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## BULIMIA NERVOSA, BORDERLINE PERSONALITY DISORDER, AND EXECUTIVE FUNCTIONS: TREATMENT AND FOLLOW-UP IN A CASE STUDY

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### Abstract

*This study describes the clinical case of a 20-year-old woman diagnosed with bulimia nervosa (BN), borderline personality disorder (BPD), and impaired executive functioning. The objectives were to: 1) Determine the efficacy of cognitive-behavioral therapy (CBT) and dialectic behavioral therapy (DBT) in a case of BN and BPD comorbidity, evaluating the improvement of specific parameters related to eating disorders (BN) and aspects of BPD after treatment (posttreatment) and at 1-year follow-up; and 2) Determine whether the psychological intervention of choice for BN and BPD is also of benefit for alteration of executive functions. She was assessed at three time points: pretreatment, posttreatment, and at 12-month follow-up. The instruments used were EDI-3, SCL-90-R, MCMI-III, ring test, and WCST. CBT and DBT were applied for 11 months. The results at 1-year follow-up showed a decrease in the characteristic symptomatology of BN and BPD, whereas executive functioning impairments did not show any improvement.*

*It was concluded that a specific unit on neuropsychological rehabilitation must be included in the treatment protocol for patients with these characteristics. However, more research is still necessary to provide an answer to the open debate on whether alterations of executive functions are previous to or consequences of ED.*

**Key words:** Eating Disorders, Bulimia Nervosa, Borderline Personality Disorder, Executive Functions, Case Report.

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### INTRODUCTION

The DSM-5 (APA, 2013) defines bulimia nervosa (BN) as recurrent episodes of binge eating, with a

sense of lack of control and presence of recurrent inappropriate behaviors (vomiting, use of laxatives and/or diuretics, medication, fasting, or excessive physical exercise), to prevent weight gain. It defines borderline personality disorder (BPD) as a dominant pattern of instability in interpersonal relationships, self-image and affects, and intense impulsivity.

Some studies have emphasized comorbidity of personality disorders (PD) and eating disorders (ED) of 22% to 95% depending on the study, affirming that BPD is the most characteristic in these patients (Del Río, Torres, & Borda, 2002).

Recent studies have reported that executive functioning performs an important role in

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the development and evolution of ED (Ferraro, VanDyke, & Staples, 2015). Several authors have stated that it is relatively frequent for persons with an ED diagnosis to show difficulties in planning, problem-solving, flexibilization of thinking, and/or behavioral inhibition (Camacho, Escoto, & Mancilla, 2008; Ferraro et al., 2015; Rosval et al., 2006; Tchanturia et al., 2011, 2012; VanDyke & Staples, 2015). Cognitive inflexibility is manifested by the inability to change schemas of thinking, thereby maintaining repetitive behavior although the environmental feedback received is unfavorable. The main planning errors are found in anticipation and organization (Alvarado & Silva, 2014; Tchanturia et al., 2004). These difficulties are an obstacle to decision-making in daily life (Brand, Franke-Sievert, Markowitsch, Tuschen-Caffier, & Jacoby, 2007).

Some authors (Camacho, Escoto, & Mancilla, 2008; Claes, Mitchell, & Vandereycken, 2012; Matsumoto et al., 2015) have observed differences in cognitive skills between anorexia nervosa (AN) and bulimia nervosa (BN). However, others (Alvarado & Silva, 2014; Lang et al., 2015) have not found significant differences in executive functioning between the two types of ED. Nevertheless, they state that there are differences in alterations related to impulsivity, which is higher in BN.

Several authors have found that cognitive deficits cannot be attributable to malnutrition or dehydration, since, in spite of recovery and reaching an optimal level of nutrition, they continue showing these deficits (Tchanturia et al., 2012). Furthermore, not all cases are so serious as to be so affected, and executive functioning is deteriorated due to chronification and impairment from the illness.

Along this line, a recent study reported that adolescents with AN showed a cognitive profile similar to adults with AN, characterized by inefficiencies in changing strategies based on environmental feedback (Lang et al., 2015). The similarity between age groups has important implications for ED treatment. Adequate intervention at disorder onset would contribute to avoiding development and chronification of the illness into adulthood. The detection of this characteristic profile facilitates the development of cognitive therapeutic strategies focused on rehabilitating these deficits to improve cognitive activity before the ED evolves into chronification.

These findings support the hypothesis that characteristic ED cognitive deficiencies are due to the presence of traits existing prior to the appearance of ED and not its consequences. Furthermore, in adolescent patients, the illness evolves in a

relatively short time, which would confirm that the deficits could not be justified as consequences of the ED or malnutrition, because due to the period of evolution of the disease, it has not had time to become chronic.

In the systematic review by Duchesne et al. (2004) on the neuropsychology of ED, they found that, after psychological treatment, some neuropsychological deficits improved, even tending to disappear. These findings demonstrate that they are functional deficits, that is, consequences of the ED. However, the findings are not conclusive, since the patients with BN did not have a clear neurocognitive profile (Van den Eynde et al., 2011).

Furthermore, when the dysexecutive syndrome is considered previous to the onset of BN (Ferraro et al., 2015), the symptomatology of executive dysfunction would be a factor in BN risk and maintenance (Fagundo et al., 2012; Zakzanis, Campbell, & Polsinelli, 2010).

These findings have important implications for both treatment and primary and secondary prevention, showing the need to include neuropsychological rehabilitation in intervention. It would therefore be advisable to reformulate the focus of therapeutic intervention and prevention of BN as it has been for AN, orienting it toward cognitive flexibilization (Pretorius et al., 2012). Moreover, these deficiencies cannot be attributable to comorbidity with other mental disorders, such as affective or anxiety spectrum, because no clear relationship has been found between these symptomatologic manifestations and cognitive performance (Alvarado & Sánchez, 2014; López et al., 2008), and therefore, this subject requires further study.

This article reports on the case study of a woman with BN, BPD, and impaired executive functioning. The objectives were to: 1) Determine the efficacy of cognitive-behavioral therapy (CBT) and dialectic behavioral therapy (DBT) in a case of BN and BPD comorbidity, evaluating the improvement of specific parameters related to eating disorders (BN) and aspects of BPD after treatment (posttreatment) and at 1-year follow-up; and 2) Determine whether the psychological intervention of choice for BN and BPD is also of benefit for the alteration of executive functions.

In this clinical case study, it was expected to achieve an improvement in measures related to general psychopathology (especially emotional alterations) and specifically in ED (Bulimia, body dissatisfaction and drive for thinness), as well as general psychological adjustment and alterations related to executive functioning, at 1-year follow-up.

## CASE PRESENTATION

The patient was a 20-year-old woman with moderate BN (BMI = 19.53) and BPD according to DSM-5 (APA, 2013). She was living with her parents. Her mother was an industrial psychologist and her father was an IT technician, aged 52 and 56 years old, respectively. They always had a good relationship. She liked eating alone and felt more at ease that way.

She was in her sophomore year in Journalism and was a responsible and committed student. The first year she passed all her courses. However, at the time of this study, her performance had worsened. She felt blocked and was unable to pass her courses.

The problem under study had begun 3 years before. She was in love with a boy in her class, but he decided to date another girl. This stage was one of the worst moments of her life. She felt alone and empty. She thought that if she vomited, she could probably lose weight, and some good-looking boy would want to be her boyfriend. She began to vomit and take laxatives. Then, the more the feeling of being empty inside increased, the more she ate. She began to diet, but it just made her hungrier. She did not understand why she could not control the binges and vomits. She drank a lot of water and weighed herself constantly, but she found that she was gaining weight. This made her feel miserable. Simultaneously, she began to cut herself on her wrists and legs, saying that, "I took the blade from the pencil sharpener or the edge of a broken ruler and I cut myself to see the blood run and feel the pain, which made me calm down, forget how bad I felt just thinking about how I was getting fatter and I was going to be left alone." The self-injuries, binges, and vomits increased, as well as her emotional distress and the feeling of losing control.

A year before the study, she began a relationship with a boy. With this partner, her symptoms remitted somewhat. However, she was afraid that he would break up with her ("I can't imagine how I am going to get along without him," and "I give him a lot of sex so he won't leave me.").

At that time, she could not concentrate and her academic performance got worse, the binges and vomiting were more frequent (seven or eight a week), and self-injuries were more severe ("Now I cut myself on the stomach and legs, I press harder on the razor-blade so it goes deeper... the little cuts I made before are not good enough anymore."). She could not stop counting calories, her body disgusted her, and the worse she felt, the looser the clothing she wore.

She was ashamed of her body when she went out ("Everyone looks at me"). She got very nervous

("They look at my butt and legs"). She did not want to go out with her friends until she lost weight. When she went out, she drank a lot to lose her sense of shame ("I prefer to blind myself and have a good time, and it's also easier to vomit.").

Arguments with her mother were frequent ("She doesn't understand me and tries to control me."). She would lose control when she got angry, she felt irate, and at those times, she would punch the door or harm herself.

She could not control her life.

## EVALUATION

Evaluation took place at three different time points. The first was before treatment (pretreatment), the second was at the end of the treatment (posttreatment), and the third was at 12 months from the end of the treatment (follow-up).

The following measures and instruments taken from the battery of evaluation protocol instruments in the specialized ED Unit were used:

- First, an adaptation of a semi-structured clinical interview, the *Entrevista Diagnóstica para los TA* [Diagnostic Interview for EDs] based on the EDSS (Stice, Telch, & Rizvi, 2000), was used. It consists of items based on DSM-5 diagnostic criteria (APA, 2013) for AN and BN. It also includes clinical items (e.g., drug use, self-harm behavior, and suicidal ideation).
- Eating Disorders Inventory (EDI-3) by Garner (2004), in a version validated for a Spanish sample by Elosua, López-Jauregui, & Sánchez-Sánchez (2010), was used to evaluate the eating pathology. It evaluates the symptoms that normally accompany AN and BN. It consists of 91 elements. Each item presents six response options (on a Likert-type scale) that go from "never" to "always." It provides scores on 11 scales. Reliability coefficients for the scales varied from 0.80 to 0.92.
- The Symptoms Checklist - SCL-90-R (SCL-90-R Symptom Checklist-90-Revised, Derogatis, 1977), Spanish version by González et al. (2002), was used to evaluate the general psychopathological state. It consists of 90 items, dimensionally organized in nine factors of symptoms. Each item presents five answer choices (on a Likert-type scale) varying from "not at all" to "extremely." Reliability coefficients found on the scales varied from 0.64 to 0.82.
- Millon's Clinical Multiaxial Inventory (MCMI-III), version adapted to a Spanish population

(Millon, Davis & Millon, 2007), was used. It consists of 175 items with a dichotomous response format (*true/false*). It evaluates different aspects of personality according to the DSM-III-R on 13 scales: 10 basic scales and 3 scales of pathological personality. All of the inventory's scales reflect, to varying degrees, both "traits" and "states." Reliability coefficients of the scales varied from 0.70 to 0.90. The basic scales were used.

- The Wisconsin card sorting test (WCST) and the ring test were used to evaluate the executive functioning. The WCST by Heaton, Chelune, Talley, and Curtis (1993) evaluates abstract reasoning and the capacity to change strategies in response to environmental changes. It also measures the ability to form new concepts, mental flexibility, and cognitive efficiency. It requires strategies for using environmental feedback to change the response pattern. The *Test de las Anillas* [Ring test] (Portellano & Martínez-Arias, 2011) measures the ability to solve problems; abilities for anticipating, planning, sequence and foresight, resistance to distraction, cognitive flexibility, abstraction; and ability to maintain adequate strategies to achieve goals. In general, it enables a person's ability for planning tasks and aptitude for achieving a goal by sequence decomposition.

Unlike the EDI-3 and SCL-90, which were measured at three different time points, the MCMI-III, which evaluates a stable construct and, therefore, is less sensitive to therapeutic change, and the WCST, which finds a normal global score, were only applied at pretreatment. Furthermore, the validity of the WCST, given its characteristics, when applied a second time could be biased by the patient learning test. However, the ring test was applied at pretreatment and posttreatment.

During the study, the Declaration of Helsinki ethical principles for medical research involving human subjects (World Medical Association, 2013) was followed. The specialized ED Unit is a healthcare center accredited for care and research. After receiving authorization from the healthcare center authorities, the patient was informed about the intention to publish this case history, and she provided signed consent.

## TREATMENT SELECTION

The therapy was individual and free. The outpatient treatment was carried out in a public specialized ED unit where she was treated by professionals specialized in clinical psychology. No medication was

prescribed. An AB experimental design was used applying clinical psychological intervention to treat psychopathological disorders in a controlled context.

The treatment was applied over 11 months in 32 60-min sessions. Due to the comorbidity of ED and BPD, the treatment selected was empirically validated for BN, CBT, and the treatment of choice for BPD, DBT (Linehan, 2003). This approach emphasized the strengths of both therapies for treating holistically and specifically integrating the eating symptoms and characteristic problems of BPD.

The four objectives of the treatment were to: 1) establish healthy eating habits and life styles, 2) reduce the anxiety associated with eating and fear of weight gain, 3) decrease dysfunctional thinking and replace it with rational thinking, and 4) develop effective interpersonal skills (problem-solving and emotional regulation), based especially on self-affirmation and respect.

## PRETREATMENT RESULTS

First, on the specific EDI-3 ED scales, standard scores (S.S.) were in the typical clinical range (minimum S.S. = 42–44/maximum S.S. = 52–56, depending on the scale), high in drive for thinness (S.S. = 55) and moderate in body dissatisfaction (S.S. = 45). Scores were above the typical clinical range in bulimia (S.S. = 67) and ED risk index (S.S. = 58) (see Table 1).

On the general psychological maladjustment scales, scores were above the typical clinical range on personal alienation (S.S. = 57) (continuous feeling of emotional emptiness: "I've felt that emptiness inside my chest since I was little," loneliness, feeling of not understanding herself and of losing control: "I don't understand what's happening to me and I can't control it"), emotional maladjustment (S.S. = 60) (tendency to emotional instability, intense outbursts of anger, high levels of impulsivity and even own self-injury on wrists and legs, and low tolerance to distress and to frustration), and ascetism (S.S. = 60) (need to seek virtue through sacrifice: "I can go without eating, it makes me feel spiritually stronger because I need less than normal to live," guilt and shame of feeling pleasure). The scores on the rest of the scales were in the typical clinical range.

On the psychological scales, the scores were above the typical clinical range. The ineffectiveness scale (S.S. = 55) showed problems with self-concept, feelings of strong emotional emptiness, lack of control and poor self-understanding, high levels of mood instability, recklessness, and even self-destructive behavior. The overcontrol scale (S.S. = 58) showed high self-demand, self-denial,

**Table 1. EDI-3 and SCL 90-R standard scores at pretreatment, posttreatment, and 12-month follow-up**

	Pre	Post	12-month follow-up
<i>EDI-3 Scales</i>			
<i>Risk of ED</i>	58	42	38
Obsession with thinness	55	45	42
Bulimia	67	44	41
Body dissatisfaction	46	41	37
<i>General psychological maladjustment</i>	55	42	38
<i>Inefficacy</i>	55	47	43
Low self-esteem	53	45	41
Personal alienation	57	50	46
<i>Interpersonal problems</i>	52	40	38
Interpersonal insecurity	54	40	38
Interpersonal distrust	49	42	40
<i>Affective problems</i>	56	39	34
Interoceptive deficits	51	41	36
Emotional maladjustment	60	40	36
Overcontrol	58	47	45
Perfectionism	54	45	44
Asceticism	60	50	47
Fear of maturity	55	44	42
<i>SCL 90-R scales</i>			
Somatization	54	49	47
Obsession-compulsion	51	40	39
Interpersonal sensitivity	62	50	48
Depression	54	45	39
Anxiety	58	48	39
Hostility	60	50	48
Phobic anxiety	47	40	37
Paranoid ideation	57	50	49
Psychoticism	55	48	47

sacrifice, and rejection of pleasure. Finally, the general psychological distress scale (S.S. = 55) showed moderate personal and interpersonal psychological impairment.

Second, on most of the general psychopathological symptom scales (SCL-90-R), the scores were not clinically significant ( $T < 63$ ). However, interpersonal sensitivity was high ( $T = 62$ ), "I feel as if I don't make a good impression on people, that they don't like me" or "I feel uncomfortable when they look at me or talk to me," and hostility was also high ( $T = 60$ ) "I feel like I'm exploding and I can't control myself" or "I feel angry or in a bad mood" (see Table 1).

Third, the presence of personality trait (prevalence/PREV = base rate 75–85) was found on the depression scales (tendency to sadness, pessimism and inability to feel pleasure, borderline) (base rate = 83) (near disorder, reflected severe

emotional and affective dysregulation, mood lability and instability, strong preoccupation with the threat of feeling abandoned again), as well as anxiety disorder and clinical syndromes (base rate = 83), and alcohol dependency (base rate = 80). The first was shown in a tendency to be tense, excessive sweating, continuous sensation of anticipating the future, catastrophism, apprehension of supposedly imminent problems, hypervigilance in her own setting, nervousness, and susceptibility. Finally, alcohol dependency was related to impulsive behavior and substance abuse characteristic of BPD.

Fourth, on the ring test, two parameters, time and number of moves needed, were evaluated to assess executive functioning. She took 428.1 s. This performance is classified in the sten score and 1<sup>st</sup> percentile, the lowest, showing high anxiety levels in her execution. Her executive functioning, specifically planning and sequencing of movements to achieve a goal, was much lower than expected for her age and academic level. The final number of movements was 200. This shows the probability of problems planning and programming complex movements.

On the WSCT, the number of attempts, 70 (minimum = 60; maximum = 128), shows good performance. The total number of correct answers was 63, and the total number of errors was 7 (S.S. = 107), showing deterioration below the mean. In perseverative responses and errors, she had a raw score of up to 4 (S.S. = 105), showing moderate deterioration. This reflects problems in creating new abstract concepts, cognitive rigidity or poor cognitive flexibility, and problems adapting her responses to environmental demands, such that her rigid maladaptive pattern tends to persist even though it is wrong. However, this tendency to perseverance does not constitute severe cognitive impairment (see Table 2).

Finally, she scored  $-0.83$  in learning to learn, which is above the 16<sup>th</sup> percentile. During execution, the percentage of errors varied from 0% to 17% without following any continuous line in the six categories, reflecting the disorganization and planning problems previously found in the ring test.

In conclusion, she was found to show alterations in planning and organization in both the WSCT and the ring test. However, her capacity for abstraction of concepts was within normal limits.

## TREATMENT EFFICACY ASSESSMENT

In the first place, the BMI remained at normal weight at both posttreatment (BMI = 19.02) and 12-month follow-up (BMI = 19.38). The self-records show normalized patterns at posttreatment in eating habits (type and amount of food, eating in



response to physical sensations, and less often to emotional eating). These patterns were maintained at the 1-year follow-up. The frequency of binge eating and vomiting fell from moderate to light at

posttreatment (between 1 and 2 binges/vomiting per week) and disappeared at follow-up. The frequency of risk situations for the appearance of inadequate compensatory behaviors, also based on self-records, was down to one or two at the 1-year follow-up, and impulsivity and anxiety “almost never” interfered in her daily life after that time.

Figure 1 and Figure 2 show the percentages of overall improvement achieved on the EDI-3 and SCL-90-R scales at posttreatment and 12-month follow-up.

Finally, in the ring test evaluation of executive functioning, a slight decrease was observed in the scores for the number of movements (pre = 200; post = 190) and for the time invested (pre = 428.1 s; post = 405.6). Therefore, the percentage improvement in the number of movements (5%) and seconds

**Table 2. WSCT scores**

Variables	D.S.	S.S.
Number of trials	70	
Correct responses	63	
Total errors	7	107
Perseverative responses	4	105
Perseverative errors	4	105
Conceptual level responses	60	
Categories completed	6	
Failure to maintain set	0	
Learning to learn	-0.83	

Note: D.S.: Direct score; S.S.: Standard score.

**Figure 1. Improvement in eating disorder and personal and social functioning variables (EDI-3)**

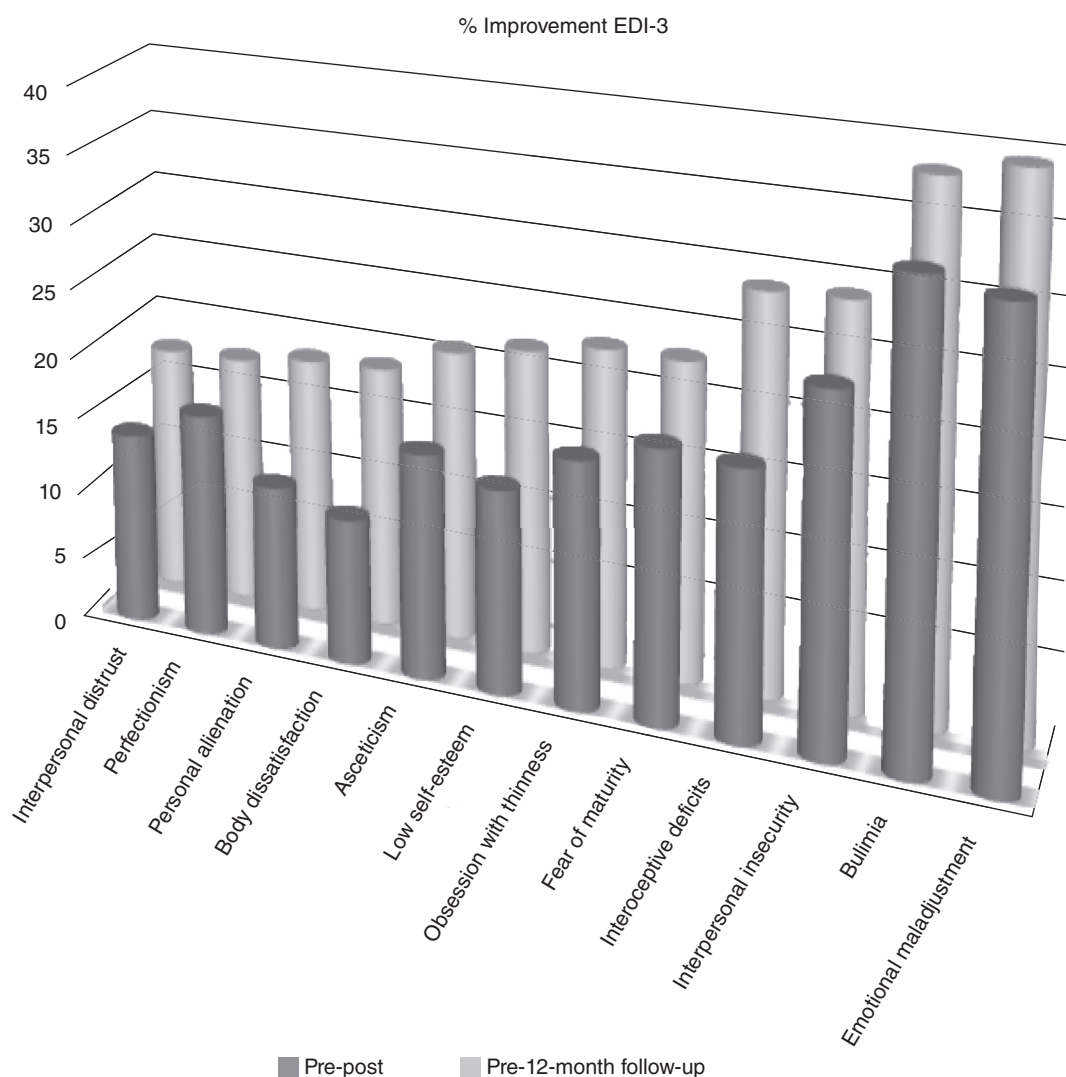
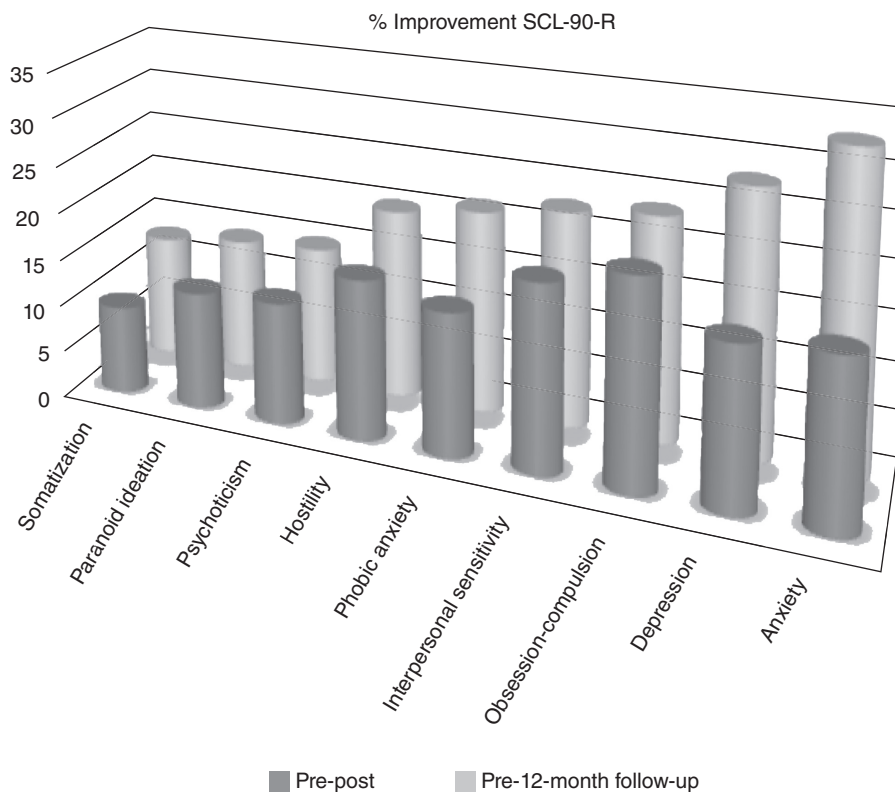


Figure 2. Improvement in general psychopathology (SCL-90-R)



taken to execute the test (5.26%) was minimal. Thus, the changes achieved in executive functioning reflected a slight improvement in planning, organization, and impulsivity in performance of the task.

## DISCUSSION

The main objective was to determine the improvement in a patient with comorbid clinical symptoms of ED, specifically BN, BPD, and impairment of executive functioning at 1-year follow-up from the end of psychological intervention. Studies have shown the increase in the severity of eating symptoms in the presence of BPD (Rosa & dos Santos, 2011; Rowe et al., 2008) and the complexity of treatment with comorbidity of BN and BPD (Reas, Rø, Karterud, Hummelen, & Pedersen, 2013).

Our results show improvement in BN behavioral symptoms at 12-month follow-up. Binge eating and purgative behavior with vomiting and laxatives was less frequent. Furthermore, body concern and drive for thinness decreased, and her eating habits became normalized. Inadequate behavior related to impulsivity also disappeared.

General anxiety and anxiety related to food and fear of getting fat diminished. Her mood improved.

She felt less guilty, sad, apathetic, and tired. The presence of irrational thoughts diminished, generating personal development skills (she felt more hopeful about the future) and interpersonal (she no longer felt so inferior to others, did not refuse to be with others nor had the feeling that others were saying "bad things" about her and distrusted people less) and distress tolerance strategies (felt less alone and reproached herself less), and emotion regulation (the feeling that others did not understand her diminished and she did not feel as hurt or offended). Therefore, CBT and DBT intervention were shown to be effective (Kröger et al., 2010). These results confirm the study by Zeek et al. (2007), in which treatment efficacy was compared in patients with BN with and without BPD. Although those with BPD showed higher levels of general psychopathology before treatment, their results were similarly favorable in both groups after intervention. These authors proposed intervention including treatment for BN and BPD. Moreover, in a study by Avargues et al. (2017) with patients with BN, with and without purging behaviors, showed that while at the beginning of the treatment, the patients with purging behavior showed a more altered bulimic pattern, more body dissatisfaction,

drive for thinness, perfectionism and inefficacy, anxiety, and depressive symptomatology compared to those without purging, after 30 months from beginning treatment, the intervention produced improvement in ED characteristics, emotional alterations, and personal development variables in both groups, with more moderate improvement in the patients without purging behavior. The effect of intervention was better in the participants with purging. The variables with the largest size effects were body dissatisfaction, bulimic symptomatology, and anxiety. The authors concluded that it is important to consider the presence/absence of purging behavior in treatment to prevent relapse of the illness.

With regard to executive functions, slight improvement was observed in executive performance from impairment found before treatment. These deficits would only partly explain the illness' chronicity and malnutrition, because they reflected 3 years of evolution of the illness, with an episode of partial remission and absence of malnutrition (Tchanturia et al., 2012). Planning was the executive function most affected. She had difficulties in identifying, organizing, and executing the stages necessary for the achievement of a final goal and showed impaired capacity for anticipation and organization, which could be attributed to high levels of impulsivity (Matsumoto et al., 2015).

Although performance on the WCST appeared to be normal, it reflected certain problems in creating new abstract concepts. She tended to cognitive rigidity with perseverance in incorrect responses instead of changing to a more adaptive response based on environmental feedback (Lang et al., 2015) with stronger manifestation in the second part of the test reflecting little planned disorganized behavior, as was the case during the ring test. These dysexecutive symptoms were not attributable to comorbidity with other anxiety-depressive mental disorders either, because no clinically significant results were observed in that measure. In this sense, the literature is not conclusive (Alvarado & Silva, 2014).

Slight differences were found in the ring test. Although the psychopathological symptoms lessened, executive performance in planning and organization deteriorated after treatment at 1-year follow-up. One possible explanation is that the cognitive deficits were traits previous to psychopathological development of BN (Ferraro et al., 2015) and not a consequence of ED, constituting risk and maintenance factors. Although symptoms related to ED improved, the presence of executive impairment remained.

## CONCLUSION

The efficacy of CBT and DBT psychological intervention for ED and BPD was confirmed (Kröger et al., 2010), although it was not effective for the treatment of dysexecutive symptoms.

Based on the debate about whether alterations in executive functions are prior to NB or a consequence of it, this case study contributes to an advanced research in this area. Although this case does not provide an answer to whether alterations in organization and planning existing at pretreatment evaluation are produced parallel to the evolution of the illness over the 3 years or were previous to onset of BN, we can state that the treatment based on CBT and DBT did not contribute to the improvement of executive alterations, even though the objectives of treatment included strategies and techniques for improving decision-making and problem-solving (organization and planning).

In view of the executive deficits found, since CBT and DBT were insufficient to improve these dysexecutive symptoms (Kelly, Bulik, & Mazzeo, 2013), we propose the need to include neuropsychological rehabilitation strategies specific to promoting favorable changes in executive functioning, understanding alterations in executive functioning not as a consequence of ED but as a risk factor predisposing to their development in treatment for patients with these characteristics (BN, BPD and alterations in executive functioning) (Fagundo et al., 2012; Zakzanis et al., 2010) which could become more severe with evolution and chronification of BN as well as aspects related to borderline personality.

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