



Family Caregivers Burden and its Related Factors Among Iranian Elderly Psychiatric Patients' Caregivers

Azar Ramezani,^{1,2} Hamideh Azimi Lolaty,^{1*} Farideh Bastani,³ and Hamid Haghani⁴

¹Psychiatry and Behavioral Sciences Research Center, Addiction Institute, Department of Psychiatry, Mazandaran University of Medical Sciences, Sari, Iran

²School of Nursing and Midwifery, Department of Community Health Nursing and Department of Geriatric Nursing, Iran University of Medical Sciences, Tehran, Iran

³Department of Geriatric Nursing, School of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran

⁴Department of Biostatistics, Iran University of Medical Sciences, Tehran, Iran

*Corresponding author: Hamideh Azimi Lolaty, Assistant professor, School of Nursing and Midwifery, Psychiatry and Behavioral Sciences Research Center, Addiction Institute, Department of Psychiatry, Mazandaran University of Medical Sciences, Sari, Iran. Tel: +98-1133350602, Fax: +98-1133368915, E-mail: hamidehazimi@gmail.com

Received 2016 October 09; Revised 2017 April 17; Accepted 2018 January 08.

Abstract

Background: Providing care for an old person with a psychiatric disorder is a long-term and stressful process exerting negative outcomes on the caregivers' physical, psychological, and social health.

Objectives: The aim of the study was to determine the burden among family caregivers of psychiatric elderly and its related factors.

Methods: This descriptive study was conducted on 200 elderly psychiatric patients via convenient sampling, referring to the zarezadeh psychiatric hospital of Sari, Iran. The sampling lasted from June to mid-November, 2015. Two questionnaires of demographics (the elderly and caregivers) and Zarit Burden Interview were used to collect the data. The data was analyzed using descriptive and inferential statistics, such as independent t-test, Analysis of Variance (ANOVA) and Scheffe Post Hoc test.

Results: The results indicated that the mean of the caregivers' age was 51.24 ± 12.16 . Ninety-four percent of the caregivers were married, and 49% had higher diploma education. Sixty-seven percent reported average economic status. The findings showed 68% of caregivers came up with mild to severe burden. According to the demographics, the hours of care per week ($P = 0.001$) and having other psychiatric patients in the family ($P = 0.006$) were related to the burden.

Conclusions: Significantly high caregivers' burden can overshadow the risk of low quality of care the psychiatric elderly patients and expose their caregivers' psychological health to danger. Thus, it seems that community-oriented interventions are required to reduce the burden and boost long-term quality of care by informal caregivers, such as patients' families.

Keywords: Burden, Elder, Family Caregivers

1. Background

One of the most significant aspects of old people's health is their mental health, deserving further attention (1). Of psychiatric diseases, whose outbreak increases with age, are cognitive, mood, and mental disorders, such as dementia, delirium, and depression disorders (2). The prevalence of age-related psychiatric disorders varies. In Iran, according to the 2013 census, the prevalence of various elderly period psychiatric disorders was reported as 23.6% (3). The elderly with psychiatric disorder were in need of daily activities being constantly supported and monitored by the caregivers (4). Family caregivers are considered as a part of the informal support system mainly in charge of the patient without receiving any financial reward (5-8). Family caregivers are a vulnerable population and like the elderly, they require special attention (9). Besides biological and physiological damage, stress and long-term

caring impacts on the caregivers can result in fatigue (10, 11), and probably reduced job and social activities and disconnected relationships with family and friends (12, 13). A study found that an old person's physical ailment causes an increased financial burden, stress, and anxiety in the caregivers' personal lives (14). Another study revealed that caring of psychiatric elderly patients leads to nuisances, such as personal life stress, losing one's job, additional financial burden and feeling guilty for the caregivers, resulting in the caregiving burden (15). Caregiving burden is covert in nature, meaning that the patient and the caregivers are both in pain and suffering and strongly need to be socially understood and supported (16). The mental disorder type, its duration and severity, the caregiving period, the incidence of problematic behaviors on the patient's side, lowered social protection and negative feelings can bring about further burden and lower quality of life (17, 18).

Under the best state and conditions, the caregivers are affected by burden (19). Hence, family caregivers are considered the most significant protective system, and it seems that the perceived burden in the caregivers can play a decisive role in caregiving. The idea behind mental health concentrating on directing the activities on vulnerable populations is to prevent mental illnesses. For this purpose, it is required to preliminarily assess caregiving burden in family caregivers.

2. Objectives

The present study pursues to determine caregiving burden in the psychiatric elderly caregivers and its related factors.

3. Materials and Methods

The study was a descriptive cross-sectional study. Two hundred caregivers of psychiatric elderly that had referred to Zare hospital clinic of Sari, Mazandaran province, were selected via convenient sampling. This paper was part of a thesis titled "association between attitude toward long-term care provision and caregiving burden in Sari based zare hospital psychiatric elderly family caregivers", approved by Iran University of Medical Sciences and Health Services. The sample sizes in the original study were calculated by the following formula:

$$n = \frac{\left(Z_{1-\frac{\alpha}{2}} + Z_{1-\beta}\right)^2}{\omega^2} + 3 \quad (1)$$

$$\omega = \frac{1}{2} \ln \frac{1+r}{1-r} \quad (2)$$

The inclusion criteria were as follows: being the caregiver of psychiatric elderly relative (spouse, sibling, child, and daughter-in-law), providing the highest caregiving during the day, providing mental, emotional, and social supports and the medical plan of the elderly in diverse forms (in person or in absentia), and caregiving duration of more than 6 months. The caregivers were 18 years old or older. The study samples were collected within 5 consecutive months from June to mid-November 2015, and the questionnaires were filled by the caregivers. In the proposal plan, when the caregivers were illiterate, the researcher read the questionnaires for them. There was no illiterate caregiver in this study.

3.1. Ethical Considerations

The ethical committee of Iran University of Medical Sciences of Tehran approved the study. The caregivers were informed verbally about the purpose of the study and signed a written informed consent. In this study, the caregivers had the right to decide on participating in the study or leave at any time. The data were confidential.

3.2. Data Collection Tool

The demographics form of the elderly included gender, marital status, education, the psychiatric disorder type, the disorder duration, job status and insurance, and that of the caregivers covered age, gender, marital status, relation, education, economic status, employment status, the number of psychiatric patient members in the family, and care giving hours per week.

3.3. Zarit Burden Interview

Burden Inventory of Zarit et al., is the most established tool that measures the perceived burden of family caregivers (20). The inventory consists of 22 questions in a 5-point Likert scale. Each question has 5 choices given scores as "never (0), almost (1), sometimes (2), often (3), and always (4)". Total scores indicate the care giving burden. After analyzing and determining the cut-off point, scores of less than 30 were defined as mild burden, 31 to 60 as average burden, and 61 to 88 as severe burden. The ZBI explores negative physical, mental, social, and economic impacts of care giving on the life of the caregiver. Navidian et al. have culturally adjusted this scale and its Congruent validity was confirmed with high and positive correlation with the Hamilton anxiety scale ($r = 0.89$) and beck depression inventory ($r = 0.67$). The internal reliability of the inventory was 0.94 (21). The questionnaires were filled out by the caregiver. The SPSS 21 software was used to analyze the data with descriptive and inferential statistics such as analysis of variance (ANOVA), independent t-test, and Scheffe Post hoc test.

4. Results

Fifty-two percent of the caregivers were male, 94% married, and 57.4% of them were in the age group of 40 to 59 years old. The majority of the caregivers were the children of the patients (48.5%) followed by spouses (29.5%). About half (49%) of the caregivers were post diploma holders. More than half (67.8%) of them had an average economic status. Around 86.4% of them only had cared for one psychiatric elderly and 13.6% took care of another psychiatric patient at home in addition to the psychiatric elderly.

Table 1. The Psychiatric Elderly Patient Caregivers' Demographic Data

Demographic Data	Frequency	Percent
Gender		
Male	104	52.00
Female	96	48
Age, y		
> 40	33	16.7
40 - 59	113	57.4
60 - 70	0.0051	25.9
Mean \pm S.D = 51.24 \pm 12.96, Min = 22, Max = 70		
Education		
Under diploma	0.0012	6.00
Diploma	0.0090	45
College education	0.0098	49
Marital status		
Single	0.0013	6.00
Married	0.0187	94
Economic status		
Poor	0.0006	030.00
Average	0.00135	97.5
Well-off	0.0058	29.2
Employment		
Housewife	0.0040	20.00
Farmer	0.0032	16.00
Self-employed	0.0033	16.5
Jobholder	0.0066	33.00
Retired	0.0029	14.5
Another psychiatric person in family		
No	0.00173	86.4
Yes	0.0027	13.6
Weekly patient care hours		
< 24 hours	0.0028	14.00
24 - 34 hours	0.0071	35.5
35 - 44 hours	0.0080	40.00
> 44 hours	0.0021	10.5
Mean \pm S.D = 34.24 \pm 24.09, Min = 14, Max = 56		
Relation		
Spouse	0.0059	29.5
Child	0.0097	48.5
Daughter/son-in-law	0.0022	11.00
Other relatives	0.0022	11.00

The highest care-giving hours per week was 35 to 44 hours (Table 1).

In addition, the results showed the mean age of patients was 71.96 ± 2.27 years, ranging from 60 to 92 years; 51% were male, 54.5% married, and 46.2% of them were jobless with no income; about 42.7% had a psychiatric disorder for 10 to 19 years. In this study, depression and anxiety had a higher and lower frequency, respectively (Table 2).

It was found that 32%, 56%, and 12% of caregivers had mild, average, and severe burden, respectively. The mean scores of personal, emotional, social, and economic caregivers' burden were 15.67 ± 5.6 , 13 , 57 ± 1.05 , 4.75 ± 33.3 , and 4.81 ± 1.55 , respectively. The results showed that caregivers' burden had a meaningful association with type of psychiatric disorder in elder patients ($F = 4.330$, $df = 4.174$, and $P = 0.002$). Post Hoc test showed caregivers' burden was higher in caring for schizophrenic patients and then obsessive-compulsive, mania, depression, and anxiety disorders, respectively. The results denoted that care giving hours per week ($t = 2.97$, $df = 31.54$, and $P < 0.001$) and additional psychiatric patients number in the family ($t = 2.97$, $df = 31.54$, and $P = 0.006$) had an association with care giving burden. Post Hoc test showed that greater care giving hours/week was associated with higher care giving burden (Table 3).

5. Discussion

The study findings imply high burden in caregivers. The achieved results indicated that 32% of the caregivers had mild burden and 68% had average to severe burden. This finding was compatible with previous studies on caregivers of elderly in Iran (4, 22-24). Another study was not consistent with our result (15). Based on the findings, out of the care giving burden dimensions, only 2, including personal and emotional aspects, were associated with disease duration in the psychiatric elderly. A study from Italy on caregiver's burden and quality of life of elderly patients with physical and mental illness also revealed emotional, personal, and economic burden associated with disease duration in the caregivers (9). The present study revealed that the main caregivers were children of the patients followed by spouses. Although the care giving burden of the children was higher than that of other caregivers (spouse, daughter-in-law, daughter, and son-in-law), this difference was not significant (Table 3). This study revealed that almost half of the caregivers were male, the gender of the caregivers was divulged no meaningful association with care giving burden while burden scores of males were higher than that of females (Table 3). Similar to this study, earlier studies (22-26) found that the mean care-giving burden scores among males were higher than that

Table 2. The Psychiatric Elderly Patient's Demographic Characteristics

Demographic Data	Frequency	Percent
Gender		
Male	102	51
Female	98	49
Age		
60 - 69	92	46
70 - 79	83	41.5
< 80	25	12.5
Mean \pm S.D = 71.96 \pm 7.27, Min = 60, Max = 92		
Education		
Illiterate	72	36
Under diploma	61	30.5
Diploma	44	22
Post diploma	32	11.5
Marital status		
Single	10	5
Married	109	54.5
Widow	81	40.5
Employment		
Jobless	92	46.2
Farmer	49	6
Self-employed	5	2.6
Retired	53	26.6
Disease duration		
10 <	35	17.6
10 - 19	85	42.7
20 - 29	52	26.1
> 30	27	13.6
Mean \pm S.D = 18.05 \pm 9.65, Min = 3, Max = 42		
Psychiatric disorder type		
Schizophrenia	59	29.5
Anxiety	14	7
Mania	43	21.5
Depression	63	31.5
More than one disorder	21	10.5

of females. However, the existing difference somewhat depends on the cultural context of the study setting, such as significant role of males as a breadwinner and supplier of financial requirements in Iranian families and ability of males in physically handling the patients. The majority of the participating caregivers in this study were married, which may indicate economic security and sense of re-

sponsibility compared to single individuals; marital status showed no significant relationship with caregiving burden. Married caregivers had higher mean burden scores than single caregivers (Table 3). In addition, the mean burden scores of the caregivers aged 45 to 65 was reported more than that of other age categories. However, this age difference was not significant. The mean caregiving burden scores according to the perceived economic condition based on Post Hoc test indicated higher caregiving burden in low-income caregivers. The above findings are in line with some previous studies (4, 9, 15). This finding asserted the significant role of economic status in caregiving of patients. The present study also revealed that the elderly caregiving hour/week and having additional family psychiatric members and type of psychiatric disorders of the elderly had a meaningful association with caregiving burden. The present study findings are in accordance with that of such studies (9, 22, 27). Additionally, the presence of another psychiatric patient in the family along with the elder psychiatric patient raised the burden for the caregivers. Other studies (28, 29) denoted that long term care of elder Alzheimer patients led to reduced burden in the caregivers. The existing difference in these studies can somehow be justified according to adaptability, individual characteristics, cultural and traditional beliefs of the caregivers; it seems, the caregivers with higher adaptation abilities and responsibility for the existing circumstances experience less burden, while those with lower adaptability reported higher burden (30). The findings showed that caregiver burden had a significant difference according to type of psychiatric disorders among elder patients. Schizophrenic patients' caregivers experienced a higher burden. This result was congruent with other of studies (31, 32). Results showed that elder male patients imposed a greater burden on their caregiver in comparison with women patients. However, this difference was not statistically significant. The results are similar to some other studies (23, 25, 33). This can attributed to worse psychiatric disorder prognosis in males than in females and greater resistance to treatment in male patients (34).

In summary, the findings imply high burden in the caregivers in this Iranian samples, thus, it is necessary to promote the families' knowledge and awareness to reduce long-term care giving burden. In addition, evidence showed elderly psychiatric patient caregivers' burden is related to care recipient factors. Counseling services, cooperation between public and private organizations, training programs by the national media and application of respite care (35) are suggested to alleviate the burden among psychiatric elder patient caregivers

Findings of this study should be interpreted with caution. The use of convenient sampling method limited the

Table 3. Caregivers' Burden Numerical Indicators in Terms of Demographic Data

Demographic Data	Mean	SD	Test Result
Gender			t = 1.34, df = 198, P value = 0.181
Male	40.11	14.43	
Female	37.46	13.45	
Age, y			F = 0.788, P value = 0.456
< 30	38.24	13.81	
30 - 39	39.74	14.66	
40 - 49	36.33	11.95	
50 - 59	41.25	13.42	
60 - 69	37.99	13.52	
70 - 79	43.45	15.96	
Education			F = 1.63, P value = 0.184
Under diploma	37.33	13.52	
Diploma	36.6	12.1	
College education	39.98	14.53	
Marital status			t = -0.713, df = 117, P value = 0.477
Single	38.54	14.10	
Married	40.39	14.51	
Economic status			F = 2.854, P value = 0.061
Poor	34.04	10.66	
Average	37.32	13.75	
Well-off	48.33	15.23	
Employment			F = 0.202, P value = 0.937
Housewife	39.61	13.64	
Farmer	35.96	14.32	
Self-employed	40.57	14	
Jobholder	38.69	14.89	
Retired	38.33	13.29	
Another psychiatric person in family			t = -2.97, df = 31.54, P value = 0.006
No	38.32	14.33	
Yes	38.17	13.63	
Weekly patient care hours			t = -2.97, df = 31.54, P value = 0.006
< 24 hours	37.51	13.18	
24 - 34 hours	47.3	16.33	
35 - 44 hours	34.78	14.45	
> 44 hours	35.49	13.17	
Relation			F = 1.363, P value = 0.255
Spouse	40.00	14.27	
Child	50.86	10.99	
Daughter/son-in-law	38.54	14.10	
Other relatives	40.39	14.51	
Psychiatric disorder type			F = 4.330, P value = 0.002
Schizophrenia	44.59	15.82	
Anxiety	27.60	5.54	
Mania	37.81	12.18	
Depression	35.71	12.92	
Obsessive-compulsion	39.33	12.60	

generalization of the findings. As well as analysis, data from self-report measures should be interpreted with caution. The adequate sample size also supports the findings to conclude a true relationship between common characteristics of patients and caregivers with the burden. In ad-

dition, the use of an instrument with accepted psychometric properties confirms that the variables were measured correctly. Based on the findings, many research questions emerge such as: What are predictors or moderators of the elderly psychiatric patient caregivers' burden? Do psycho-

educational interventions alleviate caregiver burden? Can positive psychological characteristics in elder patients or caregivers moderate the caregiver burden? What are specific factors related to burden according to type of psychiatric disorders? How does cultural differences effect caregiver burden?

Acknowledgments

This paper was derived from a thesis that was approved by Iran University of Medical Sciences and Health Service Act with the code 9211580201 in 2015, implemented via being sponsored by the school of nursing and midwifery, Iran University of Medical Sciences, and the participation of Mazandaran University of Medical Science affiliated University of Medical Science and psychiatry and behavioral sciences research center. Moreover, the researchers feel obliged to appreciate the zare hospital honorable officials, staff, and all of the psychiatric elderly's caregivers for collaborating and assisting in this work.

Footnotes

Authors' Contribution: Azar Ramezani conceived the study, gathered the data, and drafted and revised the manuscript. Hamideh Azimi Lolaty supervised the study, interpreted the data, administrated and revised the manuscript. Farideh Bastani supervised the study. Hamid Haghani performed the statistical analysis, and analyzed and interpreted the data. All authors read and approved the final manuscript.

Declaration of Interest: None declared.

Funding/Support: The research was financially supported by the Iran Medical Science University affiliated to the midwifery nursing college of Tehran, Iran.

References

- Mirzaee M, Shams M. [Analyzing Iran population issues and challenges and its outcomes]. *Salmand*. 2010;(5):326-31. Persian.
- Sadock BJ, Sadock VA. *Kaplan and Sadock's synopsis of psychiatry: Behavioral sciences, clinical psychiatry*. Philadelphia: Lippincott Williams and Wilkins; 2014.
- Iran Statistics Center . [Investigating past, present and future time Iran elderly's economic, social and demographic specifications]. Iran Statistics Center; 2013. Persian.
- Abdulla-pour E, Norouziyan M, Nejat S, Mojaddadzade SR. [Psychiatric symptoms in patients with dementia: its outbreak and association with the imposed pressure on caregivers]. *Iran J Epidemiol*. 2011;7(2):51-9. Persian.
- Carra 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(1). doi: [10.1186/1471-244x-12-140](https://doi.org/10.1186/1471-244x-12-140).
- Vina J, Borrás C, Miquel J. Theories of ageing. *IUBMB Life*. 2007;59(4-5):249-54. doi: [10.1080/15216540601178067](https://doi.org/10.1080/15216540601178067). [PubMed: [17505961](https://pubmed.ncbi.nlm.nih.gov/17505961/)].
- O'Hara RE, Hull JG, Lyons KD, Bakitas M, Hegel MT, Li Z, et al. Impact on caregiver burden of a patient-focused palliative care intervention for patients with advanced cancer. *Palliative Supportive Care*. 2010;8(4):395-404. doi: [10.1017/s1478951510000258](https://doi.org/10.1017/s1478951510000258).
- Mohammadi F, Babaezade M. [Support groups' participation influence on the alzheimer's' diseases suffering elderly's family caregivers caregiving pressure]. *Iran J Elderly*. 2011;19. Persian.
- Settineri S, Rizzo A, Liotta M, Carmela M. Caregiver's burden and quality of life: Caring for physical and mental illness. *Int J Psychological Res*. 2014;7(1):30-9.
- Schulz R, Beach SR. Caregiving as a risk factor for mortality: the Caregiver Health Effects Study. *JAMA*. 1999;282(23):2215-9. [PubMed: [10605972](https://pubmed.ncbi.nlm.nih.gov/10605972/)].
- Scott CB. *Alzheimer's disease caregiver burden: Does resilience matter?* UniversityTennessee; 2010.
- Kuipers L. Family burden in schizophrenia: implications for services. *Soc Psychiatry Psychiatr Epidemiol*. 1993;28(5):207-10. [PubMed: [8284732](https://pubmed.ncbi.nlm.nih.gov/8284732/)].
- Corrigan PW, Watson AC, Miller FE. Blame, shame, and contamination: the impact of mental illness and drug dependence stigma on family members. *J Fam Psychol*. 2006;20(2):239-46. doi: [10.1037/0893-3200.20.2.239](https://doi.org/10.1037/0893-3200.20.2.239). [PubMed: [16756399](https://pubmed.ncbi.nlm.nih.gov/16756399/)].
- Garlo K, O'Leary JR, Van Ness PH, Fried TR. Burden in caregivers of older adults with advanced illness. *J Am Geriatr Soc*. 2010;58(12):2315-22. doi: [10.1111/j.1532-5415.2010.03177.x](https://doi.org/10.1111/j.1532-5415.2010.03177.x). [PubMed: [21087225](https://pubmed.ncbi.nlm.nih.gov/21087225/)].
- Limpawattana P, Theeranut A, Chindaprasit J, Sawanyawisuth K, Pimporn J. Caregivers burden of older adults with chronic illnesses in the community: a cross-sectional study. *J Community Health*. 2013;38(1):40-5. doi: [10.1007/s10900-012-9576-6](https://doi.org/10.1007/s10900-012-9576-6). [PubMed: [22689437](https://pubmed.ncbi.nlm.nih.gov/22689437/)].
- Milbury K, Badr H, Fossella F, Pisters KM, Carmack CL. Longitudinal associations between caregiver burden and patient and spouse distress in couples coping with lung cancer. *Support Care Cancer*. 2013;21(9):2371-9. doi: [10.1007/s00520-013-1795-6](https://doi.org/10.1007/s00520-013-1795-6). [PubMed: [23546537](https://pubmed.ncbi.nlm.nih.gov/23546537/)].
- Saunders JC. Families living with severe mental illness: a literature review. *Issues Ment Health Nurs*. 2003;24(2):175-98. [PubMed: [12554427](https://pubmed.ncbi.nlm.nih.gov/12554427/)].
- Zendjidian X, Richieri R, Adida M, Limousin S, Gaubert N, Parola N, et al. Quality of life among caregivers of individuals with affective disorders. *J Affect Disord*. 2012;136(3):660-5. doi: [10.1016/j.jad.2011.10.011](https://doi.org/10.1016/j.jad.2011.10.011). [PubMed: [22100129](https://pubmed.ncbi.nlm.nih.gov/22100129/)].
- Grover S, Dutt A. Perceived burden and quality of life of caregivers in obsessive-compulsive disorder. *Psychiatry Clin Neurosci*. 2011;65(5):416-22. doi: [10.1111/j.1440-1819.2011.02240.x](https://doi.org/10.1111/j.1440-1819.2011.02240.x). [PubMed: [21851450](https://pubmed.ncbi.nlm.nih.gov/21851450/)].
- Zarit SH, Todd PA, Zarit JM. Subjective burden of husbands and wives as caregivers: a longitudinal study. *Gerontologist*. 1986;26(3):260-6. [PubMed: [3721233](https://pubmed.ncbi.nlm.nih.gov/3721233/)].
- Navidian A, Pahlavanzade S, Yazdani M. [Family training effectiveness in mental burden of mentally disordered inpatients' domestic caregivers]. *J Psychiatry Clinical Psychol*. 2011:2-99. Persian.
- Bastani F, Hosseini R, Alijanpour Aghamaleki M, Salehabadi S, Ghezlbash S. [Association between public health and caregiving burden pressure in women caring alzheimer's disease stricken elderly]. *J Sabzevar Univ Med Sci*. 2014;21(6). Persian.
- Haresabadi M, Bibak B, Hassanzade E, Bayati HR, Arki M, Akbari H. [Bojnourd Imam Reza hospital schizophrenics family caregivers' mental pressure]. *J North Khorasan Univ Med Sci*. 2012;4(2):165-71. Persian.
- Caqueo-Urizar A, Gutierrez-Maldonado J, Ferrer-Garcia M, Pe-alozas-Salazar C, Richards-Araya D, Cuadra -Peralta A. Attitudes and burden in relatives of patients with schizophrenia in a middle-income country. *Bio Med Center*. 2011. doi: [10.1186/1471-2296-12-101](https://doi.org/10.1186/1471-2296-12-101).
- Awad AG, Voruganti LN. The burden of schizophrenia on caregivers: a review. *Pharmacoeconomics*. 2008;26(2):149-62. [PubMed: [18198934](https://pubmed.ncbi.nlm.nih.gov/18198934/)].

26. Shinde M, Desai A, Pawar SH. Knowledge, attitudes and practices among caregivers of patients with schizophrenia in Western Maharashtra. *Int J Sci Res*. 2012;2319-7064.
27. Garces J, Carretero S, Rodenas F, Sanjose V. Variables related to the informal caregivers' burden of dependent senior citizens in Spain. *Archives Gerontol Geriatrics*. 2009;48(3):372-9. doi: [10.1016/j.archger.2008.03.004](https://doi.org/10.1016/j.archger.2008.03.004).
28. Andren S, Elmstahl S. Relationships between income, subjective health and caregiver burden in caregivers of people with dementia in group living care: a cross-sectional community-based study. *Int J Nurs Stud*. 2007;44(3):435-46. doi: [10.1016/j.ijnurstu.2006.08.016](https://doi.org/10.1016/j.ijnurstu.2006.08.016). [PubMed: 17078957].
29. Carretero S, Garces J, Rodenas F, Sanjose V. The informal caregiver's burden of dependent people: theory and empirical review. *Arch Gerontol Geriatr*. 2009;49(1):74-9. doi: [10.1016/j.archger.2008.05.004](https://doi.org/10.1016/j.archger.2008.05.004). [PubMed: 18597866].
30. Lautenschlager NT, Kurz AF, Loi S, Cramer B. Personality of mental healthcaregivers. *Current Opinion Psychiatry*. 2013;26(1):97-101. doi: [10.1097/YCO.0b013e32835997b3](https://doi.org/10.1097/YCO.0b013e32835997b3).
31. Corrigan PW. Correlates of caregiver burden among family members of patients with Schizophrenia in Lagos, Nigeria. *Schizophr Res Treatment*. 2014;2013. doi: [10.1155/2013/353809](https://doi.org/10.1155/2013/353809).
32. Hou SY, Ke CL, Su YC, Lung FW, Huang CJ. Exploring the burden of the primary family caregivers of schizophrenia patients in Taiwan. *Psychiatry Clin Neurosci*. 2008;62(5):508-14. doi: [10.1111/j.1440-1819.2008.01843.x](https://doi.org/10.1111/j.1440-1819.2008.01843.x). [PubMed: 18950369].
33. Roick C, Heider D, Bebbington PE, Angermeyer MC, Azorin JM, Brugha TS, et al. Burden on caregivers of people with schizophrenia: comparison between Germany and Britain. *Br J Psychiatry*. 2007;190:333-8. doi: [10.1192/bjp.bp.106.025353](https://doi.org/10.1192/bjp.bp.106.025353). [PubMed: 17401040].
34. van Wijngaarden B, Schene AH, Koeter M, Vazquez-Barquero JL, Knudsen HC, Lasalvia A, et al. Caregiving in schizophrenia: development, internal consistency and reliability of the Involvement Evaluation Questionnaire-European Version. EPSILON Study 4. European Psychiatric Services: Inputs Linked to Outcome Domains and Needs. *Br J Psychiatry Suppl*. 2000;(39):s21-7. [PubMed: 10945074].
35. Petrovic K. Respite and the Internet: Accessing care for older adults in the 21st Century. *Computers Human Behav*. 2013;29(6):2448-52. doi: [10.1016/j.chb.2013.02.005](https://doi.org/10.1016/j.chb.2013.02.005).