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PRIMARY CAREGIVERS OF SCHIZOPHRENIA OUTPATIENTS

Primary caregivers of schizophrenia outpatients: burden and predictor variables

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Abstract

This paper explores family burden in relation to relatives' coping strategies and social network, as well as in relation to the patients' severity of positive and negative symptoms. Data on the severity of symptoms (PANSS), social functioning (SFS), caregivers burden (ECFOS), coping skills (FCQ), and social support (SNQ) were gathered from a randomized sample of 101 Chilean outpatients and their primary caregivers, mostly mothers. Low levels of burden were typically found, with the exception of moderate levels on general concerns for the ill relative. A hierarchical regression analysis with four blocks showed that clinical characteristics, such as higher frequency of relapses, more positive symptoms and lower independence-performance, together with lower self-control attributed to the patient, decrease in social interests, and less affective support, predict burden. The results support the relevance of psychoeducational interventions where families' needs are addressed.

Keywords: schizophrenia, burden, families, caregivers, predictor variables, assessment

Primary Caregivers of Schizophrenia Outpatients: Burden and Predictor Variables

1. Introduction

Care activities for schizophrenia patients impact on the general and mental health of the caregivers (Reinhard, 1994; Reinhard, et al, 1995; Schene, et al., 1998; Grandón and Jenaro, 2002b). Namely, burden refers to the negative impact of the mental disease of the individual on the entire family (Schene, 1990; Biegel and Schultz, 1999; Grandón and Jenaro, 2002a). It is possible to distinguish between objective burden, the negative consequences on family routines, and subjective burden that relates to emotional disturbances experienced by the caregiver (Reinhard, et al., 1994; Schene, et al., 1994; Provencher and Mueser, 1997). Yet, subjective burden and stress have been incorrectly considered as equivalent, which has resulted in inappropriate assessments (Stull et al, 1994; St-Onge and Lavoie, 1997; Reine et al, 2003). Other studies overlap variables from objective burden and from social functioning (Szmukler, 1996).

Research on family burden has been increasingly focused on identifying relations with physical, psychological and emotional health of caregivers (e.g. Gutierrez et al, 2005), and with patient's symptoms (e.g. Provencher and Mueser, 1997; Lauber et al, 2003). Patient predictors of burden are typically related to clinical characteristics (suicidal ideation, behavioral disturbances, negative symptoms, rehospitalization rates, compliance with medication, duration of illness, unawareness, psychosocial functioning, and diagnostic subtype) (Provencher and Mueser, 1997; Dyck et al., 1999; Wolthaus et al., 2002; Kopelowicz et al., 2003; McDonnell et al., 2003; Reine et al., 2003; Saunders, 2003; Madianos et al, 2004; Koukia and Madianos, 2005).

However, more research efforts need to be made in order to identify the impact of the patient's sociodemographic variables on burden (Cook and Pickett, 1988; Winfield and Harvey, 1993; Castilla, et al, 1998), as well as on clinical variables such as positive and negative symptoms, to determine whether they equally impact on burden (Provencher and Mueser, 1997; Schene et al., 1998; Webb et al., 1998; Martínez et al., 2000), or rather have a differentiated effect (Dyck et al, 1999) with a stronger impact from negative symptoms (Wolthaus et al., 2002).

Caregiver predictors of burden have been found to be related to sociodemographic variables (family resources, social support, educational background, social life, co-residence status with the affected, leisure activities, marital relationships, unemployment, living conditions, size of family network) as well as to personality variables such as attributions, coping strategies, sense of mastery in care activities (Karanci, 1995; Dyck et al., 1999; Ohaeri, 2001; Laidlaw et al., 2002; Lauber et al., 2003; Reine et al., 2003; Saunders, 2003), or expressed emotion (EE) (King et al., 2003; Bachmann et al, 2002, 2006). Nevertheless, one of the questions still to be answered is which types of coping strategies have more impact on burden (Magliano et al., 1998a, 1998b; Webb et al., 1998; Hinrichsen and Lieberman, 1999; Scazufca and Kuipers, 1999). In addition, there is a scarcity of studies that assess caregivers' appraisal of the level of control of the patient regarding his or her disease, and those studies that exist offer contradictory results (Greenberg, et al., 1997; Provencher and Mueser, 1997; Scazufca and Kuipers, 1999). In addition, most studies of family burden, with some exceptions (e.g. Shibre et al., 2003; Gutierrez-Maldonado et al, 2005; Kealy, 2005) have taken place in developed countries while sociocultural context seems to affect not only

perceived burden, but also cultural construction and ways of coping with mental disease, in addition to social and family networks and supports (Horwitz and Reinhard, 1995; Guarnaccia and Parra, 1996; Jenkins and Schumacker, 1999). Finally, the empirical literature on family burden predictors requires more efforts to identify how sociodemographic, clinical, and personality variables from patients and their relatives, may combine to predict higher levels of burden.

This study aims to help better understand of family burden in schizophrenia outpatients from South America, and its etic (universal) or emic (culture-bound) properties (Berry et al, 1992; Jenaro et al., 2005). More specifically, the aims of this paper are: (i) examine the levels of burnout experienced by primary caregivers of outpatients with schizophrenia in a regional area of a medium income country in South America; (ii) assess predictors of burden on primary caregivers of outpatients with schizophrenia; (iii) identify the impact of positive and negative symptoms on burden of those caregivers; (iv) specify which type of coping strategies have more impact on burden. One hypothesis was tested: (1) sociodemographic and personality characteristics of the caregiver, together with clinical characteristics of the patient (i.e. frequency of relapses, positive and negative symptoms, social functioning), will predict burden.

2. Method

2.1. Sample

The study was carried out in Chile from January to February 2001. A randomized sample of 106 patients with schizophrenia who were attending a public mental health

out-patient service from the Psychiatry and Mental Health unit of the Hospital “Las Higueras” was selected. This Unit belongs to the Health Service Talcahuano from the Eighth region of Chile. Information was gathered from outpatients and their primary caregivers. Inclusion criteria were as follows: (1) The primary caregiver was defined as the member of the family who was most involved with the care of the outpatient; (2) All patients had a DSM-IV diagnostic of schizophrenia made by his or her psychiatrist; (3) The length of the disorder and thus, the diagnosis was at least six months before the present study; (4) Both patient and caregiver were older than 18. Potential participants were selected from the register of the clinic for neuroleptics, where they go once a month to obtain their prescriptions, as the psychiatric service of this hospital has no inpatient services. This system acts as an additional follow-up for adherence to pharmacological treatment; (5) Patients who had a dual diagnosis consisting of drugs and alcohol abuse, intellectual handicap, or organicity were excluded from the study. Four out of 106 patients and one relative declined to participate, stating a lack of time. No obvious differences (gender, age, socioeconomic status, educational background, occupational status) were found when compared to the remaining participants. Thus, 101 patients and their respective key caregivers were interviewed after informed consent.

2.2. Instruments

Sociodemographic characteristics of the patient and caregiver were collected with an *ad hoc* survey. Clinical characteristics of the patient were also obtained including diagnosis, length of the disorder, frequency of relapses, adherence to treatment, etc. Six groups of additional variables were measured. First, positive and negative symptoms, as

measured by the Spanish version (Peralta and Cuesta, 1994) of the Positive and Negative Syndrome Scale for Schizophrenia (PANSS) (Kay, et al., 1987). Reliability indexes of the Spanish version were $\alpha=0.62$ for the PANSS-P, $\alpha=0.92$ for the PANSS-N, and $\alpha=0.55$ for the general scale (30 items).

Second, social functioning, as measured by the Spanish version (Vázquez and Jiménez, 2000) of the Social Functioning Scale (SFS), (Birchwood, Smith, Cochrane, Wetton and Copestake, 1990). It assesses seven domains: 1) social integration/isolation (5 items), 2) interpersonal communication (10 items), 3) pro-social activities (23 items), 4) recreation (15 items), 5) independence/competence (13 items), 6) independence/performance (13 items), and 7) employment (8 close-ended items, plus several open-ended items). The Spanish version showed moderate-high levels of internal consistency for the different subscales (between $\alpha=0.66$ and $\alpha=0.90$), with the exception of the interpersonal communication domain ($\alpha=0.45$). Test-retest reliability, in a three-month period ranged from 0.66 to 0.88 for the different subscales (Vázquez and Jiménez, 2000).

Third, caregivers' burden, as measured by the Spanish version (ECFOS) (Martínez et al., 2000) of the Family Burden Interview Schedule-Short Form (FBIS/FS) (Tessler and Gamache 1996). The measure assesses objective and subjective burden experienced by caregivers of people with severe mental disorders. The measure is comprised of five sections: Support in daily living activities (Section A); Supervision of disturbed behaviors (Section B); Expenses (Section C); Impact on caregiver's daily routine and loss of social, work, and personal opportunities during life (Section D); and

general concerns (Section E). With the exception of Section C that requires estimate the amount of money spent in the outpatient, the sections ask about frequency or intensity of support during the last 30 days. The Spanish version includes additional questions for assessing costs. Reliability indexes were similar to those from the original measure, with alpha levels ranging from $\alpha=0.68$ to $\alpha=0.79$ for the different subscales. For the current study only modules A, B, D and E were used. Of the 51 items, 27 items measure objective burden, and 24 measure subjective burden. Total burden is estimated by summing both dimensions. Reliability analysis showed an adequate level of internal consistency ($\alpha=0.85$) for this general index.

Fourth, coping skills, as measured by a Spanish translation of the Family Coping Questionnaire (FCQ) (Magliano et al., 1996; 1998a, 1998b). The measure is composed of 34 items grouped into 11 subscales. Double translations (English-Spanish-English) by two independent translators were made in order to guarantee its adequacy and five independent judges assessed the language adequacy for Chilean population. Although the complete measure was used, the current analysis only includes seven subscales: i) search for information, ii) positive communication, iii) maintenance of social interests, iv) coercion, v) avoidance, vi) resignation, and vii) social implication for the patient. For the present study, the Spanish version showed medium-high levels of internal consistency for the different subscales (between $\alpha=0.52$ and $\alpha=0.81$), and moderate levels for the total scale ($\alpha=0.65$).

Fifth, social support was measured by a Spanish translation of the Social Network Questionnaire (SNQ) (Magliano et al., 1998a, 1998b). Seven questions were added to

assess the support received from mental health services during the last year; the original items assessed the support for the last two months. Psychometric properties of the measure were assessed. Initial reliability analyses were made to eliminate items with low internal consistency levels. Next, construct validity was tested using factor analysis after removing dichotomous items. The final version of the questionnaire was composed of 18 items. Confirmatory factor analyses were made and results supported the adequacy of reliability and validity properties. Factors included in the measure were: i) health support ($\alpha=0.91$), ii) practical support ($\alpha=0.61$), iii) social contacts ($\alpha=0.75$) and iv) affective support ($\alpha=0.67$).

And sixth, caregivers' sense of control over behavioral problems of the patient was measured by the Spanish translation (Vallina, et al., 1998) of The Family Questionnaire (FQ) (Barrowclough and TARRIER, 1995). The original measure consists of a list of 49 possible problems exhibited at home and an additional category of "others" to include idiosyncratic difficulties. It uses a Likert-type scale of five points, to assess the frequency of behavioral problems, the amount of disturbance these behaviors cause, and the confidence in controlling the situation. For the present study, an additional question was added to the measure - What level of control do you think your relative has over these behaviors?. Both the original and the Spanish version have shown appropriate psychometric properties (Quinn et al, 2003; Vallina et al., 1998). Reliability index on frequency of problems was $\alpha=0.90$ for the present study.

2.3. Procedure

Two types of interviews were conducted during a two-month period: one with the

outpatient and one with the primary caregiver. Separate schedules for each informant were established, in order to ensure confidentiality. First, outpatient interviews were performed. Average time for interviews with outpatients was 30 minutes, and the main researcher conducted all of these interviews. Second, the main researcher or one of three experienced research clinicians from the Mental Health Unit interviewed caregivers. Several training sessions, as well as follow-up sessions were established, in order to guarantee the adequacy of the process. Average time for the interviews with caregivers was 2 hours and 30 minutes.

Written protocols were distributed to the interviewers to ensure the standardization of the assessment and the data collection. Protocols included general instructions for each of the measures, as well as specific instructions related to frequently asked questions for potential conflicting items. Sociodemographic and clinical information was collected with a structured survey with close-ended questions developed ad hoc for this study. It is comprised of three sections: (1) demographic information of the relative, with 11 questions; (2) demographic and clinical information of the patient, composed of 14 questions; (3) information on the composition of the family unit, with two questions. All the clinical files were also reviewed to ensure the adequacy of the information provided by the informants.

2.4. Data Analysis

Completed interviews were returned to the author/contact person for compilation and analysis. Upon receipt, each interview form was verified for completeness and the data was entered into a SPSS spreadsheet. All analyses used the SPSS® v.10 for

Windows (SPSS, 1998). Data analyses required two main steps. First, routine exploratory analysis, using descriptive statistics to check for normality, outliers, linearity, and variances homogeneity, were performed in order to guarantee the adequacy of parametric tests. Second, bivariate (Anova, and Pearson Correlations) and multivariate (A hierarchic regression analysis with blocks) tests were used to contrast the hypothesis. An alpha level of .05 was selected for all the analyses.

3. Results

3.1. Sociodemographic and clinic characteristics

Table 1 summarizes main sociodemographic data. Most of patients were male, of ages from 36 to 51. Mean age was 40.7 (SD=11.9), ranging from 20 to 72. The majority were single. Almost half of them have secondary studies (complete or incomplete) and the vast majority were currently unemployed. In addition, a high percentage live with their families. The population under study is basically composed of chronic patients, with a mean length of the disturbance of 18.3 years (SD=10.5), and ranging from 3 to 48 years. Relapses average 7.2 per person (SD=8.2), with a mean of 2.5 hospitalizations (SD= 3.7) per patient, and an average of 3.5 days (SD=1.6) of duration of the hospitalization. The majority receive both oral and depot neuroleptics (52.2%) and they only receive outpatient mental health consulting (79.2%); this implies that there is no psychosocial intervention.

<Insert Table 1 about here>

As Table 2 shows, the majority of the primary caregivers were females, with a

mean age of 56.32 (SD=14.12). Of the sample 56.3% are married and their relationship with the patient is typically mother followed by sibling. Regarding education, mean years are 7.75 (SD=4.56), with a high percentage of "no studies or primary education (complete or incomplete)" (60.4%). A majority of the caregivers are housewives, whom evaluate the quality of their relationship with the patient as very good/good. Finally, the mean number of family members living at home is 4.95 (SD=2.38), and ranges from 2 to 14 individuals.

<Insert Table 2 about here>

3.2. *Burden levels*

Means and standard deviations for each of the areas of burden, as assessed with the ECFOS, were calculated. The overall mean was 43.57 (SD=25.1) and, considering that the scale ranges from 0 to 169, it can be said that the participants in the study have low levels of burden. The same pattern can be seen for all the areas: help in daily activities (objective) (M=8.66 (SD=7.58), range 0 -40); help in daily activities (subjective) (M=7.41 (SD=7.40), range 0-30); control of behavioral problems (objective) (Mean=1.99 (SD=2.75), range 0-28); control of behavioral problems (subjective) (M=3.51 (SD=3.77) range 0-21); disturbances in caregiver routines (M=1.79 (SD= 3.19), range 0-16), loss of opportunities (M=1.40 (SD=1.75), range 0-6). The only exception is the dimension of general concerns that shows moderate levels of burden (M=18.8, (SD=0.52) range 0-28).

3.3. *Predictors of burden*

A hierarchic regression analysis with blocks was made to establish the variables that predict burden after verifying (Kerlinger and Pedhazur, 1973; Cohen and Cohen, 1983; Tabachnick and Fidell, 2001): (i) the lack of multicollinearity among explanatory variables, by using the tolerance coefficient and the Variance Inflation Factor (VIF); (ii) linearity of relations, by a visual inspection of scattergrams between burden and correlated independent variables; (iii) normality of the errors distribution, by a visual inspection of residuals through histogram and P-P normal graphic; (iv) the independence of the errors, with the Durbin-Watson test; (v) the homocedasticity of the errors, with a visual inspection of residuals. Outliers were also identified to check their possible impact on the regression.

Bivariate correlations between burden and 25 independent variables were first calculated. Variables that did not significantly correlated to burden, and those with high intercorrelations were also removed to prevent collinearity. Finally, four blocks were included in the analysis. The first block (sociodemographic information) included years of education; the second (clinical characteristics) included frequency of relapses, positive and negative symptoms, and four social functioning subscales; the third (social support) included social contacts and affective support subscales; the fourth block (personality characteristics) included the item on the caregiver judgments of the patient's self-control over his or her behaviors, and four subscales of coping: resignation, avoidance, maintenance of social interests, and positive communication. In all, 15 variables grouped into four blocks were considered in the analysis.

Table 3 summarizes the hierarchic regression. As can be seen, the first block explains 5% of total variance. When the second block is included the corrected

determination coefficient reaches 59.8%, meaning that frequency of relapses, positive symptoms and independence-performance, controlling for years of education, explains 54.3% of variance. When the third block is aggregated the percentage reaches 65.1%, meaning that social contact and affective support, controlled for the other variables, explains 5.3% of variance. Finally, when the fourth block was included, the explanatory percentage of variance is of 77.3%, meaning that personality characteristics explain 12.2% of total variance, controlled for the rest of the variables included in the equation. The final model includes as predictors, in order of importance: lower independence-performance, lower self-control attributed to the patient, a decrease in social interests, more positive symptoms and less affective support, together with higher frequency of relapses.

<Insert Table 3 about here>

The significance of the Model was tested to contrast the null hypothesis "omnibus" by using the F test of the last block in the regression. The final model was composed of six variables and it was significant ($F= 23.662$, $df=15,85$, $P<0.0001$). In summary, three out of four factors -with the exception of sociodemographic characteristics- predicts burden.

4. Discussion

The present study confirms the relevance of clinical, personality variables, and social support on family burden. Clinical characteristics that help predict burden such as frequency of relapses and severity of positive symptoms, have been found in previous studies as well (Pickett, et al., 1995; Webb et al., 1998; Ricard, et al.,1999). In

addition, low independence-performance in social situations, contributed to explain burden, which agrees with previous studies where functional limitations or disturbed behavior are greater determinants of severity of burden than psychiatric diagnosis (Chakrabarti and Kulhara, 1999; Martínez, et al., 2000; Ohaeri, 2001). Social support, and more specifically affective support, emerges as a significant variable in the current study and this agrees with previous research (Reinhard and Horwitz, 1995; Solomon and Draine, 1995a). The only coping skill that, controlled for the other variables, contributes to the prediction of burden is the maintenance of social interests, which is social in nature. The relevance of social variables in caregivers leaves the door open for community-based interventions. Ensuring a social support network has proven its efficacy to alleviate burden in caregivers (Ohaeri et al, 2001; Saunders, 2003).

Responsibility attribution for behavioral disorders is one of the variables that most helps explain burden, and those caregivers who attributed lower levels of self-control to the patient experience higher levels of burden. This result contrasts with some previous studies (Greenley, 1986; Hooley, 1987; Terkelson, 1987), but supports Provencher and Mueser (1997) who concluded that there might be disadvantages for caregivers who assume that patients have no control over their negative symptom behaviors. In other words, according to attributional models of EE, emotional overinvolvement and its associated burden may result when symptoms are attributed to factors outside the patient's control (King et al., 2003). Also, in accordance with Scazufca and Kuipers (1999), burden of care seems to be more dependent on relatives' appraisal of the patient condition than on patients' actual deficits. This result offers additional support to the relevance of interventions based on reduction of expressed emotion and on increase in

relatives' knowledge about schizophrenia. These types of psychoeducational programs have demonstrated their usefulness in reducing burden, relapses, and increasing social functioning of patients and relatives (Zhao, Shen, Shi, 1999; Muela and Godoy, 2002; Koukia and Madianos, 2005). Paradoxically, although these intervention strategies have demonstrated their effectiveness, they are not fully used in health services nor have they become the standards of care in the community (Biegel and Schultz, 1999; Vallina and Lemos, 2000). More attention to specific components of these programs, and better matches between patient's clinical characteristics and sociodemographic, and personality characteristics from families may help increase their effectiveness, as well (Montero et al, 2005).

The general low levels of burden in the studied sample are quite surprising. Possible explanations could be related, in the first place, to the characteristics of the sample. Since participants are chronic outpatients who have already been discharged from the hospital, rather than being in an acute episode of schizophrenia, the frequency or intensity of support during the last 30 days might not be the main source of burden (Winefield and Harvey, 1993). Additional tentative explanations relate to culturally bound differences. As Jenkins (1988) stated, Hispanic families may conceive the mental disease as a "nervios" problem, which leads them to a greater acceptance of behavioral disorders. In fact, some cross-cultural studies have shown that in developing countries attitudes toward mental illness are more tolerant (Lefley, 1990; Kealey, 2005). Culturally bound differences may be based on the prototypical traditional family, with more extensive and close networks than in modern families, and with normative roles as caregivers assumed mostly by the mother, as "the right thing to do" (Guarnaccia and

Parra, 1996). From a cross-cultural perspective, and as in other work fields, further studies need to be conducted in order to test if such differences are better explained as cultural differences that need to be respected, or as disadvantaged situations that need to be prevented (Jenaro et al., 2005).

Contrary to expectations, negative symptoms did not help predict burden. In light of this it is necessary to analyze if their effects on burden act through other variables. For example, several studies indicate that as negative symptoms increase, social functioning decreases (Fenton and McGlashan, 1991; Tandon, et al., 1995). Something similar might happen with social contacts, which lose influence on burden when the fourth block (personality characteristics) is included in the regression. Maybe their effects on burden are indirect through variables included in the just mentioned fourth block of the equation; specifically the maintenance of social interests could be a mediator on this relation. This could help explain why when both variables are in the equation, one of them becomes redundant. Nevertheless, more studies exploring this hypothesis are needed.

The lack of predictive value of coping skills such as resignation and avoidance was also unexpected. It seems that passive oriented or emotion-focused coping strategies (resignation, avoidance) have less impact on burden than active oriented or problem-focused strategies. Thus, in some instances, repetitive efforts focused on coping may exacerbate feelings of burden instead of reduce it, similar to what happens in other work fields (Jenaro et al, in press). While existing literature on schizophrenia indicates that caregivers tend to use more emotion-focused strategies (Chakrabarti and Gill, 2002; Nehra et al., 2005), studies also recognize the impact of caregiver's

knowledge or appraisal on coping styles (Chakrabarti and Gill, 2002; Reine et al, 2003) and even in some instances, higher levels of burden is associated with the use of problem-focused oriented coping strategies (Webb et al, 1998). As Nehra et al., stated (2005), more culturally relevant investigations are required to fully understand the cultural construction of schizophrenia and its implications on attributions of personal control and on burden.

It is important to note some limitations of this study. First, participants belong to a region from a quite low social status of a South American country, so results should not be generalized to other regions and services. Second, information from families came exclusively from the primary caregiver and thus, it is not possible to ascertain that the whole family agrees with his or her opinions; results from different perspectives are only comparable to a limited extent (Bachmann et al, 2006). Third, although for the current study, burden was treated as a unidimensional variable, further work analyzing predictors separately for objective and subjective burden should be explored. Finally, additional analysis should be made in order to study the mediator role of variables such as social support, coping skills, and attributed patient self-control, on the general wellbeing of the primary caregiver (Solomon and Draine, 1995a, 1995b; Szmukler, 1996; Magliano et al., 1998a, 1998b, 1999; Schene, et al., 1998; Webb et al., 1998).

5. Conclusions

To conclude, this study has obtained data that support our hypothesis: burden results from a combination of clinical characteristics from the patient, plus personality characteristics from caregivers, plus social supports. In our study 77.3% of burden is

explained by a mixture of the above-mentioned variables. Given the preeminence of clinical characteristics related to behavioral problems (positive symptoms and poor independence-performance) on the onset of burden (more than 50%), the implementation of comprehensive cognitive-behavioral interventions (based on self-regulation, empowerment, and skills training) after discharge from hospital treatment may help significantly reduce burden. The results regarding personality characteristics, explaining more than 12% of burden, and more specifically by attributions and a reduction in social interests, suggest that additional benefits can be derived from interventions devoted to increase the patient's self-awareness, and self-control of his/her own illness. Respite opportunities, together with the use of cognitive interventions such as reattribution techniques when required, could be effective ways to reduce burden. Finally, the fact that 5% of burden is explained by a lack of support from family and friends (affective support) shows the relevance for providing respite opportunities for caregivers so that they have time to create, extend and maintain informal, self-help or even structured help networks and relationships. All these interventions may potentially benefit the quality of life of both patients and caregivers.

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Table 1. Clinical and sociodemographic characteristics of the outpatients

	Frequency	Percentage
Gender		
Male	57	56.4
Female	44	43.6
Age		
20-35 years	36	35.6
36-51 years	46	45.5
52-67 years	16	15.8
> 67 years	3	3.0
Civil Status		
Married/Partner	10	9.9
Single	76	75.2
Widow	9	8.9
Divorced	6	5.9
Educational background		
No studies/ Primary education	36	35.6
Secondary education	50	49.5
Higher education or more	15	14.9
Occupational status		
House keeper	13	12.9
Non-qualified job	12	11.9
Unemployed	76	75.2
Outpatient living with family		
No	9	8.9

Yes	92	91.1
Medication		
Oral	18	17.8
Depot	18	17.8
Both (oral and depot)	53	52.5
Atypical	12	11.9
Type of treatment		
Outpatient	80	79.2
Outpatient and day center	16	15.8
Outpatient and social club	5	5.0

Table 2. Sociodemographic characteristics of the relatives

	Frequency	Percentage
Gender		
Male	20	19.8
Female	81	80.2
Age		
19-34 years	10	9.9
35-50 years	22	21.8
51-66 years	41	40.6
> 66 years	28	27.7
Civil Status		
Married/Partner	57	56.3
Single	15	14.9
Widow	25	24.8
Divorced	4	4.0
Patient relationship		
Husband/Wife	7	6.9
Mother	55	54.5
Father	8	7.9
Son	1	1.0
Daughter	8	7.9
Brother	6	5.9
Sister	11	10.9
Other relatives	5	5.0
Educational background		
No studies/ Primary education	61	60.4

Secondary education	24	23.8
Higher education or more	16	15.8
Occupational status		
House keeper	63	62.4
Non-qualified job	14	13.8
Qualified job	7	6.9
Professional	5	5.0
Retired	10	9.9
Unemployed	2	2.0
Quality of the relationships		
Very good/good	71	70.3
Average	13	12.9
Poor/Bad	17	16.8

Table 3. Summary of the Hierarchic Regression of Burden

Predictor	Block 1	Block 2	Block 3	Block 4
	Beta	Beta	Beta	Beta
Sociodemographic characteristics				
Patient education	-0.253*	-0.068	-0.099	- 0.062
Clinical characteristics				
Frequency of relapses		0.132*	0.168**	0.127*
Positive symptoms		0.192**	0.177**	0.168**
Negative symptoms		0.062	0.073	0.000
Communication		0.067	0.136	0.125
Prosocial activities		-0.039	0.050	0.050
Independence-performance		-0.622**	-0.602**	-0.486**
Employment		-0.009	-0.029	-0.080
Social support				
Social contacts			-0.167*	-0.067
Affective support			-0.173*	-0.147**

Predictor	Block 1	Block 2	Block 3	Block 4
Personality characteristics				
Attributed patient self-control				-0.305**
Resignation				-0.074
Avoidance				0.095
Maintenance of social interests				-0.183**
Positive communication				-0.021
R	0.253	0.794	0.828	0.898
R ²	0.064*	0.630***	0.686***	0.807***
Corrected R ²	0.055	0.598	0.651	0.773

* $P < .05$ ** $P < .01$ *** $P < .001$