Psicothema

Spanish validation of the Family Questionnaire (FQ) in families of patients with an eating disorder

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Abstract

Background: The objective of this study is to evaluate the psychometric properties of the Spanish version of the Family Questionnaire (FQ) and to further examine the differences between mothers´ and fathers´ emotional response to an eating disorder (ED). **Method:** A total of 382 carers of patients with an ED participated in the study, with ages ranging from forty to fifty-three years old. **Results:** The use of confirmatory factor analysis according to gender supported both factor models of the FQ, with only minor differences in comparison to the original study performed in 2002 by Wiedemann and collegues. The internal consistency of the Spanish version of the FQ was good. Mothers displayed significantly higher levels of emotional over-involvement than fathers, while gender differences in critical comments were nonsignificant. The correlation of the two subscales of the FQ with a conceptually related measure (Expressed Emotion) and two unrelated ones (negative caregiving experience, distress) supports the convergent and concurrent validity of the instrument in both samples. **Conclusions:** The FQ has adequate psychometric properties and may be of value in assessing the impact of ED symptoms on the family environment. Finally, interventions that aim to reduce Expressed Emotion in carers may consider a gender-specific approach.

Keywords: Eating disorders; expressed emotion; Family Questionnaire; validation; gender; confirmatory factor analysis.

Resumen

Validación española del Family Questionnaire (FQ) en familias de pacientes con un trastorno de la conducta alimentaria. **Antecedentes:** el objetivo del estudio es evaluar las propiedades psicométricas de la versión española del Family Questionnaire (FQ) y examinar diferencias en la respuesta emocional de madres y padres ante un trastorno de la conducta alimentaria (TCA). **Método:** 382 cuidadores de pacientes con un TCA participaron en el estudio, con edades comprendidas entre 40 y 53 años. **Resultados:** los resultados del análisis factorial confirmatorio según género apoyaron ambas estructuras factoriales del FQ, con solo pequeñas diferencias en comparación con el trabajo original realizado en 2002 por Wiedemann y colaboradores. La versión española del FQ presentó buena consistencia interna. Las madres puntuaron significativamente más alto en sobreimplicación emocional que los padres, mientras que las diferencias de género en comentarios críticos no eran significativas. La correlación de las subescalas del FQ con una medida conceptualmente equivalente (Emoción Expresada) y dos medidas no equivalentes (experiencia negativa del cuidador, ansiedad) apoyaron la validez convergente y concurrente del instrumento para ambas muestras. **Conclusiones:** el FQ tiene adecuadas propiedades psicométricas y puede ser útil para evaluar el impacto de los síntomas del TCA en el entorno familiar. Sería recomendable que las intervenciones familiares destinadas a reducir los niveles de Emoción Expresada tuvieran en cuenta una perspectiva de género.

Palabras clave: trastornos de la conducta alimentaria; emoción expresada; Family Questionnaire; validación; género; análisis factorial confirmatorio.

A substantial body of research has been carried out to investigate the construct of Expressed Emotion (EE) (Brown & Rutter, 1966) as the emotional experience of caring for a family member with a mental disorder, and it has been found to be a significant predictor of illness outcome across a variety of psychiatric disorders (Butzlaff & Hooley, 1998; Wearden, Terrier, Barrowclouch, Zastowny, & Rahill, 1998). In samples of patients with an eating disorder (ED), high levels of criticism among family members

were considered to be maintaining factors of psychopathology in patients and were associated both with early dropout of patients from treatment (Szmukler, Eisler, Russell, & Dare, 1985) and with worse clinical outcomes (Uehara, Kawashima, Goto, Tasaki, & Someya, 2001).

Carers of relatives with EDs are faced with the acute negative symptoms of the illness and tend to spend a large number of face-to-face hours with the patient, supervising his/her eating habits and medical health status. Additionally, high levels of EE in carers are associated with increased psychological distress, psychological morbidity, and a negative caregiving experience (Kyriacou, Treasure, & Schmidt, 2008; Wearden et al., 1998). However, EE levels and the resulting interpersonal friction within the family may gradually decrease, thereby improving the situation, through psychoeducational interventions (Goddard

et al., 2011; Sepúlveda et al., 2010; Uehara et al., 2001). Also, psychological variables associated with carers' emotional well-being are differentiated by caregiver type; that is, primary caregivers, usually mothers, are more likely to experience negative consequences, in terms of their coping response to the illness and health status, than are fathers (Sepúlveda et al., 2012).

The first instrument to reliably measure the EE construct was the Camberwell Family Interview (Brown & Rutter, 1966). Since its publication, a number of alternative methods have been developed, which are less time-consuming and present fewer coding limitations. Amongst these, the Standardized Clinical Family Interview (Kinston & Loader, 1984), and the Five Minutes Speech Scale (Magaña et al., 1986) are worth mentioning, as well as self-report instruments, such as the Level of Expressed Emotion (LEE; Cole & Kazarian, 1988).

However, there are only a few tools assessing EE in relatives that have been translated into Spanish and used by the Spanish population. In terms of interviews, the Camberwell Family Interview (Gutiérrez, 1986) and the Five Minutes Speech Scale (Muela & Godoy, 2010) have been adapted for use in clinical samples in Spain. With regards to self-report instruments, the LEE has been validated in a Spanish sample of relatives of patients with an ED, showing adequate psychometric properties (Sepúlveda, Anastasiadou, del Río, & Graell, 2012).

The Family Questionnaire (FQ) was developed by Wiedemann, Rayki, Feistein, and Hahlweg (2002) as a more cost-effective and research-applicable method for assessing EE, compared to the Camberwell Family Interview (Duclos, Vibert, Mattar, & Godart, 2012). It was validated in a sample of 79 relatives of patients with schizophrenia. The instrument consists of 20 items and has a clear two-factor structure: a Critical Comments scale (CC), explaining 33.7% of variance, and an Emotional Overinvolvement scale (EOI), explaining 15% of the variance. The instrument has shown good internal consistency of .80 for the EOI scale and .92 for the CC scale. The FQ also predicts the ratings of the Camberwell Family Interview better than any other short EE instrument. Regarding the cut-off points proposed for each scale (23 for CC and 27 for EOI), the FQ presents similar levels of accuracy in identifying high EE levels as the Five Minutes Speech Scale, while at the same time it is a more cost-effective instrument than the latter (Leeb et al., 1991; Magaña et al., 1986). The measure has also been considered to be preferable to the Five Minutes Speech Scale, as the latter has been found to under-assess high EE in relatives (Möller-Leimkühler, 2005). Finally, gender differences in EE using the FQ have been found, with higher scores for EOI and CC among mothers compared with fathers (Kyriacou et al., 2008).

The specific aims of the present study are as follows: (a) to test the validity of factor solutions proposed for the Spanish version of the FQ via confirmatory factor analysis by gender; and (b) to explore internal consistency estimates of the FQ for each subscale score, as well as the convergent and concurrent validity with established measures assessing EE, and other constructs related to psychological well-being.

Method

Participants

The participants were 382 carers of patients with an ED that were recruited for the study from the Eating Disorders Service of Hospital of Badajoz, Spain (*N* = 108) and the Niño Jesús University Hospital, Madrid, Spain (*N* = 274). The distribution by gender for the whole sample amounted to 203 mothers (53.1%) and 179 fathers (46.9%), with an average age of 46.2 years (*SD* = 5.1) and 48.7 years (*SD* = 5.55), respectively, and with the age of the entire sample ranging from 40 to 53 years old. Regarding their educational level, one-third of the mothers (33.4%) and fathers (39.5%) reported that their highest level was university or postgraduate education. In terms of their employment status, the majority of the mothers (60.2%) and fathers (81.5%) had a full time job. Additionally, 84% of the mothers and 88.7% of the fathers were married or were living together as a couple, with 86.2% of the mothers and 58.9% of the fathers were spending more than 21 contact hours per week with the patient. The 203 patients had a mean age of 15.8 years (*SD* = 3.41) and a mean illness duration of 15.9 months (*SD* = 18.45). The mean Body Mass Index of the patients was 17.5 kg/m^2 (*SD* = 3.1), and they had been diagnosed with an ED by a standard clinical interview following criteria of the *Diagnostic and Statistical Manual of Mental Disorders, 4th edition, revised* (DSM-IV-R; American Psychiatric Association, 2002) at their respective hospitals. Accordingly, 71.0% of patients had a diagnosis of anorexia nervosa, 7.5% presented bulimia nervosa, and 21.5% were diagnosed with an Eating Disorder not Otherwise Specified (EDNOS).

Instruments

Sociodemographic and Clinical Questions. Carers completed a questionnaire concerning their gender, age, educational level, marital status, employment status, and amount of contact hours per week with the patient. Patients' clinical variables were obtained through their medical records and information about their gender, age, disorder subtype, duration of the illness, weight, and height were collected. The Body Mass Index was also calculated for each patient.

Family Questionnaire (FQ) (Wiedemann et al., 2002). The FQ consists of 20 items, which measure EE (10 for CC and 10 for EOI). The scoring of each item ranges from 1 (*never/rarely*) to 4 (*very often*). Higher total scores on each subscale indicate higher EE.

Symptom Check-List-90 Revised (SCL-90-R) (Derogatis & Melisaratos, 1983). The SCL-90 is comprised of 90 items organized within 9 symptom dimensions using Likert scoring on a scale of 1 to 4. The Global Severity Index (GSI) was taken as a global indicator of distress. The GSI is the average score of the 90 items, and is one of the most widely used indexes of psychopathological distress. The Spanish version of the SCL-90-R has shown high internal consistency, ranging from .81 to .90 (González de Rivera et al., 1989).

Experience of Caregiving Inventory (ECI) (Szmukler et al., 1996). The ECI assesses the experience of caring for an individual with a severe mental illness. The questionnaire consists of 66 items with a five-point Likert-type scale (ranging from 0 to 4), grouped into eight negative dimensions and two positive ones. Each scale has a satisfactory reliability falling between .74 and .91. The Spanish version obtained satisfactory internal consistency of .84 for the Positive dimension and .93 for the Negative dimension (Sepúlveda et al., in press). Higher scores indicate a greater overall positive or negative appraisal toward caregiving.

Level of Expressed Emotion Scale (LEE) (Cole & Kazarian, 1988). The LEE assesses the emotional environment at home as it is perceived by patients and their close relatives. The questionnaire contains 60 true or false items which generate a total EE score ranging from 60 to 20, with higher scores indicating higher levels of EE. The LEE is also comprised of four subscales: 1) intrusiveness; 2) emotional response to the patient's illness; 3) negative attitudes toward the patient's illness; and 4) low levels of tolerance and high expectations for the patient. The final Spanish version of the LEE scale (LEE-S), which has been used in the present study, was shortened to 45-items and it presents adequate psychometric properties (Sepúlveda et al., 2012).

Procedure

Carers were voluntarily recruited from the above mentioned Eating Disorders Services, from consecutive admissions or hospital outpatient services, over a period of two years (June 2010-2012). The sample was classified by gender, with mothers and fathers as independent informants of the emotional environment at home. The research was reviewed and approved by an institutional review board and ethical approval was granted (R-009/10).

Translation and Cultural Validation

The following translation procedures were followed for the FQ, in accordance with the guidelines for instrument translation across countries proposed by Muñiz, Elosua, and Hambleton (2013): (a) two independent translations of the original 20-item version were carried out from English into Spanish by two expert translators with knowledge of psychology and psychopathology; (b) translation back into English was carried out by another expert translator; (c) re-translated material was found to be accurate after a comparison of the direct and re-translated versions offered by the translator and the researchers; and (d) the definitive version is presented in this paper.

Data analysis

Data from the same family have been analyzed separately by classifying subjects by gender as if they were independent samples rather than correlated ones. Exclusion criteria were set at three missing responses in each questionnaire. When a maximum of three items were incomplete, individual missing values were replaced with the item mean score, separately for each gender. A series of analyses were conducted to test the psychometric properties of the FQ scale:

Confirmatory Factor Analysis (CFA). In order to examine the dimensionality of the FQ, we estimated a CFA model following recommendations for providing validity evidence based on internal structure, described by Rios and Wells (2014). LISREL 8.8 was used for mothers and fathers separately (Jöreskog & Sörbom, 2001). This model replicated the original structure proposed by the FQ. The FQ items were treated as categorical because of their limited four-point response scale. In terms of univariate normality tests, several items in both groups revealed significant skewness and kurtosis p-values, and multivariate normality tests were also significant for both groups, suggesting departure from normality. However, the measures of relative multivariate kurtosis for the present samples were 1.129 for mothers and 1.097 for fathers,

values considered relatively small, suggesting that collectively the multivariate distributions are reasonably normal (Mardia, 1970; Vieira, 2011). The Robust Diagonally Weighted Least Squares (DWLS) estimation method was used, which adjusts the model to a matrix of polychoric correlations and requires a calculation of the asymptotic covariance matrix. Satorra-Bentler chi-square (Satorra & Bentler, 1994) was also used to correct for the effects of a possible violation of the normality assumption. Following several authors' recommendations (Hu & Bentler, 1999), the fit of the model was determined by a combination of Satorra-Bentler Scaled Chi-Square (χ^2, $p>.05$), Root Mean Square Error of Approximation (RMSEA <.08) with its Confidence Interval, Comparative Fit Index (CFI >.95), and Non-Normed Fit Index (NNFI >.90) fit indices. The CFA model considered a bifactor structure where each FQ item was allowed to load onto one of two correlated factors. This model was identified by fixing the variance of the latent variables to 1.0.

Descriptive data. Descriptive statistics were calculated and gender differences in the validated Family Questionnaire-Spanish version (FQ-S) were explored using the Mann-Whitney U Test.

Reliability. Scale reliability was assessed by calculating Cronbach's alpha for the two samples separately (mothers and fathers). Corrected item-scale Pearson correlations were also calculated.

Other Evidence Indicating Validity. Concurrent validity was examined differentiating by gender. The strength of the association between subscale scores of the FQ-S, the negative dimension of the ECI, and the levels of psychopathology (GSI index) in carers was examined using Spearman correlations. The convergent validity was also explored by examining the association between the FQ-S and the LEE-S.

Results

Before carrying out a Confirmatory Factor Analysis, data were submitted to EFA using PCA and varimax rotation with Kaiser normalization, in order to replicate the results of the original version of the scale. Two factors had eigenvalues greater than 1 and a visual inspection of the scree plot indicated that a two-factor structure was appropriate, explaining 37.1% of the total variance for the sample of mothers and 32.7% for the sample of fathers.

Confirmatory factor analysis

To examine whether the Spanish version of the FQ contained the reported underlying bifactor structure, we conducted a CFA for each sample, specifying a model with two latent variables that represented each of the subscales, which predicted each of the items on their respective subscales.

Table 1 displays the CFA factor loadings for mothers and fathers respectively. In either solution, factor loadings were generally appropriate (≥.30) except for Item 17, which presented small values. The fit for the bifactor CFA model was: SB $\chi^2(169)$ = 323.432, $p<.01$, RMSEA = .067, CI [.056, .078], CFI = .95, and NNFI = .95 for mothers; SB $\chi^2(169)$ = 273.034, $p<.01$, RMSEA = .058, CI [.046, .071], CFI = .95, and NNFI = .94 for fathers. Fit indices are consistent with an appropriate overall model fit. All parameters were statistically significant. Correlations between EOI and CC were .43 for mothers and .44 for fathers.

	CFA bifactor for mothers	CFA bifactor for fathers	Corrected item-scale correlation for mothers	Corrected item-scale correlation for fathers
Factor 1: Criticism (CC) *(10 ítems, alpha de Cronbach .83)*				
FQ-2. Tengo que pedir continuamente que haga las cosas [I have to keep asking him/her to do things]	.48	.54	.40	.44
FQ-4. Él/ella me molesta [He/she irritates me]	.60	.30	.48	.22
FQ-6. Tengo que intentar no criticarle/la [I have to try not to criticize him/her]	.59	.58	.47	.43
FQ-8. Es difícil para nosotros estar de acuerdo en cosas [It's hard for us to agree on things]	.74	.64	.59	.49
FQ-10. No aprecia lo que hago por él/ella [He/she does not appreciate what I do for him/her]	.45	.39	.40	.32
FQ-12. En ocasiones, él/ella me pone de los nervios [He/she sometimes gets on my nerves]	.80	.82	.63	.62
FQ-14. Él/ella hace algunas cosas por rencor [He/she does some things out of spite]	.72	.55	.57	.46
FQ-16. Cuando él/ella quiere constantemente algo de mí, me molesta [When he/she constantly wants something from me, it annoys me]	.71	.49	.58	.41
FQ-18. Tengo que insistir que él/ella se comporte de forma diferente [I have to insist that he/she behave differently]	.64	.68	.48	.54
FQ-20. Estoy a menudo enfadado con él/ella [I'm often angry with him/her]	.73	.76	.62	.61
Factor 2: Emotional Overinvolvement (EOI) (10 ítems, alpha de Cronbach .72)				
FQ-1. Tiendo a descuidarme a mí mismo/a por él/ella [I tend to neglect myself because of him/her]	.41	.50	.29	.40
FQ-3. Pienso a menudo qué va a ser de él/ella [I often think about what is to become of him/her]	.68	.57	.53	.34
FQ-5. Sigo pensando en las razones por las que enfermó [I keep thinking about the reasons for his/her illness]	.43	.54	.37	.40
FQ-7. No puedo dormir a causa de él/ella [I can´t sleep because of him/her]	.71	.67	.51	.51
FQ-9. Cuando algo me molesta de él/ella, yo me lo guardo para mí mismo/a [When something about him/her bothers me, I keep it to myself]	.52	.35	.31	.20
FQ-11. Percibo mis propias necesidades como menos importantes [I regard of my own needs as less important]	.52	.45	.46	.39
FQ-13. Estoy muy preocupado por él/ella [I´m very worried about him/her]	.72	.71	.55	.48
FQ-15. Pensé que yo podría llegar a enfermar [I thought I would become ill myself]	.54	.39	.37	.27
FQ-17[a]. Es una parte importante de mi vida [He/she is an important part of my life]	.14	.22	.11	.16
FQ-19. He renunciado a cosas importantes con la finalidad de poder ayudarle/la [I have given up important things in order to be able to help him/her]	.47	.43	.34	.33

Note: All item-scale correlations at p<.01
[a] Proposed modification of Item 17: es la parte más importante de mi vida

Gender differences in FQ-S scoring

Gender differences in the FQ-S scores using the Mann-Whitney test yielded a mean of 21.10 (SD = 5.45) for mothers and 20.54 (SD = 4.49) for fathers in the CC subscale: these differences were not statistically significant ($z = -0.68$, $p = .49$). Regarding the EOI subscale, a mean of 27.20 (SD = 4.4) for mothers and 25.95 (SD = 4.0) for fathers were found; these differences were statistically significant ($z = -2.71$, $p = .01$). From the sample, 37.4% of the mothers showed high CC compared with 33% of the fathers, while 55.2% of the mothers yielded high EOI compared with 42.5% of fathers, following the cut-off points proposed for each subscale. These differences were statistically significant only for the EOI subscale, $\chi^2(1, 382) = 6,152$, $p = .01$).

Reliability and Item-scale correlations

Internal consistency was estimated by Cronbach's α coefficient demonstrating acceptable reliability for both samples. For mothers, the Cronbach's alpha for the CC subscale was .83 and for the EOI subscale it was .72. For fathers, however, the values were slightly lower: the Cronbach's alpha for the CC subscale was .78 and for the EOI subscale it was .69.

As shown in the Table 1, the 10 items of the CC scale inter-correlated between .11 and .63 for mothers and between .22 and .62 for fathers. Corrected item-scale correlations for the EOI scale ranged from .11 to .55 for mothers and from .16 to .51 for fathers. The item-scale correlation of Item 17 was low, suggesting that it is not as closely associated with the rest of the scale as the other items are.

Convergent and concurrent validity

Regarding the convergent and concurrent validity of the FQ-S scale by gender (see Table 2), significant correlations of moderate to high strength were found between the CC subscale and the LEE-S total scale and its subscales among the sample of mothers. Moreover, the EOI subscale showed small, but significant correlations with Hostility, Lack of Tolerance, and the LEE-S total score. Regarding the sample of fathers, significant correlations of a moderate to strong relationship were found between the CC subscale and the LEE-S total scale and its subscales, except for the Intrusiveness subscale in which the association was not significant. Finally, significant associations of moderate strength were found between the EOI subscale, the LEE-S total, and Lack of Tolerance. Regarding the concurrent validity of the scale,

Table 2

Correlations between the two subscales scores of the FQ-S and, the four subscales scores and total score of LEE scale ($N = 45$) for mothers and fathers, the GSI index and the ECI negative dimension (mothers $N = 203$ and fathers $N = 179$).

FQ subscales	FQ EOI	FQ CC	LEE-S Intrus.	LEE-S Hostility	LEE-S Negative Attitude	LEE-S Lack Tolerance	LEE-S Total	GSI	ECI negative
MOTHERS									
FQ Criticism	.43**	–	.43*	.50**	.45**	.59***	.64***	.36***	.50***
FQ Overinvolvement	–	.43**	.27	.33*	.24	.32*	.39**	.24**	.53***
FATHERS									
FQ Criticism	.44**	–	.11	.59***	.49**	.44**	.57***	.32**	.41***
FQ Overinvolvement	–	.44**	.27	.23	.13	.39**	.37*	.24**	.53***

Note: * Correlation is significant at the .05 level (2-tailed)
** Correlation is significant at the .01 level (2-tailed)
*** Correlation is significant at the .001 level (2-tailed)

significant associations of moderate strength were found between the ECI negative dimension and the GSI index and the CC and the EOI subscales, for both the mothers and fathers; however, the significant correlations between the EOI subscale and the GSI index were lower for both samples ($\varrho = .24$, $p<.01$).

Discussion and conclusions

The primary aim of this study was to adapt and validate the FQ for use with Spanish families of patients with an ED by using CFA. One innovative aspect of the study was that it separated informants within the families, thereby allowing for an examination of differences in EE between mothers and fathers. The sample of 203 mothers and 179 fathers is a large and representative one, ideal for the adaptation of an EE instrument. Our findings are in accordance with the EFA of Wiedemann et al. (2002) which endorsed the use of critical comment and emotional over-involvement as factors in the original scale. However, the two factors together accounted for 48.7% of the variance in the original scale, whereas in our samples they are slightly lower: 37.1% for mothers and 32.7% for fathers. The CFA has confirmed the validity of the two-factor solution that these authors had proposed by demonstrating an acceptable fit, with better results among mothers as compared to fathers. To date, there have not been any other published studies that provide support for using this factor structure in the analysis of clinical samples.

A content examination of the items with the lowest factor loadings and of the intercorrelations between them may be instructive. For example, Item 17 was the item with the lowest factor loading in both versions of the FQ, in the original English and in the Spanish translation. Most of the carers scored high on this item since "the feeling that sons/daughters are an important part of any father´s or mother's life" is an expected condition among them that does not discriminate between healthy family relationships and pathological ones. An amendment of the item may be suggested so that it can be better adapted to the reality of a parent living with a family member with an illness. For example, Item 17 could be modified as follows: "He/she is the most important part of my life."

The reliability of the CC and EOI subscales was acceptable for mothers, and slightly lower for fathers, although the original subscales yielded better coefficients. Intercorrelations between subscales followed expected patterns: the EOI scale appeared to be more heterogeneous than the CC scale. In line with Wiedemann et al. (2002), we also believe that EOI is a complex construct which is difficult to define. For example, item 1 for mothers may express a critical response to the illness but at the same time reveals their over-protectiveness and over-concern regarding their children; something that does not occur among fathers. Additionally, item 9 presents a low correlation with the total EOI scale for both mothers and fathers. This item may need further clarification, as it expresses an ambiguous coping response to the illness, suggesting both over-concern about the illness, through avoidance, as well as possible criticism, if the family member responding to the questions places more emphasis on the conditional statement "if something bothers me."

We also examined the convergent validity of the scale. For mothers, the CC subscale was found to have significant and high correlations with the Level of Expressed Emotion (LEE-S) total score and its subscales (close to .50), while the EOI subscale presented lower correlations with the LEE-S scale and not all of these were significant. For fathers, it is worth highlighting that the CC subscale correlated significantly with the LEE-S total scale and almost all the subscales, while the EOI correlated significantly with the LEE-S total scale and only one of the subscales. One possible explanation could be that the LEE-S and the FQ-S examine the EE construct in two different ways. The LEE-S is organized into four subscales that are difficult to define, although they mainly reflect the critical comments component of EE, with low, and in some cases non-significant, correlations among them (Sepúlveda et al., 2012). The second instrument is organized into two scales which are clearly defined and have been widely used in clinical settings. Concurrent validity was established with moderate to high correlations with other reliable instruments developed to assess caregiving experience, supporting the association between EE and psychological family variables, as well as the prognostic significance of EE in carers' well-being—both among ED samples (Kyriacou et al., 2008; Sepúlveda et al., 2012) and other clinical samples (Möller-Leimkohler, 2005).

As expected, mothers showed higher EOI compared to fathers, a difference also observed in the study by Wiedermann et al. (2002), and in other studies with ED samples (Kyriacou et al., 2008; Szmukler et al., 1996). Our results also support evidence suggesting that women tend to become more emotionally

overinvolved in their family relationships. A possible explanation of these differences is that mothers are usually the ones primarily responsible for providing formal or informal care for their children. Consequently, mothers are a more representative sample than fathers to assess EE, and to whom the maintenance model in EDs can offer a better fit and understanding of the family strain process in EDs. Another potential explanation for the lower EE among fathers could be related to their better adaptive response to the illness and could suggest their use of effective coping strategies. Regardless, fathers may need to be actively encouraged to be more involved in research and clinical contexts so as to fully assess their role in the family context.

Overall, the Spanish version of the FQ presents good reliability, satisfactory convergent validity and acceptable concurrent validity, which allow for the use of the instrument in Spanish families of patients with an ED, although some changes may be necessary to achieve a better fit of the two-factor model (i.e. the proposed modification of Item 17). The instrument obtained better psychometric properties when it was used by mothers than fathers; therefore we encourage the use of independent standards for both genders when developing gender-sensitive instruments. Differences between mothers and fathers in their emotional response to the illness also appear to support the importance of considering a gender-specific approach when carrying out interventions that aim to reduce EE in carers. More specifically, the observed gender differences in EE highlight the importance of improving the tendency of over-involvement in mothers and withdrawal and criticism in fathers. However, fathers' tendency to be emotionally over-involved in the course of the illness should be viewed as just as important an issue as their level of criticism when working with them in family therapy.

There are several limitations that should be noted. First, information about the sensitivity to change of the measure before and after family intervention has been explored in previous studies (Pepin & King, 2013). Here, however, we suggest that additional attention should be given to assessing test-retest reliability. Further evidence of the predictive validity of the instrument in assessing efficacy of treatment and relapse rate through cross-sectional models and longitudinal prediction studies is also recommended. A recent study that used the FQ to measure the sensitivity to change of the instrument after intervention showed a significant reduction in EE over time among Spanish families (Gutiérrez, Sepúlveda, Anastasiadou, & Medina-Pradas, 2014). It would be also advisable to use both objective and subjective measures of EE from both points of view (the child's and the carers') (Duclos et al., 2012) as parents may attempt to conceal their criticism or concern in a face-to-face interview context. In this context, the use of self-report measures may be more advantageous. Finally, an important aim of future research would be the examination of the psychometric properties of the FQ in other clinical samples in order to examine its generalizability.

Acknowledgements

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