

Burnout in caregivers of patients with schizophrenia

Ahmet KOKURCAN, Ayşe Gül YILMAZ ÖZPOLAT*, Ali Kemal GÖĞÜŞ
Department of Psychiatry, Faculty of Medicine, Ankara University, Ankara, Turkey

Received: 19.03.2014 • Accepted/Published Online: 16.08.2014 • Printed: 30.06.2015

Background/aim: To evaluate the burnout of schizophrenia patients' caregivers and to determine the possible relationships between sociodemographic characteristics, symptomatology, perceived social support, and the burnout profile of the caregivers.

Materials and methods: Subjects included in the study are 76 schizophrenia patients, diagnosed according to DSM-IV-TR criteria, and their caregivers. A sociodemographic form, the Scale for the Assessment of Positive Symptoms, and the Scale for the Assessment of Negative Symptoms were applied to evaluate the severity of the symptoms. The Maslach Burnout Inventory for Caregivers and the Multidimensional Scale of Perceived Social Support were applied to the caregivers of the patients. The collected data were analyzed via Student's t-test, one-way analysis of variance, and Pearson's correlation analysis.

Results: The burnout profile of the caregivers was highly correlated with the perceived social support of the caregivers and was also correlated with negative symptoms of the patients. Lower perceived social support was related to all subscales of the Maslach Burnout Inventory.

Conclusion: Perceived social support is a major factor for caregiver burnout and it was highly correlated with all subscales in our study. We think that having social support provides caregivers with better feelings and so they provide better help to the patients. Appropriate approaches should be taken to intervene in the social and clinical factors that may exacerbate the burnout process.

Key words: Burnout, schizophrenia, social support, caregivers

1. Introduction

Schizophrenia is a severe mental disorder affecting thoughts, feelings, and behaviors. The lifetime prevalence of schizophrenia in the general population is 1% according to basic sources. It is seen in every culture and socioeconomic class. The incidence is equal in both sexes; however, the age of onset in women (25–35 years) is later than in men (15–25 years), and prognosis is usually better in women (1).

The term burnout in patients' caregivers is used to identify the effects of the challenges they face during the care process, negative experiences, and the problems disrupting their lives (2). Burnout in caregivers of chronic disorders is expected to be common. The disability and social withdrawal in patients with chronic psychiatric disorders differ from those of patients with chronic physical illnesses and many other psychiatric disorders. Schizophrenia is an important chronic psychiatric disorder that distorts many executive functions and also triggers burnout in caregivers. Caregivers of patients with schizophrenia feel sadness and despair because of the patient's inability to function in many social situations.

Desperate families that feel helpless choose to be alone and draw away from the community, whereas caregivers of patients with a physical illness usually seek help (3).

The concept of the caregiver in schizophrenia gained importance after the discovery of the first antipsychotic drug, chlorpromazine, in 1950. Many antipsychotic drugs have been discovered since 1950, when day hospitals started to close and the treatment of the patients began to be maintained in the community through medical treatment. This was big progress for the treatment of patients, but patients' families have had to assume the role of primary caregiver with no preparation (4). Especially since 1980, several scales have been developed and used to assess burnout in the caregivers of patients with schizophrenia. Illness and family-related factors (symptoms, duration, support level, family history) associated with burnout were investigated in studies using these scales. The cultural differences affecting burden and the families' perceptions of burnout were also studied after 1980. Although many studies were carried out, the increased knowledge about burnout has not led to any firm conclusions because multiple variables are involved. For example, the relatives of

* Correspondence: aysgulyilmaz@yahoo.co.uk

male patients showed functional decline more frequently, as mentioned in some studies (5,6). Caucasian caregivers experienced more burnout and rejection of the patients than African-American caregivers (6). In another study from Germany, the general condition of the caregivers having regular work was better (7).

The effects of the clinical symptoms of schizophrenia on burnout have been studied in several studies with different results. The clinic symptoms were evaluated as positive (delusions, hallucinations, disorganized behaviors, and speech) and negative (alogia, apathy, anergy, avolition) symptoms in many studies. The effect of symptomatology on the burnout dimensions is controversial. Positive and negative symptoms both have been associated with higher burnout in different studies (8,9). While some authors suggested that negative symptoms are more predisposing to burnout, others supposed the opposite (10). Some studies showed an association between burnout and positive schizophrenia symptoms in male patients with female caregivers (10). Receiving inadequate professional support and situations negatively affecting the family's social support increase the psychological distress of the caregivers and impair their quality of life, in both developed and developing countries (11). The burnout rate in caregivers getting professional support for schizophrenia was lower than that of other caregivers (7,10,12). The social support for caregivers was found to have a substantial effect on burnout in research inquiring into the effect of social conditions. In a recent study by Shibre et al., the factors related to burnout at 5-year follow-up were determined, and burnout in patients' relatives with high levels of social support was found to be lower. Their study is important as it is a follow-up study and as it assesses the effect of social support on burnout directly (13). However, the research on caregiver burnout in schizophrenia has intensified and several aspects of the burnout issue are not yet clearly understood (14).

The aim of this study was to assess the burnout of caregivers, to determine clinical symptoms causing burnout, and to identify the relationships between burnout, sociodemographic characteristics, and social support.

2. Materials and methods

2.1. Participants

This cross-sectional, single-center study enrolled 76 patients who were diagnosed with schizophrenia according to the DSM-IV-TR criteria and their caregivers. The exclusion criteria were history or existence of other psychotic disorders, patients living alone, the existence of mental retardation or degenerative disorders, and a lack of literacy for both groups. A sociodemographic form, the Scale for the Assessment of Positive Symptoms (SAPS), and the Scale for the Assessment of Negative

Symptoms (SANS) were applied to the patients and the Maslach Burnout Inventory for Caregivers (MBI) and the Multidimensional Scale of Perceived Social Support (MSPSS) were applied to the caregivers.

2.2. Measurements

2.2.1. Sociodemographic data form

The patient's and caregiver's age, marital status, education, disease duration, degree of caregiver's relationship with the patient, duration of care, family income, family size, chronic physical illnesses of the caregivers, and assistant status for care were requested in the sociodemographic data form.

2.2.2. Scale for the Assessment of Negative Symptoms (SANS)

This scale is used to measure the severity of negative symptoms and is assessed by the interviewer. The SANS has 5 subscales and 25 items. The subscales are "affective flattening", "alogia", "avolition", "anhedonia", and "attention". Items are rated from 0 to 5 and total scores for the subscales and total score for the whole scale are calculated. Total score is between 0 and 125. The scale was developed by Andreasen and a Turkish validity and reliability study was conducted by Erkoç et al. (15,16).

2.2.3. Scale for the Assessment of Positive Symptoms (SAPS)

This scale is used to measure severity of positive symptoms and is assessed by the interviewer, similar to the SANS. The SAPS has 5 subscales and 35 items. The subscales are "hallucinations", "delusions", "disorganized behaviors", "positive formal thought disorder", and "inappropriate affect". Items are rated from 0 to 5 and total scores for the subscales and total score for the whole scale are calculated. Total score is between 0 and 170. The scale was developed by Andreasen and a Turkish validity and reliability study was conducted by Erkoç et al. (15,17).

2.2.4. Maslach Burnout Inventory (MBI)

This scale, which consists of 22 items, is used to assess burnout in 3 subscales. Subscales are "emotional exhaustion", "depersonalization", and "personal accomplishment". There are 7 Likert items in each subscale, and 9 items in the "emotional exhaustion" subscale, 8 items in the "depersonalization" subscale, and 5 items in the "personal accomplishment" subscale. High scores on the "emotional exhaustion" and "depersonalization" subscales but low scores on the "personal accomplishment" subscale are considered as burnout. The 7 Likert items were reduced to 5 Likert items in the Turkish form of the scale. Items are rated from 0 (never) to 4 (always) and total scores for the subscales are calculated. The scale was developed by Maslach and a Turkish validity and reliability study was conducted by Ergin et al. (18,19).

2.2.5. Multidimensional Scale of Perceived Social Support (MSPSS)

This scale consists of 12 items and is used to assess perception of social support in 3 subscales. It is a 7-point Likert scale; all subscales contain 4 items and the subscales are “family support”, “friends’ support”, and “other support”. Total scores for the subscales and total score for the whole scale are calculated and the highest scores are 28 for subscales and 84 for the whole scale. High scores in all subscales indicate high perceived social support. The scale was developed by Zimet and a Turkish validity and reliability study was conducted by Eker et al. (20,21).

2.3. Statistical analysis

Data were presented as mean \pm standard deviation (SD). Collected data were analyzed via Student’s t-test, one-way analysis of variance (ANOVA), and Pearson’s correlation analysis. All the statistical calculations were performed using the SPSS 17. All P-values were calculated as two-sided, and a P-value of less than 0.05 was considered significant.

3. Results

Sociodemographic characteristics of patients and caregivers are given in Table 1. The mean age of patients and caregivers was respectively 42.6 ± 12.0 and 50.6 ± 13.7 years. Of the patients, 36.8% were female and the mean duration of illness was 16.7 ± 8.9 years. Duration of care was 23.8 ± 11.9 years and 27% of caregivers had an assistant for care. Nineteen (25%) caregivers worked actively in addition to providing care. Total SAPS and SANS scores for women and men were not statistically significantly different (23.46 ± 17.71 , 18.46 ± 11.60 , 42.79 ± 23.01 , 38.13 ± 17.40 , women and men respectively, $P > 0.05$).

Clinical data of caregivers’ MBI and MSPSS scores are given in Tables 2 and 3. The results of our study revealed that the caregivers of patients with schizophrenia had higher levels of emotional exhaustion compared with caregivers of patients with physical illnesses and depression in previous burnout studies assessed by MBI (22–24). The mean depersonalization score of caregivers was lower than the mean exhaustion score, which was similar to many other studies (22,23). Family support of caregivers was higher than friend support and other support resources according to MSPSS.

Family income status was obtained via a self-evaluation form. The 3-point Likert form had “high, moderate, and low income” options. Higher family income was associated with better personal accomplishment but not associated with the other subscales (personal accomplishment scores: 22.63 ± 4.94 , 18.75 ± 4.11 , 17.65 ± 7.44 for high-, moderate-, and low-income caregivers respectively, $P < 0.05$). The caregivers with primary education had lower

Table 1. Sociodemographic characteristics of patients and caregivers.

Patient variables	Number	%
Sex		
Male	28	36
Female	48	64
Marital status		
Married	20	26
Widowed/divorced	8	11
Single	48	63
Occupation		
Working	47	62
Retired	8	11
Not working	15	20
Early retirement	6	7
Sex		
Male	25	33
Female	51	67
Marital status		
Married	58	26
Widowed/divorced	8	11
Single	10	63
Education		
Primary (1–5 years)	40	53
High school	16	20
University	13	17
Occupation		
Working	19	62
Retired	16	11
Not working (full-time care)	39	20
Student	2	7
Economic status		
High	4	6
Moderate	52	68
Low	20	26
Additional physical illnesses		
Present	23	52
Absent	21	48
Degree of relationship with the patient		
Wife/husband	18	25
Daughter/daughter-in-law	36	47
Parent	7	8
Sibling	15	20
Assistance for care		
Present	55	72
Absent	21	28
Family size		
Larger (4 or more)	23	30
Smaller (3 or less)	53	70

Table 2. Mean MBI scores of caregivers.

	Mean	SD	Minimum	Maximum	Number
Emotional exhaustion	14.55	8.15	0	35	76
Depersonalization	5.00	3.39	0	14	76
Personal accomplishment	21.22	6.01	1	32	76

Table 3. Mean MSPSS scores of caregivers.

Variable	Mean	SD	Minimum	Maximum	Number
Family	17.7	7.2	4	28	76
Friend	12.9	7.8	4	28	76
Other	12.6	7.3	4	28	76

scores than those with other education levels from all MBI subscales. However, only the association between education level and personal accomplishment score was statistically significant ($P < 0.05$).

Marital status was another important sociodemographic variable regarding burnout. The widowed/divorced caregivers had higher exhaustion and depersonalization scores than married or single caregivers, and the differences were statistically significant (21.63 ± 6.28 , 14.20 ± 9.18 , 13.64 ± 7.85 ; 8.13 ± 3.48 , 4.50 ± 2.91 , 4.66 ± 3.29 ; widowed/divorced, single, and married, respectively, $P < 0.05$).

Caregivers from larger families (4 members or more) had lower exhaustion and higher personal accomplishment scores than smaller (3 members or less) families (13.87 ± 7.86 , 22.50 ± 8.07 ; 21.70 ± 5.59 , 15.67 ± 8.36 , 4 or more family members and 3 or less family members, respectively, $P < 0.05$). Thirty-six caregivers were the patient's daughter or daughters-in-law, 18 were the patient's husband/wife, and 15 were siblings and 7 were parents of the patient. We could not find any differences between the groups with regards to the caregiver's degree of relationship with the patient and the burnout subscales ($P > 0.05$).

Having or not having an assistant for care and the caregiver's chronic physical illness status were not associated with the burnout scales ($P > 0.05$). Caregivers working in a regular job had lower exhaustion and depersonalization scores than full-time caregivers but the difference was not statistically significant (exhaustion scores: 14.36 ± 7.40 , 16.26 ± 9.39 ; depersonalization scores: 5.03 ± 3.56 , 5.37 ± 4.09 ; working in a regular job and full-time caregivers, respectively, $P > 0.05$).

The correlation of the MBI scores of caregivers with other variables are illustrated in Table 4. Sex, duration of illness, duration of care, and SAPS scores were not related

to burnout ($P > 0.05$). The SANS scores had significant correlation with the MBI "emotional exhaustion" and "personal accomplishment" scores ($P < 0.05$). SANS scores were not associated with depersonalization scores ($P < 0.05$). There was a positive correlation between MSPSS subscale scores and "personal accomplishment" scores, while MSPSS subscale scores were correlated negatively with "emotional exhaustion" and "depersonalization" ($P < 0.05$). The correlation between MSPSS total score and MBI was the same ($P < 0.01$; $P < 0.01$; $P < 0.01$). Therefore, higher social support perception was associated with better personal accomplishment in our study.

4. Discussion

In our study we investigated the burnout in caregivers of patients with schizophrenia. We tried to determine the possible relationships between sociodemographic characteristics, symptomatology, perceived social support, and the burnout profile of the caregivers. We also compared the burnout in caregivers of our study with the caregivers of cancer, multiple sclerosis, and depression patients in previous studies. The emotional exhaustion score was 14.55 ± 8.15 , while depersonalization score and personal accomplishment score were 5.00 ± 3.39 and 21.22 ± 6.01 . Due to lack of a cut-off scale of MBI, it was not possible to determine the number of caregivers who were exhausted.

While many different measures are utilized in burnout research, we could compare our results with the studies that used the MBI. The burnout scores of the caregivers in our study were higher than some other studies' scores as assessed by MBI (3,22,24). In one of them, 133 caregivers of patients with mental illnesses from a 2-year intervention program were evaluated. It included 94 caregivers of depressive patients (22). Because of the fact that the Turkish version of the MBI is formed by 5 Likert items

Table 4. Correlations between MBI scores and variables.

	Burnout	Depersonalization	Personal accomplishment
Age of patient	r = 0.117	r = -0.100	r = 0.070
Duration of illness	r = 0.184	r = -0.094	r = 0.035
Total SAPS score	r = 0.057	r = -0.014	r = -0.138
Total SANS score	r = 0.282 *	r = 0.193	r = -0.275 *
Total MSPSS	r = -0.449 **	r = -0.475 **	r = 0.357 **
MSPSS family score	r = -0.351 **	r = -0.456 **	r = 0.284 *
MSPSS friend score	r = -0.420 **	r = -0.376 **	r = 0.329 **
MSPSS other score	r = -0.357 **	r = -0.369 **	r = 0.285 *
Age of caregiver	r = 0.225	r = 0.152	r = -0.065
Duration of care	r = 0.146	r = 0.176	r = -0.092

*P <0.05, **P <0.01.

rather than the original 7 point Likert scale, we adjusted the scores with a coefficient for a correct comparison as done in a previous study (3,18,19).

Exhaustion and depersonalization scores of our study were higher than the scores of caregivers in the intervention program (adjusted 7-point Likert MBI emotional exhaustion and depersonalization scores in our study: 20.37 ± 11.41 , 7.00 ± 4.75 versus 12.63 ± 12.30 , 5.09 ± 5.74 in Angermeyer et al.'s) (22). Depression in patients also causes burnout in caregivers, and the risk rises if the depression is challenging and resistant to treatment. Long-term depression may disrupt the social interactions of patients and caregivers seriously (25). However, it is not as disruptive for caregivers during the remission periods, in contrast with schizophrenia. The core symptoms of schizophrenia remain constant in many cases, which prevents caregivers from relaxing for a while (26). It is the major difference between the caregivers of patients with schizophrenia and patients with depression regarding burnout (21,25).

Chronic physical illnesses also causes burnout in caregivers but it is more common for them to seek help than caregivers of patients with psychiatric disorders. Caregivers of patients with schizophrenia often draw away from the community for several reasons. One of the main reasons of isolation from social interactions is stigmatization of mental illnesses (27). The diagnosis of schizophrenia is a stigmatization for many caregivers, even in developed countries. Negative symptoms of schizophrenia create the major differences regarding burnout from physical illnesses (28). In a previous study, burnout in 103 caregivers of patients with cancer and 88 caregivers of patients with multiple sclerosis was measured

by MBI (24). As is well known, cancer is a wide group of diseases and its prognosis depends on the kind of cancer and the treatment given (29). Multiple sclerosis is a neurologic disease that damages the white matter of the brain and spinal cord. A wide variety of symptoms may be seen during the illness and multiple sclerosis usually presents with relapses and remissions (30).

We compared the burnout scores of our study with Ybema et al.'s study (adjusted 7-point Likert MBI emotional exhaustion and depersonalization scores in our study: 20.37 ± 11.41 , 7.00 ± 4.75 , versus caregivers of cancer patients: 16.52 ± 6.79 , 11.55 ± 0.78 , and caregivers of MS patients: 17.08 ± 7.14 , 13.16 ± 6.37 in Ybema et al.'s) (24). The sociodemographic characteristics of the subjects in the article by Ybema et al. were similar to those of the subjects of our study. The interesting finding of comparison between the studies was the higher exhaustion but lower depersonalization scores in the caregivers of schizophrenia patients. Schizophrenia cause more disability in many social functions than cancer and multiple sclerosis. A state of complete well-being may be achieved during remission periods of these physical illnesses, while many executive function impairments remain in schizophrenia (29,30). Therefore, higher emotional exhaustion in the caregivers of schizophrenia was an expected outcome, in our opinion.

That results of the present study revealed that depersonalization in caregivers of patients with schizophrenia was lower than in caregivers of cancer and MS patients. Depersonalization is not considered in many burnout scales and that dimension of burnout is not known as much as emotional exhaustion. The lower depersonalization scores can be interpreted as the caregivers of schizophrenia patients being able to cope

with burnout without depersonalization; they might have forced themselves to treat the patients well despite emotional exhaustion, or they could avoid mentioning their depersonalization. As underlined above, there is not much known about depersonalization and our explanations about that dimension are only predictions (22,29,30).

Another concept of burnout measured by the MBI is personal accomplishment. In this study it was associated with higher family income, higher education level, living in a larger family (4 members or more), and marital status. Sociodemographic characteristics were found to influence the personal accomplishment scale much more within the 3 subscales. Accomplishment may be a more constant dimension of burnout in caregivers of patients with schizophrenia. This finding should be supported with other studies.

Marital status is an important sociodemographic variable related to burnout. It influenced all dimensions of burnout in our study. The widowed/divorced caregivers had higher exhaustion and depersonalization and lower accomplishment scores compared to married or single caregivers. The differences were all statistically significant except the accomplishment subscale. Widowed/divorced caregivers feel lonely and helpless and that makes the caregiving process more challenging, as mentioned in many previous studies (31).

Caregivers from larger families (4 members or more) had lower exhaustion and higher accomplishment scores than smaller (3 members or less) families, although having or not having an assistant for care was not associated with burnout scales. This finding is not surprising as family support is crucial for caregivers to share difficulties and to not feel alone. In our study, the majority of the caregivers were the patients' daughters or daughters-in-law, and most of them were housewives. This finding is consistent with previous studies, in that the caregivers are generally reported to be a patient's daughter or daughter-in-law (3,25). Being at home and care-giving continuously is hard work, as expected. In our study, other family members reduced burnout in the caregivers even if they had not helped in care-giving (25).

Caregivers working in a regular job had lower exhaustion and depersonalization scores than full-time caregivers, but the difference was not statistically significant. In Möller-Leimkühler and Wiesheu's study, regular employment contributed significantly in reducing burnout in caregivers and enhanced their quality of life (7). As the caregiver gets away from the responsibilities of care for a while they may feel relieved at work. The patients' and the caregivers' ages were not associated with all subscales. Younger caregivers usually feel more despair in the face of illness. Thus, age could have been associated

with emotional exhaustion if there had been more young caregivers in our study (6–8).

The burnout scores of the female and male caregivers did not differ significantly in our study. The effect of sex on burnout dimensions is controversial. While some authors suggest that women are more prone to burnout, others suppose the opposite (4–6). Duration of illness and duration of care also were not associated with burnout. However, we think this is due to the other factors of burnout. In many studies, duration of care was found to be one of the main variables affecting burnout. There are also studies that could not find an association between burnout and duration of care (23,25,32).

Burnout scores were usually associated with negative schizophrenia symptoms and lower social support in previous studies. Some studies showed an association between burnout and positive schizophrenia symptoms in male patients with female caregivers (8–10). Our study results were similar to those of previous studies for negative symptoms but not for positive symptoms. Negative symptoms such as apathy, avolition, and alogia are more difficult than positive symptoms for antipsychotic treatment and are usually persistent, causing caregivers to feel helpless (7,9,25).

It was found that perceived social support and getting professional support were important determinants of burnout in previous studies (32,33). Perceived social support was associated with all burnout dimensions in our study. We think that having social support provides caregivers with better feelings and provides better help to the patients. There was positive correlation between MSPSS subscale scores and "personal accomplishment" scores, while MSPSS subscale scores were correlated negatively with "emotional exhaustion" and "depersonalization" ($P < 0.05$). The correlation between MSPSS total score and MBI subscales was the same ($P < 0.01$; $P < 0.01$; $P < 0.01$). It shows that great social support, or the perception of high social support, meant lower burnout and depersonalization for caregivers, as mentioned in previous studies. Furthermore, caregivers who perceive social support as high feel more accomplished (31).

An interesting finding of comparison between the scores of our study and Ybema et al.'s study (24) was higher exhaustion but lower depersonalization in the caregivers of patients with schizophrenia. More research comparing burnout characteristics of physical and mental illnesses is needed to explain different features such as depersonalization. Depersonalization and accomplishment as different dimensions of burnout are not known as well as emotional exhaustion. Therefore, these dimensions of burnout should be considered in future studies.

The burnout profile of the caregivers was highly correlated with the perceived social support of the

caregivers and correlated with the negative symptoms of the patients; however, no correlation was found with the positive symptoms of the patients. Psychotherapeutic and rehabilitation interventions to improve negative symptoms should be planned. Daily rehabilitation units developing social skills can also be applied to improve the functionality of the patient. Studies into the effect of these interventions on burnout are thought to be important in future studies.

Social support is another major factor regarding burnout in caregivers. Lower perceived social support was found to affect all subscales of MBI in our study. Family and psychotherapeutic interventions (supportive therapies or group therapies) and social programs should be considered for caregivers to decrease burnout.

There were some limitations to our study. First, the effect of stigmatization of schizophrenia was not evaluated. Stigmatization of schizophrenia is known to be an important

parameter for burnout. Second, assessing patients and caregivers only once and the absence of postintervention results can be considered as a limitation. Third, we could have included caregivers of physical or mental illnesses to compare the results with a control group. Fourth, our findings reflect the situation in Turkey only.

In conclusion, higher family income, higher education, living in a larger family, and being married were associated with higher caregiver accomplishment scores. Working a regular job, being married, and living in a larger family were also associated with lower burnout in caregivers of schizophrenia. However, the effects on burnout of the sex of the caregivers or the patients, the duration of illness, and the duration of care were not statistically significant. Further studies with larger samples and in other settings are needed to evaluate the factors that lead to burnout of caregivers of patients with schizophrenia and to determine the high-risk caregiver groups.

References

1. Sadock BJ, Sadock VA. *Synopsis of Psychiatry*. 10th ed. Philadelphia, PA, USA: Lippincott Williams & Wilkins; 2008.
2. Panayiotopoulos C, Pavlakis A, Apostolou M. Family burden of schizophrenic patients and the welfare system; the case of Cyprus. *Int J Ment Health Syst* 2013; 7: 13.
3. Yılmaz A, Turan E, Gundogar D. Predictors of burnout in the family caregivers of Alzheimer's disease: evidence from Turkey. *Australas J Ageing* 2009; 28: 16–21.
4. Millier A, Schmidt U, Angermeyer MC, Chauhan D, Murthy V, Toumi M, Cadi-Soussi N. Humanistic burden in schizophrenia: a literature review. *J Psychiatr Res* 2014; 54: 85–93.
5. Chan SW. Global perspective of burden of family caregivers for persons with schizophrenia. *Arch Psychiatr Nurs* 2011; 25: 339–349.
6. Rosenfarb IS, Bellack AS, Aziz N. A sociocultural stress, appraisal and coping model of schizophrenia burden and family attitudes towards patients with schizophrenia. *J Abn Psychol* 2006; 115: 157–165.
7. Möller-Leimkühler AM, Wiesheu A. Caregiver burden in chronic mental illness: the role of patient and caregiver characteristics. *Eur Arch Psychiatry Clin Neurosci* 2012; 262: 157–166.
8. Caqueo-Urizar A, Miranda-Castillo C, Giraldez SL, Maturana SL, Pérez MR, Tapia FM. An updated review on burden on caregivers of schizophrenia patients. *Psicothema* 2014; 26: 235–243.
9. Vella SL, Pai N. The measurement of burden of care in serious mental illness: a qualitative review. *Aust N Z J Psychiatry* 2013; 47: 222–234.
10. Kate N, Grover S, Kulhara P, Nehra R. Relationship of caregiver burden with coping strategies, social support, psychological morbidity, and quality of life in caregivers of schizophrenia. *Asian J Psychiatr* 2013; 6: 380–388.
11. Cechnicki A, Bielańska A, Hanuszkiewicz I, Daren A. The predictive validity of Expressed Emotions (EE) in schizophrenia. A 20-year prospective study. *J Psychiatr Res* 2013; 47: 208–214.
12. Caqueo-Urizar A, Gutierrez-Moldonado J, Miranda-Castillo C. Quality of life in caregivers of patients with schizophrenia: a literature review. *Health Qual Life Outcomes* 2009; 7: 84.
13. Shibre T, Medhin G, Teferra S, Wakwoya A, Berhanau E, Abdulahi A, Alem A, Fekadu A. Predictors of carer-burden in schizophrenia: a five-year follow-up study in Butajira, Ethiopia. *Ethiop Med J*. 2012; 50: 125–133.
14. Chatterjee S, Naik S, John S, Dabholkar H, Balaji M, Koschorke M, Varghese M, Thara R, Weiss HA, Williams P et al. Effectiveness of a community-based intervention for people with schizophrenia and their caregivers in India (COPSI): a randomised controlled trial. *Lancet* 2014; 383: 1385–1394.
15. Andreasen NC. Methods for assessing positive and negative symptoms. *Mod Probl Pharmacopsychiatry* 1990; 24: 73–88.
16. Erkoç Ş, Arkonaç O, Ataklı C, Özmen E. Pozitif Semptomları Değerlendirme Ölçeğinin güvenilirliği ve geçerliliği. *Düşünen Adam* 1991; 4: 20–24 (in Turkish).
17. Erkoç Ş, Arkonaç O, Ataklı C, Özmen E. Negatif Semptomları Değerlendirme Ölçeğinin güvenilirliği ve geçerliliği. *Düşünen Adam* 1991; 4: 16–19 (in Turkish).
18. Maslach, C, Jackson, SE. The measurement of experienced burnout. *J Occup Behav* 1981; 2: 99–113.

19. Ergin C. Doktor ve Hemşirelerde Tükenmişlik ve Maslach Tükenmişlik Ölçeğinin uyarlanması. In: Ankara VII. Ulusal Psikoloji Kongresi; 1992. pp. 143–145.
20. Zimet GD, Dahlem NW, Zimet SG, Farley GK. The Multidimensional Scale of Perceived Social Support. *J Pers Assess* 1988; 52: 30–41.
21. Eker D, Arkar H, Yıldız H. Çok boyutlu algılanan sosyal destek ölçeğinin gözden geçirilmiş formunun faktör yapısı, geçerlik ve güvenilirliği. *Türk Psikiyatri Dergisi* 2001; 12: 17–25 (in Turkish).
22. Angermeyer MC, Bull N, Bernert S, Dietrich S, Kopf A. Burnout of caregivers: a comparison between partners of psychiatric patients and nurses. *Arch Psychiatr Nurs* 2006; 20: 158–165.
23. Tel H, Ertekin-Pınar S. Investigation of the relationship between burnout and depression in primary caregivers of patients with chronic mental problems. *J Psychiatr Nurs* 2013; 4: 145–152.
24. Ybema JF, Kuijter RG, Hagedoorn M, Buunk BP. Caregiver burnout among intimate partners of patients with a severe illness: an equity perspective. *Pers Relationship* 2002; 9: 73–88.
25. van Wijngaarden B, Koeter M, Knapp M, Tansella M, Thornicroft G, Vázquez-Barquero JL, Schene A. Caring for people with depression or with schizophrenia: are the consequences different? *Psychiatry Res* 2009; 169: 62–69.
26. Greenberg PE, Kessler RC. The economic burden of depression in the United States: how did it change between 1990 and 2000? *J Clin Psychiatry* 2003; 64: 1465–1475.
27. Thys E, Struyven CI, Danckaerts M, De Hert M. Stigmatization of schizophrenia in Flemish newspapers. *Schizophr Res* 2013; 150: 598–599.
28. Sibitz I, Amering M, Unger A, Seyringer ME, Bachmann A, Schrank B, Benesch T, Schulze B, Woppmann A. The impact of the social network, stigma and empowerment on the quality of life in patients with schizophrenia. *Eur Psychiatry* 2011; 26: 28–33.
29. Popat K, McQueen K, Feeley TW. The global burden of cancer. *Best Pract Res Cl An* 2013; 27: 399–408.
30. Hillman L. Caregiving in multiple sclerosis. *Phys Med Rehabil Clin N Am* 2013; 24: 619–627.
31. Mizuno E, Takataya K, Kamizawa N, Sakai I, Yamazaki Y. Female families' experiences of caring for persons with schizophrenia. *Arch Psychiatr Nurs*. 2013; 27: 72–77.
32. Carrà G, Cazzullo CL, Clerici M. The association between expressed emotion, illness severity and subjective burden of care in relatives of patients with schizophrenia. Findings from an Italian population. *BMC Psychiatry* 2012; 12: 140.
33. Gülseren L, Cam B, Karakoç B, Yiğit T, Danacı AE, Cubukçuoğlu Z, Taş C, Gülseren S, Mete L. The perceived burden of care and its correlates in schizophrenia. *Türk Psikiyatri Derg* 2010; 21: 203–212.