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**“The relationship between dysfunctional family patterns and symptom severity among adolescent patients with eating disorders: A gender-specific approach”**

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**Abstract**

The objective of this study was to identify factors related to dysfunctional family functioning that may be associated with the severity of symptoms among adolescent patients with an Eating Disorder (ED) at first-contact care. We recruited a total of 48 mothers and 45 fathers of 50 patients with an ED from an ED Unit in Madrid, Spain, between October 2011 and July 2012. Parents completed self-report assessments related to family functioning and psychological wellbeing. Patients went through clinical interviews and completed a self-report questionnaire assessing symptom severity. Compared to fathers, mothers showed higher levels of anxiety and emotional over-involvement and perceived to a greater degree the positive and negative aspects of their experience as caregivers. Regarding the relationship between family functioning and symptom severity, mothers' perceptions of their family relationships as enmeshed and less adaptive, along with anxiety, accounted for 39% of variance in the severity of ED symptoms. Anxiety and symptom accommodation by the fathers accounted for 27% of variance in the symptom severity. Interventions that help parents to cope with their caregiving role should target behavioral, cognitive and emotional aspects of their functioning and be gender-specific, to improve the outcome of ED in patients.

**Keywords**

Caregiving experience, family functioning, gender, eating disorders

## **Introduction**

Caring for a relative with an Eating Disorder (ED) is associated with significant levels of psychological distress and burden (Cottee-Lane, Pistrang, & Bryant-Waugh, 2004; Haigh & Treasure, 2003). Moreover, families of persons suffering from an ED report physical and mental health deterioration, poor quality of life and interpersonal difficulties (Highet, Thompson, & King, 2005; Nielsen & Bara-Carril, 2003). In addition, families caring for younger patients with short illness duration often experience more difficulties as caregivers, considering that they live with the patient and spend many hours in contact with him/her, which is all in addition to the essential role they play in their child's development and education (Treasure et al., 2001). However, until recently, few published studies have examined the caregiving experiences in EDs among child and adolescent samples (Keitel, Parisi, Whitney, & Stack, 2010; Zabala, Macdonald, & Treasure, 2009).

Research has offered two important conceptualizations about families and EDs. The early models of "psychosomatic" families suggested that family patterns or dysfunctions contributed to the development, maintenance and perpetuation of the disorder (Minuchin, Rosman, & Baker, 1978; Selvini Palazzoli, 1978). However, more recent research has supported a more multi-determined and contextual view of psychosomatic processes (Eisler, 2005; Eisler et al., 1997; Vidović, Jureša, Begovac, Mahnik, & Tocil, 2005). These models consider the quality of family functioning to be

a factor preceding the onset of EDs, possibly playing a role in bringing about the disorder, or serving as a risk factor in the course and outcome of the disorder (North, Gowers, & Byram, 1997; Strober, Freeman, & Morrell, 1997), rather than merely being a consequence of the disease. Some of these studies have suggested that parent's perception of low cohesion and flexibility (Bonne et al., 2003; Kluck, 2008) is related to the development of EDs. Other studies have described a highly cohesive and flexible family style as more favorable for the son or daughter's physical and emotional well-being and his/her move into maturation and independence, whereas an enmeshed, overprotective and rigid family engenders and maintains EDs (Eisler, 2005).

More recent conceptualizations support the idea that no specific or particular pattern of functioning exists in families of patients with EDs (for a review of the literature, see Eisler, 2005). Additionally, dysfunctional patterns may represent the family's response to the stress of the ED (Eisler, 2005; Ravi, Forsberg, Fitzpatrick, & Lock, 2009; Treasure & Schmidt, 2013) and can serve as maintaining factors in EDs and predictors of poor outcome. A number of studies, including those carried out by the Maudsley Hospital team (Schmidt & Treasure, 2006; Treasure & Schmidt, 2013) have developed several models containing factors that may explain the complex relationship between family functioning and symptom severity in EDs, with the majority of these studies following cross-sectional designs. According to these findings, ED symptoms and behaviors may trigger distress in caregivers, which in turn may lead caregivers to adopt maladaptive coping strategies as evidenced by symptom accommodation or high levels of Expressed Emotion, in particular, criticism, hostility and over protection (Hooley, 2007). This maladaptive coping leads to increased caregiving burden and physical and psychological health problems (Dimitropoulos, Carter, Schachter, & Woodside, 2008; Kyriacou, Treasure, & Schmidt, 2008; Sepulveda, Kyriacou, &

Treasure, 2009). Finally, the above-mentioned family factors may lead to a worsening of ED symptoms and behaviors, as well as treatment response, in patients (Eisler et al., 2000).

The previously described conceptualizations of families and EDs differ in their consideration of family functioning. Dysfunctional family patterns may be considered to precede the ED, to come as a consequence of it, or a combination of both. The main question that arises is: how can we better explain the ED caregiving experience and identify treatment targets or models of change to improve illness outcomes and reduce caregivers' levels of distress? Furthermore, only a few studies based on these conceptualizations have approached the caregiving experience from a gender perspective, despite the fact that gender differences in health and wellbeing are well-known (Pinquart & Sorensen, 2006), and research in EDs has revealed differences between mothers and fathers in terms of adjustment and caregiver experience (Martin et al., 2013; Raenker, 2011). Additionally, it is important to note an underrepresentation of fathers in clinical research in EDs (Cook-Darzens, Doyen, Falissard, & Mouren, 2005).

### **Gender differences in parent functioning as an antecedent in EDs**

Studies on family patterns as a theoretical antecedent in EDs are widespread, but their results are less consistent (Polivy & Herman, 2002; Wells & Sadowski, 2001). Most researchers have gathered empirical data concerning family functioning in EDs from patients' perceptions and from cross-sectional studies. Regardless, some theoretical models and data have led to the assumption that impaired family structure and functioning can play an important part in the etiology and maintenance of the ED (Bonne, et al., 2003; Cook-Darzens, et al., 2005). Studies following this model have shown that families of patients with an ED generally tend to be less cohesive, more

overprotective, more rigid and to have poorer communication than healthy control families (Eisler, 2005; Szabo, Goldin, & Le Grange, 1999; Vidović, et al., 2005).

Regarding gender differences, some studies have shown that in comparison to fathers, mothers of patients with Anorexia Nervosa (AN) view their families to be more rigid, whereas fathers seem to be as more satisfied with their family life than other family members (Cook-Darzens, et al., 2005). In addition, mothers of patients with Bulimia Nervosa (BN) perceive less cohesion in family structure than mothers of healthy controls (Bonne, et al., 2003). No differences between fathers have been found. Finally, some researchers have suggested that factors related to family dynamics may have a more non-specific effect on general psychopathology, rather than specifically on the development of EDs (Fairburn, Welch, Doll, Davies, & O'Connor, 1997; Laliberte, Boland, & Leichner, 1999).

### **Gender differences in parent functioning as a reaction to EDs**

Mothers of patients with AN and BN express more anxiety and depressive symptoms, and more feelings of distress and burden than fathers do (Martin, et al., 2013; Raenker, 2011; Whitney et al., 2005). These results are consistent with those of studies of other groups of patients, in which female caregivers exhibited more negative scores in quality of life and mental health and more caregiving burden compared with male caregivers (Pinquart & Sorensen, 2006). In addition, fathers showed a more behavioral response to the illness, centered on unhelpful enabling and accommodating behaviors (Whitney, et al., 2005). In the Doctoral Thesis of Raenker (2011), fathers expressed more self-efficacy as caregivers and used more adaptive coping strategies compared with mothers.

From the perspective of Expressed Emotion, mothers of patients with AN and BN expressed more emotional over-involvement and critical comments than did fathers.

Fathers expressed more emotional over-involvement toward patients with BN than patients with AN (Kyriacou, et al., 2008; Zabala, et al., 2009).

Even fewer studies have considered parent's gender when exploring the relationship between family reactions and patient outcome. (Szmukler, Eisler, Russell, & Dare, 1985) showed fathers' critical comments to be associated with treatment dropout and longer illness duration. Both mothers' and fathers' anxiety levels, criticism and denial of the illness were associated with severity of ED attitudes and behaviors. (Kluck, 2008) also found an association between family dysfunction and increased disordered eating in a non-clinical sample of college women.

## **Objectives**

Conceptual models of the maintaining factors for EDs (Martin, et al., 2013; Szmukler, et al., 1985) provide a useful theoretical and heuristic tool to explain the complex process undergone by caregivers in adapting to and coping with an ED. In addition, we considered that familial factors occurring prior to ED onset should also be taken into account when examining caregiving experiences. Therefore, we felt it was necessary to examine whether family functioning (considered as a theoretical antecedent within this model), together with family maintaining factors in reaction to the illness, were related to ED outcomes. Furthermore, in recent years, studies have pointed out that, to improve the efficiency and effectiveness of psychological interventions for caregivers, we need to know more about the specificity of caregivers (Gitlin et al., 2003; Zarit, 2009). Therefore, gender differences related to the caregiving experience and the family's responses to the illness should be examined to gain a more comprehensive picture about risk and protective factors in the family environment.

The first objective of this study was to describe the caregiving experiences of parents of people with an ED by examining differences between mothers and fathers.

The second objective was to identify familial factors related to family dysfunctional patterns, either as theoretical antecedents or as a response to the illness and their associations with the severity of the ED symptoms presented by adolescent patients at the time of their first contact with mental health services. To our knowledge, no such study has ever been conducted in Spain.

## **Material and methods**

### **Participants**

Patients with their mothers and fathers were recruited over a period of ten months (October 2011-July 2012). Inclusion criteria for patients were: 1) 12 to 18 years of age, 2) presence of a restrictive or non-purging type ED, according to DSM-IV-TR diagnostic criteria (American Psychiatric Association, 2002), 3) living with their mothers and/or fathers. Adolescents were excluded if they were acutely suicidal or if they presented a diagnosis of psychosis or substance-related disorder. Patients and their parents were randomly and voluntarily recruited on the first day they were referred for treatment for their ED-specific problem from consecutive admissions at the Child and Adolescent Psychiatric Section of the Niño Jesus University Hospital. A short description of the nature and the objective of the study was provided to all families (“please help us to better understand your experience as caregiver in order to better know how to help you and your son/daughter”) during their visit to the mental health service. More specifically, about 140 ED patients who presented restrictive or non-purging symptoms seen on their first contact in the hospital were identified by an initial non-standardized and semi-structured interview, external to the present study. A total of 53 families (patients with their respective mothers and fathers) were randomly approached for the study, 51 of whom decided to sign the informed consent and to



participate in the study. All of the 51 patients were screened by a semi-structured interview (K-SADS-PL), and only one of them was excluded because she presented psychotic symptoms. Finally, the remaining 50 patients, along with their parents, were selected for the study and completed the questionnaires.

The parents' sample comprised 48 mothers and 45 fathers recruited from an ED Unit in Madrid, Spain. The sample of patients consisted of 49 adolescent females and 1 adolescent male, with a mean illness duration of 15.7 months ( $SD = 12.6$ ). Almost all patients had both their mother and father participating in the study (98% of mothers and 91.8% of fathers). The majority of patients had a diagnosis of AN-Restrictive type (78%), followed by 16% of patients with Eating Disorder Not Otherwise Specified-Restrictive type and 6% of patients with BN non-purging type. Fifty-six percent of patients had a comorbid diagnosis of Major Depressive Disorder.

### **Design and procedure**

We conducted a cross-sectional and descriptive study based on self-report questionnaires. Additionally, clinical semi-structured interviews, for screening purposes only, were conducted by two of the authors of the present study (D.A. and M.G.). Researchers carried out clinical interviews to establish the patient's diagnosis, and families agreed to a period of two weeks for the completion of self-report instruments. The hospital's Ethics committee granted approval for this study protocol (R-009/10).

### **Instruments**

*For patients.*

The Schedule for Affective Disorders and Schizophrenia for School-Age children-Present and Lifetime version (K-SADS-PL) (Kaufman, Birmaher, Brent, Rao,

& Ryan, 1996) is a structured interview capable of generating 32 DSM-IV Axis I child psychiatric diagnoses. The Screen Interview assesses the presence of 82 clinical symptoms, which are divided into 20 different diagnostic areas. The majority of K-SADS-PL items are scored using a 0 to 3 Likert-type scale. Scores of 0 indicate no information is available; scores of 1 suggest the symptom is not present; scores of 2 indicate subthreshold levels of symptomatology, and scores of 3 represent threshold criteria. The interview was previously adapted to Spanish population by Ulloa and others (Ulloa et al., 2006).

The Eating Attitudes Test (EAT-26) (Gandarillas, Zorrilla, Sepúlveda, & Muñoz, 2003; Garner, Olmsted, Bohr, & Garfinkel, 1982), which is the shortened version of the EAT-40 (Garner & Garfinkel, 1979), was used to assess disordered eating behaviors among the patient sample. It is a 26-item questionnaire with a 6-point Likert-type scale (range 0–5). Scores of 20 or more indicate ED pathology. The questionnaire is highly reliable and valid (Garner, et al., 1982), although alone it cannot yield a specific ED diagnosis. The Spanish version used in the present study obtained a satisfactory internal consistency of 0.91 for the total scale.

*For parents.*

The Hospital Anxiety and Depression Scale (HADS) (Herrero et al., 2003; Zigmond & Snaith, 1983) is an instrument designed to detect the presence of mild degrees of anxiety and depression, and their severity. It consists of 14 items, on a four-point Likert-type scale (range 0–3) grouped into two subscales, Anxiety (7 items) and Depression (7 items). Scores range from 0-21 for each subscale. The original version of the instrument showed satisfactory reliability with Cronbach's  $\alpha$  coefficients of 0.86 for each subscale. The Spanish version used in the present study obtained a satisfactory internal consistency of 0.86 for the Anxiety subscale and 0.87 for the Depression subscale.

The Experience of Caregiving Inventory (ECI) (Szmukler et al., 1996) assesses the experience of caring for a person with a severe mental illness. It consists of 66 items using a 5-point Likert-type scale (range 0–4), 52 of which are grouped into eight negative scales (difficult behaviors, negative symptoms, stigma, problems with services, effects on family, need to backup, dependency and loss) and 14 of which are divided amongst two positive scales (positive personal experiences and good relationship with the patient). Higher scores indicate a more positive or negative appraisal of caregiving. The Cronbach's alpha for the total instrument was 0.90 in the original study of Szmukler et al. (1996) and 0.92 in the present study.

The Accommodation and Enabling Scale for Eating Disorders (AESED) (Sepulveda, et al., 2009) is a 33-item questionnaire with a 5-point Likert-type scale (range 0–4) that measures the degree to which the family member allows eating disorder behaviours to continue within family life. Total scores fall between 0 and 132 with higher scores indicating higher levels of accommodation to the eating disorder symptoms by the family. This scale presented excellent internal consistency, with Cronbach's  $\alpha$  of 0.92 in the original validation study and 0.90 in the present study.

The Family Questionnaire (FQ) (Sepulveda et al., 2014; Wiedemann, Rayki, Feinstein, & Hahlweg, 2002) was designed to measure levels of expressed emotion among families of patients. The measure consists of 20 items, on a 4-point Likert scale (range 1–4), 10 items for the Critical comments scale (CC) (range 10-40) and 10 for the Emotional Over-involvement scale (EOI) (range 10-40). Higher total scores for each scale indicate higher expressed emotion. The authors gave a cut-off point of 23 for CC as an indication of high CC, and 27 for EOI. Acceptable reliability coefficients were found in the original version of the questionnaire (Cronbach's  $\alpha$  for CC 0.92 and for EOI 0.80). In the present study, the Cronbach's  $\alpha$  for the CC scale was 0.81 and for the EOI scale was 0.80.

The Family Adaptability and Cohesion Scale (FACES-II) (Olson, Portner, & Bell, 1982) consists of 30 items on a five-point Likert scale (range 1-5) and contains two subscales. The Family Cohesion subscale (15 items) assesses emotional bonding and sense of connectedness among the members of a family, with low cohesion scores reflecting disengagement and high scores a highly cohesive family functioning. The Family Adaptability scale (15 items) measures the extent to which families tolerate change depending on situational demands, with low scores indicating a rigid family functioning and high scores a more flexible functioning. For the specific purposes of the present study, a linear scoring of the FACES-II was used. Internal reliability of the FACES-II in the original version of the questionnaire was acceptable, with Cronbach's  $\alpha$  of 0.87 for the Cohesion subscale and 0.78 for the Adaptability subscale. In the current study, Cronbach's  $\alpha$  for the whole scale was 0.74.

### **Statistical analysis**

Data were analyzed using the statistical software package SPSS 15.0 for Windows (SPSS, 2006). We first conducted Kolmogorov–Smirnov tests to check for normal distributions of the data, and based on the results of the test, non-parametric statistical tests were used. All  $p$  values were two-tailed and statistical significance was set at  $p < 0.05$ .

To examine the differences between fathers and mothers in terms of psychological variables, we performed a non-parametric Mann-Whitney U test. We calculated Spearman rank correlation coefficients between psychological variables of fathers and mothers and patients' symptom severity index. We conducted a series of multiple regression analyses (successive stepwise model), with the symptoms severity index (EAT-26) as the dependent variable and family psychological factors as independent variables, to determine the factors associated with symptom severity by

separating mothers and fathers. The  $R^2$  statistic was used to ascertain the unique variance that could be attributed to each one of the independent variables. We also examined the following variables as potential confounders: age of mothers and age of fathers, respectively, hours of daily contact with the patient of mothers and fathers, respectively, and illness duration. Accordingly, possible confounders were added one by one to the multiple regression models and those that were significant at a 0.05 level or altered the unstandardized regression coefficient (B) of the main independent variable by more than 10% were retained in the models. The sociodemographic and clinical variables mentioned above were not found to act as confounding variables and so none of them was included in the final multiple regression models.

## Results

The mean age of the mothers was 44.9 years ( $SD = 4.6$ ), and the mean age of the fathers was 47.5 years ( $SD = 4.1$ ). The majority (76.3%) of the parents reported having completed higher education studies; 84% of them were married or living with their partner; 79.1% had a full- or part-time job, and 90.3% were living with their sons/daughters (Table 1). The results did not indicate significant differences between mothers and fathers in the above-mentioned sociodemographic variables. However, a significantly higher percentage of mothers, compared with fathers, reported a high number of face-to-face hours of contact per week (higher than 21 hours/week) (85.4 versus 68.9%) ( $\chi^2 = 3.629$ ,  $df = 1$ ,  $p = 0.05$ ). An important number of mothers and fathers reported a history of an ED (20.8 and 11.1%, respectively) and/or a history of a mental disorder (27.1 and 13.3%, respectively), with non-significant differences by gender. Information about parent's psychiatric history was self-reported.

Mothers showed higher levels of anxiety ( $z = -2.36$ ;  $p = 0.018$ ) and emotional over-involvement ( $z = -2.33$ ;  $p = 0.020$ ) (Table 2). In addition, they exhibited a more negative caregiving experience ( $z = -2.34$ ;  $p = 0.020$ ), while at the same time they appreciated, to a greater degree, the positive aspects of their relationship with their daughters/sons ( $z = -2.17$ ;  $p = 0.030$ ), compared with fathers. Non-significant gender differences were observed in terms of depressive symptom levels ( $z = -1.65$ ;  $p = 0.100$ ), accommodation and enabling behaviors ( $z = -1.02$ ;  $p = 0.308$ ), criticism ( $z = -1.62$ ;  $p = 0.104$ ), family cohesion ( $z = -0.46$ ;  $p = 0.648$ ) and adaptability ( $z = -0.62$ ;  $p = 0.538$ ).

Additionally, the severity of ED attitudes and behaviors was positively associated with anxiety and depressive symptom scores, with accommodation and enabling behaviors and with less adaptability, for both mothers and fathers (for mothers,  $r_s = 0.32$  to  $-0.53$ ,  $p < 0.05$  and for fathers,  $r_s = -0.31$  to  $0.54$ ,  $p < 0.05$ ). However, only in the case of the mothers were their negative experiences as caregivers associated with EAT-26 scores ( $r_s = 0.40$ ,  $p = 0.007$ ). The symptom severity index was associated with high levels of emotional over-involvement in mothers ( $r_s = 0.34$ ,  $p = 0.020$ ) and with high levels of criticism in fathers ( $r_s = 0.36$ ,  $p = 0.016$ ) (Table 3).

We adjusted several multiple regression models of the patients' symptom severity index by separating the sample of parents by gender (Table 4). Not all of the psychological variables under study were included in the regression analysis because some had a high correlation with other independent variables, and thus, their contribution to the explanatory capacity was redundant. The variables that were not included in the analyses were as follows: Experience of Caregiving Inventory negative dimension, Experience of Caregiving Inventory positive dimension, FQ EOI and FQ CC.

The resulting equations included psychological variables that varied according to gender. Specifically, for mothers, the image they had of their families as rigid and less adaptable to change ( $\beta = -0.68, p = 0.001$ ), together with their own anxiety ( $\beta = 0.41, p = 0.003$ ) and the perception of high levels of togetherness within their family ( $\beta = 0.40, p = 0.05$ ) accounted for 40% of variance in patients' severity of ED symptoms. In turn, for fathers, their levels of anxiety ( $\beta = 0.36, p = 0.014$ ), together with their accommodation and enabling behaviors ( $\beta = 0.34, p = 0.021$ ) accounted for 31% of variance in symptom severity.

## Discussion

The first objective of this study was to take a snapshot of the family environment by describing the caregiving experiences of relatives of people with an ED, while integrating a gender perspective. Mothers reported higher levels of anxiety than fathers, in accordance with previous studies among ED samples (Martin, et al., 2013; Raenker, 2011; Whitney, et al., 2005) and other groups of caregivers (Pinquart & Sorensen, 2006), whereas we did not find any differences in depressive symptom levels and accommodation and enabling behaviors. These results can be explained by the fact that the participants of this study had a relatively short illness duration and did not have previous experiences with mental health services. In fact, levels of depressive symptoms and accommodation among family members of the present study were lower than those reported in previous studies in which illness duration was longer and depressive symptoms and accommodating behaviors may have already spread among family members (Anastasiadou, Medina-Pradas, Sepulveda, & Treasure, 2014).

In terms of the results regarding parental functioning as a reaction, mothers reported higher levels of emotional over-involvement and a more negative caregiving

experience than fathers. They also reported a high number of face-to-face hours of contact per week. These results are consistent with previous studies in EDs (Martin, et al., 2013; Raenker, 2011; Whitney, et al., 2005) and in other types of caregivers (Pinquart & Sorensen, 2006).

An explanation of the differences found in relatives' wellbeing and caregiving experience may be that mothers frequently have the main responsibility for the child's care (von Essen, Sjöden, & Mattsson, 2004), they perceive themselves as more appropriate for the caregiving role and feel a greater need to fulfill this role (Bedard et al., 2005). As a consequence, mothers may spend more hours in contact with the patients and are therefore more likely to feel burdened and exhibit a more emotional response to the illness with feelings of anxiety and overprotectiveness. These coping mechanisms are consistent with studies that examine the caregiving experience from a gender perspective (Velasco, 2008). Other explanations of these differences between mothers and fathers suggest that this may be a reflection of the general finding that women report more physical and psychological complaints and a lower quality of life (O'Rourke & Tuokko, 2004) and psychological well-being than men (Bedard, et al., 2005).

Results from prior studies about family patterns and dysfunctions as an antecedent in EDs are not consistent (Polivy & Herman, 2002; Wells & Sadowski, 2001). In the present study, we did not observe any gender differences in terms of family cohesion and adaptability, which is in accordance with the findings of (Whitney, et al., 2005). However, our results are contrary to the studies of Cook-Darzens et al. (2005) and Bonne et al. (2003) in which mothers, compared to fathers, viewed their families favorably, as stable, less conflicted and cohesive, highlighting thus the pivotal unifying role of mothers in the family. In consideration of the aforementioned results of



the present study in which fathers demonstrated a more positive caregiving experience compared to mothers, the lack of differences between fathers and mothers in their perceptions about family functioning is not surprising. Accordingly, in our sample, the figure of the father emerges as a potential support for the family as a unit.

The second objective was to identify factors related to family dysfunctional patterns, both as a theoretical antecedent and a response to the illness, which may be associated with the severity of ED symptoms in mothers and fathers of adolescent patients with an ED at their first contact with mental health services.

For both fathers and mothers, anxiety and depressive symptom scores, accommodation and enabling behaviors and the perception of their family as rigid were related to the symptom severity of patients. This is not surprising given that prior studies have shown anxiety and depressive symptoms to be associated with poor illness outcome (Schmidt & Treasure, 2006; Szmukler, et al., 1996). (Kluck, 2008) also found an association between family dysfunction (specifically family adaptability and cohesion) and increased disordered eating. However, anxiety, and not depressive symptom levels, explained the variance of ED symptom severity in that study. A tentative explanation could be that, when illness duration is short, relatives' anxiety may play a more determinant role than their depressive symptoms in the progress of the ED. In fact, in the present research, both mothers and fathers scored higher in anxiety than in depressive symptoms.

Only in the case of the mothers of this study, were negative caregiving experience and emotional over-involvement related to higher levels of ED attitudes and behaviors. However, their perception of an inadequate adaptability and cohesion in their family were the only variables that explained the variance of ED symptom severity. Bearing in mind the fact that mothers' traditional gender roles require them to

provide a positive connecting function in the family, through conflict avoidance and overprotectiveness (Dio Bleichmar, 2005; Velasco, 2008), the perception of their families as highly cohesive and not adaptable to change, may lead them to experience feelings of blame and distress. This, in turn, may be associated with a worsening in the symptomatology of their daughters.

Only in the case of fathers were criticism levels associated with ED symptom severity, a finding that has been reported previously (Szmukler, et al., 1996). The results also indicated that for fathers, accommodation behaviors explained the variance in the ED symptoms. A possible explanation is that when fathers fail to fulfill their traditional gender role of setting limits in the family (as seen through their accommodation of symptoms), ED symptoms and behaviors worsen. In addition, some studies have suggested that fathers express helplessness and uncertainty regarding symptom management and lack of control (Raenker, 2011). As a consequence, they react to the illness by avoiding confrontation, as they do not know how to deal with it, or by involving themselves in reassuring and enabling behaviors.

In this study, we found that parent functioning as a theoretical antecedent and as a reaction, played an important role in identifying factors associated with ED symptomatology. The results of this research support a multi-determined and contextual view of EDs (Eisler, et al., 1997; Vidović, et al., 2005) because it takes into consideration, both theoretically and methodologically, whether family functioning precedes, maintains or comes as a consequence of the ED.

Gender differences in ED caregiving involve not only the health and experience of fathers and mothers, but also the differential relationship between all of these features. From the perspective of the parent's functioning as a theoretical antecedent, our results suggest that the actual differences in functioning between mothers and

fathers are not as important as the role and appraisal placed on this functioning by the parents themselves. The familial psychological variables that were associated with symptom severity of patients were gender-differentiated, although we did not observe any gender differences in FACES and AESED scores. These results suggest that gender is an important determinant.

The present study had several limitations. First, the current cross-sectional design did not allow for distinguishing problems as antecedents or responses to the child's illness, rather it only offered a description of family functioning at illness onset. Therefore, the current data did not allow us to differentiate between families and parents whose apparent psychological distress and symptoms were due to coping with the ongoing presence of EDs, from those who had psychiatric problems, or counterproductive patterns of functioning independent of this problem. Longitudinal designs aimed at examining family factors prior to or following the onset of the eating disorder would permit us to specify the direction of that complex relationship. Second, it would be beneficial to replicate this research in the future with larger sample sizes, as well as with populations of different nationalities and other psychiatric disorders to enhance its generalizability.

### **Implications for Clinical Practice**

These findings have implications for both clinical interventions for ED caregivers and gender-specific health practices. First, interventions that help parents to cope with their caregiving role should target the parent's behavioral, cognitive and emotional responses, either preceding or following the genesis of the disorder, which may be adapted to each parenting style and to the differential perceptions that mothers and fathers have about family functioning. Second, gender roles and gender determinants that may affect males' and females' perceptions, motivations and

expectations should be considered in clinical practice. Fathers, who are often excluded from treatment decisions and are therefore considered the “neglected” group, should always be included in clinical research and practice.

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**Table 1***Sociodemographic and clinical data of caregivers*

	Total		Mothers		Fathers		$\chi^2$ ; <i>p</i> -value
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	
<b>Gender</b>							
Male	45	48.4	---	---	---	---	2.860; 0.01
Female	48	51.6					
<b>Educational level</b>							
School/Secondary level	22	23.7	10	20.8	12	26.7	.438; 0.51
Degree/Diploma	71	76.3	38	79.2	33	73.3	
<b>Marital status</b>							
Married/Living together	78	83.9	40	83.3	38	84.4	.021; 0.88
Single/Divorced/Widowed	15	16.1	8	16.7	7	15.6	
<b>Employment situation</b>							
Full time/Part time	72	79.1	35	72.9	39	86.7	2.705; 0.10
Unemployed/Retired	19	20.9	13	27.1	6	13.3	
<b>Living with the patient</b>							
Yes	84	90.3	45	93.8	39	86.7	1.333; 0.248
No	9	9.7	3	6.3	6	13.3	
<b>Hours of Contact per week</b>							
≥ 21	72	77.4	41	85.4	31	68.9	3.629; 0.05
<21	21	22.6	7	14.6	14	31.1	
<b>History of eating- and weight-related problems</b>							
Yes			10	20.8	5	11.1	1.623; 0.20
No			38	79.2	40	88.9	
<b>Psychiatric history</b>							
Yes			13	27.1	6	13.3	2.701; 0.10
No			35	72.9	39	86.7	

**Table 2**

*Mean and standard deviations of psychological variables for the total sample and comparisons between fathers and mothers*

	Total		Mothers		Fathers		<i>z</i> ; <i>p</i> -value
	<i>N</i>	Mean ( <i>SD</i> )	<i>N</i>	Mean ( <i>SD</i> )	<i>N</i>	Mean ( <i>SD</i> )	
HADS Anxiety	93	8.70 (3.83)	48	9.69 (4.14)	45	7.64 (3.19)	-2.357; 0.018
HADS Depressive symptoms	93	6.15 (4.13)	48	6.81 (4.20)	45	5.44 (4.00)	-1.649; 0.099
ECI Positive dimension	91	30.35 (8.53)	46	32.22 (9.32)	45	28.44 (7.27)	-2.169; 0.030
ECI Negative dimension	89	74.15 (25.25)	45	80.07(26.50)	44	68.09 (22.61)	-2.335; 0.020
AESED Total	91	40.0 (19.11)	46	42.48 (20.16)	45	37.47 (17.85)	-1.020; 0.308
FQ Emotional Over- involvement	93	26.02 (4.81)	48	27.10 (5.08)	45	24.87 (4.25)	-2.330; 0.020
FQ Criticism	93	21.68 (5.27)	48	22.69 (5.37)	45	20.60 (5.01)	-1.62; 0.104
FACES II Cohesion	91	62.03 (9.44)	47	62.34 (9.54)	44	61.70 (9.43)	-.457; 0.648
FACES II Adaptability	91	49.38 (7.27)	47	48.89 (7.57)	44	49.81 (6.98)	-.616; 0.538

Note: *SD*, standard deviation; HADS, Hospital Anxiety and Depression Scale, possible score ranges for each subscale of 0-21; ECI, Experience of Caregiving Inventory, possible score range of 0–208 for ECI-negative dimension and of 0–56 for ECI-positive dimension; AESED, Accommodation and Enabling Scale for Eating Disorders, possible score range of 0-132; FQ, Family Questionnaire, possible score range of 10-40 for each subscale; FACES-II, Family Adaptability and Cohesion Scale, possible score range of 15-75 for each subscale.

**Table 3**

*Correlations among psychological variables of mothers and fathers and symptom severity of patients*

	<b>Mothers (N=48)</b>	<b>Fathers (N=45)</b>
	<b>EAT-26</b>	
HADS Anxiety	<b>0.48**</b>	<b>0.54**</b>
HADS Depressive symptoms	<b>0.32*</b>	<b>0.45**</b>
ECI Positive dimension	-0.06	-0.14
ECI Negative dimension	<b>0.40**</b>	0.24
AESED Total	<b>0.36*</b>	<b>0.52**</b>
FQ Emotional Over-involvement	<b>0.34**</b>	0.20
FQ Criticism	0.27	<b>0.36*</b>
FACES II Cohesion	-0.26	-0.28
FACES II Adaptability	<b>-0.53***</b>	<b>-0.31*</b>

Note: HADS, Hospital Anxiety and Depression Scale; ECI, Experience of Caregiving Inventory; AESED, Accommodation and Enabling Scale for Eating Disorders; FQ, Family Questionnaire; FACES-II, Family Adaptability and Cohesion Scale

\*Correlation is significant at the 0.05 level (two-tailed)

\*\*Correlation is significant at the 0.01 level (two-tailed)

**Table 4**

*Stepwise multiple regression analysis of variables related to parent functioning as predictors of patient symptom severity by parent gender (mothers and fathers)*

<b>EAT-26</b>		
Independent variables	Mothers	Fathers
	<b><math>\beta</math></b>	<b><math>\beta</math></b>
(Constants)	45.87	7.59
HADS Anxiety	0.41**	0.36**
AESED Total	0.14	0.34*
FACES Adaptability	- 0.68**	- 0.03
FACES Cohesion	0.40*	0.01
<b><math>R^2</math></b>	<b>0.40</b>	<b>0.31</b>

Note:  $\beta$ , standardized coefficient;  $R^2$ , explained variance; HADS, Hospital Anxiety and Depression Scale; AESED, Accommodation and Enabling Scale for Eating Disorders; FACES-II, Family Adaptability and Cohesion Scale;

\* $p < 0.05$ ; \*\* $p < 0.01$