Social and Body Self-esteem in Adolescents with Eating Disorders

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ABSTRACT

The aim of the present study was to analyze social and body self-esteem in adolescents with eating disorders and to assess the psychometric properties of the SEED (Self-esteem in Eating Disorders), a self-report questionnaire designed specifically to evaluate these variables. The SEED was used to compare social and body self-esteem in 170 eating disorder adolescent patients, 115 with anorexia nervosa (mean age 15.6), 55 with bulimia nervosa (mean age 16.2) and 359 schoolgirls from the general population (mean age 14.9) The SEED demonstrated good internal consistency (Cronbach alpha for eating disordered patients= .94 and for general population= .87). One week test-retest reliability was also adequate both in eating disorder patients (r= .77) and in girls from the general population (r= .86). Factor analysis yielded two factors which explained the 59% of the variance. The difference between the mean scores of the girls from the general population and the anorexic patients on one hand and the bulimics on the other was statistically significant (p<.001). There were no statistically significant differences between anorexic and bulimic patients. The differences between both anorexic and bulimic patients and girls of the comparison group in the two factors obtained in the factor analysis were highly significant (p<.001). A cut-off point of 15 gave a sensitivity of 75.9% and a specificity of 86.6% in the classification of subjects as eating disorder patients or not. The SEED showed adequate internal and test-retest reliabilities. Eating disorder adolescent patients have lower social and body self-esteem than adolescents from the general population.
Key words: body self-esteem, social self-esteem, adolescents, eating disorders.

RESUMEN

Autoestima social y corporal en sujetos con trastornos de la alimentación. El objetivo del presente estudio fue analizar la autoestima social y corporal en adolescentes con trastornos de la alimentación y evaluar las propiedades psicométricas del SEED (Self-esteem in Eating Disorders), un cuestionario autoadministrado diseñado específicamente para evaluar estas variables. Se utilizó el SEED para comparar la autoestima social y corporal en 170 pacientes adolescentes con trastornos de la alimentación, 115 con anorexia nerviosa (media de edad 15,6), 55 con bulimia nerviosa (media de edad 16,2) y 359 chicas de la población general (media de edad 14,9). El SEED demostró una buena consistencia interna (alfa de Cronbach para los pacientes alimentarios= 0,94 y para la población general= 0,87). La fiabilidad test-retest tras una semana fue también adecuada tanto en pacientes con trastorno de la alimentación (r= 0,77) como en chicas de la población general (r= 0,86). El análisis factorial produjo dos factores que explicaban el 59% de la varianza. Las diferencias entre las puntuaciones medias obtenidas por las chicas de la población general

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y las paciente anoréxicas por un lado y las bulímicas por otro, fueron estadísticamente significativas (p<0,001). No aparecieron diferencias significativas entre las paciente anoréxicas y las bulímicas. Las diferencias entre las pacientes anoréxicas y bulímicas por un lado y las chicas del grupo de comparación por otro en los dos factores obtenidos en el análisis factorial fueron altamente significativas (p<0,001). Un punto de corte de 15 dio una sensibilidad del 75,9% y una especificidad del 86,6% en la clasificación de los sujetos como pacientes alimentarios o no. El SEED demuestra una adecuada consistencia interna y fiabilidad test-retest. Los pacientes adolescentes con trastornos de la alimentación tienen más baja autoestima social y corporal que los adolescentes de la población general.
Palabras clave: autoestima corporal, autoestima social, adolescentes, trastornos alimentación

Several authors have stressed the importance of low self-esteem in the development of eating disorders (Button *et al.*, 1996; Fairburn *et al.*, 1999; French *et al.*, 2001; Williams *et al.*, 1993; Wade *et al.*, 2001), whereas a positive self-esteem has been pointed out as protective factor not only for abnormal eating behaviors (French *et al.*, 2001) but also for eating disorders (Croll *et al.*, 2002). Other studies have found that eating disordered patients with low self-esteem have a worse response to treatment (Baell & Wertheim, 1992; Fairburn *et al.*, 1993). There are several measures for evaluating general self-esteem (Rosenberg, 1979; Demo, 1985; Robson, 1989) and a few include items to assess the influence of self-concept of one's own body on the global feeling of self-esteem (Geller *et al.*, 1997; McFarlane *et al.*, 2001). Several studies have stressed the importance of self-esteem related to body weight and shape for eating disorders in adult samples (McFarlane *et al.*, 2001; Geller *et al.*, 1998) and body dissatisfaction and weight-reducing behavior may be a previous condition for eating disorders. Adolescence is a period in which perception of personal appearance plays an important role in self-esteem (Geller *et al.*, 2000; Tomori & Rus-Makovec, 2000; Gila *et al.*, 2004) and therefore, feelings of self-contempt related to social consideration and to body weight may also be a crucial aspect in the eating disorders in adolescents (Pesa *et al.*, 2000). There are some studies about shape and weight based self-esteem and eating disorders in adult patients (McFarlane *et al.*, 2001; Geller *et al.*, 1998) and low body and social self-esteem has been considered an important cognitive trait in patients with eating disorders (Cooper & Fairburn, 1993). Nevertheless, to our knowledge, there are not any studies which use an instrument aimed specifically to evaluate body and social self-esteem in adolescent eating disordered patients. The Self-Esteem in Eating Disorders questionnaire (SEED) was developed by M Launer at Burnley General Hospital in England to evaluate self-esteem related to body weight and to feelings of social appreciation. It is a short, easy to administer self-report instrument and it is the only one to evaluate completely this important component of self-esteem. The items of the questionnaire assess the subject's ideas on different aspects of her/his body, feelings of deserving appreciation from others and of being understood by others.

The objectives of the present study are to assess the psychometric properties of the SEED and also to compare adolescents from general population and eating disordered patients in order to establish if these patients have lower social and body self-esteem than adolescents from the general population.

METHOD

Subjects and procedures

A total of 170 eating disorder female adolescent patients were evaluated. One hundred fifteen had diagnoses of anorexia nervosa and 55 of bulimia nervosa according to DSM-IV diagnostic criteria (American Psychiatric Association, 1994). All were attending a specialized unit for eating disorders. The comparison group comprised 359 adolescent schoolgirls from the general population, students at primary and secondary centers. The questionnaire was administered at school during a normal class day, after permission had been obtained from the school authorities.

The *Self-Esteem in Eating Disorders questionnaire* (SEED).is a self-administered test made up of 20 items which are related to social self-contempt and to body shape and weight self-evaluation. Respondents must choose one of four possible answers. The original English questionnaire was translated into Spanish for use with Spanish adolescents. The Spanish version of the questionnaire can be obtained from the authors.

Statistical analysis

The internal consistency of the questionnaire in the eating disorder group and the general population group was determined by means of the Cronbach's alpha coefficient, which had to be in excess of 0.7. Test-retest reliability was analyzed by the Pearson product moment correlation between the scores obtained by the subjects at two different evaluations, separated by a one-week interval, in part of the group of patients and girls from the general population. A factor analysis was conducted on the SEED ratings of all the eating disorder patients, using principal components analysis with VARIMAX rotation. Only loadings greater than 0.4 were accepted as sufficiently high. The Pearson product moment correlation was used again to analyze the relationship between the two factors. The Student's *t* test for independent samples was used to compare the means of the different groups. Discriminant validity was evaluated by dividing the two groups according to a cut-off point that offered the best sensitivity and specificity. Statistical analysis was performed using the SPSS package (Norusis, 1993).

RESULTS

The mean of age was 15.6 (SD= 1.4) years in the anorexic group, 16.2 (SD= 1.4) years in the bulimic group and 14.9 (SD= 2.2) years in the comparison group.

Table 1. Sensitivity and specificity.

	Eating disorder patients (N=170)	Comparison group (N=359)
Score ≤ 15	false negatives 41 (24.1%)	true negatives 311 (86.6%)
Score > 15	true positives 129 (75.9%)	false positives 48 (13.4%)

Table 2. Eigenvalues and variances of the rotated factors of the SEED with all eating disorder patients and girls from the general population.

Factor	Eigenvalue	Variance	Cumulative variance
1	10.6	53.1	53.1
2	1.2	5.9	59

Table 3. SEED Factor Structure.

Item number	Item content	Factor loading
Factor I: Self-contempt in relation to others		
2	Others would not like to know me	.55
3	It is best if I keep away form people	.64
4	I am sorry for those who may depend on me	.59
6	I have little to offer others	.63
8	I will not enjoy sex	.58
9	I am not worthy of any help	.72
10	I not normal	.68
13	I should really not nave been born	.70
14	Nobody can understand me	.63
15	I am wasting everybody's time	.71
16	Other people's needs come before mine	.44
18	I am speaking another language to others	.63
19	I cannot trust others who thy to help me	.69
20	I am only if interest because of my eating	.63
Factor II: Self-contempt related to weight and shape		
1	My body is horrible	.83
5	Parts of my body are repulsive	.76
7	Eating dominates my life	.71
11	I hate myself	.65
12	If I lose weight I may feel better	.85
17	I am in danger of losing control	.52

Sensitivity and specificity

The cut-off score of 15 had the best specificity and sensitivity indexes: sensitivity 75.9% and specificity 86.6% (table 1). The positive predictive value was 73% and the negative predictive value was 88%.

Reliability

Internal consistency measured by the Cronbach's alpha coefficient was 0.94 in the eating disorder group and 0.87 in the comparison group. The test-retest reliability with a one-week interval was .77 in a subgroup of 37 eating disorder patients and .86 in a subgroup of 97 girls from the general population.

Factor analysis

The factor analysis was carried out with the SEED scores of all eating disorder patients and girls from the general population. The only two factors with an eigenvalue higher than 1 accounted for 59 % of the common variance. Table 2 shows the eigenvalues and the percentage of variance found for each factor. The items for each factor and the item loading are shown on table 3. The correlation between these two factors in eating disorder patients was .78 (p< .001) and in the general population was .57 (p< .001).

Results obtained by normal and eating disorder adolescents

Table 4 shows the differences in the mean score obtained on the SEED by anorexic and bulimic patients and by girls from the general population.
The differences between both anorexic and bulimic patients and the girls from the general population were statistically significant. There were no statistically significant differences between anorexic and bulimic patients.

Table 4. Comparison (Student's *t* test, two tailed) between the means obtained in the SEED by anorexic patients (N= 115), bulimic patients (N= 55) and the comparison group from the general population (N= 359).

Mean	SD	Mean	SD	*t*	*p*
Anorexic patients		**Bulimic patients**			
30.8	15.4	34.9	14.4	-1.6	.096
Anorexic patients		**Comparison group**			
30.8	15.4	9.9	8.2	13.9	<.001
Bulimic patients		**Comparison group**			
34.9	14.4	9.9	8.2	12.5	<.001

Table 5. Comparison (Student's *t* test, two tailed) between the means obtained in the two factors of the SEED by anorexic patients (N= 115), bulimic patients (N= 55) and the comparison group from the general population (N= 359).

Mean	SD	Mean	SD	*t*	*p*
FACTOR I: Self-contempt in relation to others					
Anorexic patients		**Bulimic patients**			
19.8	10.6	20.5	10.8	-.43	.668
Anorexic patients		**Comparison group**			
19.8	10.6	5.6	5.5	15.7	<.001
Bulimic patients		**Comparison group**			
20.5	10.8	5.6	5.5	10.5	<.001
FACTOR II: Self-contempt related to weight and shape					
Anorexic patients		**Bulimic patients**			
11.5	4.9	13.1	4.8	-2.2	.026
Anorexic patients		**Comparison group**			
11.5	4.9	4.2	3.7	16.7	<.001
Bulimic patients		**Comparison group**			
13.1	4.8	4.2	3.7	13.9	<.001

The differences between both anorexic and bulimic patients and girls of the comparison group in the two factors obtained in the factor analysis are shown in table 5. Again, the differences between patients and girls from the general population were highly significant. The difference between bulimic patients and anorexic patients was significant only in Self-contempt related to weight and shape, in which bulimic patients obtained a somewhat higher mean score than anorexic patients.

DISCUSSION

The first conclusion of the study is that the SEED presents sufficient internal consistency and test-retest reliability both in adolescent eating disorder patients and in girls from the normal population. Therefore, this is an instrument with good psychometric properties to be used in adolescents to study body and social self-esteem.

The factor analysis yielded two factors, one referring to self-contempt in relation to others, and the second referring to self-contempt in relation to weight and shape. The first factor, self-contempt in relation to others, can be considered as a negative self-evaluation, a characteristic which has been identified as a vulnerability factor for eating disorders and which has been found to differentiate significantly between anorexic patients and their non anorexic sisters (Karwantz *et al.*, 2001). If this was the case it may be that the other factor of self-contempt related to weight and shape was secondary to the negative self-evaluation. The statistically significant positive correlation between these two factors, particularly in eating disorder patients, indicates the need to address global negative self concept during treatment and not only negative self-esteem related to weight and shape. As the sample comprised only girls, in future studies the questionnaire should be administered to normal boys and boys with eating disorders in order to establish whether they also present this relationship.

The cut-off point of 15 offers a good sensitivity and specificity for differentiating eating disorder patients from girls of the comparison group. The positive and negative predictive values are acceptable. Anorexic and bulimic patients obtain higher mean global scores on the SEED, as other authors have found in adult patients using other measures to evaluate self-esteem also in relation to shape and weight (McFarlane *et al.*, 2001; Geller *et al.*, 1998). Both factors obtained by the factor analysis also differentiate between anorexic and bulimic patients and girls from the general population: not only the factor about self-contempt related to weight and shape, but also the factor that evaluated self-contempt in relation to others and feelings of being poorly accepted and understood by others. These findings agree with the model of Jarry (Jarry, 1998) which proposes that eating disorder patients focus their attractiveness on body image and emphasizes the role of body image in the regulation of self-esteem. This may be especially important in adolescents; at this age, the only way to feel accepted by themselves and by others is by achieving an adequate physical appearance (Smolak *et al.*, 1996; Gila *et al.*, 2004). This result emphasizes the importance of cognitive behavior therapy in adolescents with eating disorders addressed to self-esteem with its different components. Button *et al.* (1997) found a relationship between low self-esteem, abnormal eating attitudes and low levels of personal satisfaction, especially with physical image and familiar relationship. Other variable influencing low self-esteem can be self-oriented perfectionism and perfectionistic self-presentation, two characteristics that can be very important in eating disorder patients (Flett *et al.*, 1995; Castro *et al.*, in press). These variables can promote low satisfaction with self image an physical appearance in general and may favor high social insecurity.

The principal limitation of the study is to use a self-report questionnaire to evaluate self-esteem. This is a very difficult variable to assess and a self-report measure can not be completely objective. Other limitation is the impossibility to draw from this cross-sectional study definite conclusions about the importance of self-esteem in the outcome of these disorders. It would be necessary to carry out longitudinal studies to obtain data about the influence of a low self-esteem in the evolution of eating disorders.

CONCLUSIONS

The present study confirms the relationship between eating disorders and low body and social self-esteem in young adolescent patients. These data point out the importance during treatment of eating disorders of specific cognitive therapy aimed to improve self-esteem and also to change the perception of the importance of body issues in global self-worth. These results support the psychometric properties of the SEED in terms of internal consistence and test-retest reliability. Therefore it can be an useful instrument in clinical and research work with eating disorders.

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