation to others, hypervigilance/inhibition, impaired limits, and the total score of early maladaptive schemas. Additionally, there was a negative and significant relationship between the total score of body image and reappraisal and a positive and significant relationship between the total score of body image and emotional suppression. There was a negative and

significant relationship between the shame/discontent component and reappraisal and a positive and significant relationship between the shame/discontent component and emotional suppression. In addition, there was a positive and significant relationship between the concern about appearance component and reappraisal and between the concern about appearance component and emotional suppression. The following investigates the mediating role of emotional order seeking between maladaptive schemas and body image through path analysis. Table 3 shows the direct effects between research variables. Figure 1 presents unstandardized coefficients of the conceptual model.

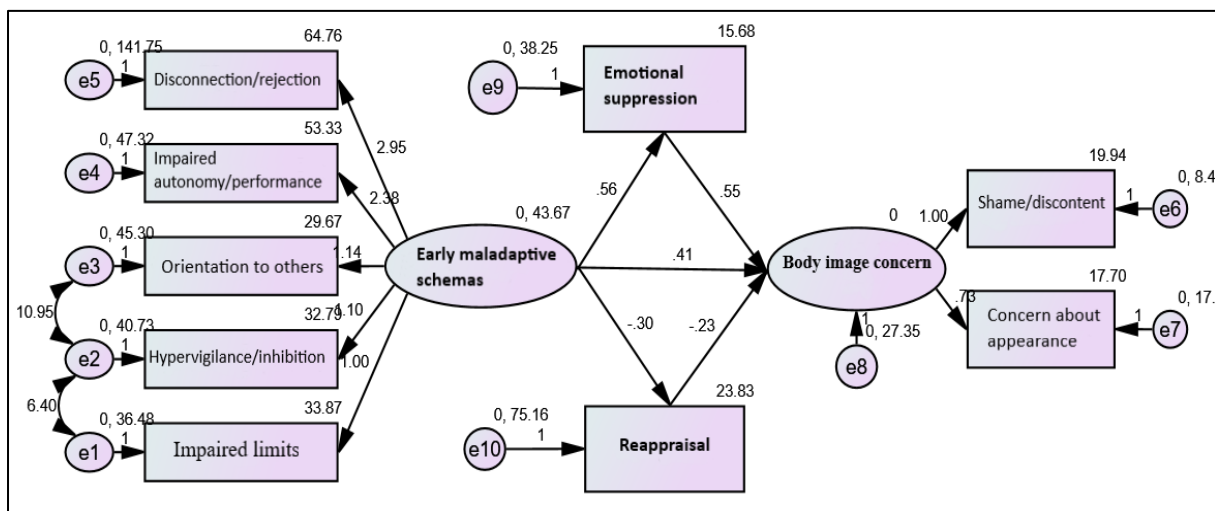


Figure 1. Unstandardized coefficients of the conceptual model

Table 3. Standard coefficients of direct paths

Predictor variable	Criterion variable	Standard coefficient	T value	Standard error	C.R	P	Result
Maladaptive schemas	Reappraisal	-0.22	-0.29	0.070	-4.26	0.0001	Confirmed
Maladaptive schemas	Emotional suppression	0.51	0.56	0.056	10.003	0.0001	Confirmed
Maladaptive schemas	Body image concern	0.32	0.40	0.060	6.83	0.0001	Confirmed
Reappraisal	Body image concern	-0.24	-0.22	0.034	-6.69	0.0001	Confirmed
Emotional suppression	Body image concern	0.48	0.55	0.049	11.29	0.0001	Confirmed

According to the results of Table 3, all of the direct paths were statistically significant. To assess the significance of the indirect path, a bootstrap test was employed (Table 4). The indirect effect coefficient of early maladaptive schemas on body image concern through the mediating role of emotion regulation ($P= 0.299$, $\beta= 0.001$) indicated its significance. According to the bootstrap test results, the indirect path of the model was also confirmed.

As a result, emotion regulation (reappraisal and emotional suppression) was partially but incapable of mediating meaningfully between the predictor and criterion variables. On the other hand, Figure 2 reports the results of investigating the mediating role of self-compassion in the relationship between early maladaptive schemas and body image. Table 5 shows the direct effects between research variables.

Table 4. The results of Bootstrap test related to the indirect effects of research model

Paths	Indirect effect	Standard error	Upper limit	Lower limit	P
Early maladaptive schemas of emotion regulation and body image concern	0.299	0.031	0.354	0.251	0.001

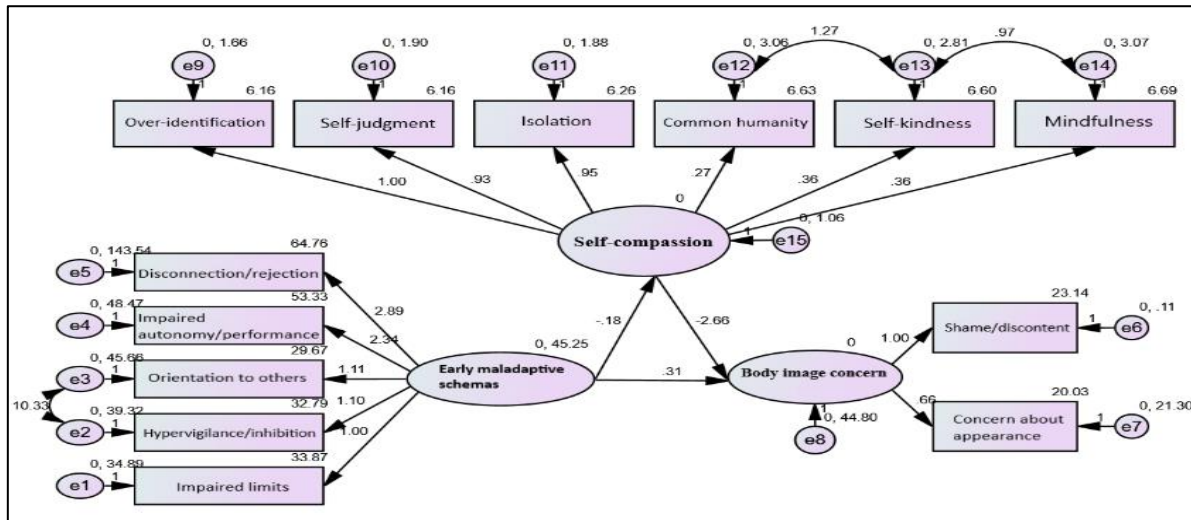


Figure 2. Unstandardized coefficients of the conceptual model

Table 5. Standard coefficients of direct paths

Predictor variable	Criterion variable	Standard coefficient	T value	Standard error	C.R	P	Result
Maladaptive schemas	Self-compassion	-0.77	-0.18	0.015	-12.34	0.001	Confirmed
Self-compassion	Body image concern	-0.48	-2.66	0.47	-5.65	0.001	Confirmed
Maladaptive schemas	Body image concern	0.23	0.30	0.10	2.93	0.003	Confirmed

According to the results of Table 5, all of the direct paths were statistically significant. To assess the significance of the indirect path, a bootstrap test was employed (Table 6). The indirect effect coefficient of early maladaptive schemas on body image concern through the mediating role of self-compassion ($P= 0.002$,

$\beta= 0.364$) also indicated its significance. According to the bootstrap test results, the indirect path of the model was confirmed. Subsequently, self-compassion was partially but not completely able to mediate meaningfully between the predictor and criterion variables.

Table 6. The results of Bootstrap test related to the indirect effects of research model

Paths	Indirect effect	Standard error	Upper limit	Lower limit	P
Early maladaptive schemas of self-compassion and body image concern	0.364	0.073	0.491	0.244	0.001

Discussion

In the present study conducted on 400 women, we revealed that self-compassion and emotion regulation variables can serve as crucial mediators in the impact of early maladaptive schemas on body image concern, leading to a reduction in the effect of early maladaptive schemas on body image with increased self-compassion and enhanced emotion regulation.

In explaining the above results, emotional regulation strategies show how to cope with stressful situations and inappropriate conditions. Therefore, primary maladaptive schemas can cause a negative and inappropriate emotional reaction. However, people with proper emotional regulation perform better than people with more defects in regulating their

emotions in stressful situations that activate primary maladaptive schemas. According to Yang, one of the main needs is the freedom to express healthy needs and emotions; if this need is not met, it can make a person prone to disorder in seeking order. These schemas make people vulnerable to the development of mental disorders. This is because body image is not the person's true appearance or how others perceive them but the person's internal view of their impression and appearance.

Therefore, body image can be affected by early maladaptive schemas (9). Early maladaptive schemas not only to explain cognitive and behavioral dysfunction but also as a factor for disruptive emotions. Schemas lie dormant at a point in time, and by changing the type of environmental inputs, they gain energy, and become active again, thereby forming people's emotional response to situations. This is caused by their involvement in information processing and emotion regulation of individuals. On the other hand, people who have self-compassion evaluate problems and stressful situations as more tolerable and have a good, non-judgmental understanding of themselves and the environment. For example, people who blame and condemn themselves magnify their thoughts feel lonely and isolated when experiencing pain and failure (early maladaptive schemas) and experience less self-compassion (13). The research of Yakin et al. also confirms it (39). Gilbert and Procter also showed that self-compassion reduces shame and self-blame (25). Also, other studies show that people who have incompatible schemas have less self-compression (26). On the other hand, dissatisfaction with body image leads to severe worries and increases anxiety and tension in a person. In general, emotional regulation helps people control and express their emotions. Its conscious and unconscious cognitive and behavioral strategies help to reduce, maintain, and increase emotions, including concern about body image. According to our results, the path analysis method indicated the indirect effect of early maladaptive schemas on body image concern with the mediation of emotional regulation. Nejati et al. showed that adaptive emotional regulation strategies can moderate negative body image and affect a person's body perception. In contrast, people who use ineffective strategies are less aware of their feelings and emotions. They have a more negative body image (40). Also, in line with the

obtained results, Salgo et al. stated that emotion regulation can moderate the states of the early maladaptive schemas (16).

Finally, people with favorable emotional regulation can moderate the effect of early maladaptive schemas on body image dissatisfaction. Also, self-compassion significantly mediated between early maladaptive schemas and body image concerns. Self-compassion is associated with improving early maladaptive schemas because it reduces things such as negative attitudes and shame towards oneself and is associated with increasing positive cognitions such as acceptance and having a kind view towards oneself.

Therefore, since the schemas of cut and rejection cause the perception of defects, shame, and social alienation in the person, increasing the beliefs based on defects reduces self-compassion. Finally, people with high self-esteem tend to cope with body image concerns more easily than people with low self-compassion. Therefore, it is predicted that people with early maladaptive schemas but with high self-compassion will cope with their body image concerns more easily, and self-compassion acts as a buffer against negative emotions, thoughts, and conflicts. In this regard, Esmaeilnia et al. stated that the primary maladaptive schemas positively correlate with body deformity disorder (6). Similarly, Abedi et al. (12) found a positive and significant correlation between all five domains of schemas (such as emotional dimensions) and body image disorder (12). The present research has some limitations such as limited sampling to one geographical region (Mashhad City) and one gender. It is recommended that future studies conducted on both genders and different cultures.

Conclusion

Based on the findings, self-compassion and emotion regulation variables can serve as crucial mediators in the impact of early maladaptive schemas on body image concern, leading to a reduction in the effect of early maladaptive schemas on body image with increased self-compassion and enhanced emotion regulation.

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Conflict of Interest

The authors declare no conflict of interest.

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Ethical Considerations

All participants completed the questionnaire voluntarily. This research was approved by the

ethical committee of Ferdowsi University of Mashhad.

Code of Ethics

IR.UM.REC.1402.133

Authors' Contributions

Conceptualization: A.H.N, M.M, and M.J.A.E; Research and review: A.H.N; Editing and finalization: A.H.N, M.M, and M.J.A.E; Supervision: M.M, and M.J.A.E.

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