Attitudes towards change in eating disorders (ACTA). Development and psychometric properties

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El cuestionario de actitudes frente al cambio en los trastornos de la conducta alimentaria (ACTA). Desarrollo y propiedades psicométricas

Summary

Introduction. *The aim of the present study was the development of a self-reported instrument in Spanish to assess attitudes towards change in eating disorders (ACTA) and to analyze its reliability and validity.*

Methods. *The questionnaire was elaborated following the transtheoretical approach of stages of changes, proposed by Prochaska and DiClemente and using the clinical records systematically registered regarding patients cognitions, behaviors and emotions related to the disorder. It was administered to 186 patients who where diagnosed an eating disorder according DSM-IV criteria. Subsequently, the process of refinement and validation of the scale was initiated. Moreover, a set of self-reported instruments was used to assess the eating disorder psychopathology: the Eating Attitudes Test (EAT), the Bulimic Investigatory Test Edinburgh (BITE), the Eating Disorders Inventory (EDI-2) and the Body Shape Questionnaire (BSQ).*

Results. *The final version consisted of 59 items divided into six subscales: precontemplation, contemplation, determination, action, maintenance and relapse. All of them showed an internal consistency over 0.70 which corresponded to the six factor obtained after the factorial analysis. Furthermore, the subscales were logically correlated to each other and to the questionnaires measuring eating psychopathology.*

Conclusions. *The present results suggest that the ACTA be an easily administered, reliable and valid questionnaire, which could be used withinthe motivational approach. This could provide interesting information regarding the knowledge of the therapeutical process.*

Key words: *Eating disorders. Anorexia nervosa. Bulimia nervosa. Motivational enhancement therapy. Questionnaire validation. Motivation assessment. Attitude towards change. ACTA.*

Resumen

Introducción. *El objetivo del estudio era desarrollar un cuestionario en español para evaluar la* actitud frente al cambio en los trastornos de la conducta alimentaria (ACTA) *y analizar su fiabilidad y validez en una muestra de pacientes que sufren este trastorno.*

Métodos. *El cuestionario se elaboró siguiendo el modelo transteórico de los estados del cambio de Prochaska y DiClemente y a partir de información clínica registrada sistemáticamente acerca de las cogniciones, emociones y conductas del paciente relacionadas con el trastorno. Se administró a 186 pacientes diagnosticadas de algún trastorno alimentario según criterios del DSM-IV, iniciándose posteriormente el proceso de depuración y validación. Además se usaron otros cuestionarios autoaplicados para evaluar la psicopatología alimentaria, el* Eating Attitudes Test *(EAT),* Bulimic Investigatory Test Edinburgh *(BITE),* Eating Disorders Inventory *(EDI-2) y el* Body Shape Questionnaire *(BSQ).*

Resultados. *La versión final constaba de 59 ítems distribuidos en seis subescalas: precontemplación, contemplación, decisión, acción, mantenimiento y recaída, todas ellas con una consistencia interna mayor de 0,70 y que se correspondían de forma bastante aproximada con los seis factores extraídos en el análisis factorial. Además las subescalas se correlacionaban de forma lógica entre sí y con los cuestionarios que miden la psicopatología alimentaria.*

Conclusiones. *Los presentes resultados sugieren que el ACTA es un instrumento de fácil administración con adecuada fiabilidad y validez, cuyo empleo dentro del enfoque motivacional podría aportar información de utilidad en cuanto al conocimiento del proceso terapéutico.*

Palabras clave: *Trastornos de la conducta alimentaria. Anorexia nerviosa. Bulimia nerviosa. Terapia motivacional. Validación de cuestionarios. Evaluación de la motivación. Actitud frente al cambio. ACTA.*

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INTRODUCTION

Motivation to treatment in patients who suffer eating disorder (ED) is a feature which has attracted great interest in recent years and which can be relevant in

regard to prognosis and response to treatment[1-5]. However, analysis and assessment of motivation still pose many conceptual and methodological difficulties.

Miller and Rollnick operatively define motivation as *a state of willingness or desire to change, which can fluctuate and is influenced by many factors but which can increase the probability for a person to initiate, continue, and commit oneself to a specific strategy for change*[6]. These authors used the transtheoretical model of change proposed by Prochaska and DiClemente. According to this model, in order for their behavior to be changed, the individuals should pass through five or six *states of change*: 1. *precontemplation*: they do not admit to have a problem or need for change; 2. *contemplation*: they know that they have a problem, but still have not decided to change. This phase is characterized by extreme ambivalence, and continuous consideration of pros and cons of abandoning the problematic behavior; 3. *decision or preparation*: there is a future determination to change, but it still has not been initiated; 4. *action*: the individual begins to modify his/her habits; 5. *maintenance*: change is achieved, and 6. *relapse:* it is considered as one more phase within the process leading to change. During the states of change, different change processes activities which favor the progression through these states are manifested. The authors identify 10 change processes[7]. According to this approach, not all *change process* is lineal, since the different states are alternating and can follow a «swinging door» pattern until culminating with the final change of the dysfunctional behavior. The separation of each phase is not clear. In fact, the same patient can simultaneously show thoughts or behaviors characteristic of different stages, and even more, the alternation of each of them can be extremely fast, being influenced immediately by variables of the setting. This includes methodological difficulties when instruments are designed to help analyze motivation to treatment in patients with ED.

Up to now, most of the instruments used to assess motivation to change in eating behavior disorders have been adaptations of questionnaires designed for addictive behaviors and other problem behaviors[8-10]. Among few questionnaires elaborated originally for ED, we find the ANSOCQ (the anorexia nervosa stages of change questionnaire)[5], specific for anorexia nervosa and the RMI (the readiness and motivation interview)[11] interactive structured interview which requires training. The existence of rigorous validation studies in our language of any of these is not known.

The objective of this present investigation was to elaborate a questionnaire on the Attitudes towards change in patients with eating behavior disorders (ACTA) in Spanish, based on the theoretical approach of the phases of changes proposed by Prochaska and DiClemente, and to initiate the validation process, analyzing psychometric properties of the questionnaire as well as the structure of its components.

MATERIAL AND METHODS

Elaboration of the questionnaire

The elaboration of the questionnaire was the result of the systematic examination of the change phases in patients who received ED treatment. The different attitudes, cognitions, emotions or type of relationships established regarding the disorder or treatment were typified and classified in some of the change phases. The information was obtained through the clinical interview and follow-up of the patient by an experienced team which knew the model of the change processes. This made it possible to make a systematic registry and then to write a preliminary questionnaire, following the recommendations found in the relevant bibliography on methodological aspects related to health measures[12].

The initial questionnaire was made up of 74 detailed ordinal questions on five levels of Likert like responses[13]. The grading of each one of the questions in this scale with five possible scores was better adjusted to the variability of the change processes. The situations posed were not limited to «all/nothing» type assessments, but rather were more or less lasting states that could range between both extremes. Thus, in the questionnaire, the subject was requested to grade his/her response based on the frequency with which the experience in question was assessed («No/never (0), Rarely (1), Sometimes (2), Frequently (3) or Yes/always (4)»). We established a central value («sometimes») in order to be able to group not very specific habits or those which could suppose a bias, both if they shifted towards the columns that indicated their presence («Yes/always» or «Frequently») as well as if they did so towards those indicating their absence («No/never» or «Rarely»).

Considering the variability towards significant facts in the patient setting that could temporally modify the attitudes towards change of a subject and, in an attempt to decrease the subjectivity in their responses, it was specified that «their situation in recent days was of interest». The frequent presence of a specific behavior received the maximum score (4) and its absence the least (0). In five questions, the score was the opposite. On the other hand, it could occur that the situation described did not adjust well to the «present» state of the surveyed person. In these cases, they was recommended to indicate the box corresponding to «No/never».

Description of the subscales

The *precontemplation* subscale, initially made up of 12 items, refers to the refusal to consider the presence of a disease. Discomforts or therapeutic recommendations are attributed to misunderstandings or erroneous situations, but the possibility of a probable diagnosis of eating disorder is never accepted. Using 14 initial items, the *contemplation* subscale reflects a state in which the subject recognizes his/her eating problem.

He/she acquires the awareness of the existence of the problem, although its importance can be underevaluated or a true disorder may not be admitted. The subject shows no determination to begin to correct it. The Decision subscale is often undistinguishable from the contemplation stage in some subjects. As it has been previously mentioned, the difference is found in the fact that «a date has been given» to the onset of the change. The subscale was also initially made up of 14 questions. The *action* subscale reflects the change in different areas: cognitive (positive thoughts towards the resolution of the disorder), behavior (change in habits for other more healthy ones), and affective (the problem is perceived as an unpleasant fact that must be modified). This scale was initially made up of 16 questions. The *maintenance* subscale evaluates the stability of the achievements obtained in the action phase. This stage also overlaps greatly with the previous phase and is made up of 10 questions. Finally, the behavior of the *relapse* subscale is independent from that of the other scales. It can show different scores not related with the phase in which the subject is found. This subscale measures the perception the subject has of the change process, regardless of his/her motivation state. It is a subjective assessment of the worsening that the interviewed subject may experience. There are 7 questions and none is scored in the opposite sense.

Procedure

The study was performed in three stages:

— *Stage 1.* To study the validity of the content, the initial version was reviewed by some experts. A pilot study was performed to assess the viability of the questionnaire which was distributed among a group of patients and the normal population. They were all asked if the questions were clear and comprehensible in order to reduce the questions the understanding of which was low. For this phase of the study, 10 more questions which were not fully comprehensible were added to the initial questions of the questionnaire, in order to control the possibility for the individuals to indicate their understanding of the questions without the carefull consideration of their contents. The subjects who said that they understood more than 50% of these incomprehensible questions were excluded from the analysis.

— *Stage 2.* The scale was administered to a sample of patients with EBD to calculate the validity internal consistency and reliability of the construct, and it was re-administered after two weeks to calculate the test-retest reliability.

— *Stage 3.* It consists of the longitudinal study of the sample in order to assess its prognostic validity. The preliminary findings were presented in another paper.

Subjects

The sample was made up of 186 patients who came to receive treatment in the Eating Behavior Disorders Unit of the Hospital Complex of Ciudad Real consecutively during the years 2000 and 2001. Mean age was 22.38 ± 6.83, and the sample was predominately made up of women (97.3%). Most had secondary studies (n = 86, 46.2%), 44 (23.7%) primary studies, 42 (22.6%) technical studies and 8 (4.3%) university studies. One patient did not finish primary school. In regards to civil status, most 112 (60.2%), were single without a partner, 41 (22%) had a boyfriend/girlfriend, 24 (12.9%) were married, 2 (1.1%) divorced with a new partner and 1 (0.5%) divorced without a partner. The diagnoses which they received, according to the DSM-IV criteria[14] were, by order of frequency: eating disorder not otherwise specified (EDNOS: 67, 36%), purgative bulimia (PB: 58, 31.2%), restrictive anorexia (RA: 34, 18.3%), purgative anorexia (PA:14, 7.5%) and non-purgative bulimia (NPB: 13.7%). Mean evolution time of the disorder was 54.67 months (range: 2 to 300), somewhat more than half of the patients initiating the treatment at this time (n = 104, 55.9%). Forty patients (21.5%) had undergone some previous treatment one to five years before, 24 (12.9%) in the previous year and 18 (9.7%) more than 5 years before.

None of the patients included presented physical complications associated to their nutritional state (obesity, diabetes mellitus or lipid disorders) or other organic disorders which required specific care or treatment. Furthermore, patients who presented moderate or serious depressive symptoms, symptoms of intense anxiety or other psychopathology other than their eating disorder were excluded. None of the patients was either included in another treatment program other than that performed in our center, all the therapeutic either interventions, conconmitant drug treatment and changes in their treatment were recorded in their clinical records.

Instruments

The patients were assessed by an experienced psychiatrist and were diagnosed according to the DSM-IV criteria for eating disorders (ED). As part of the examination, a semistructured questionnaire on socio-demographic and clinical variables was administered. A series of self-administered questionnaires for detection of eating psychopathology was also used:

EAT-40. Eating attitudes test[15] has been validated for the Spanish population[16]. It assesses different symptoms related with anorexia, analyzing three factors: oral control, diet and bulimia. It also provides a severity index of the disorder. The scores can range from 0 to 120, 30 being the cut off point for the risk population.

BITE. The Spanish version of the *bulimic investigatory test Edinburgh* was used[17,18]. It has 33 items that identify symptoms and seriousness of bulimic behaviors using two subscales. Scores over or equal to 20 indicate abnormal eating pattern and presence of binging behavior and thus a high probability of the diagnosis of bulimia.

EDI-2. The *eating disorder inventory* is a self-administered questionnaire which assesses 11 different scales related with eating disorders. The original instrument[19] included three scales evaluating attitudes and behaviors related with food and body image and five other more general ones referring to clinically relevant psychological traits (inefficacy, perfectionism, interpersonal distrust, interoceptive awareness and fear of maturity). The revised version (EDI-2) validated in Spanish[20] adds three other scales (asceticism, impulsivity and social insecurity).

BSQ. The *body shape questionnaire*[21,22] is a self-administered questionnaire which evaluates degree of dissatisfaction with the body image, its cut off point being 105 point.

Statistical analysis

Purging of the subscales was performed by a homogeneity test and its reliability was analyzed with Cronbach's alpha coefficient. Reproducibility was assessed with the intraclass correlation coefficient. To analyze the internal structure (construct validity) of the scale, the factorial analysis was used with the method of principal components and oblimin rotation. To extract factors, the *a priori* criterion was used, in order to check if the factorial structure of the questionnaire corresponded to the six previously described subescales. With an 0.05 α significance level and 80% potency, factorial loads greater than or equal to ± 0.40 were chosen for inclusion of items in a factor. When an item presented loads over 0.40 for two factors, it was included in that having the highest score. On the other hand, in some case, a factorial load over 0.30 was considered acceptable when an item could not be included in any of the factors using the 0.40 criterion. The statistical analysis was performed by means of the SPSS V. 10.0 program for Windows[23].

RESULTS

Purging and reliability of the scale

Purging of each subscale was performed by excluding the items haring a low correlation with the total score (low homogeneity) and when their elimination improved the total reliability of the subscale. Equally, the elements whose correlation with its own subscale was greater than with any other scale were maintained. Table 1 shows the alpha reliability of each subscale before and after eliminating the items which correlated less. Of the 74 initial items, 15 were eliminated, 59 items (appendix 1) finally remaining. Internal consistency coefficients obtained in this sample were high (>0.72; p<0.001) for all the subscales, indicating adequate homogeneity between the items which made them up.

Table 1 also shows the intraclass correlation coefficients which measure the test-retest reliability of the subscales of the questionnaire. These coefficients were generally ≥ 0.72 except for the action (0.6411) and relapse (0.6899) subscales.

Structural validation of the scale (construct validity)

The correlation matrix of the 59 items which were included in the simplified scale showed an 0.816 Kaiser-Meyer-Olkin index of sample adequacy, which indicates high intercorrelation, and is thus indicative of the factorial analysis being useful technique. Barlett's test of sphericity indicated that the determinant of the correlations matrix was significantly different from one (p < 0.001), therefore the factorial analysis of the items makes sense. In the variance analysis, using the method of principal components with oblimin rotation, it is seen that the 6 factors obtained explained 52.217% of the variance. Table 2 shows the structure matrix of the components, as well as the self-value and percentage of the variance explained by each of the six factors. All the items of the relapse (R) subscale presented high coordinate values for the first factor, which explains the 22.63% of the variance. Furthermore, all the items of the precontemplation (P) subscale presented elevated values for the second factor, which explains 10.60% of the variance and all the items of the action (A) subscale presented

TABLE 1. Coefficient of Cronbach α internal consistency and intraclass correlationn for the subscales of the ACTA questionnaire

	Initial Cronbach α	*Items eliminated*	*Final Cronbach α*	*Test-retest*
Precontemplation	α 12 items = 0.8526	13, 19	0.8859	0.7827
Contemplation	α 14 items = 0.7399	1, 8, 73	0.7429	0.8411
Decision	α 14 items = 0.7768	5, 14, 17	0.7851	0.8644
Action	α 16 items = 0.8084	25, 28, 39, 45, 51, 66	0.8663	0.6411
Maintenance	α 10 items = 0.9007	None	0.9007	0.8813
Relapse	α 7 items = 0.8785	None	0.8785	0.7445

APPENDIX 1. ACTA

Instructions

Below you will find a series of situations, thoughts or experiences which can be usual for you. Think about each of them and put an X mark in the box which corresponds best to *your situation in the last few days.*

It is possible that many of the experiences described *do not adapt well* to your present state. In this case, it is *preferable* for you to mark the column corresponding to «*no/never*».

	No/ never	*Rarely*	*Some-times*	*Frequently*	*Yes/ always*
1. There are times when I manage to have no thoughts about food	☐	☐	☐	☐	☐
2. I have no problem, all I want is to be left alone	☐	☐	☐	☐	☐
3. I can eat something «extra» thinking about overcoming my disease	☐	☐	☐	☐	☐
4. The effect food produces in my body terrifies me	☐	☐	☐	☐	☐
5. I can be relaxed and happy even when I have to eat in public	☐	☐	☐	☐	☐
6. I can get dressed without feeling anxious about how my clothes look	☐	☐	☐	☐	☐
7. Even if they insist, I am not going to change any of my eating habits	☐	☐	☐	☐	☐
8. Now I can say that I have overcome this disease	☐	☐	☐	☐	☐
9. In my mind, there are two persons, one the patient who ALWAYS dominates me and the other, the healthy person	☐	☐	☐	☐	☐
10. I can look at my obsessions as something that belongs to the past	☐	☐	☐	☐	☐
11. The others are exaggerating everything occurring to me	☐	☐	☐	☐	☐
12. To go out with my friends, I am influenced by whether we are going to eat out or not	☐	☐	☐	☐	☐
13. I doubt whether the others are right regarding my problem	☐	☐	☐	☐	☐
14. I would like to be left alone regarding my weight and food	☐	☐	☐	☐	☐
15. Eating time scares me	☐	☐	☐	☐	☐
16. I am not ill, I only don't want to be fat	☐	☐	☐	☐	☐
17. Although I want to, I cannot change my eating habits	☐	☐	☐	☐	☐
18. After being better, my obsessions with food have returned	☐	☐	☐	☐	☐
19. I would like to overcome my obsessions, but without changing my eating habits	☐	☐	☐	☐	☐
20. I hope that someday people will tire of telling me I am ill and need to go to the doctor's	☐	☐	☐	☐	☐
21. I can finally say that I am cured	☐	☐	☐	☐	☐
22. I have started to change my eating habits	☐	☐	☐	☐	☐
23. I depend on others start changing my eating behavior	☐	☐	☐	☐	☐
24. I have started to feel afraid again in regard to food or to binge eating and vomiting	☐	☐	☐	☐	☐
25. I would feel worse and worse if my eating problem continued	☐	☐	☐	☐	☐
26. I am trying to do what you tell me to be cured	☐	☐	☐	☐	☐
27. I attempt to avoid situations that obstruct my being cured	☐	☐	☐	☐	☐
28. I can eat everything without feeling any mistrust	☐	☐	☐	☐	☐
29. Not now, but some day I will have to decide to get rid of my problem	☐	☐	☐	☐	☐
30. I have doubts on whether I am really ill	☐	☐	☐	☐	☐
31. In future, I would like to begin to solve my eating problems	☐	☐	☐	☐	☐
32. I am not going to change my eating habits because my doctor or family tells me to	☐	☐	☐	☐	☐
33. I still have not decided, but if I wanted to, I would begin to do what I am told to do	☐	☐	☐	☐	☐
34. I am concerned about my health being affected by my eating habits, but I will change	☐	☐	☐	☐	☐

APPENDIX 1. ACTA (Continuation)

	No/ never	*Rarely*	*Some-times*	*Frequently*	*Yes/ always*
35. I read all the information I can to help me get cured	☐	☐	☐	☐	☐
36. Although I still have not done so, I know what I would have to do in order to solve my disorder	☐	☐	☐	☐	☐
37. For some time, I have been more obsessed again with my physical appearance	☐	☐	☐	☐	☐
38. I am totally dominated by my obsessions	☐	☐	☐	☐	☐
39. There is no reason why I have to change my eating habits, they belong to my way of life	☐	☐	☐	☐	☐
40. I would have to begin to forget my problem	☐	☐	☐	☐	☐
41. I was better, but I am concerned again with my diet and physical appearance	☐	☐	☐	☐	☐
42. It is difficult for me to change my behavior, but I continue to make an effort to achieve it	☐	☐	☐	☐	☐
43. Later on, I will begin to eat as I am asked to	☐	☐	☐	☐	☐
44. To solve my obsessions I have changed some customs	☐	☐	☐	☐	☐
45. I think that my present way of eating is dangerous	☐	☐	☐	☐	☐
46. I am happy when I can dominate my obsessions	☐	☐	☐	☐	☐
47. I make an effort in small details to overcome m problem	☐	☐	☐	☐	☐
48. Fear of gaining weight paralyzes me to be able to change my diet	☐	☐	☐	☐	☐
49. I feel like I did at the beginning of my disease	☐	☐	☐	☐	☐
50. To feel better, someday I will begin to solve my problem	☐	☐	☐	☐	☐
51. Now I am concerned again more than before that I can gain weight	☐	☐	☐	☐	☐
52. I am pleased by any progress that improves my disease	☐	☐	☐	☐	☐
53. I wonder if the solution to my condition would be to lose weight	☐	☐	☐	☐	☐
54. I want to get rid of this problem, but I still do not feel strong enough to overcome it	☐	☐	☐	☐	☐
55. I can continue to eat everything or to not have binges or vomiting	☐	☐	☐	☐	☐
56. It is absurd that they want to make me change my eating habits	☐	☐	☐	☐	☐
57. Although I know that it is for my own good, I do not want to begin to fight against my problem yet	☐	☐	☐	☐	☐
58. I thought that I had been cured, but I have gotten worse again	☐	☐	☐	☐	☐
59. I have no health problem, I only like controlling my weight	☐	☐	☐	☐	☐

high loads for the fifth factor, which explained 3.24% of the variance. Most of the items of the decision subscale presented elevated loads for the third factor which represented 8.774% of the variance. The items corresponding to the contemplation subscale presented elevated loads for the third and fourth factor. Finally, the items of the main (M) scale presented elevated loads, predominantly for the sixth factor. Alterwards, other possible models were analyzed. Inclusion of new factors did not facilitate the appearance of more differentiated factors than the model of six and did so with factors having a limited number of items difficult to interpret. Inclusion of five factors did not contribute to explaining the information. Summing up, the results indicate that the factors identified as first, second and fifth corresponded to the previously defined subscales from the theoretical-clinical point of view as: precontemplation, action and relapse. The sixth factor corresponded very closely to the maintenance subscale. The contemplation subscale was more difficult to define than the decision subscale.

Descriptive statistics and intercorrelations of the subscales

The total sample presented higher mean scores in the action subscale followed by, in this order, decision, relapse, contemplation, maintenance and precontemplation (table 3). Although the patients scored higher in some of the states of change, they also tended to show elevated scores in other related subscales, as indicated by the Pearson correlation coefficients shown in table 4. As it was to be expected, a moderate/high positive correlation was found between the contemplation, decision

TABLE 2. Structure matrix of the components

1 (self-value: 13.58; 22.63% of the variance)			*2 (self-value: 6.36; 10.60% of the variance)*			*3 (self-value: 5,26; 8.77% of the variance)*		
Variable	*Load*	*Scale*	*Variable*	*Load*	*Scale*	*Variable*	*Load*	*Scale*
49	0.821	R	70	–0.789	P	20	0.405	C
50	0.752	C	42	–0.732	P	41	0.767	D
54	0.751	R	52	–0.724	P	63	0.725	D
61	0.716	D	74	–0.616	P	43	0.700	C
64	0.690	R	3	–0.577	P	56	0.674	C
24	0.689	D	71	–0.564	D	44	0.661	D
26	0.667	R	10	–0.499	P	38	0.620	C
33	0.667	R	23	–0.367	P	48	0.575	D
6	0.658	C	29	–0.503	P	40	0.433	C
62	0.637	R	16	–0.458	P	53	0.405	D
72	0.572	R	21	–0.402	P	68	0.362	D
4 (self-value: 2.40; 4.00% of the variance)			*5 (self-value: 1.94; 3.23% of the variance)*			*6 (self-value: 1.79; 2.98% of the variance)*		
Variable	*Load*	*Scale*	*Variable*	*Load*	*Scale*	*Variable*	*Load*	*Scale*
67	0.366	C	60	0.790	A	37	0.549	M
12	–0.545	C	36	0.753	A	18	0.511	M
32	–0.513	D	57	0.716	A	22	0.705	M
58	0.426	C	65	0.682	A	7	0.575	M
			31	0.667	A	9	0.440	M
			59	0.651	A			
			35	0.363	A			
			55	0.626	A			
			47	0.532	A			
			4	0.459	A			
			2	0.441	M			
			15	0.502	M			
			11	0.445	M			
			69	0.437	M			

P: precontemplation; C: contemplation; D: decision; A: action; M: maintenance; R: relapse.

and relapse subscales and a moderate inverse correlation between the maintenance subscale and those of contemplation and decision. Furthermore, the action subscale was correlated inversely with precontemplation and relapse and directly with maintenance.

Convergent and discriminant validity

Since other questionnaires validated in Spanish were not available to assess the motivational state at the time when the study was performed, the convergent validity was studied by analyzing the relationship between the ACTA subscales with other measurements that this instrument could supposedly be related with, such as eating psychopathology. In general lines, the results revealed patterns consistent with expectations. In the first place, it must be stated that a high inverse correlation was found between the maintenance subscale with the EAT ($r = 0.817$; $p < 0.01$), with the subscale to thinness of the EDI ($r = -0.729$; $p < 0.01$) and with the BSQ ($r = -0.530$), as well as moderate inverse correlations with the remaining EDI and BITE subscales. Thus, the patients who scored high on the maintenance subscale maintained

TABLE 3. Descriptive statistics of the ACTA subscales

Subscale	*Mean*	*95% CI*	*SD*	*Range*	*Interquartile range*	*Skewness*	*Kurtosis*
Action	24.05	23.06-25.03	6.8	2.5-4.0	7.5	–0.534	0.381
Decision	21.47	20.44-22.51	7.1	0-38.6	7.8	–0.503	0.337
Relapse	20.15	20.15-18.54	11.1	0-40	15.72	–0.265	–0.846
Contemplation	18.96	17.91-20.00	7.2	0-32.8	10.00	–0.489	–0.301
Maintenance	15.01	13.60-16.42	9.7	0-39	14.00	0.589	–0.628
Precontemplation	13.90	12.67-15.13	8.4	0-34.2	12.29	0.569	–0.414

TABLE 4. Intercorrelations between ACTA subscales

Subscale	*Precontemplation*	*Contemplation*	*Decision*	*Action*	*Maintenance*	*Relapse*
Precontemplation	1.000	0.397**	0.367**	–0.331**	–0.245**	0.310
Sig R (bilat)		0.000	0.000	0.000	0.001	0.000
Contemplation	0.397**	1.000	0.799**	0.009	–0.514	0.678**
Sig R (bilat)	0.000		0.000	0.900	0.000	0.000
Decision	0.367**	0.799**	1.000	0.132	–0.437**	0.631**
Sig R (bilat)	0.000	0.000		0.073	0.000	0.000
Action	0.331**	0.009	0.132	1.000	–0.387**	0.157**
R sig (bilat)	0.000	0.900	0.073	0.000	0.000	0.033
Maintenance	–0.245*	–0.514**	–0.437**	0.387**	1.000	–0.657**
Sig R (bilat)	0.001	0.000	0.000	0.000		0.000
Relapse	0.310**	0.678**	0.631**	–0.157**	–0.657**	1.000
Sig S (bilat)	0.000	0.000	0.000	0.033	0.000	

* The correlation is significant at the 0.05 level (bilateral). ** The correlation is significant at the 0.01 level (bilateral);

low scores on the questionnaires which assess eating psychopathology. The action subscale also showed small and moderate inverse correlations with the BSQ and the EAT, BITE and EDI subscales. On the contrary, the relapse subscale was correlated with EAT, BITE, BSQ and the tendency to thinness of the EDI in a highly positive way. The correlation went from small to moderate with the remaining EDI subscales except perfectionism, with which there was no correlation. The correlation pattern was similar for the contemplation and decision subscales, this being lower for the precontemplation one.

In the variance analysis, no influence of the diagnosis on the scores in different subscales was found, adjusting the effect of age and evolution time of the disorder. Since the questionnaire was designed to assess attitude to change regarding a pathological behavior, no comparison with the healthy population was performed .

DISCUSSION

In the present paper, the psychometric properties and findings of interest for the validation of the ACTA, the first instrument developed in Spanish that assesses Attitude towards change in patients with eating disorders, are explained. On the contrary to previous questionnaires[8-10], the ACTA has the advantage of being specifically elaborated for ED. It is self-administered, which is considered by some authors as a disadvantage when evaluating certain complex behaviors, because it is sometimes difficult to determine what symptom the patient has in mind when filling in the questionnaire[24]. However, it has the advantage at bond easy to apply and thus is systematically used in the initial evaluation and in the later stages of the treatment. Knowing the attitude towards change in the different times of the therapy allows for having a better understanding of what the situation of the patient is. Thus, it is a valuable tool in the clinical decision making process and so improves the therapeutic results. For example, an exclusively cognitive-behavior approach applied during a phase in which the patient has still not contemplated the idea of change has many possibilities of failing. Thus, examining motivation allows for a better adaptation of the interventions.

As it has been previously described, the questions on the scale arose from the clinical experience with patients diagnosed some ED and within the viewpoint of the states of change described by Prochaska and DiClemente[7]. In agreement with it, six subscales were defined: precontemplation, contemplation, decision, action and relapse, whose items demonstrated an elevated homogeneity, that is a high internal consistency. In addition, four of the six factors extracted from the factorial analysis corresponded very closely to the subscales defined from the theoretical-clinical point of view. It was more difficult to separate the contemplation subscale from the decision one, which confirms the difficulty of exactly measuring the two stages whose conceptual independence is debated. However, they were maintained separately because it is jet to be interesting to consider the difference, basically found in the establishment of a period to initiate the action.

As it was expected, in regard the relationship with eating psychopathology, the patients who scored high in contemplation, decision and/or relapse presented more altered eating behavior, greater psychopathology and dissatisfaction with their body image. On the contrary, those who were in the action and maintenance phase showed less alteration on the questionnaires on eating psychopathology. This supplies information in regard to the convergent validity. The diagnosis did not influence the motivational state. To complete the study on the convergent validity, it would be interesting to compare the scores of the ACTA with other questionnaires that evaluate motivation, if these were validated in a future investigation.

The present study faced many methodological difficulties, among them the fact that the patients can be in different phases of change for very different problem behaviors (for example, a purgative anorexic subject may be in the decision phase to eliminate vomiting behaviors but in the precontemplation phase for the malnutrition

stage). Other investigators have attem-pted to obviate this difficulty using different questionnaires according to the subtype of eating disorder, or through clinical interview on the different symptoms[11]. The problem has been tried to be solved using generic questions on the eating disorder, or recommending the response of «No/never» when the situation does not specifically describe patients problem. Thus, the objective of the present questionnaire is to assess a general attitude, an approach to the motivational state that the patient has towards his/her problem, whose information should be taken as a whole. This idea should also be applied to the interpretation of the different subscales. The characteristics of the process of change itself proves that when there are high scores on some of the subscales, there are also high scores in the related subscales. Thus, the patients who score high in contemplation tend to do so as well in decision and to score low in maintenance. Those who score high in action also do so in maintenance, with a low score in precontemplation and relapse. Thus, the final information of the questionnaire should not be interpreted categorically, but rather as a whole, considering the score of the rest of the subscales.

Finally, the results of this study suggest that the ACTA be an instrument easy to administer, reliable and valid for the examination of motivation in ED patients. It very closely reflects the theoretical constructs it tries to measure and they correlate logically with the scales assessing eating psychopathology. Its use should be integrated within a more general context that considers the study of motivation as an essential part of the therapeutic planning. All this could supply for interesting information, useful in regard to the prognosis or to the study of variables associated to the passage from one motivational state to another.

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