

# Investigating the role of early maladaptive schemas in Body image disturbance

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## ABSTRACT

The present study aimed to investigate the role of early maladaptive schemas (EMS) in body image disturbance. This research is a descriptive-correlational study. The sample consisted of 334 students (159 boys and 175 girls) selected through a cluster sampling method among students attending universities in Arak. EMSs and body image disturbance were measured by the "Young Early Maladaptive Schemas Questionnaire" and "Body Image Concerns Inventory", respectively. The data were analyzed using Pearson correlation coefficient and multivariate regression analysis. The results showed that there is a significant positive correlation between EMSs (other than the "Emotional Deprivation", "Abandonment/Instability", "Social Alienation/Rejection", and "Self-Sacrifice"), as well as all five basic schema domains, and body image disturbance. Regression analysis also showed that combining the two schemes of "Insufficient Self-Control/Self-Discipline" and "Vulnerability", 21%, and the schema domains of "Impaired Autonomy & Performance" and "Impaired Limits", 17% of variance of body image disturbance explain and predict.

**Keywords:** Early maladaptive schemas, body image, disturbance

## Introduction

In recent decades, body image dissatisfaction and disturbance have become so commonplace<sup>[1-6]</sup>, which have been referred to as "normal dissatisfaction"<sup>[6]</sup>. This dissatisfaction that may focus on one or more aspects of the body, including stretching, height, weight, or parts of the appearance, such as nose, jaw and teeth, species, or overall physical appearance, is a serious causative agent. Some of the clinical disorders including eating disorders<sup>[7, 8]</sup>, body dysmorphic disorder<sup>[9]</sup>, and so on. In the non-clinical population, this attention, dissatisfaction and disturbance affect the well-being and psychological functions of individuals including interpersonal relationships and self-esteem<sup>[10, 11]</sup>, and disorders such as depression<sup>[7, 12, 13]</sup>, anxiety, panic Social<sup>[11]</sup>. On the other hand, body image disturbance, on many occasions, have led to the intense tendency of individuals to change and improve their appearance, using a variety of unhealthy and high-risk methods, including the massive use of

drugs (nauseous, stomach and depression drugs, Steroids, anti-pregnancy ...), hard physical activity, intense limited diets, abortion, maternal delivery, and all kinds of cosmetic and plastic surgery<sup>[14-16]</sup>. The interpretation of the "cosmetic surgery bomb" as a function of the wide prevalence of interest in plastic surgeries, which is itself subject to attention to body and BID, is a rather exaggerated reflection of this fact<sup>[16]</sup>.

Cache<sup>[17]</sup>, as one of the researchers in the field of body image, emphasizes, one of the future directions in the field of body image research, study Risk factors of body image: "Factors that influence positive and negative body image development across the life span (i.e., risk factors and protective factors)". Accordingly, a wide range of factors related to body image and body image disturbances have been studied. Many of these factors have been studied in the form of predisposing factors or risk factors, including demographic factors such as age, gender, education (parent and parent education), occupation (parental occupation), population (city and village), Socioeconomic status; factors such as body mass index, weight, height, abdominal fat, as well as lifestyle factors such as exercise activities, watching TV, nutrition program (healthy and non-alcoholic), consumption Tobacco and alcohol, as well as social factors such as culture, family, group of friends and peers, mass media, or psychological factors such as personality, self-esteem, aesthetic factors, health status<sup>[18-27]</sup>. However, despite the fact that the

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body image is a multifaceted structure includes cognitive, emotional and perceptual dimensions <sup>[28]</sup>, less research is concerned with the role of cognitions or fundamental cognitive components, including early maladaptive schemas, as a risk factor in formation and disturbance of the body image.

Schemas are fundamental structures that, like a lens, affect people's perceptions of the world, themselves and others. In other words, schemas form the way of interpretation, selection and evaluation of individuals, in their experiences <sup>[29]</sup>. By filtering the experiments, schemas provide them with an interpretation consistent with their structure and lead to choices that are consistent with them. Of course, schemas are not necessarily adaptive and do not have normal function <sup>[30]</sup>: early maladaptive schemas are the core of many personality disorders, behavioral and cognitive problems, and other disorders. In other words, early maladaptive schemas are a factor of vulnerability to disturbances and psychological and personality disorders <sup>[29]</sup>. Young <sup>[30]</sup> lists eighteen maladaptive schemas in five basic schema domains that are maladaptive, including: First domain(Disconnection & Rejection) including Abandonment/ Instability, Mistrust/Abuse, Emotional Deprivation, Defectiveness/Shame, Social Alienation/Rejection; second domain(Impaired Autonomy & Performance) including Dependence/Incompetence, Vulnerability to Harm/Illness, Enmeshment/Undeveloped Self, Failure; The third domain (Impaired Limits) including Entitlement/Grandiosity, Insufficient Self-Control/Self-Discipline; the fourth domain (Other-Directedness) includes schemas Subjugation, Self-Sacrifice, Approval-Seeking/Recognition-Seeking; the fifth domain (Overvigilance & Inhibition)including Negativity/Pessimism, Emotional Inhibition, Unrelenting Standards/Hypercriticalness, Punitiveness. These maladaptive schemas result from the non-satisfaction of the basic emotional needs of childhood and have emotional and cognitive self-harm patterns <sup>[30]</sup>. According to Young <sup>[30]</sup>, early maladaptive schemas are the core of many personality disorders, behavioral and cognitive problems, and other disorders. In other words, early maladaptive schemas are a special vulnerability factor to disturbances and psychological and personality disorders <sup>[29]</sup>, such as body image disturbances and disorders.

Regarding the relationship between schemas and disorders associated with body image (eating disorders, physical deformity, social appearance anxiety, etc.), some studies have been carried out and the role of cognitive foundations and schemas has been emphasized. For example, some research studies the role of maladaptive schemas in body image disorders, including searching and performing cosmetic surgery <sup>[31]</sup>, obesity <sup>[32]</sup>, body mass index <sup>[33]</sup>, eating disorder <sup>[34, 35]</sup>, Disagreements about body weight <sup>[36]</sup>, etc., but less exploration has directly investigated the role of maladaptive schemas in the body image and disorder in which the core and morbid forms of all these disorders are shaped. In some studies, <sup>[35, 37, 38]</sup>, although directly related to the relationship of schemas with maladaptive body image, these studies have, in general,

analyzed the variables of schemas and their relation to the distorted body image. Evaluated, for example, in a study <sup>[37]</sup>, early maladaptive schemas are reflected only in the form of a single score and a single scale (rather than each single schema as a subscale), and its relationship with the disrupted body image is measured. Or, in other study <sup>[35]</sup>, maladaptive schemas have been evaluated only in the form of five domains in relation to the distorted physical image. In the study of the magnificent and others <sup>[38]</sup>, firstly, the criterion variable is merely a physical image, while the variables of schemas, such as the study of Bone and others <sup>[35]</sup>, have been studied and analyzed in the form of five domains. Therefore, the present study investigates the role of primary maladaptive schemas in the form of single schemas and schema domains in body image disturbances.

## Material and Methods

The present study is a descriptive-correlational study examining the relationship of maladaptive schemas and body image disturbance. The study sample consisted of 334 students (159 boys and 175 girls) who were selected by cluster sampling method among students attending universities in Arak. The variables (early maladaptive schemas and body image disturbance) were measured using the Young Early Maladaptive Schemas Questionnaire (Short Form) and Body Image Concerns Inventory respectively. Descriptive statistics (mean, standard deviation), Pearson correlation coefficient and multiple regression analysis were used to analyze the research data.

## Materials

**Body Image Concerns Inventory(BICI):** BICI was developed and validated by Littleton et al. <sup>[39]</sup> to assess body image dissatisfaction and appearance concern. The BICI is a 19-item self-report measure. For each item, individuals indicated how often they have the described feeling or perform the described behavior on a 5-point Likert scale bounded by 1 (*never*) to 5 (*always*). BICI, basically measures one's body image dissatisfaction in disorders such as body dismorphic, eating disorders and similar semiotics at clinical and non-clinical levels. In the study of Liteleton et al. <sup>[39]</sup>, Cronbach's alpha in the college sample was obtained .93 and the correlation of the material with the total between .32 to .73. In the same study, the correlation of this questionnaire with the Self-Reporting Questionnaire for Body dismorphic Disorder (BDD-SR) .83 was obtained.

BICI was verified in Iran by Besak Nejad and Ghaffari <sup>[40]</sup> and validated on the collage student population. According to them (the same source), Cronbach's alpha was obtained .95 (female .93, male .95). Also, in their review, the validity of this questionnaire was correlated with the fear of negative evaluation of physical appearance and fear of negative evaluation, respectively, .55 and .43 respectively. In the study of Besak Nejad, Mehrabizadeh Honarmand, Hassani and Nargesi <sup>[41]</sup>, the Cronbach's alpha for female and male students, was .84, .84 and 85 respectively. The study of Pasha, Naderi and Akbari

[42] has also confirmed the optimal psychometric properties of this questionnaire.

**Young's Early maladaptive schemas (short form):** This questionnaire consists of 75 items that were developed by Young [43] to evaluate 15 maladaptive schemas. These schemas are distributed in five basic domains including: First domain (Disconnection & Rejection), Abandonment/ Instability, Mistrust/Abuse, Emotional Deprivation, Defectiveness/Shame, Social Alienation/Rejection; second domain (Impaired Autonomy & Performance) including Dependence/Incompetence, Vulnerability to Harm/Illness, Enmeshment/Undeveloped Self, Failure; The third domain (Impaired Limits) including Entitlement/Grandiosity, Insufficient Self-Control/Self-Discipline; the fourth domain (Other-Directedness) includes schemas Subjugation, Self-Sacrifice; the fifth domain (Overvigilance & Inhibition) including, Emotional Inhibition, Unrelenting Standards/Hypercriticalness. Each question is scored on a 6-point scale (1 (absolutely false) to 6 (perfectly correct)). In this questionnaire, each schema is measured by five questions. Reliability and validity of this tool have been proved in several studies. For example, in the study of Waller, Meyer and Hennings [44], Cronbach's alpha for the whole test was 0/96 and for all sub-scales was above 80. The implementation and standardization of this questionnaire in the Iranian population [45-47], in general, confirms its validity and reliability.

## Results

In order to investigate the relationship between early maladaptive schemas and also five basic schema domains and body image disturbance, the Pearson correlation coefficient was used (Tables 1 and 2). the mean and standard deviation of the variables are also presented in the end rows of tables:

**Table 1: Descriptive statistics and Correlational Matrix for five schema domains and BID**

Variables(schema domains & BID)	1	2	3	4	5	6
Domain 1(Disconnection & Rejection)	1					
Domain 2(Impaired Autonomy & Performance)	0.64	1				
Domain 3(Impaired Limits)	0.52	0.47	1			
Domain 4(Other-Directedness)	0.48	0.58	0.33	1		
Domain 5(Overvigilance & Inhibition)	0.60	0.64	0.44	0.57	1	
Body image disturbance(BID)	**0.26	**	**0.34	**	**0.28	1
Mean	16.20	10.82	11.02	11.45	12.12	36.4
SD	8.69	8.95	4.66	4.20	5.11	9.39

Note: (\*) denotes  $p < .05$ , (\*\*) denotes  $p < .01$

The data in Table 1 show, all of the five schema domains (“Disconnection & Rejection”, “Impaired Autonomy & Performance”, “Impaired Limits”, “Other-Directedness”, “Overvigilance & Inhibition”) are positively correlated with body image disturbance. According to data, domains 2 and 3 (“Impaired Autonomy & Performance”, “Impaired Limits”) show the highest relationship with body image disturbance, respectively.

**Table 2: Descriptive statistics and Correlational Matrix for EMSs and BID**

variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ED	1															
AI	0.11	1														
MA	0.20	0.31	1													
SI	0.32	0.17	0.49	1												
DS	0.27	0.28	0.52	0.67	1											
Fa	0.16	0.29	0.39	0.59	0.67	1										
DI	0.10	0.40	0.50	0.38	0.54	0.62	1									
VH	0.02	0.45	0.40	0.24	0.35	0.43	0.57	1								
EM	0.03	0.24	0.59	0.43	0.49	0.52	0.62	0.47	1							
Sb	0.22	0.38	0.52	0.46	0.52	0.51	0.65	0.51	0.55	1						
SS	0.17	0.18	0.12	0.09	0.01	0.09	0.25	0.23	0.27	0.34	1					
EI	0.15	0.17	0.42	0.58	0.59	0.54	0.47	0.43	0.57	0.46	0.16	1				
US	0.22	0.25	0.40	0.24	0.27	0.20	0.38	0.32	0.36	0.43	0.45	0.25	1			
ET	0.30	0.08	0.37	0.24	0.30	0.21	0.21	0.20	0.37	0.21	0.12	0.25	0.30	1		
IS	0.16	0.13	0.50	0.45	0.47	0.52	0.39	0.27	0.38	0.44	0.12	0.46	0.14	0.36	1	
BID	0.07	0.16	0.29**	0.15	0.20*	0.30**	0.33**	0.36**	0.23*	0.26*	0.14	0.25*	0.20*	0.20*	0.36**	1
Mean	4.38	7.63	5.66	4.28	2.33	3.33	4.17	4.54	4.18	5.01	12.16	6.01	12.17	9.47	7.07	36.4
SD	4.07	4.52	3.88	3.91	2.87	3.87	4.16	4.72	3.8	3.74	3.95	4.98	4.68	4.32	4.14	9.39

Note: (\*) denotes  $p < .05$ , (\*\*) denotes  $p < .01$ . ED=Emotional Deprivation, AI = Abandonment/ Instability, MA=Mistrust/Abuse, SI=Social Isolation/Alienation, DS=Defectiveness/Shame, FA=Failure, DI=Dependence/Incompetence, VH=Vulnerability to Harm/Illness, EM= Enmeshment /Undeveloped Self, SB=Subjugation, SS=Self-Sacrifice, EI=Emotional Inhibition, US=Unrelenting Standards/Hypercriticalness, ET=Entitlement/Grandiosity, IS=Insufficient Self-Control/Self-Discipline, BID=body image disturbance.

As Table 2 shows, early maladaptive schemas such as “Mistrust/Abuse”, “Failure”, “Dependence/Incompetence”, “Vulnerability to Harm/Illness” (at the level of  $p < 0.01$ ) and “Defectiveness/Shame”, “Enmeshment/Undeveloped Self”, “Subjugation”, “Emotional Inhibition”, “Unrelenting

Standards/Hypercriticalness”, “Entitlement/Grandiosity defect” (at the level of  $p < 0.05\%$ ), are positively correlated with body image disturbance. There was not a significant relationship between “Emotional deprivation”, “Abandonment/Instability”, “social isolation/alienation”, and

"self-sacrifice" with the body image concern. The three schemas "Insufficient Self-Control/Self-Discipline", "Vulnerability to Harm/Illness" and "dependency/incompetence" show the highest relationship with body image disturbance, respectively. The multiple regression analysis was used to determine the role of early maladaptive schemas in body image concern and disturbance. Tables 3 and 4 show the results of this analysis:

**Table 3: Hierarchical regression analyses summaries for schema domains predicting body image disturbance**

Steps	Criterion	Predictor variables	r	R2	F	Sig.	B	β	T	Sig.
1	BID	Domain2 (autonomous and impaired performance)	.0	.0	.22	.0	.0	.0	.4	.0
			384	148	89	000	403	384	87	000
2	BID	Domain2 (autonomous and impaired performance)	.0	.0	.14	.0	.0	.0	.3	.0
			426	169	50	000	300	285	19	002
		Domain 3 (impaired limits)					.0	.0	.2	.0
							418	208	31	022

According to table 3, schema domains 2 and 3 ("autonomous and impaired performance" and "impaired limits"), significantly predicted, almost 17% of the variance of body image disturbance. The rest of the schema domains are eliminated from the model due to the weak relationship with the criterion variable.

**Table 4: Hierarchical regression analyses summaries for EMSs predicting body image disturbance**

Steps	criterion	Predictors	R	R2	F	Sig.	B	β	T	Sig.
1	BID	IS	.0	.0	.20	.0	.1	.0	.4	.0
			367	134	50	000	24	367	52	000
2	BID	IS	.0	.0	.17	.0	.0	.0	.3	.0
		VH	458	210	42	000	.0	.0	.3	.0
							853	286	54	001

Note. BID=body image disturbance, IS=Insufficient Self-Control/Self-Discipline, VH=Vulnerability to Harm/Illness

According to Table 4, among the fifteen schemas, the combination of two incompatible schemas "Insufficient Self-Control/Self-Discipline", and "Vulnerability to Harm/Illness" in general, predicts 21% of variance of body image disturbances. The rest of the schemas are eliminated from the model due to the weak relationship with the criterion variable.

## Discussion

The present study was carried out to investigate the relation between EMSs and BID. Based on the findings (Tables 1 and 2), all of the five schema domains and also all of the EMSs (with the exception of "emotional deprivation", "Abandonment/Instability", "social isolation/alienation" and "self-sacrifice") are positively correlated with BID. On the other hand, the regression analysis data confirms the role of the

schemas in BID; two schema domains of "autonomy and impaired performance" and "impaired limits", in total, predicted %17 of the variance of the BID (Table 3). Also, combination of two schemas of "self-control/inadequate self-control" and "vulnerability Vulnerability to Harm/Illness", predicted 21% of the variance of BID (Table 4).

These results indicate that the maladaptive schemas, leads to increasing in distortion and dissatisfaction with the body image. These findings are consistent with other research investigating the relationship maladaptive schemas and body image disturbance [35, 37, 38]. On the other hand, given that the body image and its disturbance is important aspect of disorders such as body dysmorphic disorder and eating disorders(maybe even *their core* feature), the findings are indirectly consistent with Pauwels [34], cullum [48], Sapmazs Yurtsever and Sütcü [36], Unoka, Tölgyes and Czobor [33], Abbasi, Aghighi, Porzoor and Dehghan [49], Nilforooshan, Shamohammadi and Navidian [31]. Of course, this consistency is merely general; all of the above studies indicate that there is a relationship between the schema system and the body image and its disturbance, but there are differences in the details of this relationship. For example, in the study of Khosheghbal et al. [37], which has measured the relationship between BID and maladaptive schemas in nose surgery volunteers, EMSs (which are only integrated into a solidarity analysis based on a general YSQ score), Shows a very high correlation with BID (r =0.83). Meanwhile, in the regression analysis report, schemes of "Mistrust/Abuse", "Entitlement/Grandiosity" and "approval-seeking/recognition-seeking", has been reported as predictors of BID [37]. However, in the present study, firstly, the highest correlation coefficient was 0.37, and on the other hand, schemas of "Insufficient Self-Control/Self-Discipline" and "Vulnerability to Harm/Illness", are the best predictors of BID. According to Mojallal, et al. [38], who have compared the schema domains and body image of aesthetic surgery applicants with normal group, the results showed that the relationship between the schema domains and body image is negative, but this relationship has only been achieved in two schema domains of "Disconnection & Rejection" and "Impaired Autonomy & Performance", while in the present study, the results show a significant relationship between all schema domains with the BID. Bone et al. [35] also, who have investigated the schemas system of eating disorder population solely on the basis of five schema domains, reported Significance positive relationship between all schema domains and BID (between 0.23 and 0.48). These differences at this level may result from differences in the research groups (clinical and non-clinical groups) as well as measuring instruments. But, in any case, the total survey confirms the existence of a close relationship between early maladaptive schemas and the body image disturbance.

There are several possible explanations for this result. First, perceptual-attitude foundation and, consequently, the cognitive-emotional elements of the body image that have been emphasized in the cognitive approaches to the body image [17, 50, 51]. Based on the cognitive-behavioral approach [17], the body image consists of

multiple components, including perceptual, evaluation, cognitive, emotional and behavioral components; the cognitive component refers to "How do you think about your body?" Including beliefs and thoughts related to the physical characteristics, shape and size of the body and appearance and also their important, or beliefs associated with the ideals appearance. Accordingly, the disturbance of the body image, resulting from cognitive biases in the self-assessment and estimation of the body<sup>[51]</sup>, or more precisely, is derived from the biases and thoughts associated with the body and the ideals related with the body, therefore this disturbance basically can be have a Cognitive-emotional nature. This means that cognitions and cognitive biases are an integral part of body image and its disturbances<sup>[15, 51]</sup>. On the other hand, according to Cache<sup>[17]</sup>, the body image or appearance schemas are formed as a result of historical factors, including interpersonal experiences, events (teasing) and physical features and characteristics; such a process is the basis of how people think, feel and act in relation to their bodies. Accordingly, in general, the body image and its disturbance is an emotional-cognitive structure and a part of self-concept that genesis in the developmental context of the individual and in relation to themselves and others. Meanwhile, cognitive schemas, including early maladaptive schemas, also have the same nature and foundation: schemas have an emotional-cognitive structure and form in the relational context of individual with themselves and others in childhood and adolescence. These schemas act as a filter in the process of attention, processing, and action, and are the main and undisputed interpreter and decision-maker of the mental structure<sup>[30]</sup>. Therefore, both the body image and the schemas system, form in the developmental context and social relationships of individuals, and each of them has a cognitive-emotional identity. On this basis, it can be said that the role (predictor) of early maladaptive schemas in body image disturbance and the relationship between them can be in the first step due to such common foundation and the more fundamental of the schemas in the formation of all psychological structures, including the body image in the next step.

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