Purging Behaviors and Comorbidity as Predictive Factors of Quality of Life in Anorexia Nervosa

Ana González-Pinto,[1]* Failde Inmaculada,[2] Rodriguez Cristina,[1] Fernández de Corres Blanca,[1] Enjuto Sonsoles,[1] Ramírez Fernando,[1] and López Purificacion[1]

[1] Department of Psychiatry, Santiago Apóstol Hospital, Osakidetza Mental Health System, Vitoria, Spain
[2] Department of Preventive Medicine, Hospital Universitario Puerta del Mar, University of Cádiz, Cádiz, Spain

Accepted 15 March 2004

Abstract: **Objective:** *This study examined the predictive factors for the physical and mental summary components (PCS and MCS) of quality of life (SF-36) in patients with anorexia nervosa.* **Method:** *Forty-seven patients with anorexia nervosa were studied. Assessment comprised psychiatric diagnosis by a clinical structured interview for Axis I disorders (SCID-I) and personality disorders (SCID-II), Clinical Global Impression (CGI), and Quality of Life (SF-36).* **Results:** *Anorexia nervosa, restrictive type, was diagnosed in 73.9% of the patients and 51% of the patients presented with comorbidity on Axis I or Axis II or both. The predictive variables for the PCS were poor outcome in previous year, comorbidity on Axes I and II, and female gender. The predictive variables for the MCS were the presence of comorbidity in one or the other of the Axis I or II disorders and purging behaviors.* **Discussion:** *The current study suggests the importance of comorbidity and purging behaviors in the quality of life of these patients with anorexia nervosa. © 2004 by Wiley Periodicals, Inc.* Int J Eat Disord 36: 445–450, 2004.

Key words: *anorexia nervosa; purging behaviors; quality of life; comorbidity; personality disorders*

INTRODUCTION

Eating disorders have reached a critical point in the last 30 years (Ghaderi & Scott, 2001; González, Padierna, Quintana, Aróstegui, & Horcajo, 2001). Despite a good chance of recovery in the long term, many patients follow a chronic course (Steinhausen, 2002). The severity of the disorder combined with the risk of chronicity, and the fact that mainly young people are affected (Toro, 2000), has a great impact on physical health (Díaz-

Correspondence to: Ana González-Pinto, MD, Department of Psychiatry, Santiago Apóstol Hospital, Olaguibel 29, 01004 Vitoria, Spain. E-mail: agonzalez@hsan.osakidetza.net
Published online in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/eat.20058

Marsa, Carrasco, Hollander, César, & Saiz-Ruiz, 2000; Jagielska et al., 2001), as well as on the mental health and social adjustment of the affected patients (Padierna, Quintana, Aróstegui, González, & Horcajo, 2000).

In a study that included 18–34-year-old women diagnosed with eating disorders, Padierna et al. (2000) used the SF-36 health questionnaire to evaluate quality of life. They found worse quality of life in the group with eating disorders compared with the general population. Using the same questionnaire, Hay (2003) found that patients with bulimic behaviors had significantly poorer quality of life scores on the mental health dimension of the scale. Nevertheless, health related quality of life (HRQL) in patients diagnosed with anorexia nervosa has scarcely been evaluated, especially in relation to predictive factors of quality of life. The aim of the current study was to identify the predictive factors for the physical and mental summary components (PCS and MCS) of the SF-36 Health Questionnaire in patients with anorexia nervosa.

METHOD

We included all 47 patients with anorexia nervosa who were referred to an intensive care program from January 1999 to December 2000. The patients met criteria for the eating disorder as described in the 4th ed. of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994). During the first week of treatment, patients were evaluated with a clinical structured interview for Axis I disorders (SCID-I) and for personality disorders (SCID-II). Patients were classified as having comorbid Axis I or Axis II disorders, comorbid Axis I and Axis II disorders, or no comorbid disorders. Sociodemographic and clinical variables including previous hospitalizations were also recorded. Body mass index (BMI) was considered low when the value was less than 16.5 (Howard, Evans, Quintero-Howard, Bowers & Andersen, 1999). Binge eating, purging behaviors, fear of weight gain, distorted body image, and intense exercise were evaluated according to the DSM-IV criteria. Purging behaviors comprised vomiting or the misuse of laxatives, diuretics, and enemas. Patients were also evaluated by the Clinical Global Impression Scale (CGI) and the Phillips premorbid adjustment scale (Harris, 1975), which includes a social subscale ranging from 0 (*best*) to 6 (*worst*).

Some patients were considered to have a poor outcome in the previous year. We included all patients who continued to have a diagnosis of DSM-IV anorexia nervosa despite previous treatment with a psychiatrist or a psychologist in an outpatient service for at least 1 year.

HRQL was assessed using the SF-36 Health Questionnaire. The questionnaire comprises 36 items and eight specific dimensions that can be grouped under two combined or global values: the PCS and the MCS. Included in the physical component are the dimensions physical functioning (PF), limitations of role due to physical problems (RP), body pain (BP), and perception of general health (GH). The mental component combines vitality (VT), social functioning (SP), limitations of role due to emotional problems (RE) and mental health (MH).

Statistical Analyses

For the descriptive analysis of quality of life, the means and standard deviations (*SD*) were calculated for each of the specific dimensions and for the PCS and MCS. To explore the relation between the variables studied and the various dimensions of quality of life, the Student *t* test and one-way analysis of variance (ANOVA) were used, and the Scheffe

test was used for posttest comparisons. The Bonferroni correction was used and the required alpha level was $p = .05/8 = .006$.

To study the predictive variables, two multiple linear regression models were constructed. The dependent variables were PCS and MCS and the independent variables were selected on the basis of statistical and clinical criteria determined a priori, according to a previous study (Padierna, Quintana, Arostegui, Gonzalez, & Horcajo, 2002).

RESULTS

The age of the sample was 20.04 (*SD* 5.5) years and 82.7% of the sample were women. Most patients were diagnosed with anorexia nervosa, restrictive type (73.9%), 38.8% had purging behaviors, and most had a good premorbid social adjustment (68.9% had a score ≤ 2 on the Phillips scale). However, more than one half (58.7%) of the sample had a poor outcome during the preceeding 12 months. (BMI was 16.6 (*SD* 1.7) and the median duration of illness was 15.5 months. Among symptoms used for diagnosis (as outlined in DSM-IV), the most frequent were an intense fear of gaining weight (91.5%) and distorted body image (80.9%). Psychiatric comorbidity (Axes I and II of DSM-IV) was present in 51% of the sample. CGI was high or extremely severe in 21.7% of the sample. Previous hospitalizations had occurred for 40.4% of the sample.

Of the eight HRQL dimensions studied in the SF-36, patients scored lower scores on the MH, VT, and GH. Very high standard deviations were observed for RP and RE (Table 1). In the analysis of the variables and the eight partial dimensions and two summary components of the SF-36, the existence of psychiatric comorbidity on the two axes of the DSM-IV, or on one of them, was associated with lower scores on the GH (ξ: 42.3; *SD*: 17.2, $p = .008$), SP (ξ: 51.4; *SD*: 30.3; $p = .03$), and MH (ξ: 42.2; *SD*: 26.1; $p = .01$) dimensions and on the PCS (ξ: 44.1; *SD*: 7.6; $p = .02$) and MCS (ξ: 33.6; *SD*: 15.5; $p = .02$) dimensions. However, this did not reach statistical significance. Similarly, among the clinical symptoms studied, the existence of purgative behavior was associated most closely with both the partial and global dimensions of quality of life (PCS: 47.7 *SD*: 6.8, $p = .07$; MCS: 29.2 *SD*: 12.5, $p = .008$).

Poor previous outcome, presence of psychiatric comorbidity, and gender were the variables included in the best multiple linear regression model for the PCS. Both poor previous outcome and comorbidity reduced the PCS by 5 points (Table 2). Female gender was a predictive variable that improved the PCS.

The variables included in the multiple linear regression model constructed for the MCS were the presence of purging behavior and psychiatric comorbidity. In both cases, a reduction in the MCS was observed (Table 2).

Table 1. Mean (*SD*) scores on the SF-36 health questionnaire in patients with anorexia nervosa

Scales	Maximum	Minimum	*M*	*SD*
Physical functioning	100	55	83.98	13.2
Role physical	100	0	61.70	40.3
Bodily pain	100	10	72.91	25.6
General health	92	15	57.42	20.4
Vitality	95	0	52.34	23.6
Social functioning	100	0	63.56	29.9
Role emotional	100	0	65.95	40.2
Mental health	96	5	49.29	23.5
Physical summary component	70.32	30.67	50.41	8.2
Mental summary component	57.86	7.76	36.25	14.6

Table 2. Variables in regression model predicting PCS and MCS scores of the SF-36

	β	*SE*	*p*	
PCS				
Intercept	47.2	3.1	.000	Adjusted $R^2 = 0.22$
Poor outcome previous year	−5.7	2.4	.02	$F = 4.1$
Female gender	7.5	3.4	.03	$df = 4$
Morbidity in both Axes I and II	−5.3	2.9	.08	$p = .007$
Morbidity in Axis I or Axis II	3.5	2.6	.17	—
MCS				
Intercept	43.3	2.9	.000	Adjusted $R^2 = 0.17$
Morbidity in both Axes I and II	−5.5	5.5	.32	$F = 4.1$
Morbidity in Axis I or Axis II	−9.7	4.8	.05	$df = 3$
Purging behavior	−7.8	4.4	.08	$p = .01$

Note: PCS = physical summary component; MCS = mental summary component.

DISCUSSION

The relation of psychiatric comorbidity and purging to HRQL in patients with anorexia nervosa has received little attention. However, such information is important for early identification of eating disorders and for early intervention programs (Buddeberg-Fischer Klaghofer, Gnam, & Buddeberg, 1998). The current study shows that patients with anorexia nervosa have a global deterioration in the perception of their HRQL, which is especially noticeable in the area of mental health and vitality. Moreover, we show that poor outcome during treatment in the preceding 12 months and psychiatric comorbidity predict worse summary physical quality of life and that purging and psychiatric comorbidity predict lower scores on the summary mental dimension of quality of life.

The findings of worse quality of life on the summary mental dimension than in the physical dimension are in accordance with other studies (Padierna et al., 2000, 2002). Theses authors also found worse scores on the summary mental dimension of quality of life in a sample of women with eating disorders. In addition, Keilen, Treasure, Schmidt, and Treasure (1994) found a primary deterioration in the psychosocial dimensions, emotional reactions, and social isolation areas of the Nottingham Health Profile, which are similar to the mental health and social domains in the SF-36. The relation between anorexia type (purgative vs. restrictive) and quality of life has already been reported by Padierna et al. (2000). The purgative types had lower quality of life scores, although the differences were not statistically significant, as in our study.

The predictive effect of purging, which has not previously been studied by other authors, is clearly demonstrated in our study. We show that the presence of purging led to an almost 8-point reduction in the MCS. It has previously been shown that subjects who use vomiting and/or laxatives indulge in more self-damaging behaviors (Favaro & Santonastaso, 1996). Laxative use has also been associated with longer duration of the disease and greater eating concern (Turner, Batik, Palmer, Forbes, & McDermott, 2000) and with later onset of illness (Matsumoto et al., 2001). Purgative symptoms have also been reported to be more frequent in patients with chronic outcomes (Lowe et al., 2001) although, to our knowledge, it has never been reported to be an independent factor related to the mental dimension of the HRQL.

In addition, psychiatric comorbidity particularly diminished the MCS score, although the presence of comorbidity on DSM-IV Axes I and II also reduced the PCS score by 5 points. Psychiatric comorbidity has been frequently found patients with anorexia nervosa (Grilo, Levy, Becker, Edell, & McGlasham, 1996; Modestin, Oberson, & Ermi, 1997; Zerbe, Marsh,

& Coyne, 1993), but its predictive value in the quality of life in patients with anorexia nervosa has not previously been studied. Interpreting comorbidity of eating disorders is complex, as it may reflect the simple random co-occurrence of many different syndromes or just a common pathology underlying multiple phenotypical disorders (Bulik, Sullivan, & Joyce, 1999; Westen & Harnden-Fischer, 2001). The importance of the comorbidity found in our study, and the impact it has on quality of life, could also have some relation to the importance it has over time in the lives of patients diagnosed with anorexia nervosa. In a previous study, patients with anxiety and depressive symptoms at baseline had lower quality of life scores after 2 years of treatment (Padierna et al., 2002). The importance of comorbidity in the outcome of anorexia nervosa was clearly established in a recent study with an uncommonly long follow-up. In that study, patients with comorbid syndromes frequently had a poorer psychosocial outcome in the long term (21 years) (Lowe et al., 2001). Comorbidity is also frequent after recovery from anorexia nervosa (Anderluh, Tchanturia, Rabe-Hesketh, & Treasure, 2003; Pla & Toro, 1999). In accordance with Axis II, personality disorders are relatively frequent in patients who have recovered from eating disorders. Matsunaga et al. (2000) found that 26% of patients who had recovered from eating disorders were diagnosed as having a personality disorder.

Personality disorders are frequent in patients with anorexia nervosa, especially if particular personality traits are considered in addition to categorial diagnoses. In fact, the restrictive type has been associated with a constricted/overcontrolled profile. Such patients tend to be emotionally dysregulated, undercontrolled, and impulsive. They experience intense, poorly regulated emotions and tend to fly into rages (Westen & Harnden-Fischer, 2001). Poor previous outcome during the preceding 12 months and female gender are also items predictive of the physical dimension of quality of life. In this sense, poor outcome in the previous year could be related to a more severe, more chronic presentation of the disease, as described previously (Keel et al., 2002). In relation to gender, although there were no differences in the bivariate statistical analyses, female gender was a protective factor for the physical dimension of quality of life after adjusting for the other items. These results are different from those of Woodside et al. (2001), who found a similar quality of life between men and women. Those findings should be considered with caution as the sample of men was small.

Our study has some limitations. First, the sample comprises patients with anorexia nervosa diagnosed using criteria in DSM-IV, but we did not include other diagnoses such as atypical syndromes or less severe forms of eating disorders. Second, the sample included patients following treatment, as the study was performed in an eating disorders unit. A final limitation is that negative life events (Horesh et al., 1995; The McKnight Investigators, 2003) were not considered in the current study.

In conclusion, these findings show that patients with anorexia nervosa have a poor quality of life, especially in the mental health dimension, and suggest the importance of comorbidity and purging behaviors in this respect.

REFERENCES

American Psychiatric Association. (1994). Diagnostic and statistical manual of mental disorders (4th ed.). Washington, DC: Author.

Anderluh, M.B., Tchanturia, K., Rabe-Hesketh, S., & Treasure, J. (2003). Childhood obsessive-compulsive personality traits in adult women with eating disorders: Defining a broader eating disorder phenotype. American Journal of Psychiatry, 160, 242–247.

Buddeberg-Fischer, B., Klaghofer, R., Gnam, G., & Buddeberg, C. (1998). Prevention of disturbed eating behaviour: A prospective study in 14 to 19 year-old Swiss students. Acta Psychiatrica Scandinavica, 98, 146–155.
Bulik, C.M., Sullivan, P.F., & Joyce, P.R. (1999). Temperament, character and suicide attempts in anorexia nervosa, bulimia nervosa and major depression. Acta Psychiatrica Scandinavica, 100, 27–32.
Diaz-Marsa, M., Carrasco, J.L., Hollander, E., Cesar, J., & Saiz-Ruiz, J. (2000). Decreased platelet monoamine oxidase activity in female anorexia nervosa. Acta Psychiatrica Scandinavica, 101, 226–230.
Favaro, A., & Santonastaso, P. (1996). Purging behaviors, suicide attempts, and psychiatric symptoms in 398 eating disordered subjects. International Journal of Eating Disorders, 20, 99–103.
Ghaderi, A., & Scott, B. (2001). Prevalence, incidence and prospective risk factors for eating disorders. Acta Psychiatrica Scandinavica, 104, 122–130.
González, N., Padierna, A., Quintana, J.M., Aróstegui, I., & Horcajo, M.J. (2001). Calidad de vida de los pacientes afectados de trastornos de la alimentación (Quality of life of the patients with eating disorders). Gaceta Sanitaria, 15, 18–24.
Grilo, C.M., Levy, K.N., Becker, D.F., Edell, W.S., & McGlasham, T.H. (1996). Comorbidity of DSM-III-R axis I and II disorders among female inpatients with eating disorders. Psychiatric Services, 47, 426–429.
Harris, J.G., Jr. (1975). An abbreviated form of the Phillips Rating Scale of Premorbid Adjustment in Schizophrenia. Journal of Abnormal Psychology, 84, 129–137.
Hay, P. (2003). Quality of life and bulimic eating disorders behaviors: Findings from a community-based sample. International Journal of Eating Disorders, 33, 434–442.
Horesh, N., Apter, A., Lepkifker, E., Ratzoni, G., Weizmann, R., & Tyano, S. (1995). Life events and severe anorexia nervosa in adolescence. Acta Psychiatrica Scandinavica, 91, 5–9.
Howard, W.T., Evans, K.K., Quintero-Howard, C.V., Bowers, W.A., & Andersen, A.E. (1999). Predictors of success or failure of transition to day hospital treatment for inpatients with anorexia nervosa. American Journal of Psychiatry, 156, 1697–1702.
Jagielska, G., Wolanczyk, T., Komender, J., Tomaszewicz-Libudzic, C., Predalacki, J., & Ostrowski, K. (2001). Bone mineral content and bone mineral density in adolescent girls with anorexia nervosa—a longitudinal study. Acta Psychiatrica Scandinavica, 104, 131–137.
Keel, P.K., Dorer, D., Eddy, K.T., Delinsky, S.S., Franko, D.L., Blais, M.A, Keller, M.B., & Herzog, D.B. (2002). Predictors of treatment utilization among women with anorexia and bulimia nervosa. American Journal of Psychiatry, 159, 140–142.
Keilen, M., Treasure, T., Schmidt, U., & Treasure J. (1994). Quality of life measurements in eating disorders, angina and transplant candidates: Are they comparables? Journal of the Royal Society of Medicine, 87, 441–444.
Lowe, B., Zipfel, S., Buchholz, C., Dupont, Y., Reas, D.L., & Herzog, W. (2001). Long-term outcome of anorexia nervosa in a prospective 21-year follow-up study. Psychological Medicine, 31, 881–890.
Matsumoto, H., Takei, N., Kawai, M., Saito, F., Kachi, K., Ohashi, Y., Takeuchi, H., & Mori, N. (2001). Differences of symptoms and standardized weight index between patients with early-onset and late-onset anorexia nervosa Acta Psychiatrica Scandinavica, 104, 66–71.
Matsunaga, H., Kaye, W.H., McConaha, C., Plotnicov, K., Pollice, C., & Rao, R. (2000). Personality disorders among subjects recovered from eating disorders. International Journal of Eating Disorders, 27, 353–357.
Modestin, J., Oberson, B., & Erni, T. (1997). Possible correlates of DSM-III-R personality disorders. Acta Psychiatrica Scandinavica, 96, 424–430.
Padierna, A., Quintana, J.M., Arostegui, I., Gonzalez, N., & Horcajo, J. (2000). The health-related quality of life in eating disorders. Quality of Life Research, 9, 667–674.
Padierna, A., Quintana, J.M., Arostegui, I., Gonzalez, N., & Horcajo, M.J. (2002) Changes in health related quality of life among patients treated for eating disorders. Quality of Life Research, 11, 545–552.
Pla, C., & Toro, J. (1999). Anorexia nervosa in a Spanish adolescent sample: An 8-year longitudinal study. Acta Psychiatrica Scandinavica, 100, 441–446.
Steinhausen, H.C. (2002). The outcome of anorexia nervosa in the 20th century. American Journal of Psychiatry, 159, 1284–1293.
The McKnight Investigators. (2003). Risk factors for the onset of eating disorders in adolescent girls: Results of the McKnight longitudinal risk factor study. American Journal of Psychiatry, 160, 248–254.
Toro, J. (2000). La epidemiología de los trastornos de la conducta alimentaria (Epidemiology of eating disorders). Medicina Clinica, 114, 543–544.
Turner, J., Batik, M., Palmer, L.J., Forbes, D., & McDermott, B.M. (2000). Detection and importance of laxative use in adolescents with anorexia nervosa. Journal of the American Academy of Child and Adolescent Psychiatry, 39, 378–385.
Westen, D., & Harnden-Fischer, J. (2001). Personality profiles in eating disorders: Rethinking the distinction between axis I and axis II. American Journal of Psychiatry, 158, 547–562.
Woodside, D.B., Garfinkel, P.E., Lin, E., Goering, P., Kaplan, A.S., Goldbloom, D.S., & Kennedy, S.H. (2001). Comparisons of men with full or partial eating disorders, men without eating disorders, and women with eating disorders in the community. American Journal of Psychiatry, 158, 570–574.
Zerbe, K.J., Marsh, S.R., & Coyne, L. (1993). Comorbidity in an inpatient eating disordered population: Clinical characteristics and treatment implications. Psychiatric Hospital, 24, 3–8.