

## ORIGINAL ARTICLES

### “How I feel in my own body”

#### “Como me sinto neste corpo”

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#### ABSTRACT

**Introduction:** Eating disorders (ED) are currently considered one of the most common chronic disorders in the adolescent population, and their course and outcome are often severe. The aims of this study were to (i) evaluate the presence of psychopathology in an adolescent population with ED; (ii) investigate the association between psychopathology and illness severity; and (iii) investigate if the motivation for self-treatment is associated with the presence of psychopathology and ED severity.

**Materials and Methods:** The sample consisted of 43 adolescent patients aged between 12 and 18 years old attending an Eating Disorders Consultation and with a diagnosis of feeding and eating disorder according to the DSM-5 criteria. Participants completed several questionnaires, including the Youth Self-Report (YSR), the Eating Disorder Examination - Questionnaire (EDE-Q, 4<sup>th</sup> edition), the Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ), and the Bulimia Nervosa Stages of Change Questionnaire (BNSOCQ).

**Results:** The study group consisted of 42 girls (97.7%) and one boy (2.3%). The mean age was 14.65 years (standard deviation 1.73), and 72.1% were diagnosed with anorexia nervosa. The model used to test if the motivation for self-treatment was associated with the presence of psychopathology and ED severity was statistical significant, but only ED severity (EDE-Q) was a significant predictor. The correlation between YSR results (total score) and EDE-Q total results was also significant.

**Conclusion:** As expected, the model concluded that the more disturbing the eating behavior (indicated by EDE-Q results), the less motivated patients are to treat themselves. Although it was anticipated that greater levels of psychopathology would negatively influence the motivation to change, that was not found in this study.

**Keywords:** anorexia nervosa; bulimia nervosa; eating disorder; motivation to change; psychopathology; self-report

#### RESUMO

**Introdução:** As perturbações do comportamento alimentar (PCA) estão entre as doenças crónicas mais comuns na população adolescente e o seu percurso e desfecho são por vezes graves. Os objetivos deste estudo foram (i) avaliar a presença de psicopatologia na população adolescente com PCA; (ii) investigar a associação entre psicopatologia e gravidade da doença; e (iii) avaliar se a presença de psicopatologia e a gravidade do quadro de PCA são fatores preditivos de motivação para o auto-tratamento.

**Material e Métodos:** A amostra para este estudo foi composta por 43 adolescentes com idades entre os 12 e os 18 anos a frequentar uma consulta de PCA e com diagnóstico de perturbação da alimentação e da ingestão de acordo com os critérios da DSM-5. Os participantes preencheram vários questionários de autorrelato, nomeadamente o Youth Self-Report (YSR), Eating Disorder Examination Questionnaire (EDE-Q, 4<sup>th</sup> editions) e questionários de motivação (Anorexia Nervosa Stages of Change Questionnaire- ANSOCQ; Bulimia Nervosa Stages of Change Questionnaire – BNSOCQ).

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**Resultados:** A amostra consistiu em 42 adolescentes do sexo feminino (97,7%) e um do sexo masculino (2,3%). A idade média foi de 14,65 anos (desvio padrão 1,73), e 72,1% tinham sido diagnosticados com anorexia nervosa. O modelo testado para avaliar se a motivação para o auto-tratamento podia ser prevista pela presença de psicopatologia e gravidade do quadro de PCA foi significativo, mas apenas a gravidade do quadro de PCA (EDE-Q) foi um preditor estatisticamente significativo. A associação entre os resultados do YSR (Escala Total) e da EDE-Q Total também foi significativa.

**Conclusão:** Como previsível, o modelo concluiu que um maior grau de perturbação do comportamento alimentar (avaliado pelo EDE-Q) era indicativo de menor motivação para o auto-tratamento. Embora fosse expectável que índices mais elevados de psicopatologia influenciassem negativamente a motivação para a mudança, tal não se observou neste estudo.

**Palavras-chave:** anorexia nervosa; autorrelato; bulimia nervosa; perturbação do comportamento alimentar; motivação para a mudança; psicopatologia

## INTRODUCTION

Eating disorders (ED) – in particular anorexia nervosa (AN) and bulimia nervosa (BN) – are currently among the most common chronic disorders in the adolescent population, and their course and outcome are often severe.<sup>(1,2)</sup>

In recent years, there has been growing evidence of high levels of psychiatric comorbidity of AN and BN with other psychiatric disorders, namely affective disorders, anxiety disorders, substance use disorders, and personality disorders, which may contribute to their chronicity.<sup>(1-3)</sup> The study of comorbidity may have an impact on clinical practice by determining whether patients with comorbid disorders require differential treatment.<sup>(2)</sup>

Studies commonly link AN to disorders such as major depression, obsessive-compulsive disorder, and personality disorder. The lifetime prevalence of comorbid major depression ranges from 36% to 81% in adolescents with AN and from 20% to 80% in adolescents with personality disorders.<sup>(2)</sup> Considering the state of illness in AN, malnutrition and weight loss have been associated with a severe increase in the intensity of depressive, anxious, and obsessive symptoms in underweight anorexics.<sup>(1,4)</sup>

In the literature, BN has been commonly associated with major depression (lifetime prevalence 47–73%), personality disorders (22–63%), and behaviors involving poor impulse control, such as kleptomania (24%) and substance abuse (22%).<sup>(2,5)</sup>

Research indicates that approximately half of anorexics develop BN during the course of illness and that patients with clinical criteria for both diagnoses exhibit more severe psychopathological symptoms and a higher tendency for chronicity than those with a pure diagnosis.<sup>(2)</sup>

Patients with ED commonly present anxiety symptoms. Studies reveal prevalence rates two to three times greater than those reported in the community, and the presence of at least one anxiety disorder prior to the onset of the ED.<sup>(6)</sup> The most common anxiety disorders found in patients with AN are social phobia (3-55%) and obsessive-compulsive disorder (3-66%), and in patients with BN are

social phobia (4-59%) and generalized anxiety disorder (0-55%).<sup>(6,7)</sup> A retrospective study identified the presence of childhood anxiety disorders (separation anxiety disorder, simple phobia, social phobia) prior to the onset of AN in 46% of subjects.<sup>(6)</sup>

Another perspective describes ED as addictive behaviors, with distinct personality trait patterns according to the type of ED: mainly obsessive-compulsive, perfectionistic, introverted, and socially conforming traits in patients with AN; and mainly impulsive and antisocial traits in patients with BN.<sup>(1,7,8)</sup>

ED have a significant impact on patients' lives. Therefore, it is important to intervene as early as possible and in an incisive manner. In ED research, the main focus has been on problems and psychopathology rather than on competencies and skills. However, knowing more about patients' competencies and skills, namely the achievement of developmental tasks and psychosocial matters central to adolescents, may add pivotal data about risk and protective factors that can be used in treatment decisions.<sup>(1)</sup> In a study by Ekroth *et al.*, girls with ED scored significantly lower in all self-reported competence scales compared to the control group.<sup>(1)</sup>

For a therapeutic intervention to be feasible and successful, the adolescents' opinion about the difficulties experienced and motivation for change are key. The aims of this study were to (i) evaluate the presence of psychopathology in an adolescent population with ED, (ii) investigate the association between psychopathology and disease severity, and (iii) investigate if motivation for treatment is associated with the presence of psychopathology and ED severity.

## MATERIALS AND METHODS

### • Measures

The Youth Self-Report (YSR) is a standardized self-report questionnaire for adolescents aged between 11 and 18 years old. It is part of the Achenbach System of Empirically Based Assessment (ASEBA), a group

of instruments that measure adaptive and maladaptive functioning from 1.5 to 30 years of age.<sup>(1,9)</sup> YSR comprises questions about competence and emotional and behavioral problems. The emotional and behavior problem items form eight narrowband syndrome scales (“withdrawn, somatic complaints, anxious/depressed, attention problems, thought problems, social problems, aggressive behavior, delinquent behavior”) and two broadband dimensions named “internalizing” and “externalizing”. There is also a total problem score containing all items.<sup>(1,9)</sup>

The adolescent is asked to describe or rate his/her thoughts, emotions, and behavior at present or during the last six months on a three-point scale – 0 if the item or statement is not true, 1 if it is somewhat or sometimes true, and 2 if it is very true or often true.<sup>(1)</sup>

YSR has been shown to have good validity and reliability and has been translated and standardized for use in Portuguese adolescents.<sup>(9)</sup>

Eating attitudes and behaviors were investigated using the Eating Disorders Examination - Questionnaire (EDE-Q, 4<sup>th</sup> edition), a self-evaluation scale of ED psychopathology.<sup>(10)</sup> It consists of 36 items that generate four subscale scores: eating concern, weight concern, shape concern, and dietary restraint, as well as a global score that is the average of the four subscales.<sup>(11-13)</sup> A total EDE-Q score  $\geq 4$  is considered pathologic, indicative of higher disease severity.<sup>(13)</sup>

The concept of motivation to change can be defined as the willingness of patients to introduce changes that lead to the improvement of their disorder and perform the actions necessary to achieve it.<sup>(14)</sup> The Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ) and the Bulimia Nervosa Stages of Change Questionnaire (BNSOCQ) are self-evaluation questionnaires that provide a measure of patients’ stage-of-change according to the Prochaska and DiClemente’s model. This model consists of various stages of motivation, depending on attitudes and behaviors: pre-contemplation (stage 1) – individuals do not admit having a problem or the need for change; contemplation (stage 2) – individuals know that they have a problem but have not decided to change – this is a stage of extreme ambivalence; preparation (stage 3) – individuals are thinking about changing but have not initiated the process; action (stage 4) – individuals are doing active work to change, by modifying their habits; and maintenance (stage 5) – the change is achieved and patients are focusing on relapse prevention.<sup>(14-16)</sup> The assessment of stages 1, 2, and 3 is used as an indicator of treatment non-compliance (no action), and the assessment of stages 4 or 5 is used as an indicator of treatment compliance (action).

#### • Subjects and procedures

Inclusion criteria for this study were as follows: all patients aged between 12 and 18 years attending an Eating Disorders Consultation in Oporto, with a diagnosis of feeding and eating disorder according to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) criteria (anorexia nervosa [AN], bulimia nervosa [BN], or other specified feeding or eating disorder [OSFED]) in

different treatment stages were invited to participate in this study.<sup>(7)</sup> This is a cross sectional study.

## RESULTS

A total of 43 adolescents were included in this study, of whom 42 (97.7%) girls and one (2.3%) boy, with a mean age of 14.65 years (standard deviation [SD] 1.73). Thirty-one (72.1%) adolescents had a diagnosis of AN, five (11.6%) of BN, and seven (16.3%) of OSFED. In EDE-Q, 11 (25.6%) adolescents scored above the cut-off, and 32 (74.4%) scored below the cut-off.

Regarding motivation to change, assessed by ANSOCQ and BNSOCQ, one (2.3%) patient was on stage 1 (pre-contemplation), ten (23.3%) patients were on stage 2 (contemplation), 20 (46.5%) patients were on stage 3 (preparation), 11 (25.6%) patients were on stage 4 (action), and one (2.3%) patient was on stage 5 (maintenance).

**Table 1** depicts the results of the several domains of the YSR in patients with ED and controls (Portuguese non-clinical sample used to standardize the YSR).<sup>(9)</sup>

T-scores were analyzed to investigate if patients with ED not only had a general tendency to report more emotional and behavioral problems (as indicated by elevated mean scores on the YSR, except in the “delinquent behavior” subscale and total score), but also displayed a significant amount of general psychopathology. The Portuguese normative sample was used to define T-scores.<sup>(9)</sup> Clinical range was defined by scoring over T 60/T 63 on the broadband/syndrome scales and total problem scale, respectively.

On the internalizing dimension, 60.5% of patients scored in the subclinical/clinical range; on the externalizing dimension, 18.6% of patients scored in the subclinical/clinical range; on the anxiety/depression subscale, 44.4% of patients scored in the subclinical/clinical range; on the withdrawn subscale, 23.3% of patients scored in the subclinical/clinical range; and on total score, 39.5% of patients scored in the subclinical/clinical range.

The Spearman test was applied to investigate a possible correlation between YSR (total score) and EDE-Q total results. This correlation was found to be significant, meaning that patients who were more disturbed presented more severe ED issues ( $R_s=0.53$ ,  $p<0.001$ ).

Logistic regression analysis was performed to test if motivation to change could be predicted by YSR (total score) and EDE-Q results. A dichotomized version of both ANSOCQ and BNSOCQ was used as outcome variable, with 1 meaning “change” (stages 4 and 5) and 0 meaning “no change” (stages 1, 2, 3). All the assumptions were fulfilled. The model was found to be significant ( $\chi^2(2) = 16.98$ ,  $p<0.001$ ), correctly classifying 81.4% of cases.

Only EDE-Q was found to be a significant predictor ( $p=0.012$ ,  $B=-1.27$ ), with more disturbed eating behaviors linked to the absence of motivation to change.

**Table 1** – Results of the several domains of the Youth Self-Report in patients with ED and normal controls

Youth Self-Report	Patients	Controls*
Domain	Mean (SD)	Mean (SD)
Total Problems	55.60 (25.40)	35.60 (18.89)
Internalizing	23.74 (10.78)	12.48 (7.22)
Externalizing	10.69 (5.32)	9.05 (6.18)
Anxious/depressed	11.69 (5.41)	5.72(3.70)
Withdrawn	6.58 (3.01)	3.68 (2.44)
Somatic complaints	5.47 (4.19)	3.08 (2.65)
Social problems	4.37 (3.79)	2.50 (2.18)
Thought problems	6.44 (4.82)	3.05 (2.84)
Attention problems	5.84 (3.29)	4.46 (3.08)
Delinquent behavior	2.40 (2.15)	3.04 (2.69)
Aggressive behavior	8.29 (4.01)	6.02 (4.20)

\* Portuguese non-clinical sample used to standardize the YSR  
 SD, standard deviation

## DISCUSSION AND CONCLUSIONS

ED are currently acknowledged as one of the most common chronic disorders in the adolescent population and are often highly disabling.

<sup>(1)</sup> It is therefore of great importance to investigate the psychological health of adolescents with these conditions and how it differs from that of the normal adolescent population. The recognition of comorbid disorders in the context of ED is crucial to assess the need for specific (and directed) therapeutic approaches in this setting.<sup>(2)</sup>

In agreement with other reports in the literature, the present study found more emotional and behavioral problems in the population with ED than in the population without this disorder, with the first showing higher levels of psychopathology.<sup>(1,9)</sup> Adolescents with ED scored in the clinical range for the YSR internalizing dimension, which includes the “anxiety/depression”, “withdrawn”, and “somatic complains” subscales, meaning that symptoms such as anxiety and sadness are more prevalent in this population.<sup>(9,14,18,22)</sup> This result is in line with others that found that depression and anxiety are common symptoms among these patients compared to controls.<sup>(1,2,6,19-21)</sup>

Some authors suggest that the ED could be secondary to general anxiety and serve as a buffer, reducing it.<sup>(6)</sup> In line with this, it can be hypothesized that early identification and treatment of anxiety and

obsessive-compulsive symptoms could contribute to the successful treatment or even prevention of ED, namely AN and BN.<sup>(6)</sup>

The only YSR subscale that scored below the mean value in the non-clinical population assessed was the “delinquent behavior” subscale, which can be explained by the fact that this study’s sample was mainly composed of patients with AN of restrictive subtype, and delinquent behavior is more common in BN and AN binge/purging subtype.<sup>(1)</sup>

It would be interesting to investigate how adolescents with different forms of ED differ from each other regarding other psychiatric symptoms. However, the fact that this study’s sample was mainly composed of patients with AN precluded YSR score comparisons of the profile of patients with different types of ED. This is one of the study’s limitations, since the sample was mainly composed of patients with AN of the restrictive type.

Although it is generally accepted that patients with AN have a high rate of comorbid psychiatric disorders, it is unclear whether they are merely a consequence of malnutrition and weight loss and whether they persist after recovery.<sup>(4)</sup> The present sample included adolescents in different stages of disease. It would be interesting to compare YSR results of normal and recovered clinical populations and to perform a longitudinal study comparing the outcomes of

patients with malnutrition in the beginning of the study and after weight restoration.

As expected, the model used in this study showed that the more disturbing the eating behavior (indicated by EDE-Q results), the less motivated patients are for self-treatment. Despite expectations that greater levels of psychopathology would negatively influence the motivation to change, such was not found in this study.<sup>(14,18,22)</sup>

Importantly, although all patients had a clinical diagnosis of ED according to DSM-5, most did not score above EDE-Q cut-off, which could indicate an inability of patients to recognize their illness and be in symptom denial or a desire to be socially accepted by the attending physician.

The YSR seems to be a valuable tool to assess populations with ED and treatment outcomes.<sup>(1)</sup> In the future, it would be interesting to complement and compare YSR scores with those obtained on the self-report questionnaire for parents (Child Behavior Checklist) and teachers (Teacher's Report Form), in order to better understand the emotional problems of this population and their possible unwillingness to self-report problems.<sup>(1,9)</sup>

## STUDY LIMITATIONS

This study's sample was mainly composed of patients with AN, which represents a limitation regarding a specific ED profile and hence in the results obtained.

The study's cross-sectional design is another limitation and calls for the development of longitudinal and more informative studies in the future.

Lastly, although all patients had a clinical diagnosis of ED according to DSM-5, most did not score above the cut-off in the EDE-Q.

## AUTHORSHIP

Inês Aguiar – Conceptualization; Visualization; Writing – original draft; Writing – review & editing

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