Early Maladaptive Schemas and Behavioral Coping Mechanisms in Relationship with Bulimic Symptomatology

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Abstract

Introduction: *Eating disorders are difficult to treat and the relapse rate after classical interventions is high. Recent models of bulimia nervosa stress the role of the negative beliefs about the self in the etiology of this disorder. Other studies consider the strategies people affected by bulimic symptoms use in order to cope with stress. The present paper aims at identifying early maladaptive schemas and behavioral coping mechanisms in young women exhibiting bulimic symptoms, as well as testing the interaction between the two categories of variables in relationship to the severity of the bulimic symptomatology.*

Objectives: *a) to identify early maladaptive schemas and behavioral coping mechanisms associated with bulimic symptoms; b) to analyze the relationship between early maladaptive schemas and behavioral coping mechanisms that are relevant to bulimic symptomatology.*

Methods: *144 young women (m=20.21, SD=2.01) were investigated using EDI-3 (Eating Disorder Inventory 3), YSQ (Young Schema Questionnaire), SACS (Strategic Approach to Coping Scale) and PDSQ (The Psychiatric Diagnostic Screening Questionnaire) in a design including two clinical and one non-clinical research groups established by using cutoff scores in Bulimia scale of EDI-3 and PDSQ scales.*

Results: *The results indicate that the participants reporting bulimic symptoms of high clinical relevance also have more severe abandonment, enmeshment, subjugation, emotional deprivation, and entitlement maladaptive schemas than the non-clinical group, with more pronounced abandonment, enmeshment, and subjugation schemas in the high clinical relevance group than in the group of typical clinical relevance. Participants in the high clinical relevance group use more frequently antisocial action and less frequently assertive action than controls. No moderating effects of the relationship between the abandonment schema and bulimic symptoms by behavioral coping mechanisms were identified.*

Conclusions: *The implications are that early maladaptive schemas and behavioral coping strategies belong to different mechanisms developing and maintaining the bulimic symptoms and that they may not interact. Experiential findings concerning the abandonment schema, the development of a secure attachment style, and anger management strategies could be integrated so as to improve existing treatments for bulimia nervosa.*

Keywords: bulimia nervosa, abandonment, subjugation, anger, assertive action, attachment

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I. Introduction

Bulimia nervosa refers to impulsive eating and inadequate compensation behaviors aiming to prevent weight gain (vomiting, use of laxatives/ diuretics, fast, excessive exercise, etc.) at least twice a week for three months. Another criterion is self-evaluation which is unjustifiably influenced by body weight and conformation (DSM V, 2013).

Garner (2010, p. 19) identifies three categories of risk factors for this mental disorder:

- predisposing factors: female, adolescent/ young adult, Western cultural background, low self-esteem, perfectionism, depression and family history of eating disorders, obesity, depression or substance abuse;
- favorable factors: food limitation in order to lose weight, environmental pressures to be slim, exposure to critical remarks about body weight/ conformation, sexual abuse;
- maintenance factors: effects of starvation on psycho-emotional and physical level.

Simpson (apud van Vreeswijk 2012, p. 145) warns that eating disorders are difficult to treat and a relatively small proportion of patients respond to classical cognitive-behavioral treatment. Synthesizing the results of several studies, the authors reveal that patients develop chronic symptoms in a significant number of cases. The withdrawal rate is around 25% and more than half of the patients treated for bulimia nervosa relapse. An important factor that explains this situation is the robust association between certain eating disorders and personality disorders (Reas et al., 2013). Women present a significantly higher association rate between bulimia nervosa and borderline personality disorder or between anorexia and obsessive-compulsive personality disorder. It is considered that bulimia nervosa coexists with impulsivity and emotion dysregulation, while anorexia is associated with features such as rigidity and perfectionism.

According to the transdisciplinary model of eating disorders developed by Fairburn, Cooper and Shafran (2003), all diagnostic categories in this spectrum share the same mechanisms and their pathological core is represented by a dysfunctional self-assessment system based on the control of eating, weight, or shape. The overestimated importance of shape is considered to sustain efforts to restrict the eating behavior. Because these rules are difficult to respect, some patients exhibit compulsive eating behaviors, which is equivalent to impairing self-imposed control. In addition to this, the authors mention four other maintenance mechanisms of the eating disorders:

- low self-esteem: it stimulates the person to increase control over weight and shape in order to strengthen self-worth feelings;
- clinical perfectionism: the self-evaluation depends on the achievements in the valued areas such as: eating, weight and shape; this intensifies the food restrictions and the preoccupation with weight and shape;
- interpersonal problems: the person intensifies the efforts in order to fulfill the social goals perceived as depending on the extent to which one controls his form and weight;
- mood intolerance can lead to compulsive eating and compensatory behaviors in order to cope with distress.

Lampard et al. (2012) partially contradict the transdiagnostic theory. They assert that a mixture of transdiagnostic processes and processes specific to each disorder are involved in maintaining the eating disorders and that these two categories of processes are not mutually exclusive. The mentioned authors tested the relationships between the components of the transdiagnostic model and found that food restrictions positively correlated with compulsive eating in bulimia nervosa, interpersonal problems were associated only with food restrictions in eating disorder without specification, and perfectionism was not associated with the maintenance mechanisms in bulimia nervosa.

In the more recently proposed model by Cooper, Todd and Wells (2008, p. 74), compulsive eating (the nucleus of bulimic pathology) is regarded as an unhealthy way to manage distress. It is noted that some patients may be afraid that they may not be able to cope with emotions if they do not allow themselves to eat compulsively. Thus, in addition to cognitive schemas, the authors propose that alternative positive coping strategies should be included in the treatment. Examples of such strategies are: counting backwards, by 7's, from 100, loudly describing an object, reciting some lyrics, light exercise, seeking social support. As the patients' discomfort decreases, they may use problem-solving strategies and cognitive restructuring. Finally it is assessed whether the patient's greatest fears have been proven or not.

Cooper, Todd and Wells (2008, p. 48) emphasize that many patients with bulimia nervosa are not helped by the existing treatments based on the previously described models. At the same time, empirical evidence and developments of the schema-based theory (J. Young) suggest the need for revising the transdiagnostic model. More specifically, the authors consider that affect is more important than food

restrictions/ hunger in maintaining bulimia nervosa. They also discuss the role of altered self-awareness as a precursor of compulsive eating and the need to take into account existing evidence regarding the role of the negative beliefs about the self in the development of bulimic pathology.

Pauwels et al. (2013) compared a group of patients diagnosed with eating disorders with another group of patients diagnosed with different types of addictions in terms of scores obtained on a scale that measured cognitive patterns. They obtained significant differences for most schemas, with higher scores in the group of patients with eating disorders. The relevant schemas for this group were: abandonment, distrust/ abuse, social isolation, defect/ shame, failure, addiction/ incompetence, subjugation, self-sacrifice, emotional inhibition, social undesirability, unrealistic standards. There were no significant differences between the two groups regarding the following schemas: emotional deprivation, vulnerability to harm and illness, revendication, and insufficient self-control. Female patients achieved higher scores for the following schemas: abandonment, defectiveness, social undesirability, failure, dependence/ incompetence, subjugation, and self-sacrifice. The differences between the two groups of patients were preserved even when the statistical analysis controlled for gender.

In the conceptualization of J. Young (2015, p. 23) early maladaptive schemas are "generalized patterns consisting of memories, emotions, cognitions, and bodily sensations related to oneself and one's relationships with others, developed in childhood or adolescence and dysfunctional to a significant extent". Mairet, Boag and Warburton (2014) have found that in the case of female patients suffering from eating disorders and also suffering from social anxiety, abandonment and emotional inhibition explained 25.9% of the data variance. They suggested that these patients are afraid to lose significant people and are socially inhibited in order to avoid disapproval. The authors believe that early maladaptive schemas predict superficial anxious thoughts, which in turn perpetuate the schemas.

Van Vreeswijk (2012, p. 146-147) advocates for the use of a model based on cognitive schemas in the treatment of eating disorders, especially when these coexist with personality disorders and interpersonal problems. He also offers arguments for developing conceptualization and a treatment plan that address the causes of the eating disorders. The extended transdiagnostic model of Fairburn, Cooper and Shafran (2003) is presented as an attempt to integrate some of these factors as additional elements to the classical cognitive-behavioral intervention, but it is noted that it is fundamentally a maintenance model of the disorder that marginalizes the underlying schemas. Unlike this, the schema-based model focuses on the fundamental beliefs about the self, on emotions, behaviors and interpersonal difficulties, the central element in the intervention being the therapeutic relationship. The eating disorders and the personality pathology are addressed in a focused and intensive way which aims at maximizing effectiveness and minimizing the risk of relapse.

Schema-based therapy integrates elements from cognitive-behavioral, constructivist and psychoanalytical models, as well as from the attachment and Gestalt theories. It is primarily a useful therapeutic system for patients with old, chronic or resistant psychological problems. It stresses much greater emphasis than the classic cognitive-behavioral approach on exploring the origins of the psychological problems and includes experiential techniques. The therapist-patient/ client relationship and the maladaptive coping strategies receive considerable attention. When classical interventions for disorders situated on the first axis of DSM fail, it often means that there are comorbidities placed on the second axis of DSM that can be addressed through this new type of intervention (Young, Klosko and Weishaar, 2015). Schema-based therapy is not indicated for the treatment of acute psychiatric symptoms, but is useful in treating chronic depression, anxiety, eating disorders and relationship problems, reducing relapse in substance abuse, and treating people in detention (Young, Klosko and Weishaar, 2015).

Babajani, Akrami and Farahani (2014) identified a significant negative correlation between early maladaptive schemas of abandonment, social isolation, seeking approval/ recognition, emotional deprivation, subjugation, defect/ shame and failure on the one hand, and problem-focused coping style on the other hand. They also obtained a positive correlation between each of the above-mentioned schemas and emotion-focused coping strategy and a significant negative correlation between penalty and avoidance coping style.

Coping and emotion regulation skills are relevant variables in the context of eating disorders, negative emotions and instability mediating the relationship between interpersonal problems and eating disorders, both in women and men (Ivanova et al., 2017). Hasselle et al. (2017) note that child victimization is associated with eating pathologies considered to be a maladaptive way to cope with

adversity. Nevertheless, the negative expectations about the mood the person would have after excessive eating seem to mediate the relationship between experiential avoidance and compulsive eating (Della Longa et al., 2018). Brugnera et al. (2018), Barrios-Hernandez et al. (2017) have shown that people who eat compulsively have an interpersonal tendency toward submissiveness, social inhibition, and non-assertiveness, suggesting that the clinical management of eating disorders should focus on anger management.

Eating disorders positively correlate with emotion focused coping strategies and negatively correlate with task-oriented coping strategies. Physical exercise is associated with avoidant coping (Loumidis and Wells, 2001). Villa et al. (2009) note that the avoidant coping style is associated with eating disorders only if other psychological problems exist. For example, depression has a mediating effect on the relationship between avoidance and eating disorders, an avoidant strategy being replaced by an eating disorder representing in fact another coping mechanism. The authors also consider that avoidant coping behaviors such as eating or sleeping more than usual are likely to lead to depression and unhealthy eating habits, suggesting that the treatment of eating disorders should explicitly address the coping strategies.

Armstrong and Roth (2007, apud Unoka et al., 2010) conceptualize eating disorders as maladaptive mechanisms to cope with attachment-related distress, which represent a trigger of the over-alimentation in the normal population and of the compulsive eating in people with eating disorders. Unoka et al. (2010) highlight that abandonment, emotional deprivation, protectionism, subjugation, and emotional instability are associated with binge-purge behavior and low physical exercise, while abandonment and entitlement are associated with binge-purge behavior plus excessive use of weight loss pills.

In conclusion, in the literature there are consistent recent arguments on eating disorders to consider new variables with a potential explanatory role regarding this pathology. These include early maladaptive schemas and coping mechanisms.

II. Objectives

- to identify early maladaptive schemas and cognitive coping mechanisms associated to bulimic symptoms;
- to analyze the relationship between early maladaptive schemas and behavioral coping mechanisms that are relevant to bulimic symptoms.

Hypotheses

1. Young women exhibiting a high clinical level of bulimic symptoms present more severe early maladaptive schemas such as: abandonment, emotional deprivation, enmeshment, subjugation, and emotional inhibition than young women included in the group with typical clinical symptoms and, respectively, in the non-clinical group.

2. Young women presenting a high level of bulimic symptoms tend to use more frequently inefficient behavioral coping strategies (avoidance, instinctive action, indirect action, antisocial action, aggressive action) by comparison with the non-clinical group.

3. The frequency of using adaptive behavioral coping strategies (social interactions, seeking for social support, assertive action) is smaller in women exhibiting bulimic symptoms than in the non-clinical group.

4. The relationship between the severity of abandonment schema and the intensity of bulimic symptomatology varies with the frequency of using maladaptive behavioral coping strategies.

III. The method

Participants

One hundred and forty-four young women (m=20.21, S.D.=2.01) were distributed into three groups according to their level of thoughts and behaviors concerning compulsive eating, as indicated by the scores on the Bulimia scale of EDI-3 inventory. In order to form the non-clinical group, not only the level of bulimic symptoms was considered, but also the results participants obtained on PDSQ psychiatric screening, only participants with scores under the cutoff point on all scales being included. Three groups were constituted/ created: a group of 25 participants having high clinical significance scores on the Bulimia scale of EDI-3 inventory (centiles 92-100, m=14.40; S.D.=.84); a group of 46 participants having typical clinical significance scores (centiles 66-91, m=5.28; S.D.=.28); a non-clinical group of 33 participants having insignificant clinical scores on the Bulimia scale of EDI-3 inventory (centiles 1-65, m=.39; S.D.=.13) and scores under the cutoff point on all scales of the PTSD psychiatric screening.

Measures

Bulimic symptoms: We used Eating Disorder Inventory – 3 (EDI-3). It comprises 91 items grouped on four scales. Cronbach's alpha coefficient for the Bulimia scale was .85.

Early maladaptive schemas: We used Young Schema Questionnaire – 3 (YSQ-S3): it identifies 18 maladaptive schemas grouped in five categories or domains, Cronbach's alpha coefficient obtained being .76 – .88.

Behavioral coping strategies: We used *The Strategic Approach to Coping Scale* (SACS), a scale that comprises 52 items, which evaluates behavioral coping strategies as: assertive action, social joining, seeking social support, cautious action, instinctive action, avoidance, indirect action, antisocial action, and aggressive action. Cronbach's alpha coefficient was: .80 – .84.

Psychiatric symptoms: We used The Psychiatric Diagnostic Screening Questionnaire (PDSQ), a screening instrument which allows self-evaluation of symptoms on Axis I of DSM-IV. It includes 125 items grouped in 13 subscales. Cronbach's alpha coefficient was: .75 – .89.

Procedure

The collected data were analyzed by using the IBM SPSS Statistics 20 program. After calculating the scores for the severity of bulimic symptoms and identifying the level of psychiatric symptoms, the participants were distributed into three groups and the statistical analysis was conducted. The application G*Power 3.1.9.2 was used in order to ensure a satisfying statistical power for the tested hypotheses.

IV. Results

The essential descriptive data obtained for the variables of interest are synthesized in the table below:

Table 1: Descriptive data for the entire sample and for the three compared groups

Variable	High clinical significance group N=25		Typical clinical group N=46		Non-clinical group N=33		Entire sample N=144	
	M	SD	M	SD	M	SD	M	SD
Bulimia	14.44	4.22	5.28	1.90	.39	.78	4.45	5.47
Abandonment	15.24	6.19	10.82	5.43	8.39	4.60	10.67	5.72
Emotional deprivation	42.20	13.66	40.56	11.34	31.24	8.12	37.34	11.67
Enmeshment	13.40	6.23	9.60	4.92	6.00	1.5	9.29	5.11
Subjugation	13.92	4.60	11.13	4.57	9.03	2.83	10.79	4.13
Emotional inhibition	17.56	6.08	19.10	6.20	16.72	4.46	17.90	5.63
Seeking social support	23.08	5.86	24.50	5.31	23.18	4.77	23.75	5.26
Social joining	15.48	3.53	16.58	4.23	17.00	3.97	16.45	3.99
Assertive action	30.24	5.32	31.78	5.00	34.06	5.13	32.18	5.32
Instinctive action	19.24	3.99	19.10	4.22	19.09	4.01	18.95	3.93
Avoidance	14.76	4.33	15.65	5.04	14.66	3.98	14.66	4.55
Indirect action	11.88	3.20	11.45	3.75	10.84	3.14	11.36	3.43
Antisocial action	13.04	3.99	12.15	4.51	10.39	4.03	11.80	4.32
Aggressive action	12.56	3.05	13.12	3.11	12.87	3.71	12.96	3.28

In order to test the hypothesis regarding the severity of early maladaptive schemas by comparing the high clinical significance sample with the typical clinical group and the non-clinical group, we have used ANOVA analysis with a priori procedures (non-standardized orthogonal contrasts). The pondering coefficients for the three groups (high clinical significance group, typical clinical group, non-clinical group) are 1, -1 and -2 in the case of first contrast and 1, -1 and, respectively, 0 in the case of second contrast.

Table 2: The results of F test in the variance analysis

Variable	Source	df	SS	MS	F	p
Abandonment	Intergroup	2	673.56	336.78	11.61	.000
	Intragroup	101	2929.04	29.00		
	Total	103	3602.61			
Emotional deprivation	Intergroup	2	2250.63	1125.31	9.18	.000
	Intragroup	101	12381.36	122.58		
	Total	103	14632.00			
Enmeshment	Intergroup	2	783.41	391.70	18.86	.000
	Intragroup	101	2096.95	20.76		
	Total	103	2880.37			
Subjugation	Intergroup	2	340.08	170.04	10.06	.000
	Intragroup	101	1706.02	16.89		
	Total	103	2046.11			
Emotional inhibition	Intergroup	2	114.80	57.40	1.78	.174
	Intragroup	101	3255.16	32.22		
	Total	103	3369.96			
Revendication	Intergroup	2	212.17	106.08	5.46	.006
	Intragroup	101	1961.36	19.41		
	Total	103	2173.53			

According to the data in Table 2, the value of the omnibus test F indicates significant differences between the considered samples, with regard to the severity of early maladaptive schemas such as: abandonment, emotional deprivation, enmeshment, protectionism, subjugation and revendication, but not for social inhibition.

The values in Table 3 indicate that the clinical samples are significantly different from the non-clinical group, with respect to the following schemas: abandonment, emotional deprivation, enmeshment, subjugation, and revendication, but not in what concerns emotional inhibition.

Table 3: The contrast results in the variance analysis for the early maladaptive schemas

Variable	Contrast	Value of contrast	SE	t	df	p	Cohen's d
Abandonment	1	9.27	2.30	4.02	101	.000	0.77
	2	4.41	1.33	3.29	101	.001	0.61
Emotional deprivation	1	20.28	4.27	4.74	74.16	.000	1.12
	2	1.63	3.20	.51	42.17	.613	-
Enmeshment	1	11.00	1.53	7.17	50.81	.000	2.33
	2	3.79	1.44	2.62	40.58	.012	0.45
Subjugation	1	6.98	1.50	4.63	80.76	.000	0.30
	2	2.78	1.14	2.44	49.14	.018	0.34
Emotional inhibition	1	3.21	2.42	1.32	101	.189	-
	2	-1.54	1.41	-1.09	101	.275	-
Revendication	1	5.67	1.88	3.00	101	.003	0.28
	2	-.90	1.09	-.83	101	.409	-

We have also obtained significant mean differences between the high clinical significance group and the typical clinical group for the abandonment, enmeshment and subjugation schemas, a fact that sustains the idea that more intense early maladaptive schemas are to be found behind severe bulimic symptoms (Young, Klosko and Weishaar, 2015). As expected, the effect sizes are bigger in the case of clinical vs. non-clinical comparison than between the groups in the clinical spectrum. Despite this, even in the case of the first contrast the effects are medium or high only for abandonment, emotional deprivation and enmeshment schemas, all of them belonging to a dependence nucleus (Unoka et al., 2010). The abandonment schema is the only one we obtained a significant effect for in the case of the second contrast. This fact is consistent with the findings of Pauwels et al. (2013) and highlights the impact this schema has on the development of bulimic symptomatology. The large variability of the results in the literature concerning the other early maladaptive schemas suggest that the specific schemas are not so relevant as the deeper mechanism they draw attention to and which is probably linked to attachment (Unoka et al., 2010; Norman et al., 2015). The statistical power calculated with G*Power is .75.

The obtained results sustain the rejection of the null hypothesis and offer arguments for the partial confirmation of the first hypothesis.

Table 4 presents the values of the t test for independent samples when comparing the group presenting a high clinical level of bulimic symptomatology and the non-clinical group, with respect to the means obtained for the following maladaptive coping mechanisms: avoidance, instinctive action, indirect action, antisocial action, and aggressive action. The values sustain the acceptance of the null hypothesis regarding avoidance, instinctive action, indirect action, and aggressive action, and the rejection of the null hypothesis concerning antisocial action. The effect size is .65 (medium), while the statistical power is .78.

Table 4: T test results

Variable	SE	t	df	p	Cohen's d
Avoidance	1.09	.85	56	.932	-
Instinctive action	1.06	.14	56	.889	-
Indirect action	.84	1.22	56	.225	-
Antisocial action	1.06	2.48	56	.016	.65
Aggressive action	.94	-.34	56	.72	-

By analyzing the means for antisocial action in Table 1, we find arguments that support the idea that young women exhibiting a high level of bulimic symptoms tend to pursue their goal by ignoring the negative impact of their action on others when confronted with stressful situations more frequently than the participants in the non-clinical group.

This type of coping is frequently associated with a high level of anger (Hobfoll et al., 2001, apud Budău and Albu, 2010), bulimic persons being prone to experience an emotional deficit including not only anger, but also instability of disposition, impulsiveness, and self-destructive behaviors. These aspects are considered to be signs of an unfavorable prognostic because they are associated with intense emotions that impede the psychological treatment (Garner, 2010, p. 91-92).

The insignificant result for avoidance in the clinical sample discords with the findings presented by Mayhew and Edelman (1989) and Troop et al. (1994). On the other hand, Villa et al. (2009) show that avoidance is associated with eating disorders only if these coexist with other psychological problems. These authors note that the avoidant strategy can be replaced by an eating disorder that appears to be a coping mechanism in itself. In the present study we cannot know whether avoidance was a precursor of the bulimic symptomatology and a longitudinal investigation would clarify such a hypothesis.

Nevertheless, we have not obtained in our study significant differences between the clinical and non-clinical groups for coping strategies such as instinctive action and indirect action. This means that the participants with bulimic symptomatology do not act more frequently than those in the control sample in an impulsive and manipulative manner, without taking into account the consequences of their actions when experiencing a high level of distress. In addition to this, they are not particularly prone to aggressiveness in order to take control and surprise others by acting rapidly and decisively.

The discordances regarding the antisocial coping can be conciliated by the idea that women having bulimic symptoms do not intend to generate suffering in others, but rather exhibit egocentricity and high reward sensitivity, having a diminished ability to cope with the frustration of their own needs and wishes. In the context of self-absorption, one might violate others' rights, even though this does not represent a dominant of the personality. Koren et al. (2014) note that the people confronted with eating disorders not only show impulsiveness, but they are also characterized by novelty seeking and harm avoidance, facts that sustain the previous argumentation.

Table 5 synthesizes the values obtained when testing the null hypothesis, according to which there are no significant mean differences between the group with a high level of bulimic symptomatology and the non-clinical group, with respect to the following adaptive coping strategies: social joining, seeking social support, and assertive action. The results of the Student's test for independent samples indicate significant differences with regard to assertive action and the absence of such differences concerning the other two mentioned coping mechanisms.

Table 5: T test results for independent samples

Variable	SE	t	df	p	Cohen's d
Social joining	1.00	-1.51	56	.136	-
Seeking social support	1.39	-.07	56	.94	-
Assertive action	1.38	-2.76	56	.008	.73

By comparing, as in Table 1, the means for these three variables, we observe that women in the high clinical significance sample tend to use assertiveness as a coping strategy when confronted with stressful situations less frequently than those in the non-clinical sample. The effect size is .73, while the post-hoc calculated statistical power is .85 (close to the optimal value of .80). This result is consistent with the discussion regarding the previous hypothesis where it was shown that the participants presenting bulimic symptoms tend to follow their goals even though their actions are affecting others. Thus, it can be concluded that the young women in the high clinical significance sample approach the stressful situations less frequently than those in the non-clinical group in a firm, spontaneous, and transparently manner and by showing consideration to others persons' rights. On the contrary, they are prone to behave in a way that affects other people if their wishes cannot be satisfied otherwise.

As shown in Table 6, there are no significant differences between the two groups with respect to the prosocial dimension of coping (social joining and social support seeking). This result contradicts the findings presented in Troop et al. (1998), according to which women suffering from bulimia nervosa are less prone to receive social support in crisis situations and therefore find it difficult to adequately respond to stressful contexts. In order to understand the roots of these differences, we should note that the cited authors investigated patients diagnosed with bulimia nervosa, while in the current study we have only considered the severity of bulimic symptoms. In addition to this, it is possible that the participants in the cited study presented more severe forms of pathology, including depression. In our study 13 from 25 participants have obtained a score situated under the cutoff point for the depression scale of PDSQ.

We have calculated the hierarchical multiple regression by using MODPROBE application in order to test the null hypothesis that abandonment schema and antisocial action do not interact in influencing the severity of bulimic symptomatology. The insignificant result R^2-chng=.0001, F(1, 140)=.019, p=.890 and the data exposed in Table 6 support the acceptance of the null hypothesis.

Table 6: The results of the regression analysis regarding the moderation of the abandonment schema effect on bulimic symptoms by antisocial action

Effect	Coefficient	SE	t	p
Constant	4.45	.41	10.71	<.01
Abandonment	.33	.07	4.53	<.01
Antisocial action	.31	.10	3.12	<.01
Abandonment X Antisocial action	.002	.01	.13	.89
R^2=.18, F(3, 140)=10.85, p<.01				

We have also verified whether assertive action moderates the effect of the abandonment schema on bulimic symptoms: R^2-chng=.002, F(1, 140)=.417, p=.519. The statistically insignificant results of the moderation analysis suggest that the behavioral coping mechanism do not exert a moderation effect on the relationship between the severity of the abandonment schema and the variation of the bulimic symptoms.

The fact that participants with bulimic symptoms tend to pursue their goals even if they hurt others can be related to impulsivity, high level of anger, and reward sensitivity (Giel et al., 2013). Waller et al. (2003) supported this idea with a study that revealed increased levels of anger and suppression of anger in patients with bulimic symptoms compared to the control group. It was stressed that women who compulsively used eating/ vomiting had significantly higher levels of anger as trait; women who exaggeratedly exercised had higher levels of anger as state, while those using laxatives had higher

levels of anger suppression. Anger expression or suppression in the context of social behavior is not necessarily related to the effect of the abandonment schema on bulimic symptomatology. By intervening on the coping mechanisms it is not likely to diminish the influence of the abandonment schema on the current bulimic thoughts and behaviors. There is a neurofunctional base that probably supports this mechanism: the hyperactivity of the amygdala as a result of the early aversive experiences expressed in insecure attachment and sensitivity to relational hazards (Norman et al., 2015). Because this vulnerability has been created by experiences, we can assume that other such complex structures (positive interpersonal experiences, "attachment kit") may diminish it.

V. Discussion

Correlated with previous works, this study suggests that the mechanisms of development and maintenance of bulimic symptomatology may be very different. If we consider the abandonment schema as part of the development mechanism, the intervention on behavioral coping mechanisms is less likely to correct disturbed eating behaviors.

The abandonment schema may contribute to the genesis of bulimia nervosa through the anxiety that usually occurs during childhood abusive experiences. The assessment of threatening stimuli seems to have a significant role in this respect, an argument being offered by the experimental result of Coan (2008/ 2010, apud Norman et al., 2015). They revealed that the availability expectations of the attachment figures are followed by diminished neural activation in the regions associated with threat assessment. Thus it is stressed the protective effect social connections have in relation to anxiety, an emotion consistently identified as mediating eating disorders (Keel, 2013).

The above-mentioned results and the inconsistences contained in the literature on eating disorders sustain the idea that a more sophisticated model is needed in order to explain the development and maintenance of the chronic and rigid beliefs situated on schema level (Simpson et al., 2010).

In the cases in which early negative experiences were cemented in the form of abandonment or other schemas, not only the cognitive-behavioral modifications are necessary, but also an intervention on the emotional level is needed. This can be obtained by using experiential techniques that activate the emotions associated to the schema and through the limited reproduction of the parental figure so that the unsatisfied emotional needs could be addressed. Through a small number of corrective emotional experiences the person's beliefs are modified at a profound level. Young, Klosko and Weishaar (2015, p. 140, 161) present the guided imagery, the imaginary dialogue with the Vulnerable Child, Dysfunctional Parent and Healthy Adult, writing letters, etc. as useful techniques. Expressing the anger and gaining the ability to defend their own rights in front of the parent who has hurt them give patients a sense of power in coping with the schemas. Body work is useful in anger reduction, an important step in the transition from wounding to forgiveness of those who have caused the suffering.

Despite such results, we do not have to assume the existence or inexistence of specific early maladaptive schemas or coping mechanisms in patients who have a specific diagnosis (Wilson, 2013), but need to evaluate and conceptualize each case.

Limits of the study

The results of the study cannot be generalized because of the unrepresentative sample (convenience sample). In addition to this, the statistical power obtained for the moderation analysis is low by comparison with the more powerful situation of oversampling the extreme four corners from the joint distribution of the predictors (Judd, Yzerbyt & Muller, 2014, p. 669). More complex relationship could have been tested if other variables such as degree of emotional distress or thoughts concerning food had been included.

VI. Conclusion

This study highlights that the participants exhibiting bulimic symptomatology of clinical intensity also present more severe early maladaptive schemas such as abandonment, protectionism, subjugation, emotional deprivation, and enmeshment than the participants in the non-clinical group. The first three of the above-mentioned schemas are more pronounced in the group of high clinical significance than in the group with typical clinical symptomatology. The participants in the high clinical significance group tend to more frequently use antisocial action and less frequently use assertive action than controls when confronted with stressful situations. The considered behavioral coping mechanisms appear not to exert any moderation effect on the relationship between the abandonment schema and bulimic symptomatology. Thus, early maladaptive schemas and behavioral coping strategies might be related to a developing mechanism and, respectively, to a maintaining mechanism.

The present study could not identify interaction points between them. Schema based theory and attachment security priming could provide elements for future research, aiming to improve the existing models and treatments for bulimia nervosa – the results of this study provide arguments for using experiential techniques in approaching the patient with bulimic symptomatology.

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