An Investigation of the Relationship Between Perceived Social Support and Care Dependency in Patients Who Underwent Cardiovascular Surgery Intervention

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MAKALE BİLGİSİ

ABSTRACT

This study aims to investigate the relationship between perceived social support and care dependency in patients who underwent cardiovascular surgery intervention. The study sample consisted of 165 patients who were hospitalized and underwent cardiovascular surgery intervention between 01.06.2021 and 01.09.2021. Data were collected using a questionnaire form, the Care Dependency Scale and the Multidimensional Scale of Perceived Social Support. The data obtained from the study were analyzed using descriptive statistics and correlation analysis. The average age of the participating patients was 60.81±1.46 years. Of all the patients, 60% were male, 77% were married. While 58.8% of the participants had another chronic disease, 53.3% could take care of themselves. Patients' level of care dependency was found to be low (59.80±16.88), and their level of perceived social support was found to be high (74.15±11.41). A weak and negative correlation (r=-0.262) was detected between the Care Dependency Scale and the Multidimensional Scale of Perceived Social Support. Increasing the perceived social support in hospitalized patients who underwent surgical intervention is considered to decrease their level of care dependency. It is important to determine these patients' perceived social support and care dependency levels and to plan necessary nursing interventions accordingly.

Kalp Damar Cerrahi Girişimi Geçiren Hastaların Algıladıkları Sosyal Destek ile Bakım Bağımlılığı Arasındaki İlişkinin İncelenmesi

ARTICLE INFO

ÖZ

Bu çalışma, kalp-damar cerrahisi ameliyatı geçiren hastalarda algılanan sosyal destek ile bakım bağımlılığı arasındaki ilişkiyi araştırmayı amaçlamaktadır. Araştırmanın örneklemini 01.06.2021 ile 01.09.2021 tarihleri arasında hastaneye yatarak kalp ve damar cerrahisi ameliyatı geçiren 165 hasta oluşturdu. Veriler anket formu, Bakım Bağımlılığı Ölçeği ve Çok Boyutlu Algılanan Sosyal Destek Ölçeği kullanılarak toplanmıştır. Araştırmadan elde edilen veriler betimsel istatistikler ve korelasyon analizi kullanılarak analiz edilmiştir. Araştırmaya katılan hastaların yaş ortalaması 60,81±1,46 yıldır. Hastaların %60'ı erkek, %77'si evlidir. Katılımcıların %58,8'inin başka bir kronik hastalığı bulunurken, %53,3'ü kendi bakımını gerçekleştirebilmektedir. Hastaların bakıma bağımlılık düzeyleri düşük (59,80±16,88), algıladıkları sosyal destek düzeyleri ise yüksek (74,15±11,41) olarak belirlenmiştir. Bakım Bağımlılığı Ölçeği ve Çok Boyutlu Algılanan Sosyal Destek Ölçeği arasında zayıf ve negatif yönlü bir korelasyon (r=-0,262) tespit edildi. Hastanede yatan ve cerrahi müdahale uygulanan hastalarda algılanan sosyal desteğin artırılmasının bakıma bağımlılık düzeyini azaltacağı düşünülmektedir. Bu hastaların algıladıkları sosyal destek ve bakıma bağımlılık düzeylerinin belirlenerek gerekli hemşirelik girişimlerinin buna göre planlanması önemlidir.

INTRODUCTION

Cardiovascular diseases are a group of diseases in which the heart or blood vessels are affected. These diseases include coronary heart disease, cerebrovascular disease, rheumatic heart disease, heart failure, hypertension, congenital heart disease, deep vein thrombosis and pulmonary embolism[1,2]. Cardiovascular diseases are a major cause of death worldwide. According to World Health Organization 2020 data, 16% (8.9 million) of deaths from non-communicable diseases worldwide are caused by cardiovascular diseases[3]. Turkish Statistical Institute data shows that 42.3% of the total deaths in 2021 are caused by cardiovascular diseases[4].

Depending on the course of the disease, surgical methods may be preferred in the treatment of cardiovascular diseases, which may include arterial coronary bypass grafting (ACBG), percutaneous transluminal coronary angioplasty, valve repair, valve replacement, removal of tumors in the heart, and heart transplantation[5]. Patients need long-term care due to the chronic course of these diseases, indicating their need for social support[6,7].

Social support is the close bond established by individuals with someone important to them and whom they trust, which highlights the quality rather than the quantity of social relationships[1]. Perceived social support is the general value individuals assign to themselves, and it is affected by relatively permanent characteristics such as personality traits as well as more easily changing characteristics such as attitude and temperament[8]. Perceived social support is known to be a powerful resource in the solution, prevention, and treatment of individuals' sociological and psychological problems and in coping with difficult situations[1]. Knowing the perceived social support of patients with cardiovascular disease who underwent surgery is considered to positively affect their self-confidence, hopes for recovery, enhanced surgery outcomes, and independence levels. Besides, patients' level of perceived social support may bring the possibility of disease-related care dependency[9-11].

Care dependency is the decrease in the level of an individual's ability to meet his/her self-care needs and the need for a certain level of care and professional support according to the level of dependency[12,13]. Facing the care and treatment process affects the individual in terms of physiological, psychological and social aspects, which causes the individual to restrict control over his/her body and to become dependent at different levels. Individuals who underwent cardiovascular surgery need a high level of social support both in the preoperative and postoperative periods. Individuals who cannot meet this support sufficiently may develop a dependency on the nurse, who is the primary caregiver in the first place[10-13]. Therefore, examining the perceived social support is important in terms of maintaining individuals' care independence. An analysis of the literature shows that although some studies examined the level of care dependency of patients hospitalized in surgical and internal wards[14-16], care dependency in cardiac patients[10-17], and the level of social support in cardiac diseases[1,7-11], no studies were found to have investigated the connection between social support and care dependency in patients who underwent cardiovascular surgery. In this regard, the purpose of this study is to examine the relationship between perceived social support and care dependency in patients who underwent cardiovascular surgery.

MATERIALS AND METHODS

Study Design

The population of this study, which was conducted in accordance with the principles of cross-sectional research, consisted of patients who were hospitalized in 19 Mayıs Health Practice and Research Hospital between 01.06.2021 and 01.09.2021 and who underwent surgical intervention for cardiovascular diseases. An average of 150-170 patients underwent cardiovascular surgery in the hospital in question over a three-month period. Therefore, the population of the study was determined as 170 patients. No sample selection was performed; the study included 165

patients who were hospitalized between the specified dates, met the inclusion criteria, and agreed to participate in the study.

Inclusion criteria

The study included patients who were over 18 years old, had undergone cardiovascular surgery, had no obstacle to communicating, could speak and understand Turkish, and agreed to participate in the study.

Data Collection Tools

Data were collected through the Personal Information Form prepared by the researchers in line with the literature, the Care Dependency Scale (CDS), and the Multidimensional Scale of Perceived Social Support (MSPSS).

The Personal Information Form*: The form was prepared by the researchers in line with the literature[6,9,18]. The form consists of 14 questions including the participants' sociodemographic (6 questions) and medical characteristics (8 questions).

The Care Dependency Scale (CDS): *The* Care Dependency Scale (CDS) was developed by Dijkstra in 1998 in the Netherlands based on Virginia Henderson's human needs[19]. The scale aims to evaluate patients' care dependency conditions. Yönt et al. performed the Turkish validity and reliability study of the scale in 2010. The CDS determines individuals' dependency levels. It is responded on a five-point Likert scale and consists of a total of 17 items including activities of daily living. The scores to be obtained from the scale range between 17 and 85, with lower scores indicating that the patient is independent in meeting care needs and higher scores indicating that the patient is dependent on others in meeting care needs. Cronbach's alpha value of the scale was found to be 0.91 by Yönt et al., and it was found to be 0.92 in this study[20].

Multidimensional Perceived Social Support Scale: The validity, reliability, and construct validity of the scale were conducted by Eker at al., in Turkey[21]. The 12-item scale makes a subjective evaluation of the adequacy of social support received from three different sources. It is a Likert-type scale including three groups related to the source of support, each consisting of four items: family (items 3, 4, 8, 11), friends (items 6, 7, 9, 12), and significant other (teacher, lover, relative, etc.) (items 1, 2, 5, 10). The scale is responded on a seven-point Likert scale and consists of the following options: 'very strongly agree' (7 points), 'strongly agree' (6 points), 'agree' (5 points), 'neither agree nor disagree (Neutral)' (4 points), 'disagree' (3 points), 'strongly disagree' (2 points) and 'very strongly disagree' (1 point). The sub-scale score is obtained by summing the scores of four items in each sub-scale, and the total score of the scale is obtained by summing all sub-scale scores. The scores to be obtained from the whole scale range between 12 and 84, with higher scores indicating high perceived social support. Eker at al., found that the scale had high consistency levels with Cronbach's alpha values ranging from 0.8 to 0.95[21]. In this study, Cronbach's alpha value was found to be 0.86.

Data Collection

The questionnaire form and scales were administered face-to-face by the researchers to patients who underwent cardiovascular surgery at 19 Mayıs Health Practice and Research Hospital and who met the inclusion criteria between 01.06.2021 and 01.09.2021.

Data Analysis

The data obtained from the study were analyzed in SPSS (Statistical Package for Social Science) 23.0 package program. Normality distribution was determined using the Shapiro-Wilk test. Mann-Whitney U test was performed for comparisons between two groups that did not show normal distribution, and the Kruskal Wallis U test was used for comparisons among three or more groups. In addition, descriptive statistics (numbers, percentages, means, standard deviations) and the Spearman correlation test were used to examine the relationship between the two variables. The significance level was accepted $p < 0.05$.

Ethical Considerations

Ethics Committee approval was obtained from the relevant university (decision no. 2021/287 dated 26.03.2021) and permission was obtained from the hospital where the study was conducted. All the participants were informed about the study, and the study was carried out after their verbal/written consent was received.

Limitations

The limitation of the study is that it was conducted in a single center and cannot be generalized to the entire population.

RESULTS AND DISCUSSION

The average age of the participating patients was 60.81±1.46 years. The age range was found to be 30-87. While 60.6 % were male, 53.3% had primary school education. When patients' clinical features were analysed, it was found that 48.5% underwent ACBG surgery, 58.8% had another chronic disease, and 53.3% reportedly could take care of themselves (Table 1).

Table 1. Patients' sociodemographic and clinical features (n: 165)

Variables	X±SD	Min.-Max.
Age (Year)	60.81±1.46	30- 87
Variables	**n**	**%**
Gender		
Female	65	39.4
Male	100	60.6
Marital Status		
Married	129	77.0
Single	36	23.0
Education Level		
Illiterate	24	14.5
Literate	19	11.5
Primary school	88	53.3
High school	25	15.2
University	9	5.5
Place of living		
City Center	63	38.2
District center	60	36.4
Village	42	25.5
Family type		
Living alone	11	6.7
Nuclear family	125	75.8
Extended family	29	17.6
Surgical intervention		
ACBG	80	48.5
Cardiac valve surgery	30	18.0
Peripheral venous insufficiency	55	33.5
Presence of other chronic diseases		
Yes	97	58.8
No	68	41.2
Self-care status		
Yes	88	53.3
No	24	14.5
Partially	53	32.1

X±SD: Mean±Standard deviation

When Table 2 analyzed, a significant relationship was found between the patients' CDS mean scores and age, education level and self-care status, and a significant relationship was found between marital status and family characteristics and MSPSS mean scores ($p<0.05$).

Table 2: Comparison of the patients' sociodemographic and clinical features and cds and mspss mean scores

Features	CDS X±SD	Test and p	MSPSS X±SD	Test and p
Age (year)	60.81±1.46 (30 min-87 max)	r= 0.001* **p= 0.001**	60.81±1.46 (30 min-87 max)	r= 0.172* p= 0.056
Gender				
Female	51.35±2.16	Z=-1.057[a]	70.535±6.49	Z=-2.632[a]
Male	46.00±8.90	p=0.290	68.640±9.69	p=0.080
Marital status				
Married	55.45±21.42	Z=0.326 [a]	69.001±17.91	Z=0.366 [a]
Single	50.40±17.50	p=0.071	59.851±16.81	**p= 0.012**
Education level				
Illiterate	45.85±2.16		71.276±2.06	
Literate	45.83±2.45	KW=2.432 [b]	67.000±8.62	KW= 4.004 [b]
Primary school	46.44±4.30	**p= 0.000**	62.090±3.40	p=0.210
High school	47.83±9.57			
University	55.46±3.01			
Place of living				
City center	55.863±2.49		71.27±2.06	
District center	47.833±9.57	KW=2.432 [b]	67.00±8.62	KW= 4.004 [b]
Village	46.454±4.39	p=0.093	62.90±3.06	p=0.621
Family type				
Living alone	51.23±2.43	KW= 0.165[b]	50.01±7.65	KW= 6.480[b]
Nuclear family	45.12±1.89	p= 0.921	67.989±4.35	**p= 0.039**
Extended family	59.56±2.01		65.52±4.01	
Surgical Intervention				
ACBG	56.58±7.70	KW=2.949 [b]	71.22±8.06	KW=14.507 [b]
Cardiac valve surgery	56.02±9.21	p=0.087	64.84±12.94	p=0.060
Peripheralvenous insufficiency	46.01±8.88		72.66±10.00	
Presence of other chronic diseases		Z=-1.057[a] **p=0.020**		Z=-2.632[a] p=0.060
Yes	51.32±2.15		60.56±6.48	
No	46.04±8.93		58.63±9.68	
Self-care Status				
Yes	41.02±4.03		71.57±17.81	
No	43.33±8.78	KW=3.412 [b]	88.20±8.27	KW=1.708 [b]
Partially	51.78±5.94	**p=0.000**	87.61±10.84	p=0.154

X±SD: Mean±Standard deviation

[a] Mann Whitney U test; [b] Kruskal Wallis Test

*Correlation coefficient

When Table 3, which includes the comparison of participating patients' MSPSS mean scores, was analyzed, a significant relationship was found between the patient's marital status, family characteristics, and self-care status and their family sub-scale mean scores (p<0.05).

Table 3: Comparison of patients' socio-demographic and clinical features and MSPSS sub-scale mean scores

Features	Family X±SD	Test and p	Friends X±SD	Test and p	Significant other X±SD	Test and p
Age (year)	60.81±1.46 (30 min-87 max)	r= 0.001* p= 0.981	60.81±1.46 (30 min-87 max)	r= 0.162* p= 0.056	60.81±1.46 (30min-87 max)	r= 0.150* p=0.060
Gender						
Female	21.35±2.16	Z=-1.007[a] p=0.190	20.535±5.49	Z=-2.632[a] p=0.200	20.035±6.49	Z=-1632[a] p=0.180
Male	26.00±2.90		27.640±9.49		25.640±9.69	
Marital Status						
Married	20.45±21.42	Z=0.326[a] p= **0.007**	19.001±17.91	Z=0.366[a] p= 0.12	19.201±17.91	Z=0.366[a] p= 0.062
Single	15.40±17.50		19.851±16.81		19.01±16.81	
Education level						
Illiterate	25.073±2.45		21.276±2.06		11.476±3.06	
Literate	17.803±9.57	KW=2.432[b] p=0.093	17.000±8.62	KW= 3.004[b] p=0.051	27.000±6.62	KW= 2.004[b] p=0.221
Primary school	16.054±4.30		22.090±3.40		22.100±3.40	
High school	21.02±8.06					
University	20.33±6.11					
Place of living						
City center	15.263±2.49	KW=2.232[b] p=0.092	21.27±2.06	KW= 4.004[b] p=0.621	21.22±1.06	KW= 3.104[b] p=0.521
District center	17.803±9.57		27.00±8.62		17.00±6.62	
Village	26.454±4.39		22.90±3.06		24.90±2.06	
Family type						
Living alone	19.13±2.43	KW= 0.155[b] p= **0.021**	26.089±4.35	KW= 5.480[b] p= 0.539	27.089±4.35	KW=3.28[b] p= 0.609
Nuclear family	25.12±1.89		20.01±6.75		20.01±7.65	
Extended family	22.56±1.01		25.52±3.01		25.42±4.01	
Surgical Intervention						
ACBG	26.58±4.470	KW=2.749[b] p=0.087	21.22±8.06	Z=4.507[a] p=0.060	26.22±8.16	KW=9.407[b] p=0.060
Cardiac valve surgery	26.02±7.621		24.54±12.94		24.44±11.04	
Peripheral venous insufficiency	22.01±8.68		22.65±10.00		22.66±9.00	
Presence of other chronic diseases		Z=-2.057[a] p=0.270		Z=-2.632[a] p=0.340	22.56±6.48	Z=-2.432[a] p=0.050
Yes	23.22±2.25		20.56±5.48		25.63±8.58	
No	26.24±6.93		27.63±9.68			
Self-care status						
Yes	21.22±4.03	KW=2.312[b] p=0.051	22.55±17.81	KW=3.008[b] p=0.154	21.07±17.81	KW=1.601[b] p=0.054
No	23.63±8.61		26.10±7.07		27.20±8.27	
Partially	25.68±5.54		27.61±1.84		27.61±10.63	

X±SD: Mean±Standard deviation
a Mann Whitney U test; b Kruskal Wallis Test
*Correlation coefficient

Table 4: Distribution of CDS and MSPSS mean scores

	Min and Max values of the Scales	Median	X±SD
CDS	17-85	65.00	59.80±16.88
MSPSS	12-84	78.00	74.15±11.41

X±SD: Mean±Standard deviation

An analysis of Table 5 indicates a negative and weak correlation and a significant relationship between the CDS and the MSPSS ($p<0.05$). A negative and weak correlation was found between the CDS and the family sub-scale of the MSPSS.

Table 5: Correlation values among CDS and MSPSS and MSPSS sub-scale scores

		CDS
CDS	r*	1
	p	-
MSPSS	r*	-0.262
	p	**0.008**
MSPSS Family Sub-scale	r*	-0.270
	p	0.661
MSPSS Friend Sub-scale	r*	-0.150
	p	0.410
MSPSS Significant Other Sub-scale	r*	-0.216
	p	0.054

*Correlation coefficient

Care dependency is a process in which individuals' self-care ability decreases and they need someone else's help to meet their needs. In such a process, the main goal is for individuals to return to their daily social life and gain independence[16]. For this reason, determining patients' perceived social support and care dependency levels is considered to be guiding in terms of managing care and individualizing the patient[15].

This study aimed to examine the relationship between perceived social support and care dependency in patients who underwent cardiovascular surgery. The patients' average age was found 60.81±1.463, the CDS total mean score was found 59.80±16.88 (Table 4), and a significant relationship was found between the patients' age and their CDS total scores ($p<0.05$) (Table 2). A study that used the same scale and examined the care dependency of patients hospitalized in surgical internal wards found the average age of the patients as 58.65 ± 19.21 and the CDS total mean score as 69.12 ± 17.80. A study that examined elderly patients' care dependency levels found the CDS total mean score of patients over the age of 65 as 34.01± 10.43[14-18,22]. In their study conducted with 112 hospitalized elderly patients, Brito and Fernandes (2016) found that the patients' dependency level was high[22]. Lower total scores obtained from the scale indicate a higher level of care dependency. Similar to other studies, age was found to be associated with the level of care dependency in our study. Participating patients in this study were able to take care of themselves, which may have decreased the level of care dependency.

Similar to other studies, this study indicated no statistically significant relationship between the CDS mean scores and characteristics such as gender, marital status, and family structure[15-18,23]. In addition, no significant relationship was detected between the patients' CDS mean scores and the surgical intervention they underwent. Özbek Yazıcı and Kalaycı (2015) also found no significant relationship between the reason for hospitalization and the CDS mean scores[23]. This study detected a significant relationship between the patient's self-care ability and their CDS mean scores, and the CDS total score was found to increase as the self-care ability increased. The majority of the patients were able to perform self-care, which may have decreased the level of dependency.

In line with the literature, CDS mean scores were found to increase and the level of care dependency was found to decrease with the increase in patient's education level (Table 2)[10,12]. This finding may result from the fact that the patients can take responsibility for their own care and manage their diseases better as their level of education increases.

Similar to other studies, this study also detected a significant correlation between the CDS mean score and the presence of a chronic disease ($p<0.05$) (Table 2). The level of care dependency also increases in patients who have a different chronic disease[23-25]. This may be because chronic

diseases cause physical inadequacy and increase the need for care. Especially the decline in physical capacity with advancing age makes symptom management of chronic diseases difficult[26,27].

MSPSS total mean score of the participating patients was found to be 74.15±11.41 (Table 4). The highest score to be obtained from the scale is 84, and the level of perceived social support increases as the scale score increases, indicating that the patients have a high level of perceived social support. A significant correlation was detected between the patients' MSPSS mean scores and the family sub-scale mean scores, marital status and family type. While 77% of the participating patients were married, 75.8% of them lived in a nuclear family. Yılmaz and Ergun (2010), who utilized the same scale and investigated the perceived social support level of cardiac patients, found the total score of the scale as 64.25 ± 11.35, and the patients' perceived family support was found to be high[28]. Other studies in the literature also showed that spousal support was important in increasing perceived social support[29-33]. In this regard, it can be said that the most important form of relationship that increases the perceived social support is the spouse and family structure. In line with this result, a weak and negative correlation (p=-0.270) was found between the CDS mean scores and their MSPSS Family Sub-scale mean scores. This finding could be associated with the important place of the family in Turkish culture and the provision of the necessary social support by family members[34].

A weak and negative correlation (r=-0.262) and a significant relationship (p<0.05) were detected between the patients' CDS mean scores and the MSPSS mean scores. The high level of social support perceived by the patients seems to be a variable affecting care dependency.

CONCLUSIONS AND RECOMMENDATIONS

The results of this study showed that the level of care independence and perceived social support were high in patients who underwent cardiovascular surgery intervention. A weak negative correlation was also found between the CDS and the MSPSS. Based on these results, it is important to determine the perceived social support and care independence levels of hospitalized patients who underwent surgical intervention and to plan the necessary nursing interventions accordingly. Therefore, it is recommended to organize clinical trainings to increase the awareness of nurses on this issue.

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