Universidade do Minho
Escola de Psicologia

Joana Alexandra dos Santos Oliveira
de Magalhães Saraiva

Motivation to change in eating disorders

outubro de 2016

Joana Alexandra dos Santos Oliveira de Magalhães Saraiva **Motivation to change in eating disorders**

UMinho | 2016

Universidade do Minho
Escola de Psicologia

Joana Alexandra dos Santos Oliveira
de Magalhães Saraiva

Motivation to change in eating disorders

Tese de Doutoramento em Psicologia Aplicada

Trabalho efetuado sob a orientação do
Professor Doutor Paulo P. P. Machado

outubro de 2016

STATEMENT OF INTEGRITY

I hereby declare having conducted my thesis with integrity. I confirm that I have not used plagiarism or any form of falsification of results in the process of the thesis elaboration. I further declare that I have fully acknowledged the Code of Ethical Conduct of the University of Minho.

University of Minho, October de 2016

Full name: Joana Alexandra dos Santos Oliveira de Magalhães Saraiva

Signature:

Acknowledgments

My sincere thanks to all of you who have helped me build and make this dream come true.

I would like to thank the participants in this investigation for their willingness, motivation and collaboration.

I would like to thank my advisor, Professor Paulo Machado, for his availability, for the trust he put in me and for the serenity he offered.

I would like to thank to Dr. Pedro Monteiro, the first person who encouraged me to study these clinical conditions, and also all my colleagues in the Child Psychiatry Department, in particular the Adolescent Services team.

I would like to thank Dr. Luciano Moura, to Prof. Dra. Ana Rita Gaio and to Dra. Susana Delindo .

I would like to thank all the members from the Minho University Eating Disorders Research Team, Prof. Dra. Eva Conceição, Prof. Dra. Ana Rita Vaz, Prof. Dra. Sónia Gonçalves, Prof. Dra. Liliana Castro, Dra. Cátia Silva, Dra. Sofia Ramalho and Dra. Ana Bastos, for all their kindness, their cooperation and their warm responsiveness.

I would like to thank to Prof. Dra. Ana Rita Gaio and to Dra. Susana Delindro for the precious help that they have given me.

I would also like to thank my family and friends.

Agradecimentos

O meu sincero agradecimento a todos aqueles que me ajudaram a construir este sonho, tornando-o realidade:

Às participantes desta investigação, pela sua disponibilidade e motivação para colaborar no estudo.

Ao meu orientador, Professor Doutor Paulo Machado, pela sua disponibilidade, pela confiança que depositou em mim e pela tranquilidade que me transmitiu.

Ao Dr. Pedro Monteiro, que foi a primeira pessoa que me incentivou a estudar estes quadros clínicos e a todos os meus colegas do Departamento de Pedopsiquiatria, especialmente à equipa do Serviço de Adolescentes.

Ao Dr. Luciano Moura, á Prof. Dra. Ana Rita Gaio e à Dra. Susana Delindro.

A todos os membros da Equipa de Investigação em Perturbações Alimentares da Escola de Psicologia da Universidade do Minho, Doutora Eva Conceição, Doutora Ana Rita Vaz, Doutora Sónia Gonçalves, Doutora Liliana Castro, Dra. Cátia Silva e Dra. Ana Bastos, pela simpatia, colaboração e recetividade com que me acolheram e acompanharam.

À minha família e aos meus amigos

Dedication

I dedicate this thesis to all the patients I have followed.

Thank you for everything that you have taught me and for what you have shared.

Without them, I wouldn't be the professional I am today!

Dedicatória

Dedico este trabalho a todos os pacientes que acompanhei.

Obrigada pelo que me ensinaram... pelo que partilharam.

Sem eles, não seria a profissional que sou hoje!

Motivation to change in eating disorders

Abstract

The study of factors that contribute to understanding the motivation for recovery in eating disorders has been an increasingly important issue and focus in clinical literature. Treating these diseases is very difficult because, most of the times, patients are ambivalent regarding to treatment and lack motivation to change their behaviours. Drop out and failures to engage in treatment are very common.

The concept of motivation to change (Mch) can be defined as the patients' willingness to introduce any change, which leads to improvement in their disorder, and perform those actions necessary to achieve it.

Numerous factors have been linked to motivation to change: greater severity of ED symptoms, the presence of depressive symptoms and low self-efficacy have been negatively related in Mch.

There are few studies in which the target population are adolescents, but it was possible to identify that maturation fear and issues related to family have an important role in short time changes in this population.

According to various authors, one of the greatest advantages of understanding and studying motivation and to identify factors that can promote it, is that it makes it possible to understand those diseases and to choose the best treatment for the patient.

The main aims of the research presented in this thesis were to understand which factors contribute to motivation to change, to identify situations that the patient points out as crucial for change and to understand if motivation to change could predict treatment outcome.

The original results presented in this thesis are discussed in the context of previous studies and clinical findings.

Resumo

Motivação para a mudança nas Doenças do Comportamento Alimentar

O estudo dos fatores que contribuem para a compreensão da motivação para a recuperação nas doenças do comportamento alimentar tem vindo a ser alvo de estudo e divulgação na literatura clínica.

O tratamento destes quadros é complexo, uma vez que é frequente os pacientes encontrarem-se ambivalentes em relação ao tratamento e não demostrarem motivação para alterarem os seus comportamentos. O abandono do tratamento bem como a sua ineficácia são comumente verificados.

O conceito de motivação para a mudança (Mch) pode ser definido como o desejo mostrado pelos pacientes para a introdução de mudanças, que levam à melhoria da doença, aliado à realização das ações necessárias para a implementação da mesma.

Há vários fatores que têm vindo a ser implicados na motivação para a mudança nas doenças do comportamento alimentar. A presença de quadros clínicos de maior gravidade, de sintomatologia depressiva e o baixo autoconceito, parecem influenciar negativamente a motivação para a mudança.

Existem poucos estudos realizados com populações de adolescentes. No entanto, já foi possível identificar que questões relacionadas com o desenvolvimento psicoafectivo e com o meio familiar têm um papel importante nas mudanças a curto prazo.

Uma das grandes vantagens na compreensão e estudo da motivação para a mudança, é a adequação do tratamento à capacidade de mudança que o paciente apresenta em determinado momento por um lado e a maior conhecimento das doenças por outro.

O principal objetivo desta tese reside na identificação de fatores que contribuam para aumentar a motivação para a mudança de comportamentos alimentar anómalos relacionados com a doença, identificar situações que o paciente considera determinantes para a mudança destes comportamentos, e perceber se a motivação para a mudança poderá ser preditora de sucesso terapêutico.

Table of Contents

Abbreviations

AN Anorexia Nervosa

AN-R Anorexia Nervosa, restrictive type

AN-BP Anorexia Nervosa, binge/purging type

BED Binge Eating Disorder

BMI Body mass index

BN Bulimia Nervosa

BN-P Bulimia Nervosa, purging type

ED Eating Disorders

Mch motivation to change

TTM Transtheoretical Model Prochaska and Diclementi

OSFED Other Specified Eating and Feeding Disorder

USFED Unspecified Eating and Feeding Disorder

Thesis Overview

The main focus of this thesis is understanding which factors can contribute to motivation for recovery/change in eating disorders.

The initial chapter focus on a critical review and analysis of the literature on eating disorders.

The following chapters are about the validation, for a Portuguese clinical sample, of a questionnaire to determine the stage of change in AN (ANSOCQ) and to understand if the duration of treatment alone could predict motivation to change at the beginning of the study.

Although related to the thesis theme, the middle chapters of the thesis debate very different subjects - the concept of therapeutic alliance and its role on recovery, parenting styles and eating disorders and general psychopathology in a sample of adolescent patients with eating disorders and its influence on motivation to change.

The final chapters of the thesis report an original empirical study about factors that contribute to motivation for recovery in ED.

Brief introduction to the concept of eating disorders (ED)

Abstract

Classification criteria, according to DSM 5.

Epidemiological data.

Risk factors.

Treatment.

Recovery criteria.

Brief Introduction to Eating Disorders

All you need is hope and strength: hope that things will eventually get better, and strength to hold on until they do.

(Unknown author)

Eating disorders (ED) usually begin during adolescence, frequently occur in females, and are associated with significant morbidity.

Anorexia Nervosa (AN), Bulimia Nervosa (BN) and Bing Eating Disorder (BED) are the major diagnosis. Diagnosis is challenging because diagnostic symptoms and associated behaviours substantially overlap across the range of eating disorders (1).

Diagnostic criteria for ED were recently reviewed for the Diagnostic and Statistical Manual of Mental Disorders, 5th edition. There are some major differences between the previous version (the fourth edition) and the fifth edition of the diagnostic and statistical manual of mental disorders (DSM) concerning Eating Disorders, now called Feeding and Eating Disorders. The DSM 5 is more relaxed concerning the diagnostic criteria, which means that the criteria for anorexia nervosa (AN) or bulimia nervosa (BN) are not so strict. In the 5th edition, amenorrhea criterion has been dropped out, as it appears to be redundant. In BN the main difference is concerned with lowering the frequency threshold for binge and purging. A new entity has been recognised, binge eating disorder (BID). DSM-IV eating disorders not otherwise classified (EDNOS) cases were recoded as main diagnoses of AN, BN, and BED and the remaining are now included in the new category of other specified feeding (OSFED) or eating disorder or unspecified feeding and disorders (USFED) (2, 3).

Pica, rumination disorder and avoidant/restrictive food intake disorder were also included in this group. In DSM-IV they belonged to the Disorders Usually Occurring in Infancy and Adolescence (2)

Briefly, anorexia nervosa is characterised by extremely low bodyweight and a fear of its increase; bulimia nervosa comprises repeated binge eating, followed by behaviours to counteract it; binge eating disorder is distinguished from bulimia nervosa by the absence of recurrent inappropriate compensatory behaviours and other specified feeding or eating disorder group encompass variants of these disorders (2).

Eating disorders and related behaviours are common in young people. Several studies, using nonclinical samples, show that 3% to 12% of adolescents have issues about their body and adopt disturbed eating behaviours such as compulsive eating, restriction, vomit and the use of laxatives or diuretics. These behaviours are episodic and most of them are not diagnosed as an eating disorder, having a remission rate of 91% to 96% after one year (4).

Women are more affected by it than men (ratio of 9 women for 1 men). The mean age of onset for anorexia nervosa is 15 years old (14 – 19 years old), and for bulimia nervosa it's 19 years old (5).

The prevalence of anorexia nervosa in adolescent girls/young women varies from 0.3% to 0.7%, (4) 1% for bulimia nervosa in young women and 3% for binge eating disorder in adults. In Portugal, in a study led by Paulo Machado et al., using 2018 girls with age ranged from 12 to23 years old, the prevalence of anorexia nervosa was 0.39%, 0.3% for bulimia nervosa and 2,37% for eating disorders not otherwise specified (DSM-IV) (6).

Eating disorders arise from an interaction between environmental events and the biological and development features of the individual.

Risk factors can be divided into three broad categories – predisposing, precipitating and perpetuating. Predisposing factors are present before the onset of the problem and increase the vulnerability to develop an eating disorder. These include genetic factors, birth trauma, childhood temperament and personality factors and aspects of upbringing or childhood environment. Precipitating factors occur around or just before the onset such as a stressful events or going on a diet. Perpetuating factors are mechanisms (both internal and external) that cause the problem to persist (7).

According to individual studies, AN and BED seem to have few risk factors in common, while several risk factors were shared between AN and BN, and separately, BN and BED (8, 9, 10,11, 12). These data are consistent with the diagnostic migration literature which shows a relatively frequent crossover between AN and BN, and between BN and BED (13, 14), but infrequent transition between AN and BED (15). These results suggest possible common pathways between AN and BN, and BN and BED (16).

Most people affected by these disorders don't recognize that they have a problem, so they do not seek help. Most adolescents are taken to an eating disorder consultation by their parents, against their will.

Motivation for treatment in ED is very low, and patients have extreme difficulty in changing behaviours related to eating and body image.

When we consider treatment we have to think about medical treatment and psychological treatment. A multidisciplinary approach should include medical, nutritional, social and psychological components. Most pathophysiological complications are reversible with the improvement of the nutritional status or the remittance of abnormal eating and purging behaviours. So, the first thing to be done in these disorders is to improve eating behaviours.

There are some evidence-based treatments both for AN, BN and BED. Psychotherapy can be delivered individually or with the family.

For patients with AN, family psychotherapy is recommended, especially if they are adolescents. Cognitive behavioural therapy and other behavioural treatments can also be used, in adult patients.

There is a strong evidence base for the benefit of cognitive behavioural therapy model as the first line of treatment in BN and for BED.

Pharmacotherapy has been recommended in the treatment of BN and BED. Antidepressants (namely fluoxetine) have shown to be useful in both disorders and some drugs used to treat obesity have been applied to BED. Topiramate, an anti-convulsive drug, can be effective in the reduction of bulimic and purging symptoms, but his side effects are huge and the safety profile of this drug still needs to be established in these diseases. Concerning AN, there is still no strong evidence that the use of drugs is successful in it.

Some patients with ED recover completely, others tend to maintain some behaviours related to food and body image and a particular group will eventually develop a chronic condition. When we speak about recovery there is a lack of consensus regarding this subject.

The Morgan-Russell criteria were created in 1975 to define recovery and are based on weight gain and menstruation resumption (19). Nowadays, we have begun to see the inclusion of psychological aspects, such as body image concerns and fear of weight gain (20, 21). However, incorporating physical, behavioural, and psychological indices into a definition of recovery is still far from the norm and is not being done in any standardised way across studies (22).

In AN, about 10-20% of individuals do not improve with any available treatment and develop a chronic condition persisting their entire life (23). In these cases, the disorder disrupts education and vocational functioning (24). The development of binge eating is frequent and approximately half of the cases develop BN (25). Crude mortality rates for AN have a range from 0-8% across studies with a cumulative mortality of 2.8% (26). Deaths are usually the consequence of medical complications or suicide (27).

In BN 23% on average have a chronic protracted course (28). In almost 20% of cases there is a crossover to EDNOS or BED (28). Crude mortality rates of BN have ranged from 0% to 2% across studies with a cumulative mortality rate of 0,4% (29). Also in BN, vocational and educational functioning is below expectations (30).

Although the concept of women's beauty has changed across the years and thinness has been privileged, these disorders have been present for centuries and they are not a direct product of society. They interfere with a normal maturity development of adolescence and, in a way, keep people captive in their own world.

It is hard to treat these disorders and it is difficult to watch patients destroy their lives and families break apart. Sometimes therapists feel hopeless and may think that there are no solutions for their patients. But, when a patient recovers and re-discovers his life, it is joyful.

ED are not easy to understand and they are a kind of challenge for therapists. But one may say that it is a pleasure to see a caterpillar turn into a butterfly.

References:

1 – Treasure J, Claudino A, Zucker N, (2010); Eating disorders. Lancet; 375:583-93

2 – American psychiatric Association (2013) Diagnostic and statistical manual of mental disorders (5th ED.). Arligton, VA: American Psychiatric Publishing

3 – Fairburn CG, Cooper Z, (2011) Eating disorders, DSM-5 and clinical reality. The British Journal of Psychiatry. 198: 8-10

4 – Treasure J, Schimdt U, Furth E, (2003) Handbook of eating disorders (2nd Ed.), pp. 11-34, Wiley

5 – Fairburn CG, Harrison P, (2003) Eating disorders. Lancet, 361: 407-16

6 – Machado P, Machado B, Gonçalves S, Hoek H, (2007) The prevalence of eating disorders not otherwise specified. Int Eat Disorder, 40: 212-217

7 – Treasure J, Schimdt U, Macdonald P, (2010) The clinician´s guide to collaborative caring in eating disorder, pp. 60-61

8 – Fairburn CG, Cooper Z, Doll HA, Welsh SL, (1999) Risk factors for anorexia nervosa: three integrated case-control comparisons. Archives of General Psychiatry 56, 468-476

9 – Fairburn CG, Doll HA, Welsh SL, Hay PJ, Davies BA, O'Connor ME (1998) Risk factors for binge eating disorder: a community-based case-control study. Archives of General Psychiatry 55, 425-432

10 - Fairburn CG, Doll HA, Welsh SL, Hay PJ, Davies BA, O'Connor ME (1997) Risk factors for bulimia nervosa: a community-based case-control study. Archives of General Psychiatry 54, 509-517

11 – Pike KM, Hilbert A, Wilfley DE, Fairburn CG, Dohm FA, Walsh BT, Striegel-Moore R (2008). Towards an understanding of risk factors for anorexia nervosa: a case-control study. Psychological Medicine 38, 1443-1453

12 – Striegel-Moore RH, Fairburn CG, Wilfley DE, Pike KM, Dohm FA, Kraemer HC, (2005). Toward an understanding of risk factors for binge eating disorder in black and white women: a community-based case-control study. Psychological Medicine 35, 907-917

13 – Eddy KT, Dorer DJ, Franko DL, Tahilani K, Thompson-Brenner H, Herzog DB (2008). Diagnostic crossover in anorexia and bulimia nervosa: implications for DSM-IV. American Journal of Psychiatry 165, 254-260

14 – Stice E, Marti CN, Rohde P, (2013) Prevalence, incidence, impairment and course of the proposed DSM-5 eating disorder diagnoses in an 8-year prospective community study for young women. Journal of Abnormal Psychology 122, 445-457

15 – Fitcher MM, Quadflieg N, (2007). Long-term stability of eating disorder diagnoses. International Journal of Eating Disorders 40, 61-65

16 – Hilbert A, Kathleen MP, Goldschimdt AB, Wilfley DE, Fairburn CG, Dohm FA, Walsh BT, Weissman RS, (2014). Risk factors across the eating disorders. Psychiatry Research

Morgan HG, Russell GF. Value of family background and clinical features as predictors of long-term outcome in anorexia nervosa: A 4-year follow-up study of 41 patients. Psichological medicine 1975; 5:355-371

17 – Prochaska J, Diclemente C, (1984). The transtheoretical Approach: crossing the traditional boundaries of therapy. Homewood, IL: Dow Jones Irwen

18 – Prochaska J, Norcross J, (1994). Systems of psychotherapy: a transtheoretical analysis, 3rd edn. Pacific Grove, CA. Brook/cole

19 – Morgan HG, Russell GF, (1975). Value of family background and clinical features as predictors of long-term outcome in anorexia nervosa: a 4-year follow-up study of 41 patients. Psychological Medicine 5: 355-371

20 - Coutier J, Lock J. What is recovery in adolescent anorexia nervosa? International Journal of Eating Disorders 2006a; 39:550-555

21 - Coutier J, Lock J. What is remission in adolescent anorexia nervosa? A review of various conceptualizations and quantitative analysis. International Journal of Eating Disorders 2006b; 39:175-183

22 - Bardone-Cone AM, Harney MB, Maldonado CR, Lawson MA, Robison DP, Smith R, Tosh A. Defining recovery from an eating disorder: conceptualization, validation, and examination of psychosocial functioning and psychiatric comorbidity. Behav Res Ther. 2010; 48(3): 194-202

23 – Steinhausen HC. (2002). The outcome of anorexia nervosa in the 20th century. Am J Psychiatry; 159: 1284-93

24 – Byford S, Barret B, Roberts C, Clark A, Edwards V, Smethurst N, et al. (2007). Economic evaluation of a randomized controlled trial for anorexia nervosa in adolescents; Br J Psychiatry; 191: 436-40

25 – Bulik CM, Sullivan PF, Fear J, Pickering A. (1997). Predictors of the development of bulimia nervosa in women with anorexia nervosa. J Nern Ment Dis; 185: 704-7

26 – Keel Pk, Brown TA. (2010). Update on course and outcome in eating disorders. Int J Eat Disord; 43: 195-204

27 – Nielsen S, Moller-Madsen S, Isager T, Jorgensen J, Pagsberg K, Theander S. (1998). Standardized mortality in eating disorders – a quantitative summary of previously published evidence. J Psychosom Res; 44: 413-34

28 – Steinhausen Hc, Weber S. (2009). The outcome of bulimia nervosa: findings from one-quarter century of research. Am J Psychiatry; 166: 1331-41

29 – Keel PK, Brown TA. (2010). Update on course and outcome in eating disorders. Int J Eat Disorders; 43: 195-204

30 – Hay PJ, Mond J. (2005). How to "count the cost" and measure the burden? A review of health-related quality of life in people with eating disorder. J Mental Health; 14: 539-5

Psychometric properties of a measure of recovery readiness in Portuguese adolescent patients with anorexia nervosa

Abstract

Introduction: The objective of the present study was to validate an instrument to assess motivation to change in Portuguese adolescents with anorexia nervosa: the Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ). This instrument was created by Rieger et al. in 2002 and validated for the Spanish population by Serrano et al. in 2004.

Method: Subjects were 42 anorexia nervosa patients who were receiving treatment at an eating disorders unit. The evaluation instruments were ANSOCQ, the Eating Disorders Examination Questionnaire (EDE-Q) and the Youth Self Report (YSR).

Results: The ANSOCQ demonstrated good internal consistency (Cronbach's alpha=0.892). Negative significant correlations were found between the ANSOCQ and the EDE-Q and its subscales.

Conclusions: This study provides initial support for the validity of the ANSOCQ for assessing motivation in adolescents with AN.

Keywords: ANSOCQ, anorexia nervosa, motivation to change, self-report instrument, adolescents.

Psychometric properties of a measure of recovery readiness in Portuguese adolescent patients with anorexia nervosa

Abstract

Introduction: The objective of the present study was to validate an instrument to assess motivation to change in Portuguese adolescents with anorexia nervosa: the Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ). This instrument was created by Rieger et al. in 2002 and validated for the Spanish population by Serrano et al. in 2004.

Method: Subjects were 42 anorexia nervosa patients who were receiving treatment at an eating disorders unit. The evaluation instruments were ANSOCQ, the Eating Disorders Examination Questionnaire (EDE-Q) and the Youth Self Report (YSR).

Results: The ANSOCQ demonstrated good internal consistency (Cronbach's alpha=0.892). Negative significant correlations were found between the ANSOCQ and the EDE-Q and its subscales.

Conclusions: This study provides initial support for the validity of the ANSOCQ for assessing motivation in adolescents with AN.

Keywords: ANSOCQ, anorexia nervosa, motivation to change, self-report instrument, adolescents.

Introduction

Eating disorders (ED) usually begin during adolescence and are more common in females. They are associated with significant morbidity and they cause a severe impairment in social and affective development.

Anorexia nervosa, bulimia nervosa and binge eating disorder are the major subtypes represented. Diagnosis is challenging as diagnostic symptoms and associated behaviours substantially overlap across the range of eating disorders (1).

Briefly AN is characterized by low bodyweight and fear of its increase (2).

As stated above, women are more affected than man. The age of incidence for AN is 15 years old (5) and prevalence varies between 0.3% and 0.7% (3). In Portugal, in a study led by Machado et al, the prevalence of AN was 0.39% (4).

ED arise from the interaction of several factors, environmental events, biological events and development aspects of the individual.

Most of the times people affected by AN do not recognise that they have a disease and frequently avoid treatment and even when they do accept that they have a problem they can be ambivalent about it. This behaviour makes the establishment of a good therapeutic alliance difficult for health professionals, (5).

Motivation to change in ED (this refers to the willingness of patients to introduce changes that lead to improvements in their disorders) is often very low. So, it is useful to raise the patients' motivation in order to establish an adequate treatment programme (6, 7). There are some therapeutic interventions that can be applied in order to enhance patients' motivation to change, for example Motivational Enhancement Therapy.

In 1982, Prochaska and DiClemente developed a model to explain the process of change – The trans-theoretical model of change. This model has five stages of readiness to change – pre-contemplation, contemplation, preparation, action, and maintenance (8, 9). In its most recent formulation, this model proposes six stages of motivation to modify attitudes and behaviours: pre-contemplation, contemplation, preparation, action, maintenance and termination (10). This model has been applied to a large range of behaviours or disorders, such as alcohol abuse (11), smoking (12), obesity (13) or general psychological problems (14).

The University of Rhode Island Change Assessment Scale (URICA) is a generic instrument that can be used to evaluate the motivation to change (14). Recently, some instruments specifically designed for ED have been developed, namely the Readiness and Motivation Interview (6). This instrument is very accurate, but presents limitations, like the need for the interviewer to be trained to administer it and the time needed to do it.

In this context, Rieger and colleagues (15) developed a self-report questionnaire of 20 items based on the stages of change model that assesses readiness to change related to a broad range of eating disorder symptomatology, including aspects of weight, body satisfaction, weight control, emotional problems and interpersonal difficulties.

This instrument has been validated in several countries. The Spanish validation has been done with a population of 70 adolescents (16).

The objective of the present study was to translate this questionnaire so that it would be used in this thesis, and to validate it for a Portuguese adolescents' population.

Method

Participants were 42 adolescents, all girls, aged between 11 and 18 (M=14.64, SD=1.67). All of them met DSM 5 (2) criteria for AN or Atypical AN at the beginning of treatment. All participants were being followed at an Eating Disorders Unit at Centro Hospitalar do Porto, both as outpatients and inpatients.

Procedure

Patients were asked to participate in this study and were informed that their response would be confidential. Study procedures were approved by the institution's ethics committee.

The questionnaire was translated into Portuguese and back again to English. This second translation was done by a translator.

Measures

Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ) (15, 17) is a self-report questionnaire of 20 items designed to evaluate readiness to recover in AN. For each item, responders are asked to select one of five statements which refer to the pre-contemplation, contemplation, preparation, action and maintenance stages respectively. The item score can range from 1 (pre-contemplation) to 5 (maintenance). A high total score in the ANSOQ means that the patient has a high motivation to change, and a low score means a low motivation.

Rieger et al found that the ANSOQ demonstrated good internal consistency and one-week test-retest reliability in an inpatient sample of adolescent and adult patients with AN.

The Youth Self-Report (YSR) is a standardised 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. It consists of questions about competence, emotional and behavioural problems. The emotional and behaviour problem items form eight narrowband syndrome scales ("withdrawn, somatic complaints, anxious/depressed, attention problems, thought problems, social problems, aggressive behaviour, delinquent behaviour") and two broadband dimensions named "internalising" (composed by withdrawn, somatic complaints, anxious/depressed) and "externalising" (composed by attention problems, thought problems, social problems, aggressive behaviour, delinquent behaviour). There is also a total problem score, which contains all of the items.

The adolescent is asked to describe or rate his/her thoughts, emotions and behaviour now 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.

The YSR has proved to have a good validity and reliability and it has been translated and standardised for use with Portuguese adolescents (18). In this study we use the internalisation scale and the total score.

Eating Disorder Examination - Questionnaire (EDE-Q, 4th edition) is a self-evaluation scale of ED psychopathology (19). 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 which is the average of the four subscales. A total EDE-Q score of 4 was considered pathologic, indicative of higher severity of disease.

Statistical analysis

The internal consistency of the ANSOQ was calculated using Cronbach's alpha coefficient. An acceptable coefficient alpha exceeds 0.7.

The Pearson product-moment correlation was also used to determine the association between the ANSOCQ and the eating and emotional problems (assessed via the EDE-Q and the YSR-Total and internalisation scale).

Results

General characteristics and results of the questionnaire

Table 1 shows the general characteristics of the patients who participated in the study and their results on the ANSOCQ, EDE-Q and YSR and YSR-Internalisation scale.

Table 1

	Mean	SD
ANSOCQ-Total	65.55	15.24
EDE-Q - Total	2.23	0.76
Restrition - EDE	1.8	1.77
Weight concern - EDE	2.37	1.8
Shape concern - EDE	2.9	1.96
Food concern - EDE	1.87	1.55
YSR - Total	51.55	22.96
Internalization - YSR	22.70	9.59
Time elapsed since 1st consultation (menses)	9.79	12.15
Age	14.65	1.67
Age of the beginning of the disorder	13.26	1.78

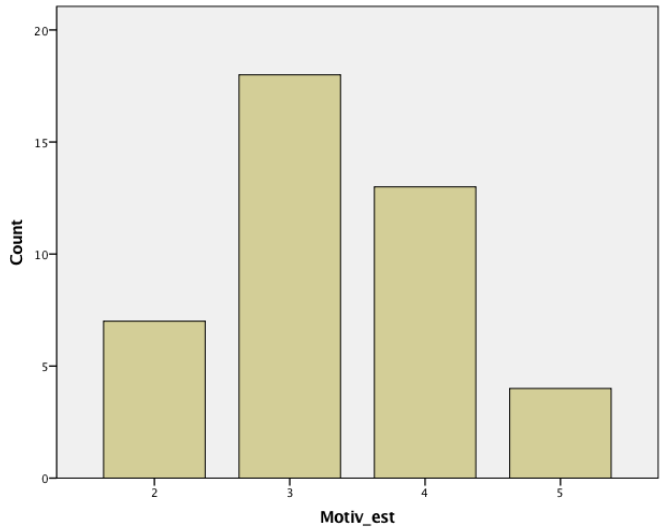
There were no significant correlations between the ANSOCQ and the months elapsed since the onset of the treatment, the z-scores related to their weight, the YSR – total and Internalisation scale. There were significant statistical correlations between the ANSOCQ and the EDE-Q and its subscales - Table 2.

Table 2 – Correlation coefficients (Pearson's r) between the ANSOCQ and EDE-Q and its subscales (N=42)

	r	p
EDE-Q - Total	-0.45	.003
Restrition - EDE	-0.47	.002
Weight concern - EDE	-0.44	.004
Shape concern - EDE	-0.41	.007
Food concern - EDE	-0.37	.015

Figure 1 shows the percentage of patients in each stage of change according to the ANSOCQ (N=42)

(Stage 1 – Pre-contemplation; Stage 2 – Contemplation 16,7%; Stage 3 – Preparation 42,9%; Stage 4 – Action 31%; Stage 5 – Maintenance 9,5%)



Internal consistency

The internal consistency of the questionnaire was measured by the Cronbach's alpha coefficient, which was 0.892.

Validity of the questionnaire

As shown in Table 2, significant and negative correlations were obtained between the ANSOCQ and the EDE-Q and its subscales.

Discussion

The results support the psychometric properties of the Portuguese version of the ANSOCQ. Our sample was younger than the previous ones (16, 17) and included patients that were being followed both as outpatients and inpatients.

In the present study the internal consistency of the ANSOCQ was acceptable and the Cronbach's alpha coefficient obtained was 0.892.

In previous studies (16, 17) the Eating Disorder Inventory (EDI-2) was used to access eating attitudes and symptoms associated with eating disorders, and the correlation between ANSOCQ and EDI-2 were high and statistically significant, thus providing support for the concurrent validity of the ANSOCQ. In our study we used the EDE-Q, and we also found a high correlation between it and its subscales and the ANSOCQ.

As it was expected, individuals with lower levels of ED symptoms, measured by EDE-Q, show more motivation to change.

The correlation between YSR/Internalisation scale and ANSOCQ was not statistically significant. In previous studies (17) it was found that depressive symptomatology (measured by the Beck Depression Inventory) had a high correlation with the Stage of Change (measured by the ANSOCQ), showing that symptoms related to depression are key issues to the patients' sense of hopefulness to change. In our study we did not found such correlation.

There was no correlation between age, age of onset of the disorder, time elapsed since the first consultation or the weight z-score. This could be justified by various factors, such as patients being in different stages of their treatment and, above all, the fact that patients were adolescents brought to treatment by their parents, most of the times against their will, and so not having a real desire/motivation to change (6).

The percentage of participants in each stage of change was different from that described by other studies (18). We did not have participants in stage one. This could be justified as a desire to be socially accepted or perhaps not having a real idea about how serious the disorder is. The global score obtained in our sample was higher (60.3 in the Spanish validation and 51.07 in Rieger et al. (2002)), but our sample was different from those ones and was composed by patients in different stages of their treatment (mean time elapsed since first consultation is 9.79 months) and in different modalities of treatment.

Nevertheless, the present data supports the psychometric properties of the Portuguese version of the ANSOCQ in terms of internal consistency and concurrent validity. This instrument is a useful tool, both in clinical and research work.

Limitations of the study

The reliability of the questionnaire should have been tested, using a one-week interval test-retest, but this was not done.

Our sample was very small (42 patients). It was composed only by adolescent girls, in different kinds of treatment modalities and a great percentage of the participants were being followed for a considerable period of time.

References

1 – Treasure J, Claudino A., Zucker N., (2010); Eating disorders. Lancet; 375:583-93

2 – American Psychiatric Association (2013) Diagnostic and statistical manual of mental disorders (5th ED.). Arligton, VA: American Psychiatric Publishing

3 - Treasure J., Schimdt U., Furth E., (2003) Handbook of eating disorders (2nd Ed.), pp. 11-34, Wiley

4 – Machado P., Machado B., Gonçalves S., Hoek H., (2007) The prevalence of eating disorders not otherwise specified. Int Eat Disorder, 40: 212-217

5 – Vitousek, K.B., Watson, S., Wilson, G.T., (1998(. Enhancing motivation for change in treatment-resistance eating disorders. Clinical Psychology Review, 18, 391-420.

6 – Geller, J., (2002). Estimating readiness for change in anorexia nervosa: comparing clients, clinicians, and research assessors. International Journal of Eating Disorders, 31, 251-260.

7 – Geller, J., Cockell, S.J., & Drab, D. L. (2001). Assessing readiness for change in eating disorders: The psychometric properties of the readiness and motivation interview. Psychological Assessment, 13, 189-198.

8 – Prochaska J., DiClemente C., (1984). The transtheoretical approach: crossing the traditional boundaries of therapy. Homewood, IL: Dow Jones Irwen.

9 – Prochaska J., Norcross J., (1994). Systems of psychotherapy: a transtheoretical analysis, 3rd edn. Pacific Grove, CA. Brook/Cole.

10 – Prochaska, J.O., DiClemente, C.C., &Norcross, J.C., (1992). In search of how people change: Applications to addictive behaviors. American Psychologist, 47, 1102-1114.

11 – Rollnick, S., Heather, N., Gold, R.,& Hall, W., (1992). Development of a short "readiness to change" questionnaire for use in brief, opportunistic interventions among excessive drinkers. British Journal of Addiction, 87, 743-754.

12 – DiClemente, C.C., Prochaska, J.O., Fairhurst, S.K., Velicer, W.F., Velásquez, M.M.,& Rossi, J.S., (1991). The process of smoking cessation: An analysis of pre-contemplation, contemplation and preparation stages of change. Journal of Consulting and Clinical Psychology, 59, 295-304.

13 – Prochaska, J.O., Norcross, J.C., Fowler, J.L., Follick, M.J., & Abrams, D.B., (1992). Attendance and outcome in a worksite weight control program: Process and Stages of change as process and predictor variables, Additive Behaviors, 17, 35-45.

14 – McConnaughy, E.A., DiClemente, C.C., Prochaska, J.O., Velicer, W.F., (1989). Stages of change in psychotherapy: a follow-up report. Psychotherapy: Theory, Research and Practice, 26, 494-503

15 – Rieger, E., Touyz, S., Schotte, D., Beaumont, P., Russell, J., Clarke, S., Kohn, M., & Griffiths, R., (2000). Development of an instrument to assess readiness to recover in anorexia nervosa. International Journal of Eating Disorder, 28, 387-396.

16 – Serrano, E., Castro, J., Ametler, E., Martínez, E., Toro, J., (2004). Validity of a measure of readiness to recover in Spanish adolescent patients with anorexia nervosa. Psychology and Psychotherapy: Theory, Research and Practice, 77, 91-99

17 - Rieger, E., Touyz, S., Beaumont, P., (2002). The Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ): Information regarding its psychometric properties. International Journal of Eating Disorder, 32, 24-38.

18 - Achenbach T, Rescorla A, Dias P, Ramalho V, VS L, Gonçalves C. Manual do Sistema de Avaliação Empiricamente Validado (ASEBA) para o Período Escolar: Um Sistema Integrado de Avaliação com Múltiplos Informadores. Psiquilíbrios Edições; 2014.

19 - Fairburn CG, Beglin S. Assessment of eating disorders: Interview or self-report questionnaire? Int J Eat Disord. 1994;16:363–70.

Does the duration of treatment in eating disorders alone predict motivation to change?

Abstract

Introduction: Eating Disorders (ED) are severe disorders, with a long time course.

Most patients afflicted by these disorders are ambivalent about treatment and lack motivation to change.

The main aim of this study was to investigate if the duration of treatment (measured in months) could predict the stage of change (Sch), according to the Transtheoretical Model (TTM) by Prochaska and Diclementi, in a group of adolescents aged between 12 to 18 years.

Patients participated in the study regardless of the kind of therapeutical approachand treatment modality used.

Method: Fifty patients with ED participated in this study.

They completed self-evaluation questionnaires, the Anorexia Stages of Change Questionnaire (ANSCOQ), or the Bulimia Nervosa Stages of Change Questionnaire (BNSCOQ), according to the ED presented, a questionnaire created by the investigators for this purpose and their body mass index (BMI) was measured.

Data was analysed using SPSS version 22.

Results: Using linear regression we could conclude that the duration of treatment is not a predictor of motivation to change.

Keywords: ED, BMI, motivation to change (Mch) and treatment outcome.

Does the duration of treatment in eating disorders alone predict motivation to change?

Abstract

Introduction: Eating Disorders (ED) are severe disorders, with a long time course.

Most patients afflicted by these disorders are ambivalent about treatment and lack motivation to change.

The main aim of this study was to investigate if the duration of treatment (measured in months) could predict the stage of change (Sch), according to the Transtheoretical Model (TTM) by Prochaska and Diclementi, in a group of adolescents aged between 12 to 18 years.

Patients participated in the study regardless of the kind of therapeutical approachand treatment modality used.

Method: Fifty patients with ED participated in this study.

They completed self-evaluation questionnaires, the Anorexia Stages of Change Questionnaire (ANSCOQ), or the Bulimia Nervosa Stages of Change Questionnaire (BNSCOQ), according to the ED presented, a questionnaire created by the investigators for this purpose and their body mass index (BMI) was measured.

Data was analysed using SPSS version 22.

Results: Using linear regression we could conclude that the duration of treatment is not a predictor of motivation to change.

Keywords: ED, BMI, motivation to change (Mch) and treatment outcome.

Introduction

Eating disorders (ED) are long course diseases that affect adolescents and young adults and interfere with their social and emotional development (1). In many patients these are characterised by recurrent treatment attempts and dropouts, re-hospitalizations, high rates of relapse and chronicity (2, 3, 4).

Most patients are ambivalent about treatment as some of the symptoms are ego-syntonic and allow them to avoid emotional and social developmental issues. (5). This can be one of the main reasons for resistance to change in ED (6) resulting in poor therapeutic alliance and adherence to treatment as well as its avoidance. (7).

Some authors describe a high correlation between motivation to change and self-efficacy (8), depressive symptomatology (9), as well as symptoms' severity (10). In adolescents, maturity fears and other variables, such as family characteristics, proved to be important for motivation to change (11, 12, 13) at

short term outcome (14, 15). Some factors known to contribute to recovery from Anorexia Nervosa (AN), cited by patients themselves, are supportive non familial relationships, therapy and maturation. (16) It has been defended by Riger (17) that neither age nor duration of illness are significantly related to motivation to change in adolescents and adults with AN (17)

Motivation to change symptoms related to the disease appear to shift over the course of illness. (6)

The concept of motivation to change (Mch) can be defined as the willingness of patients to introduce any change, which leads to improvement in their disorder, and to perform those actions necessary to achieve it. (18)

According to the Transtheoretical Model by Prochaska and Diclementi (TTM) there are several empirically validated stages of change: the pre-contemplation stage, during which patients have no intention for a therapeutic change; the contemplation stage, when patients are ambivalent about changing; the preparation stage, when patients are thinking about changing; the action stage, when patients are doing active work to change; and the maintenance stage, during which patients are focusing on relapse prevention. This model assumes that change is an intentional process and involves a continuous effort in order to terminate the symptoms associated with the disorder (18, 19). One central assumption of the TTM is that patients move through the stages of change in a spiral form. Hence relapses are regarded as integral parts of the cycle (20) and to achieve a sustained change, patients will move various times through it (21).

The aim of the present study was to verify if the duration of treatment alone (of any kind), could predict the motivation to change in an adolescents' clinical sample. For that purpose, a group of 50 patients was studied. Some of the patients were already receiving treatment and others entered the study in their first consultation (no prior treatment).

Method

Participants, procedures and design

The sample consisted of 50 participants diagnosed with an ED, according to DSM 5, who were being followed at an Eating Disorders' Consultation at the Child and Adolescent Psychiatric Department at Centro Hospitalar do Porto.

To measure motivation to change, they were separated into groups, according to the ED presented. Those with AN completed the Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ) (17), the Bulimia Nervosa (BN) group completed the Bulimia Nervosa Stages of Change Questionnaire (BNSOCQ) (22) and those in the group of the other specified feeding or eating disorders completed either the ANSCQ or the BNSCQ, according to the symptoms presented (atypical AN, BN (of low frequency and/or limited

duration). Those with binge-eating disorder (BED), purging disorder and night eating syndrome were excluded from the study. The remaining self-evaluation questionnaires were equal for all the groups and were completed when they came to their consultation, at the hospital.

Measures

The ANSOCQ (17) and the BNSOCQ (22) are self-evaluation questionnaires that give us a measure of the stage of change, according to Prochaska and DiClemente. They consist of 20 items for evaluating the readiness to recover. The items' structure is derived from the Sch model develop by Prochaska and Diclemente and for each item it is possible to choose from five possibilities which reflect the stage of motivation to change proposed by this model: pre-contemplation, contemplation, preparation, action and maintenance. For each item patients are asked to choose the statement which best describes their attitude towards change regarding the symptom mentioned. The item score can range from 1 (pre-contemplation) to 5 (maintenance).

Mean duration of follow-up in consultation was obtained from data from the clinical files. Some of the patients completed the questionnaires at their first consultation.

Body Mass Index (BMI) was also measured.

Data analysis and results

Descriptive statistics

Our sample was composed by 50 patients; mean age was 14,70 years (SD= 1,72). Thirty-eight (76%) had AN, 5 (10%) had BN and 7 (14%) had other specified feeding or eating disorder (atypical AN, BN (of low frequency and/or limited duration)).

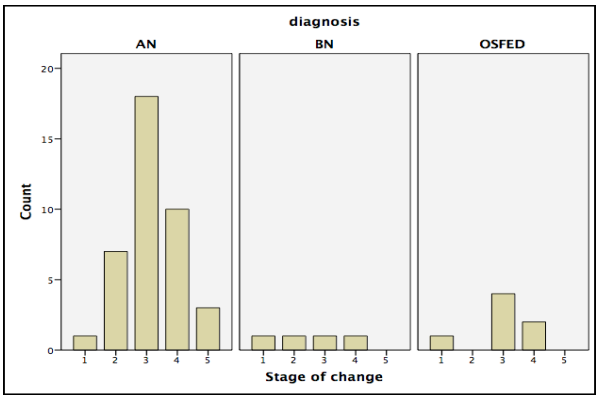
Participants obtained a mean total score on Motivation to Change of 3.16 (SD=.81). Averages of the total scale were calculated to assist in classifying the participants into stages of readiness to recover. Six percent of the participants in the sample were classified in the pre-contemplation stage (Stage 1), 16% in the contemplation stage (Stage 2), 46% in the preparation stage (Stage 3), 26% in the action stage (Stage 4) and 6% in the maintenance stage (Stage 5).

The mean total score of follow-up in consultation was 9 months (SD=11.38).

Table 1 Main characteristics and questionnaires' results of the sample of patients (N=34)

	Mean (SD)
Age	14.70 (1.70)
Motivation to Change	3.16 (0.08)
Duration of Follow-up	9 (11.38)

Graphic 1 Classification of eating disorder per stage of change



Note: <1,5 - Stage 1; 1,5-2,4 - Stage 2; 2,5-3,4 - Stage 3; 3,5-4.4 - Stage 4 and >= 4,5 - Stage 5. AN - anorexia nervosa; BN - bulimia nervosa; OSFED - other specified feeding or eating disorder (atypical anorexia nervosa, bulimia nervosa (of low frequency and/or limited duration)

Statistical analysis

First we conducted an exploratory data analysis, which included the test of normality and the test of homogeneity. The assumptions were not fulfilled so we used non-parametric tests.

The Krusskal-Wallis Test was performed to test if there were differences in Motivation to Chance among the three ED groups, AN, BN, OSFED.

There were no differences among the three groups chi-square (2)=1.81, n.s..

Table 2 Results from the Krusskal-Wallis Test

Eating disorder				
	AN	BN	OSFED	
	N=38	N=5	N=8	
	Mean (DP)	Mean (DP)	Mean (DP)	Chi-square(2)
Motivation to change	3.23 (.76)	2.63 (1.09)	3.07 (.97)	1.81

A linear regression was done to check if time of follow-up in consultation could predict motivation to change.

All the assumptions were fulfilled.

Our model explained a very low percentage of the variance of Motivation to Change, and it was not significant (R2 aj=-.021, n.s.; F(1,48)=.014, n.s.)

Table 3 Linear regression results

Follow-up in consultation				
	R2 (R2 aj)	F(1,48)	Beta	t
Motivation to change	.000 (-.021)	.014	-.017	-.12

Discussion and conclusions

The patients in this study were adolescents with a mean age of 14,70 years. The mean duration of treatment was 9 months (some fulfilled the questionnaires at their first appointment) so they were at different points of their treatment and were submitted to different treatment modalities (outpatient and hospital admission) and different therapeutic interventions.

From the results above we can conclude that duration of follow-up in consultation alone cannot predict motivation to change in our population. We could wrongly believe that the more psychotherapy one undergoes, the more motivated he/she is (23, 24). A study from Hasler also showed that patients with a history of previous treatment did not show a higher readiness for change, according to their stage of change's scores, than patients who were seeking treatment for the first time. He concluded that the result could be attributed to confounding variables such as patients' characteristics, or to the rather spiral than linear progression through the stage of change (25, 26)

Also, as mentioned above, motivation to change depends on a large number of factors, rather than one (11, 12, 13).

One of the main difficulties in treating adolescents is that they are brought to their appointments by their family, many times against their will, so there is not a real motivation to change (13) and they are not engaged in treatment. So they remain ambivalent about treatment for a long period of time.

It also seems that the symptoms of motivation to change related to the disease appear to shift over the course of the illness, as mentioned earlier. (6)

As a conclusion of this study we can defend the necessity of matching therapeutic interventions to an individual's specific stage of change in order for the treatment to be effective (27). Increasing the patients' insight and willingness to recover is vital to the establishment of an adequate treatment program (28) and several authors defend the use of specific therapeutic interventions to enhance motivation to change (24)

Limitations of the study

Although there were no differences in motivation to change between the groups, the AN group is larger than the others. So more patients with BN and with other specified feeding or eating disorder (atypical anorexia nervosa, bulimia nervosa (of low frequency and/or limited duration) should be admitted to the study in order to make a better comparison and have more confident results.

References

1 - Treasure J, Claudino A M, Zucker N. Eating Disorders. Lancet (2010); 375: 583-93

2 – Steinhausen H-C: Outcome of eating disorders. Child Adolesc Psychiatr Clin N Am 2009, 18:225-242

3 – Rigaud, D., Pennacchio, H., Bizeul, C., Reveillard, V., Verges, B.: Outcome in an adult patients: A 13-year follow-up in 484 patients. Diabetes Metab 2011, 37(4): 305-311

4 – Zipfel, S., Lowe, B., Reas, D., Deter H-C, Herzog, W., Long term prognosis in anorexia nervosa: Lessons from a 21 year follow-up study. Lancet 2000, 355:721-722

5 – Schimdt, U., Treasure, J.,: Anorexia Nervosa: Value and visible. A cognitive-interpersonal maintenance model and its implications for research and practice. Br J Clin Psychol 2006, 45(3): 343-366

6 – Vitousek, K. B., Watson, S., & Wilson, G. T. (1998). Enhancing motivation for change in treatment-resistance eating disorders. Clinical Psychology Review, 18, 391-420.

7 – Bowers, W. A.:Basic principles for applying cognitive-behavioral therapy to anorexia nervosa. Psychiatr Clin North Am 2001; 24: 293-303.

8 – Treasure, J., Schimdt, U., (2001). Ready, willing and able to change: Motivational aspects of assessment and treatment of eating disorders. European Eating disorders Review, 9, 4-18.

9 – Serrano, E., Castro, J., Ametler, L., Martínez, E., Toro, J., (2004). Readiness to recover in adolescent patients with anorexia nervosa. Psychology and Psychotherapy: Theory, Research and Practise, 77, 91-99.

10 - Geller, J., Cockell, S.J., & Drab, D. L. (2001). Assessing readiness for change in the eating disorders: The psychometric properties of the readiness and motivation interview. *Psychological Assessement*, 13 (2), 189-198.

11 - Munoz P, Quintana J M et al. Quality of life and motivation to change in eating disorders. Perception patient-psychiatrist. Eating Beahaviour (2012); 13: 131-134

12 – Ametller L, Castro J et al. Readiness to recover in adolescent anorexia nervosa: prediction of hospital admission. Journal of Child Psychology and Psychiatry (2005); 46:4, 394-400

13 – Zaitsoff S L, Taylor A. Factors related to motivation for change in Adolescents with eating disorders. Eur. Eat. Disorders Rev. (2009); 17: 227-233

14 – Castro, J., Toro, J., Cruz, M. (2000). Quality of rearing practices as predictor of short-term outcome in adolescents anorexia nervosa. Psychological Medicine, 30, 61-67.

15 – Gusella, J., Butler, G., Nichols, L., Bird, D. (2003). A brief questionnaire to assess readiness to change in adolescents with eating disorders: Its applications to group therapy. European Eating Disorder Review, 11, 58-71.

16 – Tozzi, F., Sullivan, P.F., Fear, J.L., McKenzie, J., Bulik, C.M. (2002). Causes and recovery in anorexia nervosa: The patient's perspective. International Journal of Eating Disorder, 33, 143-154.

17 – Rieger E, Touyz S et al. Development of an instrument to assess readiness to recover in anorexia nervosa. Int J Eat Disord (2000); 28: 387-396

18 – Prochaska, J.O., Diclemente, C.C. (1982). Transtheoretical therapy: Towards a more integrative model of share. Psychotherapy: Theory,Research and Practice. 19: 276-288.

19 - Prochaska J O, & Diclemente, C C. Toward a comprehensive model of change. In W R Miller & N Heather (Eds), Treating addictive behavior: Processes of change (1986). New York: Plenum Press

20 – Prochaska, J.O., Norcross, J.C.: Systems of psychotherapy: A trastheoretical analysis. 7 edn. Belmont, CA US: Thompson Brooks/Cole Publishing Co 2010.

21 – Diclement, C.C. (1999). Motivation for change: Implications for substance abuse treatment. Psychological Science, 10, 209-213.

22 – Martinez, E., Castro, J., Bigorra, A., Morer, A., Calvo, R., Vila, M., Toro, J., Rieger, E. (2007). Assesseng Motivation to change in Bulimia Nervosa: The Bulimia Nervosa Stages of Change Questionnaire. Eur Eat Disorders Rev. 15, 13-23.

23 – Treasure, J., Katzman, M., Schimdt, U.,Troop, N., Todd, G., de Silva, P. (1999)Engagement and outcome in the treatment of bulimia nervosa: first phase of a sequential design comparing motivation enhancement therapy and cognitive behavioural therapy. Behav Res Ther. 37:405-418.

24 – Feld, R., Woodside, D.B., Kaplan, A.S., Olmsted M.P., Carter, J.C. (2001). Pretreatment motivational enhancement therapy. Int J Eat Disord. 29:393-400.

25 - Prochaska, J.O., Diclement C.C., Norcross, J.C. (1992). In search of how people change. Am Psychology. 47: 1102-14.

26 – Hasler, G., Delsignore, A., Milos, G., Buddeberg, C., Schnyder, U. (2004). Application of Prochaska's transtheoretical model of change to patients with eating disorders. Journal of Psychosomatic Research. 57: 67-72.

27 – Prochaska, J.O., Redding, C.A., Evers, K.E. (2002). The transtheoretical model and stages of change. In k. Glanz, B.K. Rimer, F.M. Lewis (Eds.), Health behavior and health education: theory, research and practice (pp 60-84). San Francisco: Jossey-Bass.

28 - Geller, J., (2002). Estimating readiness for change in anorexia nervosa: comparing clients, clinicians, and research assessors. International Journal of Eating Disorders, 31, 251-260.

Do Therapeutic Relationship and Body Mass Index predict treatment outcome in Anorexia Nervosa? An Analysis Using Logistic Generalized Estimating Equations

[1]

Abstract

Introduction: Anorexia nervosa (AN) is a severe disorder, and treatment is challenging both for patients and therapists.

The main aim of this study is to investigate if therapeutic alliance and body mass index (BMI) are predictors of treatment outcome for AN.

Method: Twenty-one girls with AN entered this study and were followed for a period of one year. They completed self-evaluation questionnaires and their BMI was measured at the beginning of the study (moment 1), 6 months and one year later (moments 2 and 3).

Data was analysed using SPSS version 22.

Results: Using logistic generalized estimating equations we showed that the therapeutic alliance is a significant predictor of treatment outcome.

Keywords: AN, BMI, therapeutic alliance, motivation to change and treatment outcome.

[1] Presented as a Poster in: European Council on Eating Disorders – ECDE 2015 Meeting, Heidelberg, November 2015

Do Therapeutic Relationship and Body Mass Index predict treatment outcome in Anorexia Nervosa? An Analysis Using Logistic Generalized Estimating Equations

Abstract

Introduction: Anorexia nervosa (AN) is a severe disorder, and treatment is challenging both for patients and therapists.

The main aim of this study is to investigate if therapeutic alliance and body mass index (BMI) are predictors of treatment outcome for AN.

Method: Twenty-one girls with AN entered this study and were followed for a period of one year. They completed self-evaluation questionnaires and their BMI was measured at the beginning of the study (moment 1), 6 months and one year later (moments 2 and 3).

Data was analysed using SPSS version 22.

Results: Using logistic generalized estimating equations we showed that the therapeutic alliance is a significant predictor of treatment outcome.

Keywords: AN, BMI, therapeutic alliance, motivation to change and treatment outcome.

Introduction

Anorexia nervosa (AN) has been recognized as a severe disorder that is challenging to treat. Most of the patients are ambivalent about entering treatment, and we do not know yet which factors may contribute to a positive outcome, although poor motivation to change may be a factor.

According to the research literature, motivation to change in AN depends on several factors namely the presence of depressive symptoms, anxiety symptoms, body mass index, self-concept, personality and family relationships, among others (1).

The therapeutic alliance between patients with AN and their therapists is also important in the process of treatment, although it is not yet established that the therapeutic relationship drives symptom change (2).

Two approaches targeting motivation in therapeutic change are the Transtheoretical Model (TTM) by Prochaska and DiClemente, as a more theoretical framework, and Motivational Interviewing, as a treatment approach specifically targeting the enhancement of motivation (3, 4, 5, 6).

The TTM suggests that therapeutic interventions should be adapted to the motivational stage of the patient, and distinguishes several empirically validated stages of change: the pre-contemplation stage, in

this stage patients have no intention for a therapeutic change; the contemplation stage, in this stage patients are ambivalent about changing; the preparation stage, patients are thinking about changing; the action stage, patients are doing active work to change; and the maintenance stage, patients are focusing on relapse prevention. This model assumes that change is an intentional process and involves a continuous effort in order to terminate the symptoms associated with the disorder (7).

The aim of the present study is to test if the therapeutic alliance and the Body Mass Index (BMI) predict a stage of change at the end of the study. Specifically, we asked if there were differences between Therapeutic Alliance, BMI and Stages of Change at intake, after 6 months and after one year follow-up

Method

Participants, procedures and design

The participants in this study were 21 girls diagnosed with anorexia nervosa according to DSM 5, at different stages of treatment, mean age 14,89 years, SD = 1,43, who were being followed at an Eating Disorders Consultation at The Child and Adolescent Psychiatry Department at Centro Hospitalar do Porto. The study used a longitudinal design in which participants completed several self-evaluation questionnaires at three points: intake (Time 1), and after 6 months and 1 year follow up (Times 2 and 3). Their weight and height were also measured at each point.

Measures

The Anorexia Nervosa Stages of Change Questionnaire (ANSCQ) is a self-evaluation questionnaire that provides a measure of the stage of change, according to Prochaska and DiClemente (8). Assessment at stages 1, 2 or 3 was used as an indicator of treatment non-compliance (no action), and stages 4 or 5 was used as an indicator of treatment compliance (action).

The Therapeutic Alliance Inventory (TAI/WAI-SV) – is the short version of a self-evaluation-questionnaire, which measures the quality of the working alliance between the patient and therapist (9).

The Eating Disorder Questionnaire (EDE-Q) is a self-evaluation scale of eating disorder psychopathology (10).

Body Mass Index (BMI) was measured at each time point.

Data analysis

First we conducted an exploratory data analysis to check if the variables were normally distributed –Test of Normality. The only variable that was not significantly non-normal was TAI1

The Friedman test was used to see if there were differences between the three time moments.

Logistic generalized estimating equations (GEE) were used to identify predictors of change. GEE with an independent correlation statistics and robust standard deviation errors were used to identify if BMI and

TAI were predictors of change over 60 days study period. This methodology accounts for possible correlations in outcomes over time within individuals (11). The model included main effects (12).

Results

The ANSOCQ showed that most of the participants were assessed at stages 2 to 3 (mean = 3.20) at Time 1. This means that they were not ready to commit themselves to change (treatment) initially. At Time 2 and 3 the mean increases and the number of participants that were assessed at preparation, action and maintenance increased; The TAI showed that there was a trustful and empathic relationship between patients and therapists.

Mean and SD	TAI	BMI	ANSCQ
Time 1	44.86; 6.53	17.03; 2.43	3,20; 0,92
Time 2	43.21; 6,49	17.62; 2.03	3,23; 0,80
Time 3	44.15; 7.25	18.07; 2.49	3,47; 1.09

The Friedman test was done to see if there were differences between the three time moments'.

There were no significant differences in all tests performed.

Logistic generalized estimating equations with an independent correlation statistics and robust standard deviation errors were used to identify predictors of change:

Variable	B	SE	p	OR	95% CI
TAI	.18	.08	.03	1.2	1.02-1.42
BMI	.35	.23	.13	1.42	.91-2.21

The TAI was a significant predictor of change, B = .18, p = .03, indicating that a stronger therapeutic alliance was associated with positive treatment change.

Discussion and conclusions

Results showed that ambivalence about treatment decreased over time and at Time 3, half of the sample was assessed at Stages 4 and 5, meaning action and maintenance of treatment. Most of the participants engaged in treatment and began to understand the positive and negative aspects of change. They are more capable of making decisions and they are more confident about their actions.

Therapeutic alliance was significant as a predictor of change, meaning that trust in the therapist is important for successful therapy. When there is trust and both therapist and client agree on a plan, this plan has a great possibility of being implemented and having success.

The BMI was not a significant predictor of change in our sample. Results of prior studies on the influence of the BMI on treatment are contradictory (13). In our clinical practise we have learnt that if motivated to change, and although taking more time to recover or being more difficult to achieve some goals, patients with very low BMI can do as well as those with a higher one.

Some limitations of the research should be acknowledged. Our sample size was small and participants were followed for a relatively short time period. Given that AN is a long course disease and that changes take a long time to occur, a longer follow-up would be warranted. Nevertheless, our results provide encouraging evidence that the quality of the therapeutic alliance is an important predictor of therapeutic success for persons with AN.

References

1- Zaitsoff, S. L., Taylor, A.: *Factors related to motivation for change in adolescents with eating disorders*. Eur. Eat. Disorders Rev. (2009) 17, 227-233.

2 – Mandel et al.: *Stages of change, treatment outcome and therapeutic alliance in adults with chronic anorexia nervosa*. BMC Psychiatry 13:111

3 – Prochaska J, Diclemente C, (1984). The transtheoretical Approach: crossing the traditional boundaries of therapy. Homewood, IL: Dow Jones Irwen

4 – Prochaska J, Norcross J, (1994). Systems of psychotherapy: a transtheoretical analysis, 3rd edn. Pacific Grove, CA. Brook/cole

5 – Rollnick S, Miller WR. (2013). Motivational interviewing, helping people change. 3rd Ed The Guilford Press

6 – Brown, A. et al.: *Therapeutic alliance and weight gain during cognitive behavioural therapy for anorexia nervosa*. Behaviour Research and therapy 51 (2013) 216-220

7 - Cooper, M., Stockford, K., Turner, H.: *Stages of change in anorexic and bulimic disorders: The importance of illness representations*. Eating Behaviours 8 (2007), 474-484.

8 – Rieger, E., Touyz, S. W., Beaumont, P.J. V. (2002). The anorexia nervosa stages of change questionnaire (ANSOCQ): Informations regarding its psychometric properties. Int. J. Eat. Disord. 32, 24-38.

9 – Munder T, Wilmers F, Leonhart R, Linster HW, Barth J. (2010). Working alliance inventory-short revised (WAI-SR): Psychometric proprerties in outpatients and in inpatients. Clin Psychol Psychother. 17(3):231-9

10 - Fairburn CG, Beglin SJ. (2008). Eating disorders examination questionnaire (6.0). In Fairburn CG. Cognitive behaviour therapy and eating disorders. New York: Guilford Press

11 – Liang K-Y, Zeger SL. (1986). Longitudinal Data Analysis Using generalized linear Models. Biometrika. 73(1):13-22

12 – Hanley, J. A. et al. (2003). Statistical analysis of correlated data using generalized estimating equations: an orientation. AM J Epidemiol; 157:364-375.

13 - Castro-Fornieles, J., Bigorra, A. E. et al. (2011). Motivation to change in adolescents with bulimia nervosa mediates clinical change after treatment. Eur. Eat. Disorders Rev. 19, 46-54.

"To evaluate the perception that a sample of adolescents with eating disorders have of the parental style used by their parents"

Abstract

Introduction: It is known that eating disorders have multiple causes in its origin. Numerous authors have studied the influence of the family in this illness.

Parents have a crucial part in the emotional and social development of their children and adolescents. Diana Baumrind (1971) identified the principle parental styles and their influence in rearing children and adolescents. It is known that the authoritative style is the most protector against psychopathology. In eating disorders it is described, in the literature, that between 8,6% and 12,9% adolescents perceive their parent's style as neglectful.

The main aim of this study was to evaluate the different dimensions that constitute parenting styles in a sample of adolescents with eating disorders and study their variation along 18 months.

Method: A sample of 50 adolescents diagnosed with an eating disorder from an Eating Disorders Consultation at a public hospital in Oporto was studied. Participants filled the Parenting educational style questionnaire revised (QEEP-R).

Results and Conclusions: When we compared the mothers' educational dimensions with the fathers in the first evaluation period, there were statistical significant differences between them, and mothers had higher values in all dimensions.

The educational dimensions – Demandingness and Promotion of Autonomy remained constant along time, but there was a difference between the first evaluation period and the end of the study for the dimension Responsiveness. This could be justified by the fact that chronic disorders cause a great distress in parents, who can openly show negative emotions to their sons and daughters, who can interpret them as parents being less responsive.

Keywords: Eating Disorders (ED), Parenting Styles, Anorexia nervosa (AN), Bulimia Nervosa (BN)[2]

Presented as a Poster in: ESCAP 2015 – 16º. Encontro Europeu de Psiquiatria da Infância e Adolescência, Madrid, Junho 2015

"To evaluate the perception that a sample of adolescents with eating disorders have of the parental style used by their parents"

Abstract

Introduction: It is known that eating disorders have multiple causes in its origin. Numerous authors have studied the influence of the family in this illness.

Parents have a crucial part in the emotional and social development of their children and adolescents. Diana Baumrind (1971) identified the principle parental styles and their influence in rearing children and adolescents. It is known that the authoritative style is the most protector against psychopathology. In eating disorders, it was described, in the literature, that between 8,6% and 12,9% adolescents perceive their parent's style as neglectful.

The main aim of this study was to evaluate the different dimensions that constitute parenting styles in a sample of adolescents with eating disorders and study their variation along 18 months.

Method: A sample of 50 adolescents diagnosed with an eating disorder from an Eating Disorders Consultation at a public hospital in Oporto was studied. Participants filled the Parenting educational style questionnaire revised (QEEP-R).

Results and Conclusions: When we compared the mothers' educational dimensions with the fathers at the first evaluation period, there were statistical significant differences between them, and mothers had higher values in all dimensions.

The educational dimensions – Demandingness and Promotion of Autonomy remained constant along time, but there was a difference between the first evaluation period and the end of the study for the dimension Responsiveness. This could be justified by the fact that chronic disorders cause a great distress in parents, who can openly show negative emotions to their sons and daughters, who can interpret them as parents being less responsive.

Keywords: Eating Disorders (ED), Parenting Styles, Anorexia nervosa (AN), Bulimia Nervosa (BN)

Introduction

Parents have a fundamental role in the development of emotional and social skills on their children and adolescents. In adolescence the group of peers becomes of major importance, and adolescents change the way they perceive their parents. The relationship between them changes a lot.

The way parents interact with their sons and daughters have been studied through behavioral dimensions (factors). These dimensions (factors) were used to define parental styles (Olsen et al 2003; Park, Buriel, 2006).

The behavioral dimensions (factors) that are typically yielded by factor analysis are responsiveness and demandingness (Baumrind, 1996; Maccoby and Martin, 1983). Responsiveness refers to the way to which parents foster individuality and self-assertion by being attuned, supportive and acquiescent to children´s requests. Demandingness refers to the claims parents make on children to become integrated into society by behavior regulation, direct confrontation, and maturity demands (behavioral control) and supervision of children´s activities.

By parental style it is meant the way the relationship takes place, how rules, punishments, dialogue, love and emotional support are given.

Diana Baumrind (1967) identified three parental styles through the crossover of the higher or lower extremes of the dimensions/factors (dimensions/factors are orthogonal and independent). Those were authoritative, authoritarian and permissive. In a later study (1971,1991) a category of disengaged parents was identified (Baumrind; Maccoby & Martin 1983).

Authoritative parents are highly demanding and highly responsive; authoritarian parents are highly demanding and lower responsive; permissive parents are lower demanding and higher responsive and disengage parents are lower demanding and lower responsive.

Some authors have been thinking about introducing a third dimension/factor, and in 2013 Cruz and Ducharne proposed the dimension/factor promotion of autonomy. They revised the questionnaire of parenting styles (QEEP) and 13 new items were included. The QEEP-revised has already been validated to the Portuguese population (Cruz, Ducharne, Caldeira 2014).

Parental styles have a long lasting character. However, in each parental style there is the possibility to change some behaviors in emerging situations (Holden and Miller, 1998).

Some studies show that the authoritative parental style is the most protector against the development of psychopathology, as demandingness and responsiveness are balanced (Baumrind).

Fathers and mothers differ in the way they exert parenting. Education and cultural background also play a role in it.

It is known that ED appear in adolescence and the contribution of the family to them has been a subject of study by several investigators. Some attention has been given to the parental style of the parents and its contribution to the appearance of such diseases.

The authoritarian style has been identified as a risk factor for the development of ED. When the mother has this parental style there is a greater chance for daughters to have binge eating behaviors or for daughters and sons to have a major control upon their weight (Zubatsky, Berge, Neumark-Sztainer, 2014).

In another study mothers' of children with ED were found to have permissive or disengage parental styles (Haycraft, Blissett, 2010).

Patients with AN refer that their parents do not have as many control behaviors as healthy controls (Haycraft, Blissett, 2010).

The parental style perceived by adolescents with ED is different according to the ED presented (AN, BN), and the duration of the disease. Restrictive AN patients perceive their parents as more responsive when compared with those with purging AN and BN (Sordelli, Fossati, Devoti e La Viola, 1986). Patients with AN report less responsiveness from their parents when compared with patients partially or completed recovered (Bulik, Sullivan, Fear, Pickering, 2000).

Nevertheless, the most prevalent style in these disorders is the disengaged (8,6%-12,9%). This parental style has been identified with symptoms such as bulimia, lack of satisfaction with body image and a compulsive drive for thinness (Ibanez, 2006).

The authoritative style has been linked to low levels of ED (Haycraft, Blissett, 2010)

Method

Participants

There were fifty patients, all adolescents, in this study. They were followed either as outpatients or as inpatients at a public hospital in Oporto. All of them were diagnosed with an eating disorder according to the DSM 5.

In this study, in order to compare the ED diagnosis, we decided to make two groups. We merge patients with AN with those who had atypical anorexia nervosa (these patients were in the group OSFED), and patients who had BN with those who had bulimia nervosa of low frequency and/or limited duration (these patients were also in the OSFED). (We called this variable ED Merged).

The follow-up period was eighteen months. Data was collected at eight points: intake (Time 1), after one month (Time 2), after two months (Time 3), after six months (Time 4), after nine months (Time 5), after one year (Time 6), after fifteen months (Time 7) and after eighteen months follow up (Time 8).

We used data collected at the first evaluation period (time 1) to describe our sample and also study the time evolution of each of the three educational dimensions along 18 months, crudely and adjusted for

the effects of age, existence of other sibling in the family, age of onset of the disorder, marital status of the parents, and diagnosis of eating disorder presented.

Instruments and procedure

Parental and educational style questionnaire revised (QEEP-R) – This questionnaire is a revised version of the Parental and education style questionnaire (QEEP). Both have been translated and validated to the Portuguese population (Cruz, Raposo, Ducharne, Almeida, Teixeira & Fernandes, 2011; Ducharne, Cuz, Marinho & Grande, 2006; Cruz, Ducharne & Caldeira, 2014). It evaluates the perception that adolescents have about their parents' education style. 33 items compose it, and it has got separate sections, concerning the way the adolescent perceive the education style, for mothers and fathers. The answered scale varies between 1 (never) and 4 (always). This questionnaire allows us to define 3 education dimensions – promotion of autonomy, responsiveness and demandingness. These dimensions are the bases to define parenting styles. The Cronbach's alpha values were: father's scale: demandingness = 0.93, promotion of autonomy = 0.93 and responsiveness = 0.84; mother's scale demandingness = 0.91, promotion of autonomy = 0.91 and responsiveness = 0.81

Socio-demographic data – this questionnaire was elaborated by the investigators.

All the instruments were self-reported questionnaires.

Weight and height was also measured.

Statistical Analysis

Data were described as mean (standard deviation) for continuous variables and absolute (relative) frequencies for categorical data.

For the first evaluation period only, linear regression models were applied to investigate the effect of the gender of the parent and ED Merged on each educational dimension. The longitudinal behaviour of demandingness, promotion of autonomy and responsiveness was studied by linear mixed-effects regression models. These are subject-specific models for correlated data. Their basic premise is that there is natural heterogeneity across individuals in the study population that is the result of unobserved covariates; random effects account for the unobserved covariates. The observations were grouped by individual and a random effect at the intercept level was considered. Estimation was performed by restricted maximum likelihood. The time structure for the mean predictor was studied up to order 2. Interaction terms were examined but none was found to be statistically significant. Different residual correlation matrices and residual variances were acknowledged. Comparison between models was based on the likelihood ratio test for nested models and on the Bayesian Information Criteria (BIC) otherwise. The significance level was set at 0.05.

Results

There were 50 adolescents in this study, 49 (98%) girls and 1 (2%) boy. 76% (38) had anorexia nervosa, 10% (5) had bulimia nervosa and 14% (7) had other specified feeding or eating disorder (atypical anorexia nervosa, bulimia nervosa (of low frequency and/or limited duration).

At the first evaluation period, the mean age of the participants was 14,70 years (SD = 1,72). The majority of them 54% (27) were attending middle school and 46% (23) were at secondary school. 92% (46) never failed a year at school and 8% had failed at least once.

44% (22) of the adolescents lived with their parents, brothers and/or sisters, 2% (1) lived with the parents, brothers and/or sisters and grandparents, 22% (11) lived only with the parents, 6% (3) lived with one of the parents and 24% (12) lived with one of the parents and stepmother or father or with other relatives. Most of the parents were married 68% (34), 20% (10) were divorced and the rest 12% (6%) had other situations.

The degree of satisfaction with the relationship with the parents (being 0 very bad and 10 very good), 2% (1) classified their relation as being a 4; 6% (3) as being a 5; 6% (3) as being a 6; 14% (7) as being a 7; 24% (12) as being an 8; 16% (8) as being a 9 and 32% (16) as being a 10.

Relatively to the QEEP-R, at the first evaluation period, the mean for the dimension demandingness (father) was 2.85 (SD=0.66), for promotion of autonomy (father) was 2.94 (SD=0.77) and for responsiveness (father) was 2.72 (SD=0.78). For the mother dimension demandingness was 3,32 (SD=0.55), for promotion of autonomy was 3,34 (SD=0.65) and for responsiveness was 3.11 (SD=0.7). Total means for the dimension demandingness was 3.10 (SD=0.55), for the dimension promotion of autonomy was 3.18 (SD=0.62) and for the dimension responsiveness was 2.93 (SD=0.64) (Table 1).

Table 1 – Means and SD

	Mean (SD)
Age	14.70 (1.72)
Demandingness (father)	2.85 (0.66)
Promotion of Autonomy (father)	2.94 (0.77)
Responsiveness (father)	2.72 (0.78)
Demandingness (mother)	3.32 (0.55)
Promotion of Autonomy (mother)	3.34 (0.65)
Responsiveness (mother)	3.11 (0.7)
Demandingness Total	3.10 (0.55)
Promotion of Autonomy (Total)	3.18 (0.62)

Responsiveness (Total)	2.93 (0.64)

Still for the first evaluation period only, linear regression models of each of the three dimensions against gender of the parent and ED Merged were considered (Table 2). None of the models exhibited a significant interaction term between the two factors. While mothers were expected to score significantly higher than fathers in every dimension, ED Merged only had a statistically significant effect on Promotion of Autonomy. The estimated average difference between mothers of fathers was 0.5, 0.4 and 0.4 for demandingness, promotion of autonomy and responsiveness, respectively. For promotion of autonomy, those individuals with BN plus BN bulimia nervosa of low frequency and/or limited duration (ED Merged=1) were predicted to have 0.4 points lower than those with AN plus atypical anorexia nervosa (ED Merged=0).

Table 2: Stratified means (standard deviations) and estimates from the linear regression models explaining demandingness, promotion of autonomy and responsiveness from the gender of the parent being evaluated and ED Merged, for the first evaluation period.

Variable		Mean (sd)	Estimate	Std Error	p-value
		Demandignness			
Intercept		—	3.364	0.093	<0.001
Gender	Mother	3.3 (0.6)	Ref.		
	Father	2.9 (0.7)	-0.457	0.126	0.001
ED Merged	0	3.1 (0.7)	Ref.		
	1	2.9 (0.4)	-0.265	0.167	0.112
		Promotion of Autonomy			
Intercept		—	3.441	0.108	<0.001
Gender	Mother	3.4 (0.6)	Ref.		
	Father	2.9 (0.8)	-0.427	0.147	0.005
ED Merged	0	3.2 (0.7)	Ref.		
	1	2.8 (0.7)	-0.405	0.194	0.039
		Responsiveness			
Intercept		—	3.159	0.114	<0.001
Gender	Mother	3.1 (0.7)	Ref.		

	Father	2.7 (0.8)	-0.377	0.156	0.017
ED Merged	0	3.0 (0.8)	Ref.		
	1	2.7 (0.6)	-0.292	0.205	0.158

The study included a longitudinal evaluation with 8 different time points. The median (minimum-maximum) number of observations per patient for each of the studied dimensions was 6 (1-8) for both mothers and fathers.

We next refer to the time-evolution of each of the studied dimensions.

There were no statistically significant dependences of demandingness nor promotion of autonomy on the moment of the evaluation (p=0.754 and p=0.091, resp.). However, the scores of these two dimensions were shown to significantly differ between fathers and mothers; the latter were expected to score 3.3 points higher both on demandingness and promotion of autonomy than the formers.

The regression models were also adjusted for age, onset of disorder, existence of siblings, marital status of the parents, ED Merged and Onset of the disorder; none of the variables was shown to have a statistically significant effect on the response.

Responsiveness was the only dimension exhibiting a significant decrease along time; the model estimated each 1-month increase to produce an average reduction of 0.01 points in the response (Table 3). As in the two previous dimensions, also fathers were expected to score lower than mothers on responsiveness. However, the progression of responsiveness along time was shown to be independent of the gender of the parent (p=0.927). As before, adjusting for age, onset of the disorder, existence of siblings, marital status of the parents, ED Merged and Onset of the disorder did not have a significant impact on responsiveness.

Table 3: Estimates from the mixed-effects linear regression models explaining the time behaviour of demandingness, promotion of autonomy and responsiveness.

The errors were modelled with an autoregressive correlation structure of order 1; the parameters were estimated at 0.466, 0.591 and 0.611, respectively.

		Fixed-effects			Random-effect
Variable		Estimate	Std Error	p-value	Std Deviation
Demandingness					
Intercept		3.299	0.078	<0.001	0.466
Gender	Mother	Ref.			
	Father	-0.447	0.059	<0.001	—

Promotion of Autonomy					
Intercept		3.319	0.097	<0.001	0.591
Gender	Mother	Ref.			
	Father	-0.354	0.069	<0.001	—
Responsiveness					
Intercept		3.095	0.106	<0.001	0.621
Gender	Mother	Ref.			
	Father	-0.354	0.073	<0.001	—
Time		-0.009	0.004	0.029	

In all models, the best intra-individual residuals correlation structure was found to be autoregressive of order 1. Different variances according to the gender of the parent were also examined but the difference was not identified to be statistically significant.

Conclusions

The three educational dimensions – demandingness, promotion of autonomy and responsiveness, presented larger mean values in the mothers' scale than in the fathers, and the differences were statistical significant. As mothers spent more time with their children and adolescents, they had more opportunity to interact with them and were closer to them.

The mean values obtained in our sample were not very different from the ones presented in the validation of the questionnaire. So, probably there are more factors implicated in the origin of these diseases. Also, our sample is mainly represented by AN restrictive type, and more pathological parental styles are found in BN and AN purging type.

We found a statistical significant difference at time of evaluation in the dimension promotion of autonomy between BN plus BN bulimia nervosa of low frequency and/or limited duration and AN plus atypical anorexia nervosa. The former group see their parents as less promoters of autonomy than the latter one. As it was mention earlier more pathological parental styles are found in the former group, so this difference could be justified by that.

As stated previously, the parental styles have a long lasting character. However, in each parental style there is the possibility to change some behaviours in emerging situations (Holden and Miller, 1998). On our sample, the progression of all dimensions along time are independent of the gender and there is no statistically dependence of the dimensions demandingness and promotion of autonomy on the moment of evaluation. However, the dimension responsiveness shown to be significant dependent on the moment

of evaluation. The model estimates a mean decrease of 0.12 during one year. It is known that ED are chronic disorders and carers are exposed to great levels of distress. They became tired, angry and they show this openly to their children in certain occasions. This can be seen, by adolescents, as parents being less supportive. In our sample the mean decrease was 0.12 along one year, which is a very small value, so we think that in terms of clinical meaning this decrease could be considered irrelevant. We support that a longer follow-up should be done to understand and this decrease.

Understanding the parental style could be of interest to prevent ED, as we could promote some changes in the way parents, special mothers, educate their adolescents (Lobera, Ríos, Casals, 2011). Special attention should be given to promotion of autonomy, over protection and responsiveness, as these are the issues more implicated in ED by the literature.

Limitations of the study

It was impossible to compare boys and girls, because there was only one boy in our study.

As ED are long lasting diseases, a longer follow-up time should have been done.

Our worked was based on the study of the parental dimensions/factors and not on the parental style. The dimension promotion of autonomy was included, for the first time, in the QEEP-R. So, it is impossible, at this moment, to compare our results with other studies from ED populations.

References

Baumrind, D. (1966). Effects of authoritative parental control on child behavior. Child Development, 37, 887-907.

Baumrind, D. (1971). Current patterns of parental authority. Developmental Psychology Monograph, 4, 1-103.

Baumrind, D. (1991). The influence of parenting style on adolescent competence and substance use. Journal of Early Adolescence, 11, 56-95.

Baumrind, D. Patterns of parental authority and adolescent autonomy (2005). New Dir Child Adolesc Dev., (108):61-9.

Bulik,C. M, Sullivan, P. F, Fear, J. L, & Pickering, A. (2000). Outcome of anorexia nervosa: Eating attitudes, personality and parental bonding. International Journal of Eating Disorders, 28,139-147.

Cruz, O., Raposo, J. V., Ducharne, M. A. B., Almeida, L. S., Teixeira, C. M., & Fernandes, H. M. (2011). Questionário de estilos educativos parentais (QEEP): Contributos para a validação factorial da versão portuguesa das parenting scales. RIDEP, 1, 157-176.

Cruz, O., Ducharne, M. B., Caldeira, C. (2014). Questionário de estilos educativos parentais revisto (QEEP-R). Póster apresentado no IX Congresso Iberoamericano de Evaluación Psicológica.

Ducharne, M. A. B., Cruz, O., Marinho, S., & Grande, C. (2006). Questionário de estilos educativos parentais (QEEP). Psicologia e Educação, V, 63 - 75.

Haycraft, E. & J.Blissett (2010). Eating disorder symptoms and parenting syyles. Appetite. 54, 221-224.

Holden, G. W., & Miller, P. C. (1999). Enduring and different: a meta-analysis of the similarity in parents child rearing. Psychological Bulletin, 125, 223-254.

Ibáñez Martínez N., Muñoz Cano D., Ortega Galera M., et al. (2006) Construcción del vínculo parental en patología alimentaria y trastorno límite de la personalidad asociado. Trastornos De La Conducta Alimentaria 4, 386–422.

Lobera, J. I., Ríos, B. P., Casals, G. O., Parenting styles and eating disordes. Journal of psychiatric and mental nrsing; 18 (8): 728-735.

Maccoby, E. E., & Martin, J. A. (1983). Socialization in the context of the family: Parent-child interaction. In P. H. Mussen (Series Ed.) & E. M. Hetherington (vol. Ed.), Handbook of child psychology: Vol. 4. Socialization, personality and social development (4 th ed, pp. 1–101). New York: Wiley.

Olsen, S. F., Newell, L. D., & Hart, C. H. (2003). Parenting skills and social- communicative competence in childhood. In Greene, J. O., & Burlesc, B. R. (Eds.) Handbook of communication and social interaction skills (pp. 753-782). New Jersey: Erlbaum.

Parke, R., & Buriel, R. (2006). Socialization in the family: ethnic and ecological perspectives. In W. Damon (Series Ed.). & N. Eisenberg (Vol. Ed.), Handbook of child psychology: Vol. 3. Social, emotional, and personality development (5 th ed.,463-552). New York: Wiley.

Sordelli, A., Fossati, A., Devoti, R. M., & La Viola, S. (1986). Perceived parental bonding in anorexic and bulimic patients. Psychopathology, 29, 64-70.

Zubatsky, M., Berge, J., Neumark-Sztainer, D., Longitudinal association between parenting style and adolescente disordered eating behaviours. Eating and Weight Disorders (2014).

R, Development, Core and Team (2012).

A Language and Environment for Statistical Computing. In: R. Foundation for Statistical Computing

How I feel in my own body – self-reported problems in adolescents with eating disorders, using the YSR. Relationship with disorder severity and motivation to change.

Abstract

Objectives: 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 evaluate the presence of psychopathology in an adolescent population with ED; to investigate the association between psychopathology and the severity of the illness; to investigate if the motivation for treatment is associated with the presence of psychopathology and the ED severity.

Method: The sample consisted of 43 adolescent patients, aged between 12 and 18 years old, attending an Eating Disorder Consultation, with a diagnosis of Feeding and Eating Disorder according to DSM-5 criteria. Participants completed the Youth Self-Report (YSR), the Eating Disorder Examination - Questionnaire (EDE-Q, 4th edition) and the Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ) and the Bulimia Nervosa Stages of Change Questionnaire (BNSOCQ). Their BMI was also measured.

Results: The patient group consisted of 42 (97,7%) girls and one (2,3%) boy. The mean age was 14,65 (SD=1,73), and 72,1% were diagnosed with Anorexia Nervosa (AN). The model was significant. Only EDE-Q is a significant predictor. The correlation between YSR results (total score) and the EDE-Q total results was also significant.

Conclusion: Our model was significant, meaning that more disturbed eating behaviours are linked to less motivation to change. Also, patients who were more disturbed, presented the most severe ED issues.

Keywords: eating disorders; anorexia nervosa; bulimia nervosa; motivation to change; self-reported psychopathology.[3]

Presented as a Poster in: APPIA – XXIV Encontro da Associação Portuguesa de Psiquiatria da Infância e Adolescência, Vila Real, Maio 2015

How I feel in my own body – self-reported problems in adolescents with eating disorders, using the YSR. Relationship with disorder severity and motivation to change.

Abstract

Objectives: 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 evaluate the presence of psychopathology in an adolescent population with ED; to investigate the association between psychopathology and the severity of the illness; to investigate if the motivation for treatment is associated with the presence of psychopathology and the ED severity.

Method: The sample consisted of 43 adolescent patients, aged between 12 and 18 years old, attending an Eating Disorder Consultation, with a diagnosis of Feeding and Eating Disorder according to DSM-5 criteria. Participants completed the Youth Self-Report (YSR), the Eating Disorder Examination - Questionnaire (EDE-Q, 4th edition) and the Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ) and the Bulimia Nervosa Stages of Change Questionnaire (BNSOCQ). Their BMI was also measured.

Results: The patient group consisted of 42 (97,7%) girls and one (2,3%) boy. The mean age was 14,65 (SD=1,73), and 72,1% were diagnosed with Anorexia Nervosa (AN). The model was significant. Only EDE-Q is a significant predictor. The correlation between YSR results (total score) and the EDE-Q total results was also significant.

Conclusion: Our model was significant, meaning that more disturbed eating behaviours are linked to less motivation to change. Also, patients who were more disturbed, presented the most severe ED issues.

Keywords: eating disorders; anorexia nervosa; bulimia nervosa; motivation to change; self-reported psychopathology.

Introduction

Eating disorders (ED), particularly anorexia nervosa (AN) and bulimia nervosa (BN), are currently considered one of the most common chronic disorders in the adolescent population, and their course and outcome are often severe (1,2).

In recent years, there has been growing evidence regarding the high levels of comorbidity of AN and BN with other psychiatric disorders, namely with affective disorders, anxiety disorders, substance use disorders and personality disorders, which may contribute to their chronicity (1–3). The study of

comorbidity will influence clinical practice by determining whether patients with comorbid disorders require differential treatment (2).

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

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

Research indicates that approximately half of anorexics develop BN, which often predates AN, and that patients with clinical criteria for both diagnosis exhibit more severe psychopathological symptoms than those with a pure diagnosis, as well as a higher tendency for chronicity (2).

Patients with ED commonly present anxiety symptoms. Studies reveal prevalence rates generally two or three times greater than those reported in the community, and the presence of at least one anxious disorder prior to the onset of the ED (6). The most common associated anxiety disorders found in patients with AN have been social phobia (3-55%) and obsessive compulsive disorder (3-66%); in patients with BN, social phobia (4-59%) and generalised anxiety disorder (0-55%) are the most frequent (6,7). A retrospective study verified the presence of childhood anxiety disorders in 46% of the sample, prior to the onset of AN (separation anxiety disorder, simple phobia, social phobia) (6).

Another viewpoint suggests eating disorders as addictive behaviours, describing different personality trait patterns: AN patients emerge as more obsessive-compulsive, perfectionistic, introverted and socially conforming individuals; BN patients present mainly impulsive and antisocial traits (1,7,8).

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

In order for a therapeutic intervention to be possible and successful, the adolescent's opinion regarding his/her difficulties is central, as is his/her motivation for change. The aims of this study were: to evaluate the presence of psychopathology in an adolescent population with ED; to investigate the association between psychopathology and the severity of the illness; to investigate if the motivation for treatment is associated with the presence of psychopathology and the ED severity.

Materials and methods

Measures

The Youth Self-Report (YSR) is a standardised 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 (1,9). It consists of questions about competence, emotional and behavioural problems. The emotional and behaviour problem items form eight narrowband syndrome scales ("withdrawn, somatic complaints, anxious/depressed, attention problems, thought problems, social problems, aggressive behaviour, delinquent behaviour") and two broadband dimensions named "internalising" and "externalising". There is also a total problem score, which contains all the items (1,9).

The adolescent is asked to describe or rate his/her thoughts, emotions and behaviour now 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 (1).

The YSR has proved to have a good validity and reliability and it has been translated and standardised for use with Portuguese adolescents (9).

Eating attitudes and behaviours were investigated using the Eating Disorder Examination - Questionnaire (EDE-Q, 4th edition), a self-evaluation scale of ED psychopathology (10). 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 which is the average of the four subscales (11–13). A total EDE-Q score ≥ 4 was considered pathologic, indicative of higher severity of disease (13).

The concept of motivation to change can be defined as the willingness of patients to introduce any change which leads to improvement in their disorder and perform the actions necessary to achieve it (14). 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 the patient's stage-of-change according to Prochaska and DiClemente's model. This model consists of various stages of motivation depending on attitudes and behaviours: pre-contemplation (stage 1) - individuals don't admit to have a problem or need for change; contemplation (stage 2) - individuals know they have a problem

but still have not decided to change - it's 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, modifying their habits; and maintenance (stage 5) - change is achieved and patients are focusing on relapse prevention (14–16). Assessment at stages 1, 2 and 3 was used as an indicator of treatment non-compliance (no action), and at stages 4 or 5 was used as an indicator of treatment compliance (action).

Body Mass Index (BMI) was measured when the adolescents came to their consultation.

Subjects and procedures

The sample consisted of 43 adolescent patients.

Inclusion criteria were as follows: patients aged between 12 and 18 years attending an Eating Disorder Consultation at The Child and Adolescent Psychiatry Department at Centro Hospitalar do Porto, with a diagnosis of Feeding and Eating Disorder according to DSM-5 criteria (Anorexia Nervosa (AN), Bulimia Nervosa (BN) or Other Specified Feeding or Eating Disorder (OSFED)), in different stages of treatment (17).

Patients filled all the questionnaires at the treatment unit and their BMI was measured.

Results

The patient group consisted of 42 (97,7%) girls and one (2,3%) boy. The mean age was 14,65 (SD=1,73). In the patient group, 31 (72,1%) were diagnosed with AN, five (11,6%) with BN and seven (16,3%) with OSFED. According to the EDE-Q, 11 (25,6%) scored above the cut-off point and 32 (74,4%) below the cut-off point.

Regarding motivation to change, measured by ANSOCQ and BNSOCQ, one (2,3%) patient was on stage 1 (pre-contemplation), ten (23,3%) were on stage 2 (contemplation), 20 (46,5%) were on stage 3 (preparation), 11 (25,6%) were on stage 4 (action) and one (2,3%) was on stage 5 (maintenance).

Table 1 shows means and standard deviations for patients with ED and for normal controls (Portuguese non-clinical sample used to standardize the YSR (9)).

T-scores were analysed to investigate if ED patients not only had a general tendency to report more emotional and behavioural problems (as indicated by elevated mean scores on the YSR, except in "delinquent behaviour" subscale and total score), but also if these scores indicated a significant amount of general psychopathology. The Portuguese normative sample (9) was used to define T-scores. Clinical range is defined by either scoring over T 60/T 63 on the broadband/syndrome scales and total problem scale respectively.

On the internalising dimension, 60.5% patients scored in the subclinical/clinical range; on the externalising dimension, 18.6% patients scored in the subclinical/clinical range; in the anxious/depression subscale, 44.4% patients scored in the subclinical/clinical range; in the withdrawn subscale, 23.3% patients scored in the subclinical/clinical range and, on total score, 39.5% patients scored in the subclinical/clinical range.

The Sperman test was applied to verify a possible correlation between YSR results (total score) and the EDE-Q total results. This correlation was significant, meaning that patients who were more disturbed, presented more severe ED issues. $Rs=0.53$, $p<.001$

Logistic regression was performed to test if motivation to change could be predicted by YSR (total score) and EDE-Q results. A dichotomised version of both ANSOCQ and BNSOCQ was used as the outcome variable: 1 meaning "change" (stages 4 and 5) and 0 meaning "no change" (stages 1, 2, 3). All the assumptions were fulfilled.

The model was significant, $\chi^2(2)=16.98$, $p<.001$ and classifies correctly 81.4% of cases.

Only EDE-Q is a significant predictor $p=.012$, $B=-1.27$, meaning that more disturbed eating behaviours are linked to no motivation to change.

Discussion and conclusions

Nowadays, ED are considered one of the most chronic disorders in the adolescent population and, in many cases, they are highly debilitating (1). It is therefore of great importance to investigate the psychological health of adolescents with these conditions and the manner in which they differ from the normal population.

Recognition of comorbid disorders is vital, since we could hypothesise that their presence would demand a different therapeutic approach of the ED (2).

As described in the literature (1,9), we found more emotional and behavioural problems in the ED sample compared to non-clinical samples, which points to the presence of greater levels of psychopathology. Our patients scored in the clinical range for the YSR internalising dimension, which includes the "anxious/depression", "withdrawn" and "somatic complains" subscales, meaning that symptoms such as anxiety and sadness are more prevalent in this sample (9,14,18). This result is in line with other studies finding depression and anxiety symptoms to be common in these patients compared to controls (1,2,6,19–21).

Some authors suggest that ED could be secondary to general anxiety and serve as a buffer, reducing it (6). Thus, we might consider that the early identification and treatment of anxiety and obsessive-

compulsive symptoms could contribute to the ED successful treatment, or even prevent the emergence of ED, namely AN and BN. (6)

The only YSR subscale that scored below the mean value of the non-clinical sample was the "delinquent behaviour" subscale. This can be explained, as our sample is mainly constituted by AN restrictive type patients and this behaviour is more common in BN and AN binge/purging type patients (1).

It would be interesting to investigate how adolescents with different forms of ED differ from each other regarding other psychiatric symptoms. However, our sample was mainly constituted by patients with AN, so we weren't able to compare the profiles of the different types of ED regarding the YSR scores. This is one of the limitations of our study, since the sample was mainly constituted by 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 not clear whether they are merely a consequence of malnutrition and weight loss and if they persist after recovery (4). Our sample is constituted by adolescents in different stages of the disease, but the majority presents a BMI <18.5. It would be interesting to compare the results obtained in the YSR between a normal and a recovered clinical sample, and to perform a longitudinal study comparing the results of patients with malnutrition in the beginning of the study and after weight restoration.

As we expected, our model concluded that the more disturbing the eating behaviour (indicated by EDE-Q results), the less motivated patients are to treat themselves. Although we expected to find that greater levels of psychopathology would negatively influence motivation to change, such was not found in our sample (14,18).

Nonetheless, we must take into consideration that, although all patients had a clinical diagnosis of ED according to DSM-5, most of them did not score above the cut-off point in the EDE-Q. This could mean that they weren't capable of recognising their illness and were denying their symptoms, or that they had a desire to be socially accepted by their accompanying doctor.

Furthermore, we can conclude that the YSR is a valuable instrument to evaluate ED clinical samples, and can be used to assess treatment outcome (1). The YSR is part of a group of instruments (Achenbach System of Empirically Based Assessment) and it would be interesting to complement and compare the scores with those obtained on the self-report questionnaire for parents (Child Behaviour Checklist, CBCL) and for teachers (Teacher's Report Form, TRF), in order to achieve better understanding of the emotional problems of this population and their possible unwillingness to report self-problems (1,9).

Limitations to the study

Our sample is mainly constituted by patients with AN, limiting us to a specific ED profile and associated results.

This is a transversal study and a longitudinal study would give us more information.

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

YSR	Patients	Controls
	Mean/SD	Mean/SD
Total Problems	55.60 (25.40)	35.60 (18.89)
Internalising	23.74 (10.78)	12.48 (7.22)
Externalising	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 behaviour	2.40 (2.15)	3.04 (2.69)
Aggressive behaviour	8.29 (4.01)	6.02 (4.20)

Table 1. Means and standard deviations (SD) for patients and controls on YSR scales.

References

1. Ekeroth K, Engström I, Hägglöf B, Broberg AG. Self-reported competencies and problems among Swedish girls with eating disorders and a control sample, using the Youth Self-Report. Eat Weight Disord. 2003;8(4):274–81.
2. Herzog DB, Keller MB, Sacks NR, Yeh CJ, Lavori PW. Psychiatric comorbidity in treatment-seeking anorexics and bulimics. J Am Acad Child Adolesc Psychiatry. 1992;31(May 1991):810–8.
3. Saraiva J, Guerra J, Mansilha H. Perturbações do Comportamento Alimentar II. In: Psicologia e Psiquiatria da Infância e Adolescência. 1ª ed. Lidel; 2014. p. 241–61.
4. Pollice C, Kaye WH, Greeno CG, Weltzin TE. Relationship of depression, anxiety, and obsessionality to state of illness in anorexia nervosa. Int J Eat Disord. 1997;21(4):367–76.
5. Lledó E, Waller G. Bulimic psychopathology and impulsive behaviors among nonclinical women. Int J Eat Disord. 2001;29(1):71–5.
6. Godart NT, Flament MF, Lecrubier Y, Jeammet P. Anxiety disorders in anorexia nervosa and bulimia nervosa: Co-morbidity and chronology of appearance. Eur Psychiatry. 2000;15(1):38–45.
7. Kaye WH, Weltzin TE, Hsu LG. Relationship between anorexia nervosa and obsessive and compulsive behaviors. Psychiatr Ann. 1993;23(7):365–73.
8. Davis C, Claridge G. The eating disorders as addiction. Addict Behav. 1998;23(4):463–75.
9. Achenbach T, Rescorla A, Dias P, Ramalho V, VS L, Gonçalves C. Manual do Sistema de Avaliação Empiricamente Validado (ASEBA) para o Período Escolar: Um Sistema Integrado de Avaliação com Múltiplos Informadores. Psiquilíbrios Edições; 2014.
10. Fairburn CG, Beglin S. Assessment of eating disorders: Interview or self-report questionnaire? Int J Eat Disord. 1994;16:363–70.
11. La Mela C, Maglietta M, Lucarelli S, Mori S, Sassaroli S. Pretreatment outcome indicators in an eating disorder outpatient group: The effects of self-esteem, personality disorders and dissociation. Compr Psychiatry. Elsevier Inc.; 2013;54(7):933–42.
12. Fairburn CG, Cooper Z, Connor MO. Eating Disorder Examination (Edition 16.0D). Cogn Behav Ther Eat Disord. 2008;(1994):1–49.
13. Machado P, Machado B, Gonçalves S, Woek H. The prevalence of eating disorders not otherwise specified. Int J Eat Disord. 2007;40(3):212–7.
14. Ametller L, Castro J, Serrano E, Martınez E, Toro J. Readiness to recover in adolescent anorexia nervosa : prediction of hospital admission. J Child Psychol Psychiatry. 2005;4(46):394–400.

15. Fernández L, Cano T. Attitudes towards change in eating disorders (ACTA). Development and psychometric properties. Actas Esp Psiquiatr. 2003;31(3):111–9.
16. Cooper M, Stockford K, Turner H. Stages of change in anorexic and bulimic disorders: The importance of illness representations. Eat Behav. 2007;8(4):474–84.
17. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders - DSM-5. 5ª ed. American Psychiatric Association; 2013.
18. Zaitsoff S, Taylor A. Factors related to Motivation to Change in Adolescents with Eating Disorders. Eur Eat Disord Rev. 2009;17(3):227–33.
19. Rastam M. Anorexia nervosa in 51 swedish adolescents. Premorbid problems and comorbidity. J Am Acad Child Adolesc Psychiatry. 1992;31:819–29.
20. Herzog DB, Nussbaum KM, Marmor AK. Comorbidity and outcome in eating disorders. Psychiatr Clin North Am. 1996;19:843–59.
21. Halmi KA, Eckert E, Marchi P, Sampugnaro V, Apple R, Cohen J. Comorbidity of psychiatric diagnoses in anorexia nervosa. Arch Gen Psychiatry. 1991;48:712–8.

Motivation to change in eating disorders

Abstract

Introduction and Objectives: The identification of the factors that allow for the understanding of the motivation for recovery in eating disorders has been an increasingly important issue and focus in clinical literature. Numerous factors have been linked to motivation to change/recovery in eating disorders.

According to various authors, one of the greatest advantages of understanding and studying motivation and to identify factors that can promote it, is that it makes it possible to understand those diseases and to choose the best treatment for the patient.

The main aims of the current study were to identify the factors that contribute the most to the patient's motivation to change and recovery (treatment outcome), to describe situations that the patients point out as being crucial for change and to understand if motivation to change can help to explain treatment outcome.

Method: A single follow-up study of a Portuguese population of adolescents, aged between 12 – 18 years old, who have been diagnosed with an eating disorder at baseline. All patients were followed at an Eating Disorder Unit, at Centro Hospitalar do Porto, Departamento de Psiquiatria da Infância e da Adolescência.

Adolescents filled in several self-reported questionnaires.

The effects of the evaluated factors (eating disorder symptoms, general psychopathology, self-concept, therapeutic alliance) on the patients' motivation to change and recovery were identified by conditional logistic regression models.

Results: Occurrence of change was shown to be negatively associated with EDE. Recovery from ED was positively associated with self-concept and exhibited no significant relationship with the follow-up.

Conclusion: The only factors for which a significant evolution along the study period was identified were the occurrence of change in ED behaviours (measured by ANSOCQ and BNSOCQ) and general psychopathology (measured by YSR).

The best model to predict Occurrence of change in eating disorders along the 18 months' period included only the severity of the ED disorder, measured by the EDE-Q.

The best predictor of the recovery status along the study period consisted only of the self-concept score.

The present study has also identified the motivation to change ED behaviours as having a significantly ($p=0.050$) positive crude effect on the treatment outcome (existence of recovery).

Keywords: eating disorders; anorexia nervosa; bulimia nervosa; motivation to change; self-reported psychopathology.

Motivation to change in eating disorders

Abstract

Introduction and Objectives: The identification of the factors that allow for the understanding of the motivation for recovery in eating disorders has been an increasingly important issue and focus in clinical literature. Numerous factors have been linked to motivation to change/recovery in eating disorders.

According to various authors, one of the greatest advantages of understanding and studying motivation and to identify factors that can promote it, is that it makes it possible to understand those diseases and to choose the best treatment for the patient.

The main aims of the current study were to identify the factors that contribute the most to the patient's motivation to change and recovery (treatment outcome), to describe situations that the patients point out as being crucial for change and to understand if motivation to change can help to explain treatment outcome.

Method: A single follow-up study of a Portuguese population of adolescents, aged between 12 – 18 years old, who have been diagnosed with an eating disorder at baseline. All patients were followed at an Eating Disorder Unit, at Centro Hospitalar do Porto, Departamento de Psiquiatria da Infância e da Adolescência.

Adolescents filled in several self-reported questionnaires.

The effects of the evaluated factors (eating disorder symptoms, general psychopathology, self-concept, therapeutic alliance) on the patients' motivation to change and recovery were identified by conditional logistic regression models.

Results: Occurrence of change was shown to be negatively associated with EDE. Recovery from ED was positively associated with self-concept and exhibited no significant relationship with the follow-up.

Conclusion: The only factors for which a significant evolution along the study period was identified were the occurrence of change in ED behaviours (measured by ANSOCQ and BNSOCQ) and general psychopathology (measured by YSR).

The best model to predict Occurrence of change in eating disorders along the 18 months' period included only the severity of the ED disorder, measured by the EDE-Q.

The best predictor of the recovery status along the study period consisted only of the self-concept score.

The present study has also identified the motivation to change ED behaviours as having a significantly ($p=0.050$) positive crude effect on the treatment outcome (existence of recovery).

Keywords: eating disorders; anorexia nervosa; bulimia nervosa; motivation to change; self-reported psychopathology.

Introduction

The identification of the factors that allow for the understanding of the motivation for recovery in eating disorders has been an increasingly important issue and focus in clinical literature and many investigators are interested in it (1, 2). Treating these diseases is very difficult because, most of the times, patients are ambivalent regarding to treatment and lack motivation to change their (3) behaviours. Drop out and failure to engage in treatment are very common (4).

Many instruments have been developed to evaluate readiness and motivation to change in eating disorders (ED), namely the readiness and motivation interview (5), the anorexia nervosa stages of change questionnaire (6) and the bulimia nervosa stages of change questionnaire (7) among others.

The concept of motivation to change (MCh) can be defined as the willingness of patients to introduce any change which leads to improvement in their disorder and to perform those actions necessary to achieve it (8).

The trans-theoretical model of behaviour change (TMC) by Prochaska (1992) has been applied by several authors to ED (9). According to this model, patients are said to be in different disease stages based on their degree of motivation and attitude towards change. TMC conceptualises change as occurring through a series of stages including pre-contemplation (i.e. failure to recognise a problem, not considering change), contemplation (i.e. thinking about making changes), preparation (i.e. preparing to make changes), action (i.e. working on recovery) and maintenance (i.e. working to maintain changes) (10, 11)

Numerous factors have been linked to motivation to change. Greater severity of ED symptoms may be related to less motivation both in adolescents and adults. Also the presence of depressive symptoms (3, 12, 13, 14) and low self-efficacy (15) have been implicated in MCh.

In some studies, a greater motivation was found in older patients when compared to adolescents (16). Others found no differences (13). Nevertheless, it is important to remember that, most of the times, adolescents are taken to consultation by their parents against their will. In those situations, it is more difficult to engage them in treatment. Also their capacity to understand the consequences and gravity of the disease are less than those found in adults.

Very low body mass indexes can be related to poor motivation at the beginning of treatment. However, studies about this issue are not consensual on the matter (17).

When bulimic patients were compared with anorexic patients and other eating and feeding disorders patients, it was found a greater motivation in the first group (9, 20).

There are few studies in which the target population consists of adolescents, but it was possible to identify that maturation fear and family-related issues play an important role in short time changes in this population (18). Adolescents who see their relationship with their parents in a more positive way have shown a greater motivation to change. (19)

According to various authors, one of the greatest advantages of understanding and studying motivation and to identify factors that can promote it, is the possibility to understand ED and to choose the best treatment for each patient. (21, 22)

The main aims of the current study were to identify the factors that contribute the most to the patient's motivation to change and on recovery (treatment outcome), to describe situations that the patients point out as being crucial for change and to understand if motivation to change can help to explain treatment outcome.

Method

Participants and procedures

A single follow-up study of a Portuguese population of adolescents, aged between 12 – 18 years old, who have been diagnosed with ED – AN, BN, or OSFED, according to the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM – 5) (American Psychiatric Association, 2015?). All adolescents were followed at an Eating Disorder Unit, at Centro Hospitalar do Porto, Departamento de Psiquiatria da Infância e da Adolescência, for a period of 18 months.

Participants completed several self-evaluation questionnaires at baseline (Time 1) and after 18 months follow-up (Time2). They were followed in consultation in between.

Weight and height were also measured at each point. Body Mass Index (BMI) and Z-Scores were also calculated.

The treatments provided through this Unit were diverse and included medical consultation, inpatient treatment, family therapy and parental groups.

Treatment choices were made on a case by case basis by clinicians.

Written consent was obtained from both parents and participants, allowing the use of their responses for research. Procedures were approved by the ethics board of the Centro Hospitalar do Porto.

Measures

The Anorexia Nervosa Stages of Change Questionnaire - ANSOCQ (6) and the Bulimia Nervosa Stages of Change Questionnaire BNSOCQ (7) are self-evaluation questionnaires that give us a measure of the stage

of change, according to Prochaska and DiClemente. Each of them consists of 20 items for evaluating the readiness to recover. The items' structure is derived from the Sch model develop by Prochaska and Diclemente and for each item it is possible to choose from five possibilities, reflecting the stage of motivation to change proposed by this model: pre-contemplation, contemplation, preparation, action and maintenance. For each item patients are asked to choose the statement which best describes their attitude towards change regarding the symptom mentioned. The item score can range from 1 (pre-contemplation) to 5 (maintenance) (6, 7).

The Therapeutic Alliance Inventory (TAI/WAI-SV) is the short version of a self-evaluation-questionnaire and measures the quality of the working alliance between the patient and therapist (23).

The Youth Self-Report (YSR) is a standardised self-reported 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. It consists of questions about competence, emotional and behavioural problems. The emotional and behaviour problem items form eight narrowband syndrome scales ("withdrawn, somatic complaints, anxious/depressed, attention problems, thought problems, social problems, aggressive behaviour, delinquent behaviour") and two broadband dimensions named "internalising" and "externalising". There is also a total problem score, which contains all of the items.

The adolescent is asked to describe or rate his/her thoughts, emotions and behaviour at the present time 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.

YSR has been shown to be valid and reliable and it has been translated and standardised for use with Portuguese adolescents (24).

The Eating Disorder Examination - Questionnaire (EDE-Q, 4th edition), is a self-evaluation scale of ED psychopathology (10) that investigates eating attitudes and behaviours. 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 which is the average of the four subscales (11–13). A total EDE-Q score ≥ 4 was considered pathologic, indicative of higher severity of disease (25).

The Piers-Harris children's self-concept scale is a self-evaluation scale that is used to evaluate the way the adolescent feels and thinks about him/herself (26).

Sociodemographic and personal and family data/history, time elapsed since disease onset, previous admissions as inpatient were also asked.

A questionnaire, developed by the researcher, concerning the degree of satisfaction with the relationship with parents, reasons/motivations to change behaviours and difficulties found during this process was also considered.

In order to reasonable frequencies for a variable reflecting ED diagnosis, patients with AN were merged with those with atypical anorexia nervosa (these patients were in the group OSFED), and patients with BN were grouped with those diagnosed with bulimia nervosa of low frequency and/or limited duration (these patients were also in the OSFED). Throughout, we will refer to this dichotomous variable simply as Merged ED (MED).

We also defined a recovered patient as someone scoring less than 4 on EDE-Q, being above Percentile 3 on body mass index (BMI) adjusted for age (AN) and not having binge eating episodes or purging behaviours (EDE-Q) (BN).

The ANSCOQ and the BNSOC are self-evaluation questionnaire that provide a measure of the stage of change. Assessment at stages 1, 2 or 3 was used as an indicator of treatment non-compliance (no action/ no occurrence of change), and at stages 4 or 5 as an indicator of treatment compliance (action/occurrence of change).

Two binary variables were then defined: the occurrence of change and the existence of a recovery

Statistical Analysis

Data were described as mean (standard deviation) for continuous variables and absolute (relative) frequencies for categorical data. Means at the baseline and at the end of the follow-up were compared by the t-test for paired samples.

The crude evolution of binary factors during follow-up and the dependencies of recovery and motivation to change on the studied factors were investigated by conditional logistic regression models. Indeed, the setup of the study resembles a matched study in which the observations for each subject at two time-points can be thought of as a matched “pair” (27).

Comparison between models was based on the likelihood ratio test for nested models and on the Akaike Information Criteria (AIC) otherwise. No interaction terms in the linear predictor were shown to be statistically significant.

Statistical analysis was performed with the R language and software environment for statistical computation, version 2.3.3. (28, 29). The significance level was set at 0.05.

Results

The study included 50 adolescents (at intake), 49 (98%) girls and 1 (2%) boy. 76% (38) had anorexia nervosa, 10% (5) had bulimia nervosa and 14% (7) had other specified feeding or eating disorder (atypical anorexia nervosa, bulimia nervosa (of low frequency and/or limited duration).

At baseline, the mean age of the participants was 14,70 years (SD = 1,72). The majority of them 54% (27) were attending middle school and 46% (23) were at secondary school. 92% (46) never failed a year at school and 8% had failed at least once. 44% (22) of the adolescents lived with their parents, brothers and/or sisters, 2% (1) lived with the parents, brothers and/or sisters and grandparents, 22% (11) lived only with the parents, 6% (3) lived with one of the parents and 24% (12) lived with one of the parents and stepmother or father or with other relatives. Most of the parents were married 68% (34), 20% (10) were divorced and the rest 12% (6%) had other situations. The mean age of onset of the disorder was 13.03 years.

The variable occurrence of change (then measured in an ordinal 1-5 scale) was dichotomized: stages 1, 2 and 3 were interpreted as meaning that the patient was not yet ready to change, while stages 4 and 5 meant that a change had already occurred. Throughout, this binary variable will be simply referred to as occurrence of change (OCh).

The sample frequencies for the variables recovery and motivation to change, at baseline and at the end of the follow-up, are presented in Table 1. For each variable, the discordant "pairs" (those individuals that start the study in a certain category and end up in the other category) are the ones estimating the time effect on the variable.

		Follow-Up			
		Occurrence of Change		Recovery	
		No	Yes	No	Yes
Baseline	No	9	14	9	9
	Yes	5	9	4	15

Table 1: Table of the sample absolute frequencies for motivation to change and recovery.

The crude evaluation of the time effect on each studied factor/scale showed that only the occurrence of change and (marginally) YSR have significantly changed over the follow-up period (Table 2). In particular, the odds for OCh at the end of the 18-m follow-up was estimated to be approximately the triple of the odds for OCh at baseline.

Variables	Categorical			
	Coefficient	Std Error	OR	p-value*
OCh	1.030	0.521	2.800	**0.048**

Recovery	0.811	0.601	2.250	0.177
	Continuous			
	Mean(sd) Baseline	Mean(sd) Follow-Up	t-statistic (df)	p-value+
Therapeutical Alliance	45.8 (6.6)	45.0 (8.0)	0.299 (df=35)	0.767
Self-Concept	34.6 (9.9)	37.5(12.1)	-1.462 (df=36)	0.152
YSR	54.0 (31.7)	42.2(22.5)	1.955 (df=21)	**0.064**
Internalization	22.9(11.5)	17.8(9.8)	2.383(df=26)	**0.025**

*: conditional logistic regression

+: t-test for paired sampled

Table 2: Table exhibiting the time-effect on each studied scale/factor. For the categorical variables, the table presents the estimates from the used conditional logistic regression models; for the continuous variables, the table contains the sample means and standard deviations as well as the result from the paired t-test.

Adjusting the above OCh and recovery models for other predictors cancelled out the significance of the time effect. For OCh, only EDE was inferred to be a significant predictor (Table 3 below). The model estimated the odds for OCh to decrease by 59% (95% CI for OR: 0.197-0.866) for each 1-unit increase in the EDE scale. As for recovery, only self-concept was shown to have a (marginally) significant effect; for each 1-unit increase in self-concept, the odds for recovery was estimated to increase by 24% (95% CI for OR: 0.991-1.557).

Variables	Coefficient	Std Error	p-value	OR (95% CI)
Occurence of Change				
EDE	-0.885	0.378	0.019	0.413 (0.197- 0.866)
Treatment outcome/Recovery				
autoconceito	0.217	0.115	0.060	1.242 (0.991- 1.557)

Table 3: Estimates from the conditional regression models for the occurence of change and treatment outcome.

Conclusions

In this study, the only factors for which a significant evolution along the study period was identified were the occurrence of change in ED behaviours (measured by ANSOCQ and BNSOCQ) and general psychopathology (measured by YSR). Patients were observed to improve their eating behaviours along

time, reflected in the fact that at the end of the study there were more patients in the stage of change action – 4 and maintenance – 5, and that they showed less general psychopathology.

The best model to predict OCh along the 18 months' period included only the severity of the ED disorder, measured by the EDE-Q. The model estimated a significantly negative association between the two variables, meaning that low values of EDE-Q were related to stages of change 4 or 5. This fact had already been mentioned in the literature (3, 12, 13, 14). No other variables were significantly identified as predictors of OCh in our population, although it has been described in other studies that the presence of depressive symptomatology, self-evaluation and self-efficacy have been implicated in OCh (3, 12, 13, 14).

The best predictor of the recovery status along the study period consisted only of the self-concept score. Patients who were recovered showed more confidence on themselves and on their actions. Being more confident allowed them to make more changes on their eating behaviour and to improve their health. This has also been described in the literature, as mention earlier.

The present study has also identified the motivation to change ED behaviours as having a significantly ($p=0.050$) positive crude effect on the treatment outcome (existence of recovery).

Patients who were on stages of change 4 and 5 (OCh=1) had a better chance of being recovered (existence of recovery=1). However, the model's goodness-of-fit was evaluated to be worse than from the model including self-concept. Moreover, the authors run into numerical convergence problems when considering the two predictors simultaneously. This was probably related with the relatively small number of participants in the study.

The major advantage of understanding the patient's motivation to change ED behaviours and to identify the stage of change where he is placed, is the possibility to choose the best treatment for him at a certain moment of his life (21, 22). By doing this it will be possible to have more success in the treatment of these disorders.

At the end of the study (after 18 months), 14 patients were in stages 4 (action) and 5 (maintenance) of motivation to change. These patients pointed out that there were various factors that had contributed to implement a change, but the ones that had a greater impact were the illness symptoms and the feeling that they were losing something in their adolescence's life. This group also considered that treating themselves was more important because of their family than because of them. There are some studies concerning this subject, and they state that when patients change for personally meaningful reasons, more sustained change will occur (29). Our sample is constituted by adolescents, so we can think that family has a strong effect on their will to change. Perhaps adolescents want to stop stressful situations

between family members, special parents or as they are very dependent upon parents they want to please them to be accepted.

Limitations of the study

Some limitations of the research should be acknowledged. The sample size was relatively small and participants were followed for a relatively short time period. Given that AN and BN are long course diseases and that changes take a long time to occur, a longer follow-up would be warranted; essentially if recovery were to be studied.

Patient's answers to questionnaires were self-reported. Some patients may have had difficulties in recognising their illness and thus may have denied their symptoms. Moreover, a desire to be socially accepted by their accompanying doctor may have been present and, in that situation, answers may have been biased and not a true reflex of their clinical situation.

Also the ED groups were not equally represented. Even after the definition of the variable merged ED, the imbalance implied a failure in the statistical estimation method and the variable could not have been considered further in the analysis.

References

1 - Hasler, G., Delsignore, A., Milos, G., Buddeberg, C., &Schnyder, U. (2004). Applications of Prochaska's transtheoretical model of change to patients with eating disorders. *Journal of Psychosomatic Research, 57, 67-72.*

2 – Prochaska, J. O., Norcross, J. C., & Diclimente, C. C. (1995). *Changing for good*. Avon.

3 – Geller, J., Cockell, S.J., & Drab, D. L. (2001). Assessing readiness for change in the eating disorders: The psychometric properties of the readiness and motivation interview. *Psychological Assessement*, 13 (2), 189-198.

4 – Kazdim, A. E., & Mazurick, J. L. (1994). Dropping out of child psychotherapy: Distinguishing early and late drop outs over the course of treatment. *Journal of Consulting and Clinical Psychology, 62, 1069-1974.*

5 – Geller, J., Drab, D. L. (1999). The readiness and motivation interview: A symptom-specific measure of readiness for change in the eating disorders. *Eur. Eat Disorders Rev. 259-278*

6 – Rieger, E., Touyz, S., W., Beumont, P., J., V. (2002). The Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ): Information regarding its psychometric properties. *Int J Eat Disorder 32: 24-38*

7 - Martinez, E., Castro, J., Bigorra, A., Morer, A., Calvo, R., Vila, M., Toro, J., Rieger, E., Assessing motivation to change in Bulimia Nervosa: The bulimia nervosa stages of change questionnaire.

8 – Prochaska, J. O., & Diclementi, C. C. (1982). Transtheoretical therapy: towards a more integrative model of chance. *Psychotherapy: Theory, Research and Practise 19, 276-288.*

9 – Blake, W., Turnbull, S., Treasure, J. (1997). Stages and processes of change in eating disorders: implications for therapy. Clinical Psychology and Psychotherapy, 4(3), 186-191.

10 – Prochaska, J. O., Diclemente, C. C., & Norcross, J. C. (1992). In search of how people change. *American Psychologist, 47(9), 1102-1114.*

11 – Prochaska, J. O., Norcross, J. C., Fowler, J. L., &Abrams, D. B. (1992). Attendance and outcome in a worksite weight control programme: Processes and stages of change as process and predictor variables. *Additive Behaviors, 17, 35-45.*

12 – Geller, J., Cockell, Brown, K. E., Zaitsoff, S. L., Bates, M. E., Menna, R., & Dunn, E. C. (2008). Assessing readiness for change in adolescents with eating disorders. The psychometric properties of the readiness and motivation interview – adolescent version. *Psychological Assessment, 20, 63-69*

13 - Rieger, E., Touyz, S., Schotte, D., Beumont, P., Russell, J., Clarke, S., Kohn, M., & Griffiths, R. (2000). Development of an instrument to assess readiness to recover in anorexia nervosa. *International Journal of Eating Disorders, 28, 387-396.*

14 - Serrano, E., Castro, J., Ametler, L., Martinez, E., & Toro, J. (2004). Readiness to recover in adolescent patients with anorexia nervosa. *Psychology and Psychotherapy: Theory, Research and Practice, 77, 91-99.*

15 – Treasure, J., & Schimdt, U. (2001). Ready, willing and able to change: Motivational aspects of assessment and treatment of eating disorders. *European Eating Disorders Review, 9, 4-18.*

16 – Vitousek, K., Watson, S. (1998). Enhancing motivation for change in treatment resistant eating disorders. Clin Psychol Rev, 18: 391-420

17 – Geller, J., Cassin, S. E., Brown, K. E., Srikameswaran, S. (2009). Factorsassociated with improvement in readiness for change: low vs normal BMI eating disorders. *Int J Eat Disorde 42: 40-46.*

18 – Castro J., Toro, J., & Cruz, M. (2000). Quality of rearing practises as predictor of short-term outcome in adolescent anorexia nervosa. *Psychological Medicine, 30, 61-67.*

19 – Shannon, L. Z., & Taylor, A. (2009). Factors Related to motivation for change in adolescents with eating disorders. *Eur Eat Disorders Rev., 227-233.*

20 – Ward, A., Troop, N., Todd, G., Treasure, J. (1996). To change or not to change – "How" is the question? *Brit J Med Psychol 69: 139-146.*

21 – Pedro, M., Quintana, J. M., Hayas, C., Padierna, A., Aguirre, U., Gonzáles-Torres, M. A. (2012). Quality of life and motivation to change in eating disorders. Perception patient-psychiatrist. Eating Behaviours 13: 131-134

22 – Ametller, L., Castro, J., Serrano, E., Martínez, & Toro, J. (2005). Readiness to recover in adolescent anorexia nervosa: prediction of hospital admission

23 – Munder T, Wilmers F, Leonhart R, Linster HW, Barth J. (2010). Working alliance inventory-short revised (WAI-SR): Psychometric proprerties in outpatients and in inpatients. Clin Psychol Psychother. 17(3):231-9

24 - Ducharne, M. A. B., Cruz, O., Marinho, S., Grande, C. (2006). Questionário de estilos parentais (QEEP). Psicologia e Educação, V, 63K75.

25 – Fairburn CG, Cooper Z, Connor MO. Eating Disorder Examination (Edition 16.0D). Cogn Behav Ther Eat Disord. 2008;(1994):1–49

26 - Veiga, F. H. (2006). Uma nova versão da escala de autoconceito Piers-Harris children's selfconcept scale (PHCSCS – 2). Psicologia e Educação V, 39K48.

27 - David H. Hosmer, Stanley Lemeshow, Applied Logistic Regression, 2nd Edition. Wiley Series in Probability and Statistics, 2000.

28 – R, Development, Core and Team (2012).

29 - R: A Language and Environment for Statistical Computing. In: *R. Foundation for Statistical Computing*.

CONCLUSIONS

Summary and contributions

Although ED are well studied diseases, positive treatment outcome is hard to achieve most of the times. Usually these disorders have their onset during adolescence or early adulthood and that will negatively interfere with the normal development of adolescence and compromise life in the future, as they have a chronic course in many patients.

Some ED behaviours are ego-syntonic and they seem to have a protective role in life. Some patients with ED do not accept or even recognise having a disease. This makes motivation to treatment weak.

There are several psychological theories proposed to explain behaviour change.

One of the best models to explain change is the trans-theoretical model of change. This model has five stages of readiness to change: pre-contemplation, contemplation, preparation, action and maintenance. An individual's position on the cycle of change is dependent upon how important it is for him to change his behaviours and how confident he feels that he can do it.

There are instruments to access motivation to change in ED. The ANSOCQ and the BNSOCQ are self-report questionnaires designed, the first by Rieger, and the latter adapted from the ANSOCQ by Serrano, for this purpose. As there were no instruments for the AN Portuguese population, this instrument has been translated and a validation is taking place.

Also, it was important to determine (for the formation of the sample of this study) if patients followed for a long period of time showed a different motivation to change ED behaviours than those who began treatment later on. For this purpose fifty patients, with different times of follow-up, entered a study. In this study they fulfilled the ANSOCQ or BNSOCQ (self-report questionnaires that give us a measure of motivation to change ED behaviours). A linear regression was performed, and it was concluded that a history of previous treatments could not predict motivation to change in our sample (there are other studies that support this finding). This could be justified by the trans-theoretical model of change that states that progression through this cycle is rather spiral than linear, and patients can go through it several times before achieving maintenance.

One of the things that contribute the most for the success of treatment in any disease is the relationship between client and therapist. In one of our studies, we tested if the therapeutic alliance predicted an improvement in motivation to treatment along time. Specifically, we searched if there were differences between therapeutic alliance and stages of change at intake, after 6 months and after one-year follow-up. We concluded that ambivalence about treatment decreased over time, and at the end of the study half of our sample was working hard to change behaviours related to ED and was engaged in treatment.

Therapeutic alliance is a good predictor of change. When there is trust in the treatment and in the therapist and the client agrees on a plan, the possibility of having it implemented and having success is greater.

We know that family and the way parents raise their children have a crucial part in their emotional and social development. There are different parental styles of education, and some are more protective against psychopathology. The most protective one is the authoritative.

In ED literature, it is described that the most prevalent style is the neglectful.

Parental styles are based in dimensions such as demandingness, responsiveness and promotion of autonomy. Mothers and fathers have ways of educating their children and adolescents and the parental style is constant along the years, although in situations of crisis parents can adapt and behave differently.

In our population, we found that there were differences between fathers and mothers when we compared the dimensions. Mothers scored higher in all dimensions. We think that this is related to the fact that mothers are closer and interact more with their children and adolescents. Both Promotion of autonomy and Demandingness dimensions remained constant along time, but there were minor changes in Responsiveness, which decreases along time. It is said that parental styles remain constant, but it can be adapted to situations of crisis. As ED represent chronic conditions and families have more difficulty in dealing with them, they can show anger and tiredness and this can be interpreted by patients as lack of attention/fulfilment of needs.

We used a questionnaire (QEEP-R) in which a new dimension was introduced and it is being studied by Cruz and Ducharne – promotion of autonomy -, so we do not have a way to compare our population with others that have an ED.

ED, as mentioned earlier, are currently considered one of the most common chronic disorders, and they have strong co-morbidity with other disorders such as obsessive-compulsive disorder, anxiety disorders, affective disorders, among others. Sometimes it is difficult to know if symptoms are related to ED themselves and produced by changes linked to starvation, or even if they constitute independent disorders.

In one of our studies, we investigated the association between psychopathology and the severity of the ED illness, and the association between motivation for treatment, presence of psychopathology and ED's severity. We found that the greater the disturbed eating behaviours the less there is motivation to change, and patients with a stronger psychopathology presented more severe ED issues.

The last chapter of this thesis investigates which factors contribute to understanding motivation for recovery in ED. In literature, factors such as the severity of ED symptoms, the presence of depressive

and/or anxiety symptoms, low self-efficacy, BMI, age of patients, type of ED and relationship with family members and friends, among many others, have been implicated in motivation to change. Several authors have applied the trans-theoretical model of change to ED. This model was also chosen to understand change in our study.

We studied a population of 50 patients with ED (baseline) along 18 months, concerning various factors. The best models to explained existence of recovery and occurrence of change respectively included self-concept as a predictor of the former and the severity of the ED (EDE-Q) as a predictor of the latter.

One of the advantages of understanding and studying motivation and to identify factors that can promote it, is that it makes it possible to understand those diseases and to choose the best treatment for the patient, according to stage of change where he is.

Limitations of the study

Our sample size was rather small, and the ED groups were not equally represented. The AN group is larger than the others. This made it difficult to obtain statistical results concerning the comparison between them.

Also, it was not possible to have all patients present in all evaluation times, as some of them did not fill the questionnaires at a specific time and there were a few who gave up the study by various reasons.

Our AN sample is essentially constituted by restrictive patients, so we do not differentiate the restrictive and the purging sub-groups.

Although patients were followed for a period of 18 months, considering that these disorders have a long course and changes take a long time to occur, a longer follow-up would be warranted.

Also our sample is mainly formed by girls. Only one boy entered the study. So, it was not possible to test gender differences.

All questionnaires are self-reported. Some patients may have difficulty in recognising their illness and deny their symptoms. Also they can have a desire to be socially accepted by their accompanying doctor and their answers may not be a reflex of the real clinical situation.

Finally, one of the questionnaires that we have used was not yet validated for the Portuguese population, although a preliminary study was done and validation it taking place.

Clinical implications

One of the major points in knowing the stage of change in which a patient is (knowing how he feels about his disorder and if he is prepared to make changes), is that it allows us to choose the best treatment for that patient and improve treatment outcome.

Also, if we could identify factors that contribute to improve motivation to change behaviours related to the ED, we could directly intervene on them.

In the prevention field, some measures could be proposed, such as changing some educational rules that parents use to educate their children, improving self-image in adolescents and diminishing anxiety traits in children.

Direction for future research

A lot has to be done in the field of ED.

Understanding why some patients are more motivated to change behaviours and treat themselves than others is crucial to design the adequate therapeutic intervention and match it to the patient.

Studies with larger samples, with different genders and ages and in different cultural backgrounds should be done.

More accurate instruments should be created and used to evaluate this population.

Appendixes

During my Doctoral Programme the following communications and studies were presented in national and international conferences:

VIII Simpósio Nacional de Investigação em psicologia, Aveiro, Junho 2013

III Congresso dos Internos de Psiquiatria da Infância e da Adolescência
Outubro 2013
"Novas descobertas em Perturbações do comportamento alimentar" - Joana Saraiva
Communication

IX Congresso Nacional de Psiquiatria
Novembro 2013
"Este corpo em que habito" - Sofia Gomes, Sofia Leite, Joana Saraiva
Poster

XVI Congresso Anual APNEO "Desvios Nutricionais – A Epidemia do séc. XXI)
Porto 28 29 de Abril de 2014
"Obesidade e comorbilidade psicopatológica"
Communication

16ª. Congresso Mundial de Psiquiatria
2014
"Este corpo em que habito (imagem corporal na adolescência)"
Poster

"Imagem corporal, múltiplas influências", XXV Encontro de Psiquiatria da Infância e Adolescência,
Faro de 14 a 16 de Maio de 2014
"Imagem corporal, múltiplas influências"
Poster

Saraiva J, Guerra J, Mansilha H. Perturbações do Comportamento Alimentar II. In: Psicologia e Psiquiatria da Infância e Adolescência. 1a ed. Lidel; 2014. p. 241–61.

Book chapter

Moderadora de uma mesa redonda sobre patologia do comportamento alimentar no 7º. Encontro de medicina do Adolescente, Maio 2014

APPIA – XXIV Encontro da Associação Portuguesa de Psiquiatria da Infância e Adolescência

Vila Real, Maio 2015

"How I feel in my own body – self-reported problems in adolescents with eating disorders, using the YSR. Relationship with disorder severity and motivation to change."

Poster

ESCAP 2015 – 16º. Encontro Europeu de Psiquiatria da Infância e Adolescência,

Madrid, Junho 2015

"To evaluate the perception that a sample of adolescents with eating disorders have of the parental style used by their parents"

Poster

European Council on Eating Disorders – ECDE 2015 Meeting

Heidelberg, November 2015

"Do Therapeutic Relationship and Body Mass Index predict treatment outcome in Anorexia Nervosa? An Analysis Using Logistic Generalized Estimating Equations"

Poster

Descodificação dos comportamentos autolesivos sem intenção suicida – estudo qualitative das funções e significados na adolescência

Joana Jorge, Otília Queirós, Joana Saraiva: Análise Psicológica, vol 33, nº 2, Julho 2015

Adversity, emotion regulation, and non-suicidal self-injury in eating disorders

Ana Isabel Vieira, Sofia Ramalho, Isabel Brandão, Joana Saraiva & Sónia Gonçalves (2016): Eating Disorders

Paper