

Caregiver burden, family adaptation, partnership, growth, affection, and resolve, anxiety levels, and perceived social support in relatives of patients with open heart surgery

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SUMMARY

OBJECTIVE: The aim of this study was to examine the relationship between caregiver burden, family adaptation, partnership, growth, affection, and resolve score, anxiety levels, and the perceived social support of the relatives of patients who had open heart surgery.

METHODS: Volunteers among the relatives of patients who had open heart surgery in our cardiovascular surgery clinic and were followed up in the first 3 months were included in the study. The cardiovascular surgeons recorded the sociodemographic data of the relatives of the patients and directed them to a psychiatry clinic for further evaluation. The caregiver burden scale, family adaptation, partnership, growth, affection, and resolve scale, anxiety level scale, and perceived social support scale were applied to the relatives of the patients who participated in the study.

RESULTS: Within the scope of the study, a total of 51 individuals, 29.4% (n=15) men and 70.6% (n=36) women, were included in the evaluation. The participants' ages ranged from 32 to 68 years, with an average age of 48 years. There was a statistically significant relationship between the caregiving burden scale score and the scale scores other than age ($p<0.05$). There was a statistically significant difference in terms of caregiving burden scale score, working status, physical and psychological problems, changes in home life, and changes in family relationships ($p<0.05$).

CONCLUSION: The fact that the need for security and intimacy is related to anxiety and depression can be interpreted as the caregiving problems of the relatives of the patients who think that their patients are safe and feel closer to the intensive care personnel will decrease. Their depression and anxiety levels will also decrease.

KEYWORDS: Caregiver burden. Depression. Anxiety. Coronary artery bypass grafting. Perceived social support.

INTRODUCTION

Recent estimates from the World Health Organization (WHO) reveal that coronary heart disease (CHD) is the leading cause of death worldwide, responsible for more than 9 million global deaths in 2016. Coronary artery bypass graft (CABG) is one of the most common revascularization procedures for advanced and extensive CHD¹.

It is stated that having a sick member in the family creates a severe burden for caregivers². Patients undergoing CABG surgery often depend on their spouses or family members for care and assistance during post-operative recovery and cardiac rehabilitation. Nausea, loss of appetite, cognitive impairment, psychological problems (anxiety, stress, depression), sleep disorders, medication problems, and various recovery issues delay the independence of surgery patients, affecting their caregivers³.

It has been reported that the situation of patients who are unable to communicate and express themselves emotionally deteriorates their relatives. The caregivers feel exhausted and may present sleep disorders⁴.

Caring for someone with CABG differs from caring for other chronic conditions such as dementia or cancer. While caring for a patient with progressive disease is a long-term experience that often results in the patient's death, a CABG caregiver can expect to begin the caregiver role at the point of surgery and finish after 2 to 3 months. Thus, caring for a CABG patient provides an exciting model for investigating the transient caregiving experience and the implications of a newly adopted role⁵. Previous studies have mainly focused on the stress and anxiety levels and coping methods of the relatives of patients who are hospitalized in the intensive care unit or followed up for chronic diseases, apart from cardiac reasons⁶.

In light of this information, we aimed to examine the relationship between caregiver burden, family adaptation, partnership, growth, affection, and resolve (APGAR) score, anxiety levels, and the perceived social support of the relatives of patients who had open heart surgery.

The hypothesis of our study is that the burden of caregivers will be affected by age, job status, economic status, perception of social support, and anxiety level.

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METHODS

This retrospective and systematic study was conducted in university hospital psychiatry and cardiovascular surgery clinics. A total of 100 volunteers, 18 years of age or older, among the relatives of patients who had open heart surgery in our cardiovascular surgery clinic and were followed up in the first 3 months were included in the study. The relatives who had previous diagnoses of mental retardation and psychotic disorders, a primary or acquired neurological disease that may affect cognitive abilities (stroke, dementia, head trauma, cranial operation), and ongoing alcohol or substance abuse were excluded from the study.

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008. Ethics committee approval was granted by our institution on February 23, 2022 with protocol number 2022/25. Informed consent has been obtained from all participants.

The cardiovascular surgeons and these individuals recorded the sociodemographic data of the relatives of the patients and directed them to a psychiatry clinic for further evaluation. The caregiver burden scale, family APGAR scale, anxiety level scale, and perceived social support scale were applied to the relatives of the patients who participated in the study.

As a result of the evaluation, a comparison was conducted between demographic data, caregiver burden assessments, family APGAR scale, anxiety level, and perceived social support. Additionally, the predictive measures were examined.

Statistical analysis

To determine the study group, the sample size was determined using the G-Power 3.1 program. The minimum sample size was 48, with a margin of error of 0.05, a power of 0.80, and an effect size of 0.44. Patient data collected within the scope of the study were analyzed with the Statistical Package for the Social Sciences (SPSS) for Windows 23.0 (IBM Corp., Armonk, NY, USA) package program. Frequency and percentage for categorical data and mean and standard deviation for continuous data were given as descriptive values. For comparisons between groups, the “independent sample t-test” was used for two groups, and the “analysis of variance (ANOVA) test” was used for more than two groups. We have used the “Pearson correlation analysis” to evaluate the relationship between continuous variables. The results were considered statistically significant when the p-value was less than 0.05. The correlation coefficient of the relationship between the two variables is weak between 0.00 and 0.29; low between 0.30 and 0.49; moderate

between 0.50 and 0.69; strong between 0.70 and 0.89; and very strong between 0.90 and 1.00.

RESULTS

Within the scope of the study, a total of 51 individuals, 29.4% (n=15) men and 70.6% (n=36) women, were included in the evaluation. The distribution of demographic and clinical findings for the patients is given in Table 1. The participants ranged from 32 to 68 years, with an average age of 48 years.

The results of Pearson correlation analysis evaluating the relationship between patients’ age, family APGAR score, caregiver stress index, multidimensional perceived social support (MPSS) scale total score and sub-dimension scores, and caregiving burden scale score are given in Table 2. When Table 2 was examined, it was determined that there was a statistically significant relationship between the caregiving burden scale score and the scale scores other than age ($p<0.05$). The positive correlation coefficient between the variables is positive. If it is negative, it indicates an inverse relationship.

The demographic and clinical findings of the patients and the distribution of the scale scores of the caregiving burden scale scores are given in Table 3. When Table 3 was examined, it was observed that there is a statistically significant difference in terms of caregiving burden scale score, working status, physical and psychological problems, changes in home life, and changes in family relationships ($p<0.05$).

Table 1. Distribution of demographic and clinical findings of the patients.

(n=51)	n (%) or Median±SD
Age (years)	48±10 (Min: 32; Max: 68)
Gender	
Male	15 (29.4)
Female	36 (70.6)
Degree of affinity with the patient	
Children	20 (39.2)
Partner	26 (51)
Relative	5 (9.8)
Marital status	
Married	49 (96.1)
Single	1 (2)
Widow	1 (2)
Job	
Not working	29 (56.9)
Working	17 (33.3)
Retired	5 (9.8)

Table 2. Evaluation of the relationship between caregiver burden scale scores and age and other scale scores.

Age and other scale scores	Caregiver burden scale	
	Correlation coefficients (r)	p-value
Age	-0.093	0.518
Family APGAR	-0.533	<0.001
Caregiver Stress Index	0.805	<0.001
MPSS—family support	-0.462	0.001
MPSS—friend support	-0.453	0.001
MPSS—private person support	-0.519	<0.001
MPSS—total	-0.514	<0.001

MPSS: multidimensional perceived social support. Statistically significant values are denoted in bold.

Table 3. Evaluation of the caregiver burden scale score based on demographic and clinical findings.

		Caregiver Burden Scale	
		Median±SD	p-value
Gender	Male	18.7±18	0.122
	Female	28±19.7	
Degree of affinity with the patient	Children	23.2±15.6	0.611
	Partner	27.8±21.6	
	Relative	20.2±23.9	
Marital status	Married	25.9±19.6	0.233
	Single/Widowed	9±4.2	
Job	Not working1	31.6±20.1	0.025 (difference: 1-2)
	Working2	16.7±16.2	
	Retired3	17.4±13.7	
Physical problems	No	13.4±14	<0.001
	Yes	35±18.1	
Psychological problems	No	17.7±16.5	<0.001
	Yes	35.2±19	
Change in home life	No	21.9±18.5	0.018
	Yes	37.4±19.0	
Change in family relationships	No	21.6±18.4	0.006
	Yes	40.1±17.4	

Statistically significant values are denoted in bold.

DISCUSSION

Having a sick member in the family creates a severe burden for caregivers. Inpatient treatment in the intensive care unit, where many stress factors are involved, negatively affects the patient and their family. It has been reported that seeing the patients' disability to communicate and defend themselves emotionally

wears out their relatives. Patients' relatives feel exhausted due to caregiver burden, depressive symptoms, and sleep quality. In addition, family members who are not satisfied with the intensive care service report higher levels of depression and anxiety⁷. In the literature, many studies have been conducted to determine the requirements of patients' families. Despite this, studies still need to reveal the relationship between needs and the level of anxiety and depression. In addition, the lack of sufficient studies examining the needs of the relatives of the patients and their anxiety and depression symptom levels in the cardiovascular surgery (CVS) intensive care unit reveals the necessity of this research⁸. In this study, we found that there was a statistically significant relationship between the caregiving burden scale score and the scale scores other than age.

It has been shown that depression and anxiety symptoms are commonly observed in the relatives of patients receiving inpatient treatment in the intensive care unit. It is mentioned that the psychological problems detected in the relatives of the patients are related to the severity of the disease⁹. Another study reported that depression and anxiety symptoms are high in relatives during hospitalization in the intensive care unit, even if the patient is well enough to be discharged from the hospital¹⁰. It was found that 80% of the family members who were sick in the intensive care unit had borderline anxiety, and 70% had borderline depression symptoms. More than 80% had other physical and emotional symptoms such as fatigue, sadness, and fear¹¹. Another study reports that these rates are 73.4% for anxiety and 35.3% for depression¹⁰. In this study, there was a statistically significant difference in terms of caregiving burden scale score, working status, physical and psychological problems, changes in home life, and changes in family relationships.

Relatives of patients in the intensive care unit exhibit symptoms of high anxiety and depression and feel the need for security and closeness intensely. It can be thought that meeting these needs can reduce the anxiety and depression symptoms of the relatives of the patients. It was concluded that female relatives of patients had more anxiety and depression symptoms than males and that the information needs of spouses were higher than those of other relatives. It has been determined that the relatives of the patients have higher security and intimacy needs, revealing the importance they attach to the need¹².

In the traditional family structure, there are close relations and strong bonds between family members. When a family member gets sick, other family members try to be together and meet their support and help needs. Family members often feel responsible for their relatives and are willing to share the burden. While family members try to help the patient, various needs arise simultaneously¹³. In this context, healthcare team

members must help the patient's family and meet their needs. However, it was determined that the average scores of the family members' needs for information about the patient and the need for psychological support and comfort were higher than the average scores of the personal needs and the need to be with or close to the patient¹⁴.

In previous research, it was shown that the relatives of the patients hospitalized in the clinical and intensive care units put their own needs aside, and being close to the patient was reported as the top priority¹⁵. In another study, families were also concerned with their personal needs. It was determined that patients were more concerned about whether they had a successful operation, received careful medical care, and how their recovery would be¹⁶. In studies conducted on patient families, it has been shown that families focused on communicating with the patient and observing visible improvement¹⁷.

CONCLUSION

The fact that the need for security and intimacy is related to anxiety and depression can be interpreted as the caregiving

problems of the relatives of the patients who think that their patients are safe and feel closer to the intensive care personnel will decrease. Their depression and anxiety levels will also decrease.

ETHICS COMMITTEE APPROVAL

Ethics committee approval was received for this study from Balikesir University Medical Faculty Clinical Research Ethics Committee (approval date: 23.02.2022; approval number: 2022/25). Informed consent was obtained from the individuals who participated in this study.

AUTHORS' CONTRIBUTIONS

ND: Conceptualization, Formal Analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing. **AD:** Conceptualization, Project administration, Writing – original draft, Writing – review & editing. **SA:** Conceptualization, Data curation, Investigation, Methodology, Writing – original draft, Writing – review & editing.

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