

# Research Paper: Role of Early Maladaptive Schemas and Attachment Styles in the Prediction of Thoughtful Rumination in Individuals with Body Dysmorphic Disorder



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**Citation** Dehghan Sarvolia N, Dehghani A. Role of Early Maladaptive Schemas and Attachment Styles in the Prediction of Thoughtful Rumination in Individuals with Body Dysmorphic Disorder. Journal of Research & Health. 2019; 9(7):568-574. <http://dx.doi.org/10.32598/JRH.1442.1>

<http://dx.doi.org/10.32598/JRH.1442.1>



## Article info:

Received: 15 Aug 2017  
Accepted: 26 May 2018  
Publish: 01 Nov 2019

## Keywords:

Resistance Exercise,  
Omega3, Supplement,  
Adhesion Molecules,  
Overweight

## ABSTRACT

**Background:** Body dysmorphic disorder (BDD) has been characterized by mental preoccupation about an imagined or exaggerated physical deficit, which includes any part of the body. The purpose of the current research was to identify the early maladaptive schemas and attachment styles in the prediction of thoughtful rumination in individuals with body dysmorphic disorder.

**Methods:** The research design is post-event research and descriptive-correlation type. The research sample includes all of women clients at Cosmetic Surgery clinics of Isfahan city in 2016. 70 individuals were selected by purposive sampling, who obtains a score more than the cut point in the Yale-Brown Obsessive-Compulsive Scale. The participants filled the questionnaires of the Young Early Maladaptive Schema Questionnaire, Collins & Read's Adult Attachment Scale, and the Rumination Response Scale (RRS). The data were analyzed by the SPSS-23 software version.

**Results:** The results of the Pearson correlation coefficient showed a positive and significant relation between maladaptive schemas and thought rumination in the clients and the anxious/ambivalent attachment style had a significant relationship with thoughtful rumination ( $R=0.44$ ). Stepwise regression analysis showed that in the early maladaptive schemas variable, the vigilance and maladaptive schema of flaw/shame, and in attachment styles, the anxious/ambivalent attachment style are better predictors of thoughtful rumination in clients.

**Conclusion:** The conclusions reveal that in the treatment of Body Dysmorphic Disorders, it's important to pay attention to think contents and attachment styles in clients, and using schema therapy technics to help patients to free from unnecessary and ruminative thoughts.

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## Introduction

**D**uring the last decade, the increasing of young person's orientation towards the appearance beauty led to 38 % enhancement in plastic surgical operations. However, most of the patients were diagnosed with BDD, and instead of treatment, they had plastic surgeries [1]. Body Dysmorphic Disorder (BDD) has been characterized by one or several imaginary or exaggerated deficit about appearance along with repetitive behaviors and clinical discomfort [2]. Body dysmorphic disorder in the revised Diagnostic and Statistical Manual (DSM-5), is in the Obsessive Compulsive Disorder (OCD) [3]. Rumination is a form of the additional cognitions manifested in people diagnosed with disorder which includes permanent preoccupation with of a certain subject or thought and permanent thinking about it [4]. Research findings show that people diagnosed with (BDD) significantly have more history in plastic surgery and suicide attempts due to rumination and worry about appearance and even have higher rates in suicide in comparison to people without the disorder [5]. Sadock et al found out that the increase of rumination in people with anorexia is accompanied with the increase of negative emotions [6]. Also, Shors & et al., showed that meta-cognition, meta-anxiety, and thought intersection components have a significant relation with BDD, such that they can predict 24 % of variance scores of body dysmorphic disorder in students [7]. On the other hand other researches confirmed that negative image in people with BDD is due to false thoughts and beliefs that the person has about body parts and is related to poor psychological incompatibility and increase of negative emotions [8, 9]. Regarding the pathological role of ruminations in the patients' cognitive infrastructure, it seems that schemas can be one of the explanatory factors of rumination and disorders such as BDD. Schemas are extensive and exclusive subjects about the individual or others which develop during childhood or adolescence and from the thinking procedure in people [10]. In patients, schemas can be maladaptive [11]. Early maladaptive schemas include five domains of disconnection and rejection, impaired autonomy and performance, impaired limits, other-directedness, and overvigilance and inhibition, which act in our cognitive system as an inclusive processing structure [12] and can influence the appearance assessment [13]. Some researches show that there is a significant difference between women who are candidate for plastic surgery and who are not [14]. Sabine et al studied the change mechanisms in cognitive behavioral therapy that CBT can significantly benefit the behavioral symptoms of the maladaptive schema of depend-

ency /incompetency in patients with severe OCD [15]. Also, Kim, Lee and Lee found out that patients with OCD gain a higher score in deficit/shame and social isolation/alienation schemas [16]. Also Boone & et al., found that all of the five domains of early maladaptive schemas have positive and significant relation with the concerns about body image in patients with eating disorders [17]. Generally, the research shows a difference between the schemas in clinical and non-clinical settings, and maladaptive schemas show higher prevalence in clinical settings. On the other hand, the attachment factor as a developmental process and emotional bond between mother-child is health indicator and individuals' mental well-being [18]. Bowlby believes that open to the type of relationship between caregiver and child and the amount of sensitivity and responsiveness to the needs, three main attachment styles, avoidance, safe and two-sided are formed, and have an important role in all aspects of life in adulthood [19]. Mikulincer & Shaver (2007) believe that among attachment styles, people with anxious attachment style are more likely to have ruminated about how to react in social situations, therefore they tend to be near other people on one hand, and on the other hand, they suffer from a great fear about being abandoned [20]. Numan, William and Ozgar stated in their research that rumination has a significant relation to avoidance attachment style accompanied with fear and distress in students [21]. Also, Jadidi et al found out that anxious attachment style is related to the increase of rumination in students [22]. Regarding to the research's literature about early maladaptive schemas and the lack of enough research about the role of attachment styles as inclusive subjects which have roots in childhood, also the prevalence of rumination in patients with OCD and especially those diagnosed with BDD, so the current research was aimed to investigate the role of early maladaptive schemas and attachment styles in the prediction of rumination and in patients with body dysmorphic disorder.

## Methods

The research design is post-event research and descriptive-correlation type. The statistical population includes all the women patients at the plastic surgery, skin and beauty clinics in Isfahan city in 2016. 70 individuals were selected according to the study criteria (education till diploma, aged between 18 and 35 years, interest and conscious will power in attending the study, gained score higher than cut point "20" in the body dysphoric disorder scale), they were selected by purposive sample, and responded Young Early Maladaptive Schema Questionnaire, Collins & Read's Adult Attachment Scale and Rumination Response Scale

(RRS). The exclusion criteria are; having history of severe mental illness, having an obvious physical deficit, disinterest in participating in the study, and lack of cooperation in filling the questionnaires. Finally the data were analyzed in both descriptive (frequency, percentage, mean and standard deviation) and inferential statistics (Pearson correlation test and stepwise regression analysis) by using SPSS-23 software version.

### In this research tools included

**Young Early Maladaptive Schema Questionnaire (1998):** this questionnaire consists of 75 items which were designed by Young (1998) and includes 15 early maladaptive schemas as emotional deprivation, abandonment, mistrust, social isolation, defectiveness, dependency, vulnerability to harm or illness, underdeveloped self, emotional inhibition, subjugation, self-sacrifice, unrelenting standards, insufficient self-control, entitlement and failure [23]. Each item has been scored by a Likert scale from completely wrong to completely right (1 for completely wrong, 6 for completely right). Reliability and validity of this questionnaire have been proven in several researches. Standardization of the questionnaire in Iran was done by Ahi that its internal consistency was obtained by using Cronbach's alpha in females 0.97 and in males 0.98 [24].

### Collins & Read's Adult Attachment Scale

This scale consisted 18 items which has scored by a 5 Likert scale. Collins & Read developed this scale according to Hazan & Shaver's Adult Attachment Scale that suggesting three attachment styles which showed that subscales of Closeness (C), Dependency (D), and Anxiety (A) in 2 months period and even in 8 months [25]. According to Cronbach's alpha in all the items which was equal or higher than 0.80, so its reliability is high. Also in Iran, the reliability was tested by using test-post-test method with correlation between two runs in one month period which showed that the difference between the two runs of C,D, A subscales was not significant and the test is reliable in 95% level, and with regards to the correlation between the results of the two runs, the subscale A is the most reliable ( $r=0.75$ ) and the second reliable subscale is the C ( $r=0.57$ ), and the least reliable is D ( $r=0.47$ ). On the other hand computing Cronbach's alpha showed that anxiety subscale (A) has the most reliability (0.74) and dependency (D) has the least (0.28) and the reliability of the closeness subscale is (0.52) and the results were consonant during retesting [26].

### Rumination Response Scale (RRS)

Nolen-Hoekseman and Morrow have developed a self-scale which assesses four kinds of reaction to negative mood [27]. The Response Styles Questionnaire (RSQ) is consist of two subscales include Rumination Response Scale (RRS) and Dispositional Resilience Scale (DRS). The Rumination Response Scale (RRS) has 22 items, the responses have been ranged from 1 (never) to 4 (always). Its high internal validity has approved experimentally. Cronbach's alpha coefficient is between 0.88 and 0.92. Several researches showed that retest correlation of RRS is 0.67 [28].

### Young Early Maladaptive Schema Questionnaire

This scale has been designed by Philips et al, and is a self-report tool which consists of 12 questions and has a two factor ranking structure and two additional questions [29]. The participants responded range from (completely disagree) to (completely agree) on a Likert scale. A score higher than 20 shows the presence of BDD. Reliability and validity's studies (BDD-YBOCS) show that this tool is appropriate for the assessment of BDD symptoms. Cronbach's alpha of internal consistency is 0.80 which shows a high internal consistency of the questionnaire. The diagnosis of justifiability comparing to psychiatric ranked form (BPRS) is appropriate ( $r=0.19$ ). Rabiei & et al., showed that revised version of Young Early Maladaptive Schema Questionnaire for BDD has good reliability and validity [30].

### Results

The demographic characteristics showed that 52 individuals (74.2 %) were single, 16 individuals (22.9 %) were married and 2 individuals (2.9 %) were divorced. The frequency distribution of the participants' age showed that 25 individuals (35.7 %) were between 18 to 21 years old, 32 individuals (45.7 %) were 22 to 25 years old, 8 individuals (11.4 %) were 26 to 30 years old and 5 individuals (7.2 %) were 31 to 35 years old. Also considering the education level 29 individuals (41.4 %) had diploma, 21 individuals (30 %) had associate degree, 16 individuals (22.9 %) had bachelor degree, and 4 individuals (5.7 %) were higher than bachelor.

Regarding to Pearson correlation coefficient in the table, there is a positive and significant relation between the domains of disconnection/rejection, impaired performance, other directedness, overvigilance and rumination. Whereas the relation between impaired limits

and rumination isn't significant. Also, there is a positive relation between the anxious/ambivalent attachment style and rumination. Safe attachment style has a

negative relation with rumination, but is not significant (p= 0.06). And at last there is no significant relation between avoidance attachment style and rumination.

**Table 1.** Mean, standard deviation and correlation coefficient of early maladaptive schemas, attachment styles with rumination

Variable	Mean	Standard deviation	Rumination	p
1 <sup>st</sup> Domain: disconnection/rejection	82.60	17.62	0.49	0.01
2 <sup>nd</sup> Domain: impaired performance	62.81	15.50	0.41	0.01
3 <sup>rd</sup> Domain: impaired limits	33.57	8.84	0.22	0.06
4 <sup>th</sup> Domain: other directedness	36.30	7.69	0.45	0.01
5 <sup>th</sup> Domain: overvigilance	33.25	8.95	0.55	0.01
Secure attachment	61.38	13.40	-0.22	0.06
Avoidant attachment	52.45	8.03	0.01	0.90
Anxious/ambivalent attachment style	60.00	15.12	0.44	0.01
Rumination	61.25	13.69	1	0.001

Regression stepwise analysis was used for the assessment of the early maladaptive schemas role and attach-

ment styles in the prediction of rumination in patients with BDD.

**Table 2.** Results of regression stepwise analysis for five domains of early maladaptive schemas

Criterion variable	Step	Predict variable	B	Beta	R	RS	F	P	Tolerance	Durbin-Watson
Rumination	1	Overvigilance	0.84	0.55	0.55	0.30	29.57	0.001	1.00	2.03
	2	Overvigilance	0.65	0.43	0.63	0.40		0.001	0.87	
		Rejection	0.26	0.34					0.87	
	3	Overvigilance	0.53	0.35	0.66	0.44	17.40	0.001	0.67	
		Rejection	0.23	0.30					0.84	
		Other directedness	0.39	0.22				0.79		

Between the five domains of maladaptive schemas, at first, the overvigilance shows 30 % of the changes in rumination scores in the participants and second, accompanied with rejection domain it becomes 40 %. Third, overvigilance, rejection and other directedness domains can predict 44 % of the variance changes in

the scores of rumination in patients with BDD. The positive tilt value of regression line shows that the mentioned model can predict the increase of rumination in patients, and overvigilance is the most important predict variable in predicting the rumination in patients.

**Table 3.** Regression stepwise analysis for early maladaptive schemas

Criterion variable	Step	Predict variable	B	Beta	R	RS	F	P	Tolerance	Durbin-watson
Rumination	1	Defectiveness/shame	1.25	0.52	0.52	0.27	25.24	0.001	1	2.32
	2	Defectiveness/shame	1.06	0.44	0.65	0.42	25.81	0.001	1.04	
		Hypercriticalness	0.85	0.40					1.04	
	3	Defectiveness/shame	0.97	0.40	0.68	0.46	19.11	0.001	1.07	
		Hypercriticalness	0.81	0.38					1.05	
		Abandoment	0.46	0.20				1.05		

Among the early maladaptive schemas, first the initial schema of defectiveness/shame shows 27 percent of the variance changes in rumination in patients and second, by the entrance of the early maladaptive schema of hyper criticalness, this rate increases to 42 percent.

And third, the maladaptive schemas of defectiveness/shame, hyper criticalness, and abandonment can predict 46 percent of the changes in the scores of rumination in patients with BDD. The positive tilt value of regression line shows that the mentioned model can

predict the increase of rumination in patients, and defectiveness/shame schema is the most important predict variable of the increase of rumination in the patients.

Among attachment styles, just the ambivalent attachment style showed 19% change in the variance of rumination scores in patients. The positive value of the

regression line tilt ( $B = 0.39$ ) for anxious/ambivalent attachment style shows that the mentioned variable can predict the increase in rumination in patients with BDD. The rest of attachment styles are deleted from the stepwise regression equation and therefore they aren't able to predict the changes in the scores of rumination in participants.

**Table 4.** Regression stepwise analysis results for attachment styles

Criterion variable	Step	Predict variable	B	Beta	R	RS	F	p	Tolerance	Dorbin-watson
Rumination	1	Anxious/ambivalent attachment style	0.39	0.43	0.43	0.19	16.24	0.01	1	2.01

## Discussion

The results of the study show that early maladaptive schemas and attachment styles play an important role in strengthening or reduction of rumination in patients with BDD, therefore, we see that in the five domains of maladaptive schemas, the domain of overvigilance, rejection and other directedness, can predict the increase of rumination in patients with BDD. Also, the results show that among the early maladaptive schemas, the maladaptive schema of defectiveness/shame, hypercriticalness and abandonment can predict the increase of rumination in patients with BDD. These results are consistent with the results of Sabin et al [15], Boone et al [17], Ghandehari & Dehghani [31], Nilforoshan et al [32], Pourmohseni and Shirmohammadi [33] and maladaptive with the research of Daneshmandi et al [34].

Boone & et al., found out that all five domains of early maladaptive schemas as well as perfectionism have a positive and significant relation with the worry about body image in patients [19]. Also Pourmohseni and Shirmohammadi [33] found in their research that the mean of the schemas of disconnection and rejection, self-discipline, other directedness and overvigilance in the plastic surgery applicant group is significantly higher than the no applicant group. However, Daneshmandi et al concluded in their study that although employing the emotional schemas leads to the reduction of maladaptive emotional schemas, but has no significant impact on rumination [34]. Regarding to these results we can conclude that, the high scores of early maladaptive schemas in patients lead to the development of negative thoughts and ruminations about self, others and life, and which makes the person vulnerable to psychological disorders such as BDD. By considering the results of the current study, the overvigilance domain is one of the most important variables in predicting the increase of rumination in patients with BDD. Because of the regressions and rigid rules, these

individuals use the defense mechanism of rumination in relation with self-image, to avoid the spontaneous impulses and negative feelings, and use plastic surgery as a safety behavior. Also the results show that, patients with disconnection/rejection schema experience high rumination. Actually, these individuals have instability and distrust towards to receiving kindness and establishing a relationship, as well as having unsafe attachment to others [35]. Also it seems that patients with BDD tend to have plastic surgery for the same reasons so they can attract love and kindness of others by fixing their artificial imaginary flaws and deficits. Other directedness is another important domain related to rumination. This domain over concentrates on needs, tendencies and feeling of others. Also, it seems that the body image of these people is largely affected by the information received from the environment, so they might develop rumination about hiding or fixing the imaginary defects about their appearance, so they won't be judged negatively and seen ugly by others. One of the most important early maladaptive schemas in predicting rumination is the maladaptive schema of defectiveness/shame. This schema causes excessive sensitivity to criticism, rejection, blame, shyness, inappropriate comparison, feelings of insecurity in the presence of others and feelings of shame in association with internal flaws and deficits [36]. Individuals with BDD, believe that their thoughts and feelings of mental inadequacy are due to their incompetence appearance and, they unconsciously relate their inefficiency and problems to their appearance and begin ruminating about it, ever they might choose plastic surgeries to compensate their artificial deficits, and fulfill the ruminations. Also hypercriticalness is a major belief that one must strive to meet very high personal standards even with lots of effort. Excessive criticism about appearance and rumination in individuals with BDD arises from perfectionism and having high standards in relation to being flawless.

The results of the study showed that among attach-

ment styles, anxious/ambivalent attachment style can predict the rate of rumination in patients with BDD. These results are consistent with Numan, William and Ozgur [21], Kazemi et al [37], Lanciano et al [38], Jung et al [39] and Jadidi et al [22]. Lanciano & et al., [37] observed that people with insecure anxious attachment style, experience more maladaptive rumination. Also, Jung & et al., [38] observed in their study that, people with anxious attachment, have more rumination about betrayal of a spouse. Mikulincer & Shaver believed that among attachment styles, individuals with anxious attachment are more likely suffer from rumination about performance in social settings, therefore they have tended to closeness on one hand, and on the other hand they fear being rejected by others [20]. Also, body deformity and obsession-compulsion are known as disorders with anxiety base, and researches show that people respond to anxiety via rumination [23]. So we can argue that rumination in patients with BDD, is also a response to anxiety related to negative body image and distorted beliefs about having flaws and deficits.

Research's limitation included having only female participants due to some practical limits; also the research was done at the Isfahan city which requires caution in applying the results to individuals in other cities and males. Finally, regarding to the results, we conclude that early maladaptive schemas and anxious/ambivalent attachment style play a big role in increasing the rumination in patients with BDD.

## Conclusion

These results clarify that in the treatment process of BDD, it is important to pay attention to thought content and attachment styles in the patients, and it's necessary to use specific methods such as schema therapy, so they can be free from repetitive and unnecessary and negative rumination. Furthermore, in the domain of prevention, these results have an implicit about the improvement of mother-child relation and establishing a safe attachment style, especially in children and teenagers, which helps to reduce the possibility of developing rumination and maladaptive schemas and insecure attachment.

## Ethical Considerations

### Compliance with ethical guidelines

This study is from a dissertation with the ethical approval of 15020701942007 dated 2016/2/10 from the University of Najafabad.

## Funding

This research did not receive any specific grant from-funding agencies in the public, commercial, or not-for-profit sectors.

## Authors' contributions

Study design: Nahid Dehghan Sarvolia, Akram Dehghani; Data collection and analysis: Nahid Dehghan Sarvolia, Akram Dehghani; Manuscript preparation: Nahid Dehghan Sarvolia, Akram Dehghani.

## Conflict of interest

The authors declared no conflict of interest.

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