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Influence of motivation and clinical outcome in eating disorders

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Introduction. Our aim was to assess if the degree of motivation at the beginning of the treatment for eating disorders (ED) might have an influence on the clinical outcome at one year of follow-up.

Methods. 102 patients diagnosed of ED, following ED DSM-IV criteria, who initiated treatment at the hospital eating disorders unit, were included in the study. All the patients were examined with the structured interview SCID-I and numerous clinical and demographic variables were recorded. Before beginning eating disorders treatment, patients completed one questionnaire that assessed attitudes towards change in eating disorders (ACTA) and other questionnaires measuring eating and general psychopathology.

Results. At one year of follow-up, initial low scores on the «relapse» subscale predicted a greater weight recovery in patients with anorexia nervosa and a lower number of weekly binges in bulimic patients.

Conclusions. Attitude towards treatment at the beginning of a therapeutic program, mainly «feeling of relapse», is a significant prognostic factor for the therapeutic response.

Key words:
Eating disorders. Motivation towards change. Prognostic. Treatment.

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Influencia de la motivación en la evolución clínica de los trastornos del comportamiento alimentario

Introducción. Nuestro objetivo era valorar si en los pacientes con un trastorno del comportamiento alimentario (TCA) la motivación al inicio del tratamiento puede influir sobre la evolución clínica al año de seguimiento.

Métodos. En el estudio fueron incluidos 102 pacientes que acudieron para recibir tratamiento en una unidad hospitalaria de trastornos alimentarios y que reunían criterios de TCA del DSM-IV. Todos los pacientes fueron diagnosticados según la entrevista estructurada SCID-I y se registraron las variables socio-demográficas y clínicas. Asimismo, previamente a ser incorporados a nuestro programa de tratamiento completaron el Cuestionario de actitudes ante el cambio en los TCA (ACTA) y otros cuestionarios de psicopatología alimentaria y general.

Resultados. Bajas puntuaciones iniciales en la subescala de «recaída» predecían en las pacientes con anorexia una mayor recuperación ponderal y en las pacientes con bulimia se asociaban a un menor número de atracones semanales tras 1 año de seguimiento.

Conclusiones. La actitud del paciente al inicio de un programa terapéutico, especialmente la sensación de recaída, es un factor pronóstico importante en la respuesta terapéutica.

Palabras clave:
Trastornos del comportamiento alimentarios. Motivación frente al cambio. Pronóstico. Tratamiento.

INTRODUCTION

The first descriptions of anorexia nervosa already indicated a characteristic that has been maintained over the centuries: incongruity between disorder seriousness and involvement of the patient in its solution[1]. More than 10 % of those affected deny their disease[2]. Furthermore, in addition to limited disease awareness, one of the greatest difficulties in its treatment is that even once they have recognized the disorder, they lack involvement. In fact, the reason that the patients consult with an eating disorder (ED) is frequently secondary to family pressure or as a consequence of some physical symptom that leads them to request help in the health care services[3]. In addition, on the contrary to other psychiatric diseases, patients with ED consider some of their symptoms as «valuable» in their lives, although they may sometimes not be aware of these «positive effects» or of the ambivalence entailed in the solution of their problem[4]. This ambivalence may explain the resistance to therapeutic indications, premature drop-outs, or de-

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fiant and boycotting attitude towards the treatment programs. Thus, one of the greatest challenges in the management of patients with ED is to involve them in the change process. Knowing this process and establishing a therapeutic framework, stimulating the patient to adopt an active participation attitude, may be very important for the picture's final solution.

The attitude of resistance, or even more so, of ambivalence towards treatment suggests similarities with substance addict patients. Based on this analogue, it has been theorized that therapeutic approaches useful in the treatment of the latter could provide advantages in subjects with ED[5]. Prochaska developed the trans-theoretical model of change (TMC) to explain the therapeutic process and prognosis in the treatment of patients with addictive behaviors[6]. The model explains how voluntary change occurs and suggests that the persons use explicit or implicit strategies (change processes) to move over the different phases[7]. The TMC includes three dimensions: change stages (when?), change processes (how?) and change levels (what?). It identifies 5 change stages, according to different types of motivation and preparation for change: *a)* precontemplation: the subjects do not accept they have a problem or have to change their problem behavior; *b)* contemplation: they know they have a problem but still have not decided to change it; *c)* decision or preparation for change: they have made a decision to change their behaviors in a future time but still have not initiated the changes; *d)* action: the subjects began to change their habits, and *e)* maintenance: they have achieved and maintained the changes and the interventions should be basically oriented towards maintaining them[8]. Transition between the difference phases is sequential but not linear and may follow a spiral development. The individuals frequently may go back to previous stages before the problem behavior is finally eradicated. Thus, relapse has been considered by some authors as one more phase within the change process[9]. Relapse refers to the perception the subject has on deterioration, that is generally accompanied by reactivation of the symptoms associated to their «problem behavior.»

The change phases are accompanied by change processes (how the changes occur), that represent types of activity initiated or experienced by the subject to change their thoughts, affects or behaviors related with a specific problem. These change processes are present to a greater or lesser degree in the different change phases and are those that explain the passage between the different phases. Prochaska and DiClemente[10] identified 10 change processes. However, the relationship between change processes and phases has recently been criticized, questioning the specificity between different processes with specific change phases[11]. Other important variables that have been included in the change model analysis are those of «decision making» (assessment of the pros/cons of change)[12] and Bandura's concept of self-efficacy (feeling of one's own capacity to change)[13,14].

The central approach of the transtheoretical model (change phases) serves as an index of the patient's motivational state. That is, the different phases help to identify the moment each subject is in regarding the change of his/her disease behavior. In this model, an error between therapeutic intervention and motivational phase of the patient would lead to resistance[15]. Thus, the therapy would be more effective if the therapist has correctly identified the change phase of each problem behavior and adapts his/her interventions to it. In fact, if the ambivalence is not recognized and managed, it may lead to difficulties in the development of the therapeutic program[16]. Evaluation of the disposition to change should begin from the initial phase and continue during the entire therapy process.

The TMC has been applied to different behavior problems, as in the control of glycemia of diabetic patients[17], in weight loss[18], and in a wide range of other health problems[19]. Its prognostic validity has also been indicated in different psychiatric diseases, such as addictions and panic attacks[20]. Studies carried out in patients with ED not only confirm the utility of this model to understand the change process in these patients but also its prognostic utility[22,23]. The attitude that the patients adopt towards change in their problem behaviors and their involvement in treatment may be a relevant aspect in the final success. Adapting the treatments to the patient's change phase would influence the prognosis and could favor the establishment of some objectives that are appropriate to motivation for change of each patient[24].

Up to now, investigations on the impact of the change phases in the prognosis of ED patients have been scarce, since it requires adequate assessment instruments[25,26]. However, identifying the predictive factors in the response to treatment may help clinical management and increase knowledge on the efficacy of psychotherapeutic treatment[27]. The objective of our study was to assess the influence of motivation to treatment, identifying the change phases, in the clinical evolution of ED patients.

METHODS

The sample was made up of 102 subjects (101 women and 1 man) diagnosed of ED who were incorporated into the treatment program of the Eating Disorder Unit of the Ciudad Real Hospital during the years 2000 to 2003 and in whom a one year follow-up was done. Mean age of the patients included in the study was 23.61 SD, 7.64 years. With regards to maritol status, 28 were married (27.5 %) and the rest single. Most of the subjects 39 (38.2 %) had secondary studies, 31 (30.4 %) middle and upper level and 29 primary (28.4 %); 2 patient did not complete their primary studies. Regarding the diagnostic distribution, 34 subjects (33.3 %) had DSM-IV criteria of anorexia nervosa (An), 34 of bulimia (bn) and 34 (33.3 %). Eating Disorders not otherwise Specified (EDNOS). Most of the subjects sent to our unit had

already previously initiated treatment in another unspecialized health care site.

Instruments and procedure

All the subjects were interviewed using the diagnostic interview for DSM-IV criteria at the onset of the treatment. Those subjects who had an eating behavior disorder filled out the Attitudes towards Change in Eating Disorders (ACTA) questionnaire; the Spanish version of EAT-40 (Eating Attitudes Test)[28]; of EDI-2 (Eating Disorders Inventory)[29], of BITE (Bulimic Inventory Test Edinburgh)[30] and BSQ (Body Shape Questionnaire)[31]. We also administered other questionnaires to assess general psychopathology such as BDI (Beck Depression Inventory)[32] and the STAI (State-Trait Anxiety Inventory)[33].

The ACTA questionnaire has been elaborated and validated in our setting, following the algorithm of the Prochaska and DiClemente change process in the patients with an eating behavior disorder. The subjects should respond on their degree of involvement of cognitive, emotional, relationship and perceptual processes associated to change in these disorders on a Likert like scale of five values, that range from «no/never» to «yes/always». Separate scores are obtained for each one of the change subscales (precontemplation, contemplation, decision, action and maintenance) and a subscale related to the impression of worsening that the subject may have on his/her course (relapse). This questionnaire has shown high reliability, with an alpha coefficient for each one of the subscales that ranges from 0.74 to 0.90. Its construct validity and relationship with other psychopathological variables have been the object of a previous publication[34].

Weight control, purgative behaviors, and other alterations in eating habits were recorded through clinical interview with those responsible for the treatment. None of the participants required hospitalization during follow-up and the patients included in the study were incorporated to usual out-patient treatment that included: 6 psychoeducational group therapy sessions, 12 group therapy sessions with cognitive orientation, 4 family intervention sessions, 12 individual therapy sessions within a motivational framework, and 20 individual sessions with nursing from the unit for nutritional habit control. Psychopharmacological treatment was also associated in those subjects who had mood state disorders.

Statistical analysis

The statistical program SPSS for Windows version 10.0[35] was used for the data analysis. The Student's *t* test for related samples was applied to study the difference between the mean scores obtained in the variables at onset and one year later. The one-way variance analysis (ANOVA), with the Scheffé test for the post hoc comparisons, made it possible to study the differences between the diagnostic groups regarding the scores in the ACTA subscales. Finally, to analyze the predictive power of the ACTA subscales on the changes experiences for the clinical variables at one year of follow-up, the stepwise multiple regression analysis was used, the dependent variables of each analysis being the changes in weight, number of vomits and number of weekly binges. This analysis was applied separately in each diagnostic subgroup. Effect of age, disease duration and previous treatment time were controlled.

RESULTS

Clinical and psychopathological characteristics

Table 1 shows the mean scores of the different general psychopathology and eating psychopathology questionnaires and of other clinical variables obtained at the onset and after one year in the different diagnostic groups (table 1).

Table 2 shows the evolution of the ACTA scores. During a one year follow-up there was a significant statistical increase in the mean scores on the action and maintenance subscales and a significant decrease in the remaining subscales. Comparing the changes in the one year follow-up of the different subscales according to the diagnostic groups, it was found that patients with EDNOS had a significantly greater increase than patients with AN in the action subscale (ANOVA; F: 7.684; GL: 2; $p = 0.001$). Furthermore, the EDNOS had a significantly greater increase in the mean scores of the maintenance subscale than BN and AN (F: 5.50; GL: 2; $p = 0.005$). As expected, as the patients' eating psychopathology improved, the scores in the Action and maintenance phases were higher (they initiated and consolidated their achievements in the different disorder behaviors and symptoms). On the other hand, those patients in whom ED diagnosis was confirmed after the clinical interview, but who had no disease awareness or attitude of change had higher scores on the precontemplation and contemplation subscales that were also correlated with high scores in decision and the relapse subscale ($p < 0.01$) (table 2).

Predictive variables

In patients diagnosed of anorexia nervosa, low scores in Relapse predicted greater weight gain, even when the effect of the initial weight was adjusted (β: –0.391; 95 % CI: –0.636, –0.146; 28.3 % of the variance). On the contrary, high scores in relapse predicted a greater weight increase at one year of follow-up (β: –0.127; 95 % CI: –0.239, –0.014, 11.4 % of the variance; $p < 0.001$). In the patients with bulimia, high scores in the preparation subscale are associated with weight increase (β: 0.484; 95% CI: 0.079, 0.544; $p < 0.01$; 23.4 % of the variance) at one year of follow-up. Decrease in the number of binges is inversely related with the number of initial binges (β: –0.821; 95 % CI:

Table 1 Scores in the main clinical and psychopathological parameters

	AN		BN		EDNOS	
	t_1, SD	t_2	t_1	t_2	t_1	t_2
BMI	17.2 SD 2.0	18.9 SD 1.7[1]	25.8 SD 8.4	26.3 SD 8.5	23.5 SD 8.4	23.7 SD 7.8
Mean weight	43.5 SD 5.7	47.3 SD 5.0[1]	67.6 SD 22.6	68.6 SD 22.2	62.5 SD 23.4	63.5 SD 21.9
No. of vomits/week	0.77 SD 1.9	0.35 SD 0.8	7.5 SD 10.7	1.8 SD 5.2[2]	3.0 SD 7.2	0.21 SD 1-2[3]
Use of laxatives/week	0.00	0.25 SD 1.2	0.40 SD 1.4	0.0	1.5 SD 7.4	0.0
No. binges/week	0.31 SD 1.3	0.17 SD 0.6	4.4 SD 5.8	1.2 SD 16.3[2]	3.06 SD 8.3	0.0
EAT-40	46.9 SD 21.2	41.1 SD 24.6	43.3 SD 17.9	33.8 SD 16.3[2]	43.7 SD 24.0	36.3 SD 26.7
BITE	13.03 SD 8.2	11.9 SD 8.9	33.8 SD 9.5	26.1 SD 9.4[2]	20.0 SD 12	14.5 SD 10.6[3]
BDI	18.8 SD 10.7	14.7 SD 10.1[1]	23.5 SD 10.0	16.6 SD 9.6[2]	21.5 SD 8.9	15.1 SD 2.9[3]
St-STAI	30.0 SD 14.8	23.1 SD 12.3[1]	34.6 SD 11.4	26.2 SD 11.9[2]	32.9 SD 15	25.7 SD 14[3]

Student *t*-test for related samples: [1] Mean weight increase and Body Mass Index (BMI) statistically significant ($p < 0.001$) in AN; significant decrease in BDI and STAI. [2] Statistically significant decrease innumber of weekly vomits and binges in BN ($p < 0.001$) and in the questionnaires that evaluate psychopathology. [3] Statistically significant decrease in the number of weekly vomits and binges in EDNOS ($p < 0.05$). and in BITE, BDI and STAI ($p < 0.01$).

–0.991, –0.650; 77.7 % of the variance; $p < 0.001$). In addition, high scores in relapse predicted a greater number of initial binges (β: 0.369, 95 % CI: 0.154, 0.584; 14.9 % of the variance), independently of the scores on BITE, EAT, BDI or STAI. Finally, in patients with EDNOS, decrease in the number of binges during the treatment is inversely related with the number of initial binges.

CONCLUSIONS

The findings of our study confirm the relationship between attitude towards change and clinical outcome of the disorder. However, and on the contrary to other previous studies, our research identifies the perception of worsening that the patient has at the onset of the treatment program, i.e. high scores on the relapse subscale, as the attitude that best predicts the treatment response evaluated according to some clinical parameters. This finding has not been previously reported, possibly because relapse is not explored in most of the questionnaires that evaluate the stages of change. The importance of this relationship is stressed since it has greater prognostic relevance than the rest of the subscales that evaluate other attitudes. Previous publications have indicated the importance that attitude to change has in the prognosis of ED, but relapse has never been included as an aspect to be considered in the clinical course.

Table 2 Mean scores in the ACTA subscales at onset and year of follow-up. Student's *t* test for related samples

	Onset Mean SD	One year follow-up Mean SD	*p*
Precontemplation	12.30 SD 10.10	8.90 SD 7.84	0.000
Contemplation	18.52 SD 8.05	15.35 SD 7.81	0.000
Preparation	18.96 SD 8.11	16.55 SD 8.43	0.000
Action	24.48 SD 9.36	27.39 SD 6.70	0.000
Maintenance	13.78 SD 7.99	17.70 SD 9.63	0.000
Relapse	18.36 SD 11.76	15.76 SD 10.74	0.002

Other previous studies have identified an association between the initial phase of change and the therapeutic response, for example, that of Wolk and Devlin[36] in patients who were receiving interpersonal therapy for treatment of bulimia nervosa. Treasure, et al.[37] found that bulimic patients who were in the action phase at the onset of out-patient treatment had greater improvement in frequency of binges than those who were in the contemplation phase, although they found no differences in the decrease of compensatory behaviors. High scores in the action phase were also associated to greater therapeutic alliance. Previous studies of our group[38] have identified a clear relationship between change phases with evolution of eating psychopathology. High scores on the maintenance scale predict an improvement in the EAT-40, EDI-2 and BITE scores at one year of follow-up and also that high scores in the action subscale predict improvement in the BSQ scores. We also identified an association between high scores on the contemplation subscale and high scores in the BITE at one year of follow-up and between the decision scale and high scores in the subscales of introceptive awareness, maturity fear

and ascetism of EDI-2. The attitude that the patient has to the possibility of changing his/her pathological behaviors will be a decisive factor in the therapeutic response. In the present study, the clearest relationships between the change phases and clinical evolution of the disorder is centered in the Relapse phase. For some patients, Relapse could mean having feelings of incapacity and hopelessness towards the possibilities of success in solving the problem, which could be interpreted as a complication associated to the therapeutic program or to the clinical picture course. However, it could also be a marker of poor response that is found in some patients prior to the application of the therapeutic program. These patients would interpret the symptoms of their disease course as corresponding to a relapse or would show greater sensitivity to setbacks back in the evolution of their disorder which, somehow, could influence worse subsequent evolution.

The findings discovered by our group somehow stimulate the development of other studies that reply to these findings and consider the perception of the patient's worsening as an important aspect in the ED prognosis.

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