THE TURKISH JOURNAL ON ADDICTIONS
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ORIGINAL ARTICLE

Comparison of Patients with Schizophrenia, Bipolar Disorder, and Substance Use Disorder in Terms of Family Burden

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Main Points

- The caregiver burden of the substance use disorder (SUD) group was found to be significantly higher than the bipolar disorder (BD) and schizophrenia groups.
- While 66.0% of caregivers in the SUD group had a heavy burden, the rate of heavy burden was 42.0% in BD and 34.0% in the schizophrenia group.
- Caregiver burden was found to be similar in BD and schizophrenia groups.
- It can be said that SUD causes more family burden than other chronic diseases such as schizophrenia and BD.

Abstract

The aim of this study was to compare the family burden of relatives of patients diagnosed with schizophrenia, bipolar disorder, and substance use disorder. In this study, 50 patients diagnosed with substance use disorder, 50 patients diagnosed with schizophrenia, and 50 patients diagnosed with bipolar disorder according to DSM-5 diagnostic criteria were included. A total of 150 caregivers were included, 50 for each group. Caregivers had been providing continuous care to patients for at least 1 year. Along with a semi-structured sociodemographic data form, the Addiction Profile Index for patients diagnosed with substance use disorder, Positive and Negative Syndrome Scale for patients with schizophrenia, Hamilton Depression Rating Scale, and Young Mania Rating Scale for patients with bipolar disorder were administered. Zarit Caregiver Burden Scale and Family Assessment Device were administered to patient caregivers. The mean Zarit Caregiver Burden Scale score of the group with substance use disorder was found to be significantly higher than the bipolar disorder and schizophrenia groups ($p = .001$). There was no significant difference between the bipolar disorder and schizophrenia groups in terms of the Zarit Caregiver Burden Scale ($p > .05$). Substance use disorder can cause more family burden than other chronic disorders such as schizophrenia and bipolar disorder.

Keywords: Bipolar disorder, caregiver, family burden, schizophrenia, substance use disorder

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Received: August 13, 2021
Accepted: November 9, 2021

Introduction

While chronic mental illnesses cause significant disability for the patient herself, the caregivers of the patient are also affected significantly. Schizophrenia, which is one of the chronic mental illnesses, is a disorder that affects the patient as well as his/her immediate surroundings and even the whole society in which she/he lives. Due to the fact that schizophrenia is a progressive disorder that causes disability, patients need the care and assistance of the people around them in their daily life. Caring for schizophrenia patients creates psychological and sociocultural burdens for caregivers

Cite this article as: Kahya, Y., Erdoğan, A., Önder, A., Kulaksızoğlu, B., & Kuloğlu, M. M. (2022). Comparison of patients with schizophrenia, bipolar disorder, and substance use disorder in terms of family burden. *Addicta: The Turkish Journal on Addictions*, 9(1), 16-22.

DOI: 10.5152/ADDICTA.2022.21078

(Provencher & Mueser, 1997). Bipolar disorder (BD) is also a chronic psychiatric disorder characterized by recurrent attacks. The cyclical course of the disorder with recovery and exacerbation affects the individual both physically and emotionally, disrupting the individual's communication with the family and adaptation to daily life. Patients and caregivers have to deal with many problems during care. This process puts a lot of burden on caregivers (Steele et al., 2010). Substance use disorder (SUD) is recognized as a public health problem. In SUD, the family has many functions such as application to treatment, treatment follow-up, and supporting the patient in the post-treatment process (Harrison & Asche, 2001). Psychiatric disorders are common in the families of SUD patients (Erdoğan et al., 2021).

The concept of caregiver is defined as the person who observes and provides care and physical, mental, financial, and social support to the patient/sick individual (Williams & Mfoafo-M'Carthy, 2006). Caregiver burden is defined as the psychological condition consisting of the combination of emotional and social pressure, financial insufficiency and physical energy expenditure burden of the caregiver arising from patient care (Gutiérrez-Maldonado & Caqueo-Urízar, 2007). As the treatments for mental disorders have started to be community-based, the time spent in the family apart from inpatient institutions has increased, and families have taken a more active role in the care of patients. Therefore, interest in the course of the disorder on the behavior of the caregivers and the effects of the behaviors of the caregivers on the course of the disorder has increased. Caregiver burden has been evaluated in many chronic psychiatric disorders. BD and schizophrenia patients, opioid and alcohol use disorder patients were compared in terms of caregiver burden (Chadda et al., 2007; Hegde et al., 2019). A study comparing the family burden of three groups with BD, schizophrenia, and SUD was not found in the literature.

This study aimed to compare the caregiver burden of patients with BD, schizophrenia, and SUD and to evaluate family functions. Especially, our study aimed to determine whether SUD causes more caregiver burden than other severe chronic mental disorders and hypothesized that SUD causes the most severe caregiver burden among chronic mental disorders. This study may contribute to the literature by revealing the serious social consequences of SUD.

Methods

Sample

This study was carried out in Akdeniz University Medical Faculty Department of Psychiatry and Akdeniz University Alcohol and Substance Addiction Research and Treatment Center (AMBAUM). In this study, 150 patients who had been followed up for at least 1 year with the diagnosis of schizophrenia ($n = 50$), BD ($n = 50$), and SUD ($n = 50$) according to the Diagnostic and Statistical Manual of Mental Disorders 5 were enrolled. A total of 150 caregivers (50 caregivers for each group) who provided regular and constant care to patients for at least the last 1 year were included in the study. Inclusion criteria for patient groups: being over the age of 18, being at least a primary school graduate, being diagnosed more than 1 year ago, and having a regular caregiver. Inclusion criteria for the caregiver group: being over the age of 18, not having any psychiatric or physical illness, having the education to understand the scales, and giving regular care to the patient for at least 1 year. Exclusion criteria include lack of education, being younger than 18 years of age, mental retardation, organic mental disorder, head trauma, comorbid alcohol or substance use for patients with BD and schizophrenia, comorbid psychiatric disorders for patients with SUD, and having a history of any psychiatric illness for caregivers.

Data Collection Process and Procedure

A face-to-face psychiatric interview was held with all patients and their caregivers, and people who met the inclusion criteria were included in the study. The study was carried out for 3 months between September 2019 and December 2019. During this period, approximately 1000 SUD patients applied to the AMBAUM outpatient clinic, approximately 300 BD patients to the mood outpatient clinic, and approximately 300 schizophrenia patients to the psychosis outpatient clinic. Participants who met the inclusion and exclusion criteria and volunteered to participate in the study were included. At the beginning of the study, 50 patients and 50 caregivers were targeted for each group, and the study was completed when these numbers were reached. Along with a semi-structured sociodemographic data form, Positive and Negative Syndrome Scale (Kay et al., 1987; Kostakoğlu et al., 1999) for patients with schizophrenia, Hamilton Depression Rating Scale (Akdemir et al., 1996; Hamilton, 1960), and Young Mania Rating Scale (Karadağ et al., 2001; Young et al., 1978) for patients with BD were administered. The Zarit Caregiver Burden Scale (ZCBS) (Ozlu et al., 2009; Zarit et al., 1980) and the Family Assessment Device (FAD) (Bulut, 1990; Epstein et al., 1983) were applied to the patient caregivers. Written informed consent was obtained from all participants. Participants gave consent for their data to be used in the study. The study was conducted in accordance with the Declaration of Helsinki, and a written ethics committee approval was obtained from Akdeniz University Faculty of Medicine Clinical Research Ethics Committee with a decree number of 720.

Statistical Analysis

IBM SPSS (Statistics Package Program for Social Sciences) version 24.0 (IBM Corporation, Armonk, NY, USA) was used for analysis. Continuous variables are expressed as mean ± standard deviation, median, maximum, minimum, and categorical data as numbers and percentages. In the intergroup analysis of continuous variables, normality analyses were performed with the Kolmogorov – Smirnov test. One-way ANOVA test was used in the analysis of three groups and above for the data that fit a normal distribution, and the *t*-test was used in the comparison of two groups. Mann – Whitney *U*-test was used for comparisons of data that did not conform to normal distribution between two groups, and Kruskal – Wallis test was used for comparisons of three groups and above. Chi-square test was used for the comparison of categorical data. The linear relationship between the scales was evaluated using the Pearson's correlation test. Statistical significance level was accepted as $p < .05$.

Results

The mean age of caregivers of patients followed up with schizophrenia, BD, and SUD was 49.76 ± 10.63 years for the SUD group ($n = 50$), 47.50 ± 14.03 years for the BD group ($n = 50$), and 54.46 ± 14.45 years for the schizophrenia group ($n = 50$) ($p = .029$). In total, 62.7% of the caregivers were women and 79.3% were

Table 1.
Comparison of the Sociodemographic Characteristics of Caregivers

	Caregivers of Substance Use Disorder Patients		Caregivers of Bipolar Disorder Patients		Caregivers of Schizophrenia Patients		
	n = 50	%	*n* = 50	%	*n* = 50	%	*p*
Gender							
Female	35	70.0	27	54.0	32	64.0	.248
Male	15	30.0	23	46.0	18	36.0	
Marital status							
Married	42	84.0	38	76.0	39	78.0	.057
Single	0	0	8	16.0	6	12.0	
Separated	8	16.0	4	8.0	5	10.0	
Education							
Primary school	40	80.0	22	44.0	27	54.0	.003
High school	7	14.0	12	24.0	12	24.0	
University	2	6.0	16	32.0	11	22.0	
Degree of the caregiver							
Mother	30	60.0	11	22.0	21	42.0	<.001
Father	12	24.0	7	14.0	13	26.0	
Spouse	4	8.0	20	40.0	6	12.0	
Child	0	0	7	14.0	3	6.0	
Caregiver	0	0	0	0	1	2.0	
Sibling	4	8.0	5	10.0	6	12.0	
Children							
No	2	4.0	13	26.0	4	8.0	.002
Yes	48	96.0	37	74.0	46	92.0	
Family type							
Nuclear family	45	90.0	46	92.0	46	92.0	.956
Extended family	3	6.0	2	4.0	3	6.0	
Broken family	2	4.0	2	4.0	1	2.0	
Employment status							
Working	17	34.0	20	40.0	14	28.0	.506
Unemployed	33	66.0	30	60.0	36	72.0	
Living with the patient							
Yes	38	76.0	43	86.0	46	92.0	.081
No	12	24.0	7	14.0	4	8.0	
Does anyone support care							
Yes	36	72.0	30	60.0	26	52.0	.118
No	14	28.0	20	40.0	24	48.0	
Age (year) (mean ± SD)	49.76 ± 10.63		47.50 ± 14.03		54.46 ± 14.45		0.029

married, and no significant difference was found between the three caregiver groups in terms of gender and marital status (p = .248, p = .057, respectively). It was found that mothers frequently provided care in the SUD and schizophrenia group, and in the BD group, it was found that the spouses frequently provided care. While the monthly income level of 46% of the caregivers of the patients in the SUD group is below 2500 Turkish Liras, this rate is 20% in the Schizophrenia group and the BD group (p = .025). The sociodemographic characteristics of the caregivers are summarized in Table 1.

Table 2.
Comparison of the Sociodemographic Characteristics of the Patients

	Substance Use Disorder		Bipolar Disorder		Schizophrenia		
	n = 50	%	*n* = 50	%	*n* = 50	%	*p*
Gender							
Female	4	8.0	27	54.0	18	36.0	<0.001
Male	46	92.0	23	46.0	32	64.0	
Marital status							
Married	11	22.0	30	60.0	12	24.0	<.001
Single	37	74.0	18	36.0	34	68.0	
Separated	2	4.0	2	4.0	4	8.0	
Education							
Primary school	31	62.0	20	40.0	19	38.0	.001
High school	17	34.0	11	22.0	18	36.0	
University	2	4.0	19	38.0	13	26.0	
Age (year) (mean ± SD)	27.20 ± 4.30		41.46 ± 14.42		37.50 ± 12.88		<.001
Duration of illness (years) (mean ± SD)	8.14 ± 4.58		11.78 ± 9.76		12.62 ± 8.75		.068
Number of hospitalizations (median) (min-max)	2 (0 – 8)		1 (0 – 10)		2 (0 – 20)		.755

The mean age of the patients was 27.20 ± 4.30 years for the SUD group ($n = 50$), 41.46 ± 14.42 years for the BD group ($n = 50$), and 37.50 ± 12.88 years for the schizophrenia group ($n = 50$) ($p < .001$). (According to Posthoc Bonferroni test, $p < .001$ for SUD – BD, $p < .001$ for SUD – schizophrenia, $p = .257$ for schizophrenia – BD.) The education level of patients with SUD, in which patients in the BD group are often married and female, was found to be lower, and it is summarized in Table 2.

When the mean scores of ZCBS applied to caregivers are compared, it was found to be statistically significantly higher in the SUD group (62.96 ± 16.46) compared to the BD group (54.26 ± 15.44) and the schizophrenia group (51.98 ± 14.47) ($p = .001$) (According to the Posthoc Bonferroni test, $p = .017$ for SUD – BD, $p = .002$ for SUD – schizophrenia, $p = 1.000$ for schizophrenia – BD). When the obtained scores graded as 22 – 46 "mild burden," 47 – 55 "moderate burden," 56 – 110 "severe burden" (15), it was determined that 66.0% of the caregivers in the SUD group had severe burden, whereas 42.0% of the caregivers in the BD group and 34.0% of the caregivers in the schizophrenia group had severe burden ($p = .016$) (Table 3).

The mean scores of the FAD subscales (problem solving, communication, roles, affective responsiveness, affective involvement, behavior control, and general functions) applied to caregivers were evaluated by the groups. Theoretically accepted as an indicator of unhealthy in family functions, an average of over 2 points (16) was found for the SUD group in the "roles, affective involvement, behavior control, and general functions" sub-scales, for the BD group, the "problem solving, roles and affective involvement" sub-scales, for the schizophrenia group, "roles, affective involvement, and behavior control" sub-scales (Table 4).

A significant positive correlation was found between Positive and Negative Syndrome Scale (PANSS) positive scores and the number of hospitalizations ($p < .001$, $r = .559$). No significant correlation was found between PANSS negative scores and the number of hospitalizations ($p = .063$, $r = .265$). Significant

Table 3.
Comparison of Zarit Caregiver Burden Scale Scores Between Groups

	Substance Use Disorder		Bipolar Disorder		Schizophrenia		
	n = 50	%	*n* = 50	%	*n* = 50	%	*p*
Zarit Caregiver Burden Scale Rating							
Mild	8	16.0	18	36.0	21	42.0	.016
Moderate	9	18.0	11	22.0	12	24.0	
Severe	33	66.0	21	42.0	17	34.0	
Zarit Caregiver Burden Scale scores (mean ± SD)	62.96 ± 16.46		54.26 ± 15.44		51.98 ± 14.47		.001

Table 4.
Comparison of Family Assessment Device Scores Between Groups

Family Assessment Device Sub-Scales (Mean ± SD)	Substance Use Disorder (n = 50)	Bipolar Disorder (n = 50)	Schizophrenia (n = 50)	p
Problem solving	1.96 ± 0.62	2.08 ± 0.65*	1.76 ± 0.54	.028
Communication	1.93 ± 0.55	2.00 ± 0.61	1.84 ± 0.47	.346
Roles	2.24 ± 0.49*	2.14 ± 0.51*	2.09 ± 0.50*	.317
Affective responsiveness	1.97 ± 0.65	1.88 ± 0.64	1.92 ± 0.61	.779
Affective involvement	2.58 ± 0.47*	2.40 ± 0.43*	2.50 ± 0.47*	.161
Behavior control	2.18 ± 0.41*	2.00 ± 0.36	2.09 ± 0.41*	.075
General functioning	2.09 ± 0.56*	1.87 ± 0.54	1.80 ± 0.51	.024

*Score > 2, which is accepted as an indicator of the trend toward being unhealthy in family functions.

positive correlations were found between ZCBS total scores and PANSS negative scores, psychopathology scores and total scores (p = .024, r = .319; p = .006, r = .340; p = .029, r = .310, respectively). No significant correlation was found between PANSS positive scores and ZCBS total scores (p = .747, r = .047).

Discussion

In our study, the mean ZCBS score of the SUD group was found to be significantly higher than the BD and schizophrenia groups. No significant difference was found between the BD and schizophrenia groups. A study compared the caregiver burden of 100 BD patients and 100 patients with schizophrenia and found no significant difference between the two groups in terms of caregiver burden (Chadda et al., 2007). It can be said that bipolar and schizophrenia patients have a similar caregiver burden, and SUD patients have a heavier caregiver burden than these chronic disorders. In a study, moderate objective burden (65.3%) and severe subjective burden (74%) were reported in caregivers of SUD patients. The objective burden was greater in the areas of "financial burden" and "disruption of routine activities." Objective burden correlated with monthly family income, monthly substance expenses, number and type of substance, treatment history, gender, and caregiver type. Subjective burden depended on gender, type of caregiver, and the patient's treatment history (Sharma et al., 2019). Similarly, in our study, it was found that 66% of patients with SUD patients had a severe burden. It can be said that SUD is a disorder that creates a heavy burden for caregivers. It was found that mothers often cared for patients in the SUD group. The caregivers are mostly spouses in the BD group and mothers in the schizophrenia group. Our findings are compatible with the literature (Kaur et al., 2018; Soares et al., 2016). It is to be expected that younger people can better tolerate the burden than elderly people. But it is possible that patients with schizophrenia are more passive than patients with BD, even in their euthymic phase, so they could be more manageable by their caregivers. Therefore, the caregiver burden may be similar despite the age difference, due to oppositiveness, and continuous focus on the substance of use. Therefore, it can be expected that the family burden will be more severe. It may be more difficult to handle the SUD group due to oppositiveness and continuous focus on the substance of use. Therefore, it can be expected that the family burden will be more severe. It was found that 92% of the SUD patients included in our study were male, and the average age was lower than the other two groups. Also, it was found that 74% of the patients with SUD are single. It is known that family bonds are strong in our society, and considering the high probability of living with parents, mothers may be expected to provide care to young, single, and male patients. Also, despite the negative consequences that the SUD has brought to the family in many ways, the fact that women in the family adopt the patients due to their social roles may cause an increase in the family burden of women. We think that preventive interventions should be planned especially for women who care for SUD patients.

A significant positive correlation was found between disorder duration and ZCBS total scores of the patients in the SUD group. When three groups were examined in our study, the duration of the disorder in the group with SUD was slightly shorter than the other two groups, although it did not create a statistical significance. Considering that the family burden of the group with a diagnosis of SUD is significantly higher than the other two groups, it can be thought that as the duration of the disorder of the group with a SUD diagnosis increases, this significant difference may increase more. It can be said that as the duration of the illness increases, SUD can create a much greater burden on families.

Unemployment rate is higher in patients with SUD (Henkel, 2011). In the group with a diagnosis of SUD, unlike the other two groups, the need for financial support for substance use of the patients may increase the family burden more. In our study, the monthly income level of the group caring for SUD patients was found to be significantly lower than the other two groups. These financial problems in the SUD group may also increase the family burden. Social support to the families of SUD patients may be beneficial to reduce the family burden.

In our study, positive significant correlations were found between ZCBS total scores and PANSS total scores, negative and psychopathology subscale scores in patients with schizophrenia. No statistically significant correlation was found between the PANSS positive subscale score and the ZCBS total score. It can be concluded that negative symptoms cause more care burden. When the literature is examined, some studies indicate that negative symptoms cause more care burden, while some studies indicate that positive symptoms cause more care burden, while similar rates were found in some studies (Dyck et al., 1999; Magliano et al., 2006; Wolthaus et al., 2002). Besides, while a

significant correlation was found between the PANSS positive subscale scores and the number of hospitalizations in our study, no significant correlation was found in the PANSS negative subscale score. As a result of the rapid recognition of positive symptoms by the patient, caregiver, and physician, rapid interventions may be made for positive symptoms. It can be said that symptoms such as decreased self-care, social isolation, and loss of motivation are not noticed by patients' relatives and are difficult to express by patients, which may reduce early interventions and cause more family burden.

BD patients in euthymic state were included in our study. It can be expected that BD in a euthymic state will cause less family burden. In a study conducted on functionality, a decrease in psychosocial and cognitive functions was found in patients with BD, although they were in remission (Elias et al., 2017). In another study, it was observed that residual symptoms related to the disorder increased the family burden in BD patients (Perlick et al., 2008). From this point of view, even if they are in a euthymic state, BD patients can create a burden on their caregivers. We recommend that BD patients should be evaluated in outpatient clinics in terms of caregiver burden, even if euthymic.

On FAD subscales applied to caregivers (problem-solving, communication, roles, affective responsiveness, affective involvement, behavior control, and general functions), theoretically accepted as an indicator of unhealthy in family functions, an average of over 2 points (Epstein et al., 1983) was found for the SUD group in the "roles, affective involvement, behavior control, and general functions" sub-scales, for the BD group, the "problem solving, roles and affective involvement" sub-scales, and for the schizophrenia group, "roles, affective involvement and behavior control" sub-scales. It was reported that dysfunctional family functions in FAD are associated with many negative clinical outcomes, including lower recovery rates, non-compliance with treatment, longer recovery time, lower quality of life, and increased risk of relapse (Staccini et al., 2015). In our study, unhealthy functions were found on FAD subscales in certain areas in all three disorders, and we think that therapeutic interventions for unhealthy family functions may be important in preventing relapses in these chronic disorders.

Limitations, Directions/Suggestions for Future Research, and Conclusion

Our study is the first article in the literature to compare the schizophrenia, BD, and SUD groups head-to-head in terms of family burden. In this respect, it is superior to other studies in terms of revealing the caregiver burden in SUD patients. The limitations of our study are that it is cross-sectional and based on self-report scales. Further comprehensive prospective studies are needed to evaluate family burdens in chronic psychiatric disorders and to conduct interventions on this issue. We recommend that researchers conduct prospective long-term prospective studies. Additionally, we suggest that future studies should include the measurement of disability.

As a result of this study, the family burden of caregivers of patients with SUD was found to be significantly higher than the schizophrenia and BD groups. Family burden was found to be similar between schizophrenia and the BD group. In chronic psychiatric disorders, the functionality and quality of life of not only patients but also families should be evaluated.

Ethics Committee Approval: This study was conducted in accordance with the Declaration of Helsinki, and a written ethics committee approval was obtained from Akdeniz University Faculty of Medicine Clinical Research Ethics Committee with a decree number of 720.

Informed Consent: Written consent form was obtained from the participants who agreed to participate in the study. The participants received verbal and written information about the aim of the study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - Y.K., M.M.K.; Design - Y.K., M.M.K., B.K., A.E.; Supervision - M.M.K., B.K.; Materials - Y.K.; Data Collection and/or Processing - Y.K.; Analysis and/or Interpretation - Y.K., A.Ö.; Literature Review - Y.K., A.E.; Writing - Y.K., A.E.; Critical Review - A.E., A.Ö., B.K.

Acknowledgment: Authors would like to thank our AMBAUM colleagues, especially Şebnem Erener Çelik.

Declaration of Interests: The authors have no conflicts of interest to declare.

Funding: The authors declared that this study has received no financial support.

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