

Comparison of Caregivers' Burden among Family Members of Patients with Severe Mental Disorders and Patients with Substance Use Disorder

Ronak Mihan^{1,2}, Seiedeh Bentolhoda Mousavi^{1,2}, Mohammad Reza Khodaie Ardakani¹, Hamed Rezaei¹, Samaneh Hosseinzadeh³, Ali Nazeri Astaneh¹, Rosa Alikhani^{1*}

Abstract

Objective: The burden on caregivers of patients with severe mental disorders is significantly higher than the care burden of patients with other medical conditions. Substance use disorder is also one of the most common psychiatric disorders that has negative effects on people's quality of life. This study was designed to investigate caregiver burden in severe mental disorders versus substance use disorder.

Method: First-degree relatives of patients admitted to the Razi Psychiatric Hospital of Tehran with a diagnosis of schizophrenia, bipolar disorder type1, schizoaffective disorder, or substance use disorder entered this study. They completed the sociodemographic questionnaire for patients and caregivers and the Zarit burden interview for caregivers.

Results: Our study shows that caregiver burden in substance use disorder has no significant difference with that in severe mental disorders ($P > 0.05$). In both groups, the highest spectrum of burden was moderate to severe. To find caregiver burden related factors, a general linear regression model with multiple predictor variables was fitted. In this model, caregivers' burden was significantly higher in patients with comorbidity ($P = 0.007$), poor compliance ($P < 0.001$), and in female caregivers ($P = 0.013$).

Conclusion: Statistically speaking, the caregiver burden in substance use disorders is as severe as other mental disorders. The considerable burden on both groups necessitates serious efforts to minimize its negative effects.

Key words: *Caregiver Burden; Severe Mental Disorders; Substance Use Disorder*

1. Psychosis Research Center, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.
2. Substance Abuse and Dependence Research Center, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.
3. Department of Biostatistics, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.

*Corresponding Author:

Address: Department of Psychiatry, Razi Hospital, University of Social Welfare and Rehabilitation, Tehran, Iran, Postal Code: 1866958891.

Tel: 98-21 33401220-9, Fax: 98-21 33401604, Email: Ro.Alikhani@uswr.ac.ir

Article Information:

Received Date: 2021/08/29, Revised Date: 2021/10/31, Accepted Date: 2021/12/09



The estimated prevalence of psychiatric disorders is between 17.4 to 29.2% all over the world (1-3). The World Health Organization estimates that one in every four families suffers from a psychiatric disorder (3). Mental disorders are recurrent and impose an enormous burden on both society and caregivers. The burden of psychiatric disorders on families and caregivers is significantly higher than other chronic conditions such as diabetes and heart and kidney disease (4). This burden increases not only with the aging of the caregivers, but also with the increased duration of the illness (4).

With a lifetime prevalence of 2%, severe mental disorders (SMDs) such as schizophrenia and bipolar disorder also pose a heavy burden on caregivers (5). Shifting the care from institutes into the community, known as deinstitutionalization, has increased the caregivers' need for emotional as well as monetary support; as the fund and resources for community centers are still very limited. Concerns are higher in developing countries, where budgeting faces more obstacles. Deinstitutionalization is also progressing rapidly in Iran. It is estimated that about 50% of patients with schizophrenia, who are discharged from the hospital, return to family life. The caregivers, therefore, have to cope with a myriad of difficulties, such as stigma, elevated costs, deteriorating symptoms, as well as, lack of financial, social, and emotional support, which interrupt family dynamics. Caregivers also have to handle complex emotions such as shame, sadness, anger, guilt, and anxiety (6-8).

The term "Family burden" encompasses all the emotional and financial complications, challenges, and distress experienced in the family environment as a consequence of a chronic psychiatric condition. It contains both subjective and objective dimensions. Objective burden is evident and consists of financial losses, troubled family relations, and stigma. Subjective burden, on the other hand, is defined as the attitude toward one's condition; that is, how people assess the burden of the care that complicates the perception of specific disease-related challenges (9). Quality of life is also mutually related to the caregivers' burden. That is, different dimensions of the quality of life (Physical, psychological, and environmental) significantly predict the overall burden of care, and the level of literacy, depressive symptoms, objective support, and objective burden of care significantly predict the quality of life (10).

The high amount of caregiver's burden has been documented in previous studies, with the main focus on assessing burden in conditions such as mood disorders, anxiety disorders, and schizophrenia. In Walke's study on caregivers of psychiatric patients in 2018, in the moderate and severe forms of the disease, the care burden was 59.1% and 40.9% respectively, with the highest rates in the areas of physical and mental health, relationship with spouse, and external support (11). In a

study conducted by Navidian *et al.*, among the caregivers of all the psychiatric patients who referred to a Mental Health Center in Sistan and Baluchestan Hospital in 2008, 26.4% showed mild levels of stress, 60.8% showed a moderate level of stress, and 12.8% showed a severe form of stress (6).

Substance use disorders (SUDs) are a series of biopsychosocial phenomena that have been named the "family disease" as a result of their impact on the whole family system. They pose adverse effects on people's performance and quality of life. The impact on caregivers and family members is high and merits deeper consideration (12, 13). Despite their prevalence, there are limited researches that consider a range of psychiatric disorders such as substance use disorders along with schizophrenia and bipolar disorder.

Consuming drugs affects almost all aspects of family life, including interpersonal and social interactions, leisure activities and the financial status, instigating increased conflict and burden. Families of patients with alcohol problems, especially their spouses, are at increased risk of stressful life events, are prone to medical and psychiatric disorders, and are more likely to refer to medical care services (12, 14, 15). In a survey of 200 caregivers of alcohol-dependent patients in 2017, the families reported both objective and subjective burdens, which were correlated with the severity of alcohol dependence, economic burden, disturbed family bonds, and their routine activities (16). In a study by Mattoo *et al.* on caregivers of substance abusers (alcohol and opioids) who were referred to psychiatric centers, moderate to severe burden of care was reported in more than 95% of the families (12). Cieck *et al.* also found that when living with heroin-dependent men, families suffer from the burden. In this study, Zarit's scale score was significantly higher in the study group than the control group and they experienced a decreased quality of life in all domains (13).

Caregivers play an important role in the longstanding management of mental disorders. Also, their quality of life and health is mutually affected by the chronic condition of the psychiatric patient and the wellbeing of the patient. Expressed emotion and caregivers' burden are associated with an increased rate of hospitalization and recurrence (17-20). Determining the burden of care on families provides crucial information for developing the required social, psychological, and instructive interventions that can efficiently assist families and improve the quality of care (21).

In this study, we have compared three important severe mental disorders, which are the disorders with which the majority of patients are admitted to psychiatric wards, with substance use disorder. Considering the significant prevalence of substance use disorder in our country and the lack of adequate studies on the burden that caregivers have to endure in their families, we decided to conduct a study to evaluate this issue and to compare the burden of this disorder with the burden of severe

psychiatric disorders. In psychiatric disorders, it is crucial to pay attention to the caregiver’s burden in order to improve the physical and mental health of caregivers and to reduce the severity of psychiatric disorders, their recurrence, and hospitalization of psychiatric patients.

Materials and Methods

This cross-sectional study was performed on the first-degree relatives of patients with severe mental disorders (schizophrenia, bipolar disorder type 1, schizoaffective disorder) and substance use disorder (all substances except caffeine and tobacco) admitted to Razi Psychiatric Hospital in Tehran. All the eligible patients (260 patients and their caregivers) with these disorders who were admitted to the Hospital in 2020 were assessed and entered the study. This research was approved by the Ethics Committee of the University of Social Welfare and Rehabilitation Sciences (IR.USWR.REC.1399.003).

The diagnosis was based on the DSM5 criteria and was made through a structured interview. The inclusion criteria included: being between 18 to 65 years old, having lived with the patient for at least the past one year, and spending time with the patient as the primary caregiver. Samples were excluded in case of any cognitive disability in the patients’ caregivers, the presence of another family member with a psychiatric disorder, a chronic physical illness in the same home, and the presence of a severe neurological disease or chronic systemic disease in the patient. After obtaining the informed consent, the demographic characteristics of both patients and caregivers were obtained by a questionnaire designed by the researchers, and the 22-item Zarit questionnaire was filled by the caregivers to evaluate the caregiver burden.

Measure

The demographic information of patients was gathered based on their information recorded in the hospital. The demographic information of caregivers was gathered based on their own statements. Caregivers’ burden was measured by the Zarit Burden Interview (ZBI) which was performed for each caregiver separately. ZBI is a 22-item tool, widely used to assess the objective and subjective burden on the family. In this questionnaire, families are asked about stressful areas including physical, mental, economic, and communication problems. The items are answered on a 5-point scale (0 indicating never and 4 indicating always). The potential

scores are between zero and 88. In 1986, Zarit labeled scores from 61 to 88 as “severe burden,” 41 to 60 as “moderate to severe,” 21 to 40 as “mild to moderate,” and less than 21 as “little or no stress.” The psychometric properties of the ZBI include acceptable inter-rater reliability and convergent validity with a Cronbach's alpha of 0.79, a correlation coefficient of 0.71, a test-retest reliability of 0.71, and internal consistency with Cronbach's alpha of 0.91 (22). This questionnaire has been validated in different societies, including Iran, among caregivers of patients with psychiatric disorders with an overall Cronbach's alpha of 0.94 and an inter-cluster correlation of 0.97 (6).

Statistical Analysis

Demographic characteristics of patients and main variables were reported by mean (SD) and frequency (percentage). The normality of distribution of the caregiver burden scores was assessed by Kolmogorov-Smirnov (k-s) test. T-test for continuous variables and chi-square test for categorical variables were used to assess homogeneity in the two groups. Finally, univariate and multivariate regression models were used. In multivariate analysis, a significant level of 0.2 is considered to modulate the effect of curvatures. The P < 0.05 was considered significant. All the above analyses were performed in the SPSS software version 22.

Results

In this study, caregivers of patients with severe mental disorders and substance use disorders accounted for 62.3% (162) and 37.7% (98) of the study population, respectively. The severe mental disorders included in the study consisted of bipolar disorder type 1 (53.7% - the highest rate), schizophrenia (38.9%), and schizoaffective disorder (7.4%). In the group of patients with substance use disorders, the most commonly used substances were methamphetamine (50%), opioids (36.7%), cannabis (12.2%), and alcohol (1%).

In the severe mental disorders group, the age ranged from 19 to 65 years (mean: 38.2±10.5) and in the substance use group, it ranged from 18 to 64 (mean: 35.8±9.6). The mean age of the two groups did not reveal any significant difference (P = 0.066). The mean age of the caregivers did not show any significant difference either (P = 0.674). The duration of the disorder, however, was significantly higher in the group of patients with severe mental disorders (7.1 years), than in the other group (4.7 years) (P < 0.05) (Table 1).

Table 1. Mean Age of Patients and Caregivers, and Duration of the Disorder in Severe Mental Disorders (SMDs) and Substance Use Disorders (SUDs)

Variable	Severe mental disorder		Substance use disorder		t-test	
	Mean	SD	Mean	SD	Value	P-value
Patients’ age	38.2	10.45	35.8	9.63	1.84	0.066
Duration of the disorder	7.1	5.89	4.7	3.4	3.67	< 0.001
Caregivers’ age	46.22	15.78	47.06	15.17	0.421	0.674

The chi-square test indicated the homogeneity of quantitative variables except for gender, compliance, and comorbidity in patients ($P < 0.05$). The rate of comorbidity was significantly higher in the group of patients with substance use disorder. The rate of

compliance was significantly higher in the group of patients with severe mental disorders (Tables 2 and 3). The k-s test showed a normal distribution for the caregiver burden in both groups ($P < 0.05$).

Table 2. Sociodemographic and Clinical Variables of Patients in Severe Mental Disorders (SMDs) and Substance Use Disorders (SUDs)

Variable		Severe mental disorder		Substance use disorder		Chi-square	
		N	Percent	N	Percent	Value	P-value
Gender	Male	125	77.2	92	93.9	12.62	< 0.001
	Female	37	22.8	6	6.1		
Education	Under high school diploma	110	67.9	69	70.4	0.23	0.893
	High school diploma	44	27.2	24	24.5		
	Academic	8	4.9	5	5.1		
Occupation	Unemployed	114	70.4	64	65.3	1.01	0.799
	Employee	1	0.6	1	1.0		
	Worker	9	5.6	5	5.1		
	Freelancer	38	23.5	28	28.6		
Marital status	Single	86	53.1	58	59.2	3.21	0.201
	Married	42	25.9	28	28.6		
	Divorced, widow/widower	34	21.0	12	12.2		
Number of family members	2	13	8.0	3	3.1	4.09	0.394
	3	26	16	12	12.2		
	4	60	37	38	38.8		
	5	39	24.1	30	30.6		
	6-10	24	14.8	15	15.3		
Number of hospitalizations	1	16	9.9	13	13.3	8.64	0.124
	2	49	30.2	35	35.7		
	3	29	17.9	20	20.4		
	4	20	12.3	9	9.2		
	5	13	8.0	12	12.2		
Compliance	6-28	35	21.6	9	9.2	6.50	0.011
	Yes	61	37.65	22	22.44		
	No	101	62.34	76	77.55		
Comorbidity	Yes	40	24.7	45	45.9	12.5	< 0.001
	No	122	75.3	53	54.1		

Table 3. Sociodemographic and Clinical Variables of Caregivers in Severe Mental Disorders (SMDs) and Substance Use Disorders (SUDs)

Variable	Group	Severe mental disorder		Substance use disorder		Chi-square	
		N	Percent	N	Percent	Value	P-value
Gender	Male	90	55.6	51	52	0.3	0.581
	Female	72	44.4	47	48		
Education	Illiterate	11	6.8	9	9.2	4.36	0.225

Occupation	Under high school diploma	71	43.8	52	53.1		
	High school diploma	53	32.7	28	28.6		
	Academic	27	16.7	9	9.2		
	Unemployed	75	46.3	49	50		
	Employee	23	14.2	7	7.1		
	Worker	1	0.6	1	1.0	3.07	0.381
	Freelancer	63	38.9	41	41.8		
Marital status	Single	35	21.6	13	13.3		
	Married	104	64.2	72	73.5		
	Divorced	7	4.3	5	5.1	3.35	0.341
	Widow/widower	16	9.9	8	8.2		
Relationship with the patient	Mother	35	21.6	19	19.38		
	Father	29	17.9	25	25.51		
	Sister	17	10.49	8	8.16		
	Brother	39	24.07	21	21.42	8.30	0.140
	Spouse	23	14.19	21	21.42		
	Other	19	11.72	4	4.08		

In the group of severe mental disorders, the caregiver burden was evaluated as “severe” in 18.51%, “moderate to severe” in 69.13%, and “mild” in 12.34% of individuals. In the substance use disorder group, on the other hand, the caregivers’ burden was estimated as “severe” in 21.42%, “moderate to severe” in 68.36%, and “mild” in 10.2% of participants. In both groups, therefore, most of the care givers reported moderate burden. The mean score of caregivers’ burden were 51.4±9.6 and 52.3±9.5 for severe mental disorders group and substance use disorder group, respectively. The t-test results showed that differences were not statistically significant between the two groups (P = 0.437).

The interactions of all demographic variables and the group were checked with the two-way ANOVA. None of the factors were significant (P < 0.05).

A general linear regression model with multiple predictor variables was fitted. In the first step, variables were entered into the univariate model and variables with a P-value less than 0.2 were entered into the multiple variables model. Comorbidity, compliance, and caregivers’ gender were significant variables in this model. Caregivers’ burden was higher in patients with comorbidity and poor compliance, and in female caregivers (Table 4).

Table 4. Result of General Linear Multiple Regression Model for Interaction of All Variable and Family Burden in Severe Mental Disorders (SMD) and Substance Use Disorder (SUD)

Variable (level)	B	SE	Wald value	DF	P-value
Groups (Severe mental disorders and Substance Use Disorders)	0.50	1.13	0.193	1	0.660
Presence of Comorbidity	3.18	1.19	7.191	1	0.007
Caregiver’s gender (male)	-2.65	1.08	6.145	1	0.013
Better Compliance	-6.06	1.18	26.254	1	< 0.001

Discussion

This study was designed to investigate the sociodemographic and clinical variables associated with family burden in severe mental disorders versus substance use disorder.

In our study, in both groups, the number of male patients were higher than females. There was a statistically significant difference in gender distribution between the two groups, and this difference was greater in patients with substance use disorder. This result was expected as a usual distribution and is in agreement with other

studies (23, 24), which indicates that substance use disorders are much more common in men than women (24, 25).

In our study, the duration of disorder was significantly higher in the group of patients with severe mental disorders. The difference in the groups could be explained by the fact that severe mental disorders are chronic conditions, whereas substance use disorder, if treated, can affect a shorter duration of life.

The rate of comorbidity was significantly higher in patients with substance use disorder. This is in line with

previous studies in national population surveys that have found that about half of those who experience a mental disorder during their lives will also experience a substance use disorder and vice versa (26, 27). This data shows high rates of comorbidity between substance use disorders and anxiety disorders, mood disorder, attention-deficit hyperactivity disorder (ADHD), psychotic disorders, and borderline and antisocial personality disorder. Anxiety and depressive (50%) symptoms are also very common throughout the course of schizophrenia (26). In the Stanley Foundation Bipolar Treatment Outcome Network study, 65% of patients met the DSM-IV criteria for at least 1 comorbid Axis I disorder (27). This shows how one of the main causes of hospitalization in patients with SUD is the presence of comorbidity, while SUD patients without a comorbidity might never need any inpatient treatments.

In our study, both the groups of patients with severe mental disorders and patients with substance use disorder revealed a high amount of burden posed on caregivers. This is consistent with previous literature, suggesting that psychiatric disorders impose a high burden on the society, family, and caregivers and the burden imposed by these disorders is even higher than that imposed by chronic medical patients (7). The enlightening point in this study is that there is no statistically significant difference between the burdens on caregivers of the studied groups. This finding suggests that living with a patient with substance use disorder can expose one to the same burden as living with a patient with a severe mental disorder does, which necessitates careful attention by clinicians as well as authorities in planning strategies to approach the burden (28, 29).

Our results show that most of the caregivers in both groups experienced a moderate to severe amount of caregiver's burden. This is in agreement with findings of other studies, such as those by Navidian and Hajebi (6, 28), which suggest that the level of burden experienced by most primary caregivers is higher than moderate. Experiencing high levels of burden is associated with decreased quality of life and function of the caregivers and, therefore, affects the quality of care (6, 28).

In this study, Caregivers' burden was higher among female caregivers and among caregivers of patients with comorbidity and poor compliance. Female caregivers experienced more burden than males in severe mental disorders, which is consistent with previous studies, such as those by Hajebi and Navidian (6, 28, 30). It is hypothesized that female caregivers, due to having several responsibilities, such as playing the role of the primary caregiver, being in charge of children and sometimes working outside, are susceptible to experiencing more burden than males (28). Also, in the review by Maurin and Boyd, the burden was significantly higher on female, older, widowed, and divorced caregivers (31).

Comorbidity in patients was another factor that was associated with increased caregiver's burden. The presence of comorbidities can increase the amount of care that is necessary for the patient.

In previous studies, age and duration of the disorders were correlated with increased burden. In Navidian's study, for instance, the caregivers' burden was moderate to severe in older patients with longer duration of the disorder (6). Also, Hajebi's study showed that higher duration of the disorder and a younger age at the onset of the disorder were predictive of the higher burden of the disease on caregivers (28). In our study, however, age and the duration of the disorder did not have any significant association with increased burden. This is because our study compared two groups of patients, that is those with severe mental disorders and those with SUD, that could share the same covariates and, so, no difference could be detected between them.

Poor compliance was also one of the factors that was correlated with increased burden on the patients' caregivers. Poor compliance happens when patients have poor insight into their conditions; therefore, they have less motivation and tendency to cooperate in the process of their treatment. Poor compliance can also be associated with more hospitalization, which is consistent with Navidian's results that showed more hospitalization is associated with more caregivers' burden (6).

Limitation

This study encompasses the general limitations of descriptive studies due to the nature of the analysis. Descriptive studies cannot reveal a causal relationship; rather, they only expose correlations between hypothesized factors. Therefore, they should be interpreted cautiously. Although the data was gathered in the largest psychiatric hospital in Iran, it was collected locally; hence, there are limitations to generalization of the findings. Another limitation of this study was its small sample size, which was due to the difficult access to families during the Covid-19 pandemic, their lack of cooperation with the research team (the heavy burden of psychiatric disorders on families and frustration with treatment) and the strict inclusion criteria. Not considering the family income that is necessary to accurately assess the burden of care is another limitation of this study. The reason for not including income in the assessed variables was the researchers' concerns about the participants' resistance to answering to questions about it and, thus, to working with the research team. It is suggested that future studies shall include other variables, such as family income, in assessing the caregiver burden.

Conclusion

Caregiver burden in severe mental disorders and substance use disorder is significantly higher on female caregivers and in case of the existence of a comorbidity or poor compliance of the patient. The caregiver burden

on families of patients with substance use disorder is as high as on families of patients with severe mental disorders. The negative impacts of caregiver's burden were considerable on both groups and it is essential to make serious efforts to minimize these negative effects.

Acknowledgment

We appreciate the efforts of the Razi Psychiatric Hospital staff, patients and their caregivers. We are also grateful to the members of the Psychosis Research Center for their contribution to this study. This work was supported by the University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.

Conflict of Interest

None.

References

1. Steel Z, Marnane C, Iranpour C, Chey T, Jackson JW, Patel V, et al. The global prevalence of common mental disorders: a systematic review and meta-analysis 1980-2013. *Int J Epidemiol*. 2014;43(2):476-93.
2. Taheri Mirghaed M, Abolghasem Gorji H, Panahi S. Prevalence of Psychiatric Disorders in Iran: A Systematic Review and Meta-analysis. *Int J Prev Med*. 2020;11:21.
3. Charlson F, van Ommeren M, Flaxman A, Cornett J, Whiteford H, Saxena S. New WHO prevalence estimates of mental disorders in conflict settings: a systematic review and meta-analysis. *Lancet*. 2019;394(10194):240-8.
4. Ampalam P, Gunturu S, Padma V. A comparative study of caregiver burden in psychiatric illness and chronic medical illness. *Indian J Psychiatry*. 2012;54(3):239-43.
5. Hardoon S, Hayes JF, Blackburn R, Petersen I, Walters K, Nazareth I, et al. Recording of severe mental illness in United Kingdom primary care, 2000-2010. *PLoS One*. 2013;8(12):e82365.
6. Navidian A, Bahari F. Burden experienced by family caregivers of patients with mental disorders. *Pakistan Journal of Psychological Research*. 2008 Jun 22;23(1-2):19-29.
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(2):157-66.
8. Pai S, Kapur RL. The burden on the family of a psychiatric patient: development of an interview schedule. *Br J Psychiatry*. 1981;138:332-5.
9. Sales E. Family burden and quality of life. *Quality of life research*. 2003 Jan;12:33-41.
10. Zeng Y, Zhou Y, Lin J. Perceived Burden and Quality of Life in Chinese Caregivers of People With Serious Mental Illness: A Comparison Cross-Sectional Survey. *Perspect Psychiatr Care*. 2017;53(3):183-9.

11. Walke SC, Chandrasekaran V, Mayya SS. Caregiver Burden among Caregivers of Mentally Ill Individuals and Their Coping Mechanisms. *J Neurosci Rural Pract*. 2018;9(2):180-5.
12. Mattoo SK, Nebhinani N, Kumar BN, Basu D, Kulhara P. Family burden with substance dependence: a study from India. *Indian J Med Res*. 2013;137(4):704-11.
13. Cicek E, Demirel B, Ozturk HI, Kayhan F, Cicek IE, Eren I. Burden of care and quality of life in relatives of opioid dependent male subjects. *Psychiatr Danub*. 2015;27(3):273-7.
14. Astals M, Domingo-Salvany A, Buenaventura CC, Tato J, Vazquez JM, Martín-Santos R, et al. Impact of substance dependence and dual diagnosis on the quality of life of heroin users seeking treatment. *Subst Use Misuse*. 2008;43(5):612-32.
15. Bizzarri J, Rucci P, Vallotta A, Girelli M, Scandolari A, Zerbetto E, et al. Dual diagnosis and quality of life in patients in treatment for opioid dependence. *Subst Use Misuse*. 2005;40(12):1765-76.
16. Vaishnavi R, Karthik MS, Balakrishnan R, Sathianathan R. Caregiver Burden in Alcohol Dependence Syndrome. *J Addict*. 2017;2017:8934712.
17. Perlick DA, Miklowitz DJ, Link BG, Struening E, Kaczynski R, Gonzalez J, et al. Perceived stigma and depression among caregivers of patients with bipolar disorder. *Br J Psychiatry*. 2007;190:535-6.
18. Saunders JC. Families living with severe mental illness: a literature review. *Issues Ment Health Nurs*. 2003;24(2):175-98.
19. Tsang HW, Tam PK, Chan F, Cheung WM. Sources of burdens on families of individuals with mental illness. *Int J Rehabil Res*. 2003;26(2):123-30.
20. Vella SL, Pai N. The measurement of burden of care in serious mental illness: a qualitative review. *Aust N Z J Psychiatry*. 2013;47(3):222-34.
21. Eloia SC, Oliveira EN, Lopes MVO, Parente JRF, Eloia SMC, Lima DDS. Family burden among caregivers of people with mental disorders: an analysis of health services. *Cien Saude Colet*. 2018;23(9):3001-11.
22. Zarit SH, Reever KE, Bach-Peterson J. Relatives of the impaired elderly: correlates of feelings of burden. *The Gerontologist*. 1980;20(6):649-55.
23. Rehm J, Shield KD. Global Burden of Disease and the Impact of Mental and Addictive Disorders. *Curr Psychiatry Rep*. 2019;21(2):10.
24. Mousavi SB, Higgs P, Piri N, Sadri E, Pourghasem M, Jafarzadeh Fakhari S, et al. Prevalence of Substance Use among Psychotic Patients and Determining Its Strongest Predictor. *Iran J Psychiatry*. 2021;16(2):124-30.
25. Degenhardt L, Chiu WT, Sampson N, Kessler RC, Anthony JC, Angermeyer M, et al. Toward a global view of alcohol, tobacco, cannabis, and cocaine use: findings from the WHO World

- Mental Health Surveys. PLoS Med. 2008;5(7):e141.
26. Buckley PF, Miller BJ, Lehrer DS, Castle DJ. Psychiatric comorbidities and schizophrenia. Schizophr Bull. 2009;35(2):383-402.
 27. McElroy SL, Altshuler LL, Suppes T, Keck PE, Jr., Frye MA, Denicoff KD, et al. Axis I psychiatric comorbidity and its relationship to historical illness variables in 288 patients with bipolar disorder. Am J Psychiatry. 2001;158(3):420-6.
 28. Hajebi A, Naserbakht M, Minoletti A. Burden experienced by caregivers of schizophrenia patients and its related factors. Med J Islam Repub Iran. 2019;33:54.
 29. Greenberg PE, Fournier AA, Sisitsky T, Pike CT, Kessler RC. The economic burden of adults with major depressive disorder in the United States (2005 and 2010). J Clin Psychiatry. 2015;76(2):155-62.
 30. Noghani F, Seyedfatemi N, Karimirad MR, Akbarzadeh A, Hasanpour-Dehkordi A. Health Related Quality of Life in Family Caregivers of Patients Suffering from Mental Disorders. J Clin Diagn Res. 2016;10(11):Vc05-vc9.
 31. Maurin JT, Boyd CB. Burden of mental illness on the family: a critical review. Arch Psychiatr Nurs. 1990;4(2):99-107.