

Family burden in bipolar disorders: Results from the Italian Mood Disorders Study (IMDS)

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SUMMARY. **Aims** – To explore: a) the burden of care, and the professional and social support in relatives of patients with bipolar disorders; b) the psychosocial interventions provided to patients and their families by Italian mental health centres. **Methods** – 342 outpatients with a bipolar disorder and their key-relatives were randomly recruited in 26 Italian mental health centres, randomly selected and stratified by geographical area and population density. Family burden was explored in relation to: a) patient's clinical status and disability; b) relatives' social and professional support; c) interventions received by patients and their families; d) geographical area. **Results** – In the previous two months, global functioning was moderately impaired in 36% of the patients, and severely impaired in 34% of them. Twenty-one percent of patients attended a rehabilitative programme, and 3% of their families received a psychoeducational intervention. Burden was higher when patient's symptoms and disability were more severe, the relatives had poorer psychological support and help in emergencies by the social network, and the family lived in Southern Italy. Differences in family burden in relation to geographical area disappeared when psychosocial interventions were provided. **Conclusion** – This study highlights the need to increase the availability of rehabilitative interventions for patients with bipolar disorders and of psychological support for their families, especially in Southern Italy.

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INTRODUCTION

With a life-time prevalence of 03-1.5% (Weissman *et al.*, 1996; Merikangas *et al.*, 2007), bipolar disorders are

the sixth cause of disability in the world and one of the most demanding mental problems, both for the sufferers and for society (Murray & Lopez, 1996; Dean *et al.*, 2004; Wolff *et al.*, 2006).

The high costs of these mental disorders are related to several factors, such as:

- a) the suicide rate of 10-20% (Chessick *et al.*, 2007);
- b) the frequent alcohol and drug abuse (Kessler *et al.*, 2005);
- c) the recurrence rates of 60% at two-year and 73% at five-year in patients receiving appropriate mood-stabilizers treatments (Gitlin *et al.*, 1995);

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- d) the high hospitalisation rates and need for compulsory treatments (Preti *et al.*, 2008);
- e) the persistence of subthreshold symptoms and enduring personal and social dysfunctions in the intervals between episodes (Coryell *et al.*, 1993; Judd *et al.*, 2003; Revicki *et al.*, 2005; Miklowitz & Johnson, 2006);
- f) the loss of productivity in sufferers and their caregivers (Clark, 1994; Simon, 2002; Kleinman *et al.*, 2003; Wolff *et al.*, 2006).

Although bipolar disorders have resemblance with schizophrenia, the connection to unipolar depressive disorder may be even more important (Cuellar *et al.*, 2005; Schweitzer *et al.*, 2005). While the manic and hypomanic episodes define the disorder, recent studies highlighted that bipolar patients if symptomatic are about 90% of the time depressed. Moreover, depression was found to account for most of the morbidity and mortality in bipolar disorders (van Wijngarden *et al.*, 2004; Michalak *et al.*, 2008).

The fact that bipolar disorders have been found to be associated with a percentage of divorce higher than that of general population and of persons with unipolar depression, and the evidence of social maladjustment in patients' children, suggests that these disorders may involve high family burden (Hammen *et al.*, 1990; Coryell *et al.*, 1993; Heru & Ryan, 2004; Lam *et al.*, 2005; Ogilvie *et al.*, 2005).

Compared with the large amount of data on family burden in schizophrenia, still very little is known about the difficulties experienced by the caregivers of patients with bipolar disorders. Recent studies on this topic revealed that from 70% to 93% of relatives of patients with these mental disorders felt distressed at a moderate-severe levels and that these relatives frequently reported symptoms such as loss of appetite, sleeplessness, tension and poor concentration. Moreover, financial problems, marital conflicts, difficulties in parental role and in work activities, and a progressive social isolation of the family were the most troublesome practical consequences reported by the caregivers (Dore & Romans, 2001; Chakrabarti *et al.*, 2003; Perlick *et al.*, 2004; vanWijngarden *et al.*, 2004; van der Voort *et al.*, 2007). Family burden was found to be more associated with the severity of the symptoms than to their polarity (Dore & Romans, 2001; van der Voort *et al.*, 2007), and to be predictive of clinical relapse at 7 and 15-month follow-ups (Perlick *et al.*, 2004). It has also been reported that family difficulties persisted in the intervals between the episodes, especially when the patient's social functioning remained poor (Reinares *et al.*, 2006). Furthermore, family burden was

found to be higher among relatives who believed that the bipolar disorder was under the patient's control, and that these mental disorders had a poor outcome (Gonzales *et al.*, 2007; Perlick *et al.*, 2007a, b; 2008).

Some studies have investigated the relationships of family burden with relatives' coping styles, within the framework of Folkman & Lazarus' stress-appraisal-coping model (1980). These studies highlighted that burden experienced by relatives was influenced by type of coping strategies (emotion-focused vs. problem-oriented) they adopted to deal with patient's mental disorder and by levels of social network support available for the families (Chakrabarti & Gill, 2002; Nehra *et al.*, 2005; Chadda *et al.*, 2007; Perlick *et al.*, 2008).

Despite a growing interest for family burden in bipolar disorders, up to now no study has systematically investigated this phenomenon in community mental health care settings on a large scale.

On the basis of a previous study on family burden in schizophrenia (Magliano *et al.*, 2002; 2005; 2006), in the period 2006-2007 our research group carried out a national study on the social and family context of outpatients with mood disorders. The Italian Mood Disorders Study (IMDS) aimed to explore:

- a) the burden of illness;
- b) the social network;
- c) the professional support; and
- d) the opinions about mood disorders in patients with bipolar disorders or unipolar major depression and in their key-relatives.

In this first paper, we report data on the burden in 342 key-relatives of outpatients with bipolar disorder and on its relationships with family socio-demographic characteristics, patients' clinical variables, and relatives' social and professional support.

We hypothesized that family burden increased in relation to the severity of patients' symptoms and disability, that it was positively related to the level of social and professional support, and that it was higher in Southern Italy, where the quality of health care was poorer.

METHODS

Thirty mental health centres were randomly selected on a national basis taking into account population density (>100.000 inhabitants; 100.000-25.000 inhabitants; <25.000 inhabitants) and geographic location (northern, central and southern Italy) of their catchments area.

In each selected centre, 15 outpatients with a clinical diagnosis of bipolar disorder according to DSM-IV were randomly selected among all those who had been in contact with the local mental health centre for at least 6 months and met the following criteria:

- a) age between 18 and 65 years;
- b) at least one contact with the local mental health centre in the last 6 months;
- c) at least one depressive, manic, hypo-manic or mixed episode in the last two years;
- d) no hospital admission in the previous 2 months;
- e) no clinical worsening in the last 2 months having required intensive crisis management ("crisis");
- f) co-habitation in the last year, and continuously in the last 2 months, with at least one adult relative aged between 18 and 80 years;
- g) no co-habitant suffering from physical or mental disorders requiring specialised treatments (including psychotherapies) or intensive care. Randomization was performed by the coordinating centre and its results were communicated to each local researcher by mail.

Each randomly selected patient was asked for his/her informed consent to participate and to allow the contact with the relative who was mostly involved in his/her care (key-relative). Each patient was interviewed by a trained researcher using BPRS to assess his/her clinical status in the last month. Each key-relative who gave informed consent was interviewed by a trained researcher about the patient's disability in the last month by means of Assessment of Disability interview (AD). He/she was asked to fill in the Family Problems Questionnaire (FPQ) and the Social Network Questionnaire (SNQ). Bio-psycho-social treatments received by the patient, and professional support provided to his/her family in the last two months by the local mental health centre were registered by the researcher on the Pattern of Care Schedule (PCS). Family socio-demographic variables and patient's clinical characteristics were collected by an ad-hoc schedule. The study protocol was approved by the university's review board. Data collection was carried out from April 2006 to January 2007.

ASSESSMENT INSTRUMENTS

The Brief Psychiatric Rating Scale (BPRS 4.0; Lukoff *et al.*, 1986; Ruggeri *et al.*, 2005) assesses patient's psychopathological status in the previous month. It contains 24 items grouped in the following subscales: depression/anxiety, somatic concern, anxiety, depression, suici-

dality, guilt, tension), positive symptoms (grandiosity, suspiciousness hallucinations, unusual thought content, conceptual disorganisation), negative symptoms (blunted affect, emotional withdrawal, motor retardation, uncooperativeness, self-neglect, disorientation, mannerism & posturing), manic excitement (hostility, elevated mood, bizarre behaviour, excitement, distractibility, motor hyperactivity). Each item is rated on a 7-level scale from 1 "absent" to 7 "very severe".

The Assessment of Disability (AD; Morosini *et al.*, 1988; Magliano *et al.*, 2002) is a semi-structured interview derived from the Disability Assessment Schedule (WHO, 1988), which explores patient's personal and social functioning in the previous month. The personal functioning area includes the following components: poor or excessive self-care, underactivity, and psychomotor slowness or acceleration. The social functioning area covers the following aspects: social withdrawal or overinvolvement, participation in household activities, affective and sexual relationships with a partner, parental role, conflicts in social and interpersonal relationships, work ability for employed persons, interests and information about local events, and behaviour during emergencies. Each item is rated on a 6-point scale from 1 "excellent functioning" to 6 "very poor disability". Items rated as appropriate contribute to a 6-level global functioning score that ranges from 1 "excellent functioning" to 6 "severe impairment in all functioning areas".

Before data collection, one researcher per centre was trained in the use of BPRS and AD. Inter-rater reliability in the use of the interviews was measured by means of Cohen's kappa coefficient and found to be satisfactory (kappa value > .80 for 78% of the BPRS items and 83% of the AD items, between .79 and .60 for 14% of the BPRS items and 16% of the AD items).

The Family Problems Questionnaire (FPQ) is a 32-item instrument, covering the following aspects:

- a) practical burden (11 items);
- b) psychological burden (9 items);
- c) professional support (5 items);
- d) consequences on under-age relatives (2 items);
- e) financial costs (5 items).

The items are rated on a 4-level scale from 1 (never) to 4 (always) and refer to the previous two months. The scores of the items rated by the respondent as appropriate on the 4-level scale contribute to the subscale's summary mean score. The tool was originally developed by the National Institute of Health (Morosini *et al.*, 1991) and subsequently validated in five languages (Magliano *et al.*,

1998). Test-retest reliability of the items produced Cohen's kappa coefficients between .50 and 1.0 for the 79% of the items. Cronbach's alpha values on the FPQ's subscales ranged between .92 and .66. In this paper, items from a-d subscales have been reported.

The Social Network Questionnaire (SNQ; Magliano *et al.*, 1998; 2006) includes 15 items, exploring the respondent's:

- a) frequency of social contacts (4 items);
- b) practical social support (3 items);
- c) emotional support (5 items);
- d) social support in emergencies concerning the patient (2 items).

The items are rated on a 4-level scale from 1 (never) to 4 (always). An additional item investigates the respondent's perception of change in his/her social network in the last year. In this study sample, Cronbach's alpha values of the SNQ's subscales ranged between .52 and .63.

The Pattern of Care Schedule (PCS; Magliano *et al.*, 1998) collects information on pharmacological, socio-rehabilitative, and psychotherapeutic interventions received by the patient, and on the support provided to the family in the previous six and two months by the local mental health centre's professionals.

STATISTICAL ANALYSIS

Differences in family burden in relation to relatives' and users' socio-demographic variables and users' clinical characteristics were explored by ANOVA test. Correlations of practical and psychological burden with family socio-demographic variables and patients' clinical characteristics and with relatives' social network and professional support were analysed by Spearman's r coefficient. Differences in psychosocial interventions in relation to geographical area were explored by χ^2 followed by post-hoc tests to show significant pairwise comparisons. Stepwise multiple regression analysis was performed to explore the simultaneous effect on practical and psychological burden (dependent variables) of family socio-demographic characteristics and patients' clinical variables, of psychosocial interventions received by the patient, of support provided to relatives by their social network and professionals, and of geographical area. Only variables which were found in statistically significant relationship with family burden in univariate analyses were included in the regression model. The level of statistical significance was set at $p < .01$ for the univariate analyses and at

$p < .05$ for the multivariate ones. Statistical analyses were performed using the SPSS package, version 11.5.

RESULTS

Analyses performed on the global sample

Sample description

Data were collected in 26 out of the 30 selected mental health centres (87%). Of the 390 expected cases, 14 users and 36 key-relatives refused to take part in the study. These did not differ from those who accepted as far as sex, age, marital status and educational level were concerned.

The study population included a total of 342 users and their key-relatives (Table I). 58% of the patients were female, 50% married, with a disability pension in 20% of the cases. Twenty-two percent had attempted suicide, 40% had had a crisis in the previous 12 months. On average, BPRS symptoms were at a mild level. The most frequent symptoms were anxiety (79%), depression (66%), somatic concerns (56%), and feeling of guilt (56%). Hostility was present in 48% of the sample and elevated mood and grandiosity in 38% and 32%, respectively. Twenty-six percent of patients had suicidal thoughts. At the AD, patients' global functioning was moderately impaired in 36% of patients, and severely or very severely impaired in 34%. In particular, more than 50% of patients had disabilities in daily activities (54%), social relationships (56%), affective relationships (56% of married patients and 88% of single ones), occupational role (73% of employed patients), attitudes to finding a job (52% of unemployed patients), interests in being informed (52%). Parental role was impaired in 50% of patients with underage children.

All patients were receiving drug treatments. In the previous two months, 61% had had regular support meetings with professionals, 15% had received psychotherapy, 35% had attended information sessions on bipolar disorders and their treatments, 21% participated in a rehabilitation programme (socialization groups: 12%; social skills training groups: 10%; expressiveness groups: 7%; vocational training courses: 6%; manual works: 4%; sport activities 3%; holiday activities: 1%).

Key-relatives were mostly spouses or parents, in half the cases they were employed. In the previous two months, 35% had had contact with the patient's psychiatrists, 30% attended information sessions on bipolar disorders and pharmacological treatments provided to the patient, 3% received a psychoeducational family intervention and 1% systemic family therapy.

Table I – Patients' socio-demographic and clinical variables, and key-relatives' socio-demographic characteristics (N=342)

Patients	
Sex, % F	58
Age, mean (sd)	45.4 (11.0)
Marital status, %	
• married	50
• single	35
• divorced	10
• widowed	4
Years of education, mean (sd)	10.4 (4.1)
Occupation, % yes	37
Problems with the law, % yes	7
Years of illness, mean (sd)	13.7 (8.9)
Months in contact with local mental health services, mean (sd)	106.0 (81.7)
N. of voluntary hospitalisations, mean (sd)	3.6 (6.7)
N. of compulsory hospitalisations, mean (sd)	1.3 (2.7)
Suicide attempts, yes %	22
Crisis in the last year, % yes	40
BPRS depression/anxiety subscale, mean (sd)	2.1 (0.8)
BPRS manic excitement subscale, mean (sd)	1.7 (0.8)
BPRS positive subscale, mean (sd)	1.5 (0.7)
BPRS negative symptoms subscale, mean (sd)	1.5 (0.6)
AD global score, mean (sd)	3.1 (1.0)
Key-relatives	
Sex, % F	60
Age, mean (sd)	51.5 (14.1)
Relationship with the patient, %	
• spouse	47
• parent	30
• son/daughter	11
• sibling	11
• other relative	2
Years of education, mean (sd)	9.3 (4.2)
Occupation, % yes	49
Daily hours spent in contact with the patient, mean (sd)	6.8 (3.0)

Family burden, social network and professional support

Psychological burden was significantly higher than practical burden (1.6 (0.6) vs. 1.9 (0.6), paired t test: -1.14 , df 326, $p < .0001$; Table II). The psychological consequences most frequently reported by the relatives were feeling of loss, worry for the future, feeling of not being able to bear the situation any longer, and beliefs that their family life had been negatively influenced by the patient's conditions. Difficulties in leisure activities and in going on holidays were reported as present by 56% and 50% of relatives, respectively. Among the 79 key-relatives who filled in the additional items on the consequences for patient's underage children, 41% stated that the situation had had a negative impact on the children's psychological well-being, and 33% on their social and school life.

The mean scores of the practical and psychological social support were 2.5 (0.7) and 2.5 (0.6), respectively. In particular, 94% of the relatives stated that in case of their own health problems, they would have had someone

to take care of them, and 93% affirmed that when pleasurable things happened to them, they had someone to share them with. As for social contacts (mean score: 2.2 (0.6)), 95% reported that they had called or met friends in the previous two months. Sixty-nine percent of the key-relatives stated that, compared to the previous year, their social contacts were stable, 23% that they were improved and 8% that they were worsened.

Ninety-five percent of the relatives felt confident they would be helped by friends in an emergency concerning the patient, and 93% felt supported by their social network when things were going particularly badly (mean score: 2.9 (0.7)).

As far as professional support was concerned (mean score: 3.2 (0.6)), 83% of the key-relatives stated that they had been informed by professionals on how to deal with the patient's bad or dangerous behaviour, and 98% that they were confident that professionals would have helped them in case of emergency. Sixty percent of the relatives sought advice from professionals, and 70% of them felt they had been adequately advised.

Table II – Practical and psychological burden experienced by the key-relatives in the previous two months (N=342; items from a-b subscales of the FPQ)

Items	Always – Often/Yes %	Sometimes %	Never/No %	Missing N
Practical burden				
I have had to wake up during the night*	12	32	56	14
I have had to neglect my hobbies and things I like doing in my free time*	15	41	44	14
I have had difficulty going on Sunday outings*	15	29	56	14
I have found it difficult to have friends at home*	14	27	59	14
I have not met friends and people I like to spend my leisure time*	12	33	54	14
I have found it difficult to carry out my usual work or household activities or I had to stay at home from work or school*	10	26	63	17
I have had to neglect other family members*	11	29	61	14
I have had difficulty in going on holiday in the last 12 months	16	34	50	135
My work or study activities have been negatively influenced*	9	36	55	179
I have had difficulty in working or studying*	10	32	58	178
I have had financial problems*	6	20	73	19
Psychological burden				
I have felt that I would not be able to bear this situation much longer	13	44	43	16
I have cried or felt depressed	19	47	33	16
I have worried for the future of other family members	19	45	36	16
When I went to a public place with my ill relative, I felt that everyone was watching us	6	27	67	19
I feel guilty because I believe that I or my spouse may have passed on the illness to our relative	11	25	64	177
I feel responsible because of my relative's mental problems	8			17
I think that if we were not available, nobody would take care of my ill relative	48	25	27	17
I think that if our relative didn't have this problem, everything would be all right in our family	28	28	34	18
When I think about how our ill relative was beforehand and how he/she is now, I feel disappointed	48	37	15	18

* due to my ill relative's condition

Burden was higher among relatives of patients with more severe level of symptoms and disability, and previous hospital admissions, and among those who could rely on less social support (Table III). These correlations were relatively modest in absolute value. Family burden was higher if the patient had had a crisis in the previous 12 months (practical burden: mean 1.7 (sd 0.6) vs. 1.5 (0.5), $F=11.8$, df 1,325, $p<.001$; psychological burden: 2.0 (0.6) vs. 1.9 (0.5), $F=7.0$, df 1,325, $p<.01$) and if he/she was unemployed months (practical burden: mean 1.7 (0.6) vs. 1.4 (0.4), $F=15.4$, df 1,325, $p<.0001$; psychological burden: 2.0 (0.5) vs. 1.8 (0.5), $F=11.4$, df 1,325, $p<.001$). Objective burden was higher among relatives of patients who had attempted suicide (1.8 (0.7) vs. 1.5 (0.5), $F=9.3$, df 1,325, $p<.01$) and subjective burden among relatives of patients who had had previous problems with the law (2.3 (0.6) vs. 1.9 (0.5), $F=12.8$, df 1,325, $p<.0001$), and among those who were receiving a rehabilitative intervention (2.1 (0.5) vs. 1.9 (0.6), $F=7.7$, df 1,325, $p<.01$). Patients' attendance of a rehabilitative programme was associated to a higher perception of professional support by the relatives (3.1 (0.6) vs. 3.4 (0.5), $F=18.4$, df 1,324, $p<.0001$).

Analyses performed on the sample stratified for geographical area

Family burden was significantly higher in Southern Italy than in the other two geographical areas (objective burden: Northern 1.5 (0.5) vs. Central 1.5 (0.6) vs. Southern Italy 1.8 (0.6), $F=11.4$, 2,325; $p<.0001$; subjective burden: Northern 1.9 (0.5) vs. Central 1.8 (0.5) vs. Southern Italy 2.1 (0.6), $F=11.7$, 2,324, $p<0.0001$).

In Southern Italy, information sessions on bipolar disorders and their pharmacological treatments were less frequently available for patients (Northern=37% vs. Central=47% vs. Southern Italy = 18%, $\chi^2 = 20.1$ df 2, $p<.0001$; Southern vs. Central Italy: $\chi^2 = 20.1$, df 1, $p<.0001$, and vs. Northern Italy: $\chi^2 = 9.6$, df 1, $p<.002$) and their relatives (Northern=40% vs. Central=33% vs. Southern Italy = 15%, $\chi^2 = 16.2$, df 2, $p<.0001$; Southern vs. Central: $\chi^2 = 9.2$, df 1, $p<.002$, and vs. Northern Italy: $\chi^2 = 16.0$, df 1, $p<.0001$). In the same geographical area, patients' families were more rarely in contact with the local mental health centre (Northern=49%, Central=41%, Southern Italy = 11%, $\chi^2 = 38.9$, df 2, $p<.0001$; Southern vs. Central: $\chi^2 = 25.7$, df 1, $p<.0001$, and vs. Northern $\chi^2 = 37.5$, df 1, $p<.0001$) and they did not receive family

Table III – Correlations of burden with family socio-demographic variables, patient's clinical variables, and professional and social support received by the families (Spearman's *r* coefficient)

Variables	Practical burden	Psychological burden
	r value	r value
FAMILY SOCIO-DEMOGRAPHIC CHARACTERISTICS		
Patient's years of education	-.14 ^a	-.16 ^a
Relative's years of education	-	-.16 ^a
PATIENT'S CLINICAL VARIABLES		
BPRS positive symptoms	.41 ^c	.39 ^c
BPRS negative symptoms	.41 ^c	.37 ^c
BPRS depression/anxiety	.40 ^c	.31 ^c
BPRS maniac excitement	.33 ^c	.32 ^c
AD Disability global score	.46 ^c	.41 ^c
Number of voluntary hospital admissions	.18 ^b	.16 ^a
Number of compulsory hospital admission	.28 ^c	.25 ^c
SOCIAL NETWORK		
Psychological support	-.26 ^c	-.20 ^c
Practical support	-.27 ^c	-.20 ^c
Help in patient's care	-.37 ^c	-.33 ^c

^a=*p*<.01; ^b=*p*<.001; ^c=*p*<.0001

psycho-educational interventions at all (Northern=0.2% vs. Central Italy=0.7%). In Central Italy, patients more frequently attended supportive meetings with psychiatrists than in the other two areas (Northern=49%, Central=83%, Southern Italy=51%, $\chi^2 = 35.2$ df 2, *p*<.0001; Central vs. Southern: $\chi^2 = 25.0$, df 1, *p*<.0001, and vs. Northern $\chi^2 = 30.7$ df 1, *p*<.0001).

Stepwise multiple regression analyses

Independent variables accounted for 40% of variance in practical burden and 35% of variance in psychological burden, respectively (Table IV).

Both practical and psychological burden increased in relations to levels of patient's positive symptoms and dis-

ability and when the patient had lower levels of education, and the relative had poorer social support in emergencies and lived in Southern Italy.

Practical burden was higher when patient's symptoms were more severe and he/she had a crisis in the last year, and when the relatives perceived poorer practical social support.

Psychological burden was higher among relatives of patients who reported previous problems with the law and higher number of hospital admissions.

DISCUSSION

This is the first study on family burden in bipolar disorders which has been carried out on a large sample of

Table IV – Stepwise multiple regression analysis: effects of clinical and socio-demographic variables, levels of social support, and geographic area on the levels of practical and psychological burden experienced by the relatives

Variables	Practical burden	Psychological burden
	Standardized beta	Standardized beta
BPRS positive symptoms	.14 ^a	.22 ^c
BPRS depression/anxiety	.14 ^a	-
AD Disability global score	.27 ^c	.23 ^c
Patient's crisis in the last year	.14 ^b	-
Number of patient's voluntary hospitalisation	-	.12b
Patient's years of education	-.11a	-.10a
Patient's problems with the law	-	.15b
Social support in patient's care	-.15a	-.18c
Practical support from social network	-.15a	-
Geographic area: Southern Italy	.17c	.18c
Model's F, df	27.8; 8,312 ^c	25.4; 7,312 ^c
Adjusted R²	.40	.35

^a=*p*<.01; ^b=*p*<.001; ^c=*p*<.0001

key-relatives of randomly selected outpatients receiving community mental health care. These characteristics, together with the random selection of centres stratified by geographical areas and population density, make the study results representative of psychiatric care in Italy. The fact that the study methods and assessment tools are largely those used in the previous national study on family burden in schizophrenia (Magliano *et al.*, 2002) will facilitate future comparisons among these different mental disorders.

Among the weaknesses of the study, the following should be mentioned:

- a) cases from families with other affected members and of those not living in the same house as their relatives were excluded;
- b) the diagnosis was made only on a clinical basis and there was a lack of information on type and course of patient's disorder, as well as on polarity of the last episode;
- c) the cross-sectional study design does not allow us to make causal inference on the relation between burden and socio-demographic and clinical variables;
- d) the adoption of assessment instruments developed with relatives of users with psychosis could make the tools not sensitive enough to highlight distinctive aspects of burden in mood disorders;
- e) there was a lack of evaluation of burden in other family members;
- f) the large number of univariate analyses that increased the probability of change findings. We attempted to reduce this bias by considering as significant only those analyses at $p < .01$ level.

Although patients selected for the study had not been hospitalised nor had had a clinical worsening in the previous two months, they showed several, and mainly depressive, symptoms. This finding is consistent with data reported in the literature on the presence of mild psychiatric symptoms over the intervals between the episodes (Miklowitz & Johnson, 2006; Michalak *et al.*, 2008).

Seventy percent of the patients showed impairment in global functioning, which was severe or very severe in 34% of cases. Due to this situation, 21% of patients attended a rehabilitative programme that was evidence-based only in 10% of cases. These findings are in accordance with studies mentioned in the Introduction of this paper (Miklowitz & Johnson, 2006; Reinares *et al.*, 2006), and with data by Rea *et al.* (2003) who found that seventy-five percent of patients with a bipolar disorder remained functionally impaired with inter-episodic symptoms.

Although assessments were not made during an acute phase of the patient's disorder, most subjective burden situations were rated as present by the majority of the relatives. In particular, 88% of relatives felt disappointed if they thought about how the patients was before the illness and 56% believed that the patient's condition had had a negative influence on the family. These findings highlight the persistence of psychological consequences of bipolar disorders for the family during the intervals between the episodes (Chakrabarti *et al.*, 2003; Reinares *et al.*, 2006), and the need to identify relatives requiring long-term supportive interventions (Weber-Rouget & Aubry, 2007).

On the other hand, the fact that family burden was significantly associated with the occurrence of a crisis in the previous 12 months suggests that the family consequences of bipolar disorders are at least partially sensitive to the clinical fluctuations of this mental disorder (Perlick *et al.*, 2005).

In multivariate analysis, social network support was found to be significantly associated with family burden. This finding should be interpreted in the light of literature data on the close relationship between relatives' social network and adaptive coping strategies with mental disorders in a loved one (Solomon & Draine, 1995; Chadda *et al.*, 2007; van der Voort *et al.*, 2007).

Family burden was significantly higher in Southern Italy, even controlling the clinical variables. This is consistent with the results of our previous study on schizophrenia and reflects the gradient of quality of health care in Italy (Magliano *et al.*, 2002; Costa *et al.*, 2003; Di Bartolomeo *et al.*, 2008). Southern Italy is characterised by poor professional and economic resources allocated to mental health care, which involves a more demanding family commitment and a lower availability of psychosocial interventions for patients and their families. These findings outline the need to invest in training the professionals in the use of evidence-based psychosocial interventions, especially in Southern Italy (Magliano & Fiorillo, 2007).

Among relatives who referred to professionals for suggestions on how to cope with patient's behaviours, 30% stated that they did not receive them, and 40% affirmed that they had never asked for them. This finding suggests that quite a large segment of families does not consider mental health professionals as persons they can talk to fruitfully. It cannot be excluded, however, that professional support is not frequently requested by relatives since their social network is preserved and it provides its usual role of practical and psychological support (Magliano *et al.*, 2006).

In our sample, 41% of key-relatives thought that the patient's condition had influenced the psychological well-being of the patient's children. Burden on children is at the moment a highly neglected aspect, particularly in mood disorders research (Ostman & Hansson, 2002; van Wijngarden *et al.*, 2004)). In-depth studies are needed given the increased genetic risk of mood disorders in children of patients with bipolar disorders (Hammen *et al.*, 1990).

In conclusion, this data can be considered a useful starting point to describe the problems related to the treatment of bipolar disorder in community-oriented mental health services, and to define the needed resources to provide evidence-based interventions in the community (de Girolamo *et al.*, 2007). In clinical practice, much support should be provided to caregivers of patients with inter-episodic symptoms and disability and to families with poor social network (Weber-Rouget & Aubry, 2007).

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