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Self-Efficacy Perceptions in Coping of the Patients' Post-Coronary Artery Bypass Graft Surgery

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Abstract

Objective: In this study it was aimed to determine the dynamics of postoperative coronary artery bypass graft surgery patients' coping strategies and detect the effects of self-efficacy levels in these dynamics.

Methods: This analytical cross-sectional study done between 01 October 2015-30 January 2016 in an Education and Research Hospital in Bursa, Turkey. 384 patients included to study and all of them were over 18 years old, had coronary artery bypass graft operation, at least on 4th day after surgery, conscious, no loss of hearing or visual function and volunteer for study. "Patient Information Form", "The Coping Strategy Indicator" and "Barnason Efficacy Expectation Scale Cardiac Surgical Version" are used for data collection. SPSS 21.0 statically analyse programme was used for evaluation of data with one and multivariate analyses.

Results: Age means of patients was 60.8±10.23. 51.6% of patients were literate or primary school graduated and many of them (82%) were married. 21.9% patients had serious disease history. Score mean of patients' The Coping Strategy Indicator was 70.69±8.32. Problem Solving Subscale had the highest score and Avoidance Subscale had the lowest score. Barnason Efficacy Expectation Scale Cardiac Surgical Version total score mean was 51.94±6.15 and it was positively mild related to The Coping Strategy Indicator (r=.519, p<.005). Multivariate analyses showed that Coping score increases if after coronary artery bypass graft surgery performed patients self-efficacy score is high, had serious disease history before and decreased age (p<.05, R^2=.299).

Conclusion: In conclusion, the study showed that coping levels of after coronary artery bypass graft surgery related to self-efficacy level, age and disease history of patients.

Keywords: Cardiovascular; coronary artery bypass graft surgery; coping; self-efficacy.

Koroner Arter Bypass Greft Cerrahisi Sonrası Hastaların Başa Çıkmasında Öz Etkililik Algıları

Özet

Amaç: Bu araştırmada, bir devlet hastanesinde koroner arter bypass greft cerrahisi sonrası hastaların başaçıkma stratejilerinin dinamiklerini tanımlamak ve bu dinamiklerde öz etkililik düzeylerinin etkisini belirlemek amaçlandı.

Yöntemler: Analitik kesitsel tipte olan araştırma Türkiye'de Bursa'da bir Eğitim ve Araştırma Hastanesinde 15 Aralık 2015- 30 Ocak 2016 tarihleri arasında yürütüldü. Araştırmaya 18 yaş üzeri, koroner arter bypass greft cerrahisi geçirmiş post operatif en az 4. günde olan, bilinci açık, işitme ve konuşma fonksiyon kaybı olmayan ve çalışmaya katılmayı gönüllü olan 384 hasta dahil edildi. Araştırmada veri toplamada "Hasta Tanıtıcı Bilgi Formu", "Başaçıkma Stratejisi Ölçeği" ve "Barnason Etkililik Beklenti

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Ölçeği" kullanıldı. Veriler SPSS 21.0 (Statistical Package For Social Science) istatistik analiz programında, tek değişkenli ve çok değişkenli analizler ile değerlendirildi.

Bulgular: Hastaların yaş ortalaması 60.8±10.23 olup, %51.6'sı okuryazar veya ilkokul mezunu ve çoğunluğu (%82.0) evlidir. Özgeçmişinde önemli bir hastalık bildirenler %21.9'dur. Hastaların Başaçıkma Stratejisi Ölçeği puan ortalaması 70.69±8.32 olup, en yüksek Problem Çözme alt ölçeği, en düşük ise Kaçınma alt ölçeği idi. Barnason Etkililik Beklenti Ölçeği Kardiak Cerrahi Versiyonu toplam puan ortalaması ise 51.94±6.15 olup, Başaçıkma Stratejisi Ölçeği puanları ile pozitif yönde orta derecede ilişki gösterdiği saptandı (r=0.519, p<0.005). Yapılan çok değişkenli analizlerde, koroner arter bypass greft cerrahisi geçirmiş hastaların öz etkililik puanları arttıkça, yaşları küçüldükçe, daha önce hastalık geçirme durumları varsa başaçıkma puanlarının artış gösterdiği belirlendi (p<0.05, R^2=0.299).

Sonuç: Sonuçta koroner arter bypass greft cerrahisi sonrası hastaların başaçıkma düzeylerinde; öz etkililik düzeyleri, yaşları ve hastalık öyküleri belirleyici bulundu.

Anahtar sözcükler: Başaçıkma; kardiyovasküler; koroner arter bypass greft cerrahisi; öz etkililik.

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Cardiovascular diseases today are one of the leading causes of mortality in almost all societies. They have the greatest share in deaths caused by non-infectious diseases in the world. As per the data of World Health Organization in 2018, 17.9 million deaths caused by cardiovascular diseases constitute 44% of non-infectious diseases and 31% of all global deaths.[1] There is also an increase in deaths related to heart diseases in our country and according to data from Turkish Statistical Institute 38.4% of all death cases in 2018 originated in the circulatory system, and many of those deaths (39.7%) resulted from ischemic heart diseases.[2] Coronary artery bypass grafting (CABG) surgery is one of standard open-heart surgery approaches preferred frequently in treatment of coronary heart diseases.[3]

The Coping of the Patients Post-Coronary Artery Bypass Graft Surgery

CABG surgeries which cause several changes in patients in terms of mood, as well as physical and social aspects are difficult operations for which adaptability to lifestyle changes is required.[4] Recovery after CABG surgery is a stressful process and requires necessary coping strategies for physical and psychosocial adaptation.[5, 6] If coping which is a form of people's reaction to stressful cases and their way of behavior is effective and active, it eases the problem and reduces the level of emotional stress.[7] Utilizing certain coping strategies so as to minimize or entirely remove the negative effects of stressful cases, or factors of those cases, are a universal approach. "Coping" can be defined as a person's resistance to events or factors that produce stress for him, and the sum of his cognitive, emotional and behavioral reactions to those events.[8] The studies that were conducted so far reported that patients with cardiovascular diseases who underwent open-heart surgeries experience different stress and lifestyle changes during the post-operative recovery process. It was also detected that patients suffer from stress, incisional breast pain, extremity wounds, and problems in relation to edema, psychological and neurological issues, ineffective coping strategies, irregularities in sleeping and appetite. Because of these problems, patients were observed to undercut their exercises and activities or postpone the return to their preoperative lifestyle.[9–11] The level of self-efficacy is highly important in this period for the person in coping. If the individual believes that he cannot do anything to cope with these problems he uses emotional and ineffective coping strategies such as avoidance or focusing on motive in order to reduce his stress and anxiety.[10] In self-efficacy which is also defined as optimistic self-belief, it is important that person should feel self-sufficient in a matter of overcoming the detected problems to take action and it reflects consciousness of "capable". It was indicated in literature that the argument of self-efficacy can be evaluated as a means for motivation and a reflection of his capacity for coping with stress.[12–16] Individual's perception of self-efficacy gives support to him in coping with the disease by assisting the strong self-care concept and self-confidence, and enabling him to do his own self-care. There are some evidences regarding that this sense of control directly decreases the rate of psychological or physical diseases and it has a cognitive function that affects stress reactions.[13, 17, 18]

Knowing a patients' coping strategies and their levels of self-efficacy after surgery, which is an unforgettable experience for CABG surgery patients, might increase the quality of provided care system and efficiency of discharge education. Moreover, it was reported that perception of self-efficacy is a concept peculiar to case and behavior, and a person who believes that he can be effective in any case might see himself ineffective in another case.[15] Thus, considering the fact that using the scales that evaluates a person's expectations of efficacy peculiar to case will cause more reliable success in specific matters (for example, ex-

pectations of a diabetic patient are evaluated by diabetic management self-efficacy scale more efficiently than by general self-efficacy scale), in this study Barnason Efficacy Expectation Scale (BEES) Cardiac Surgery Version was used for CABG surgery patients.

Purpose

In this research it was aimed to determine the dynamics of post-CABG surgery patients' coping strategies and detect the effects of self-efficacy levels in these dynamics. Answers were investigated for the questions below in accordance with the general purpose:

1. At which level of post-CABG surgery patients' coping strategies are detected?
2. At which level of post-CABG surgery patients' self-efficacy are determined?
3. What is the effect of self-efficacy in post-CABG surgery patients' coping strategies?

Methods

Design: This study used an analytical cross-sectional design.

Setting and Participants: The study was conducted at the Cardiovascular Service of an Education and Research Hospital in Bursa, between the dates of 15th of December 2015 and 30th of January 2016. There are 5 operating rooms, cardiovascular surgery intensive care unit with 15 beds, and cardiovascular surgery post-operative clinic with 20 beds and two cardiovascular surgery pre-operative clinics with 30 beds for each. There have been performed over 1000 operations per year.

Population and Sample of Research: The population of the study was formed by the patients who underwent CABG surgery in the Cardiovascular Service of an Education and Research Hospital in Bursa. Sample was determined as 384 CABG surgery patients who stayed in stated hospital in Cardiovascular Service between the dates of 1st of October 2015 and 30th of January 2016. The size of the smallest sample of the study was calculated as 384 with 50% for the expected prevalence rate, with 95% confidence level and standard deviation of 0.05 (n=384). Patients aged over 18 who are on at least 4th day of post-CABG surgery process; who are consciously use their hearing and speaking functions and who accepted to participate voluntarily in the study were chosen for the research. Patients who underwent open-heart surgery apart from CABG surgery, those who had CABG surgery in another hospital and the ones who did not accept to participate voluntarily in the study were excluded from the research.

Data Collection Tools

Patient Information Form

It is a questionnaire form consisting of questions including patients' age, educational status, occupation and such sociodemographic features, surgery type, diagnosis of disease, surgery date, treatment applied after surgery and such introductory features.

Coping Strategy Indicator (CSI)

The CSI was a self-assessment inventory developed by Amirkhan in 1990 and adapted into Turkish by Aysan[19] The indicator is 3 point Likert scale and consists of 3 subscales as Problem Solving, Seeking Social Support and Avoidance. There are 11 articles for each subscale and total score of those 3 subscales varies between 11 to 33 points. Highness of total scores of subscales refers to increase in identified quality. Indicator and subscales' reliability coefficient were calculated between 0.83 to 0.92.[19] Cronbach's alpha reliability coefficient of the indicator was detected as 0.83.

Barnason Efficacy Expectation Scale (BEES) Cardiac Surgery Version

BEES Cardiac Surgery Version was developed by Barnason and his colleagues in 2002 with the aim of determining self-efficacy of CABG surgery patients in adapting to risk factors and lifestyle (physical function, psychological function, changes in risk factors for coronary artery disease and self-care management) in regard to post-CABG surgery recovery. The validity and reliability of its Turkish version was made by Avcı, Işık and Karahan[20] in 2013; it consists of 15 articles and 5 subscales as Physical Function, Psychosocial Function, Diet Modification, Exercise-Activity Modification and Self-Care Management. Each article is given points through 1-4 point Likert scale (1= strongly disagree, 4= strongly agree) which is based on patient's perception of trust on his capability of stated behavior. The total score for the whole scale varies between 15 to 60 points. High score indicates that efficacy expectation is high for determining post-CABG surgery recovery and rehabilitation behaviors. Cronbach's alpha reliability coefficient of the scale is 0.83.[20] In this study, Cronbach's alpha reliability coefficient of the scale was calculated as 0.89.

Data Collecting Method

The data of this study were collected by researchers in daytime including weekends through face-to-face meeting technique with patients who met the criteria of participating in the study. Each meeting lasted approximately 30-40 minutes.

Analysis of Data

The data acquired from the research was evaluated by using SPSS 21.0 (Statistical Package for Social Science) program. Socio-demographic characteristics and descriptive

statistics (number, percentage, average, minimum and maximum value) in point distribution of scales were calculated. Kolmogorov-Smirnov test was primarily performed in order to evaluate the conformity of quantitative data to normal distribution. In consequence of this evaluation it was determined that there was observed no statistical significant difference (p=.095), and so these data have been conformed to normal distribution (p>.05). Pearson correlation analyses were used to identify the relationship between BEES Cardiac Surgery Version and CSI scores. Student's t-test, One-Way ANOVA test, Post Hoc Tukey HSD test were performed for univariate analyses. In order to estimate variations in CSI score variance, Multiple Regression Analysis (stepwise method) was performed on independent variances that are effective in patients' CSI scores. Statistical significance level was determined as 0.05.

Ethics of the Research

Before beginning the study, approval from Medical Faculty Local Ethics Committee which is the institution of one of the authors (Date: April 09, 2015 and no: 20478486/418); permissions from Bursa Public Hospital Union and Education and Research Hospital were taken. Permission for the scales used in the research was taken from the writers through e-mail. Before data collecting process, written permission was taken from the participants through informed consent forms.

Results

Sociodemographic and CABG-related features of participant patients were shown in Table 1. The average age of patients were detected as 60.88±10.23 (Min: 23.00, Max: 89.00), 68.2% of them were male, 51.6% were literate or pri-

Table 1. Patients' sociodemographic and coronary artery bypass graft surgery-related characteristics (n=384)

Sociodemographic and coronary artery bypass Grafting (CABG) surgery-related characteristics	n (%)	Sociodemographic and coronary artery bypass Grafting (CABG) surgery-related characteristics	n (%)
Age group (60.88±10.23* Min: 23.00, Max: 89.00, Median: 62.00)		Any permanent medication?**	
Aged 61 and below	187 (48.7)	Yes	274 (71.4)
Above aged 61	197 (51.3)	No	110 (28.6)
Sex		Significant disease history?	
Female	122 (31.8)	Yes	84 (21.9)
Male	262 (68.2)	No	300 (78.1)
Educational status		Any surgical history?	
Not literate	40 (10.4)	Yes	201 (52.3)
Literate or primary-school graduate	198 (51.6)	No	183 (47.7)
Middle-school graduate	84 (21.9)	Post-op duration (day) (8.63±8.29* Min: 4.00 Max: 118.00 Median: 7.00)	
High-school graduate	49 (12.8)	7 days and below	233 (60.7)
College/university graduate	13 (3.4)	Above 7 days	151 (39.3)
Marital status		Feelings about CABG surgery	
Married	315 (82.0)	Good	351 (91.4)
Single	9 (2.3)	Moderate	33 (8.6)
Widow/divorced/separated	60 (15.6)	Bad	0 (0.0)
Perception of Income		Anxiety status before CABG surgery	
Income less than expensed	235 (61.2)	No	120 (31.3)
Income equal to expense	126 (32.8)	Very little	114 (29.7)
Income more than expense	23 (6.8)	Some	69 (18.0)
Longest-Term settlement		Much	49 (12.8)
State	293 (76.3)	Too much	32 (8.3)
Province	73 (19.0)	Satisfaction status of patients regarding treatment, care service after CABG surgery***	
Village/Town	18 (4.7)	Very good	229 (59.6)
Cigarette use status		Good	134 (34.9)
Still smoking	9 (2.3)	Moderate	19 (4.9)
Smoked but quitted	142 (37.0)	Bad	2 (0.5)
Never smoked	174 (45.3)		
Quitted for surgery	59 (15.4)		

*Mean±standard deviation; ** Those who have permanent medications are the patients who have chronic disease diagnosis, *** All patients have said that they have got information from nurses (n=384).

mary school graduate, 82% were married, the perception of income of 61.2% were less than income and expense, the longest-term settlement that 76.3% of participants live in was determined as city center. 45.3% of patients have never smoked, 71.4% had permanently-used medications, 78.1% have had never serious illness before, 52.3% have had any surgical operation before. Post-op period of 60.7% of patients was 7 days and below. It was stated that 91.4% had good feelings about the surgery, 29.7% were anxious before surgery, 59.6% thought that treatment and care service were satisfying and all the patients (100%) got information about the surgery from nurse when they came to service (Table 1).

It was detected that the average of patients' CSI scores is 70.69±8.32, and Problem Solving subscale has the highest score average (26.21±4.54) but Avoidance subscale the lowest (18.65±3.06). The average of patients' total scores of BEES Cardiac Surgery Version was calculated as 51.94±6.15, the highest score average of Self-Care Management subscale as 14.57±1.76 and the score average of Diet Modification subscale as 7.31±1.13. The lowest subscale was Psychosocial Function with 9.67±1.72 (Table 2).

CSI scores of patients in research group were compared with their descriptive features in Table 3. It was determined that in research group CSI score averages of those who are aged 61 and below, at high school level and above, married, the ones with medical history stating previous serious disease and patients who have high efficacy level (above median score) are higher than others' at statistically significant level ($p<.05$, Table 3). CSI scores of patients did not vary significantly by sex, perception of income, the longest-term settlement or medical history stating the fact that the patient ever had a surgical operation or not ($p>.05$).

Weak or mid-level positive relationships between CSI

Table 3. Comparison of patients' coping strategy ındicator (CSI) scores as per their some characteristics (n=384)

Characteristics	n	X±SD*	t**/p
Age group			
Aged 61 and below	187	72.10±7.73	t =3.271
Above aged 61	197	69.35±8.65	p=0.001
Sex			
Female	122	70.50±9.53	t=-0.274
Male	262	70.77±7.71	p=0.767
Educational status			
Not literate (a)	40	67.25±10.27	F*** =9.827
Literate/Primary school (b)	282	70.39±8.17	p=0.000
High-School/College/ University (c)	62	74.29±6.19	a< b<c ****
Marital status			
Married	315	71.16±7.99	t=2.390
Single/Widow/Divorced/ Separated	69	68.53±9.44	p=0.017
Perception of income			
Little	235	70.97±8.43	t=0.845
Even/Much	149	70.24±8.15	p=0.399
Longest-Term settlement			
State	293	70.79±8.19	t=0.447
Province/Village/Town	91	70.35±8.77	p=0.655
Significant disease history*****			
Yes	84	72.50±9.57	t=2.263
No	300	70.18±7.88	p=0.024
Any surgical history?			
Yes	201	70.88±8.59	t=0.475
No	183	70.48±8.04	p=0.635
BEES cardiac surgery version scores			
Low Efficacy: Median score and below	201	67.53±8.29	t=-8.504
High Efficacy: Above median score	183	74.16±6.86	p=0.000

*Mean±standard deviation; **Student's t test; ***One-Way ANOVA test; **** Post Hoc Turkey HSD test; ***** Significant disease history status is based on patients' self-notification and all patients have stated that they had a heart disease.

Table 2. Descriptive statistics of the Coping Strategy Indicator (CSI) and Barnason Efficacy Expectation Scale (BEES) Cardiac Surgery Version (n=384)

Scales and subscales	Item mean*	X±SD**	Median	Min.	Max.
Problem solving	2.38	26.21±4.54	26.00	11.00	33.00
Seeking social support	2.34	25.82±4.84	26.00	12.00	33.00
Avoidance	1.70	18.65±3.06	18.50	11.00	30.00
Total CSI	2.14	70.69±8.32	71.00	43.00	91.00
Physical function	3.27	9.82±1.67	10.00	3.00	12.00
Self-Care management	3.64	14.57±1.76	15.00	7.00	16.00
Diet modification	3.64	7.31±1.13	8.00	2.00	8.00
Psychosocial function	3.22	9.67±1.72	10.00	4.00	12.00
Exercise-Activity modification	3.52	10.55±1.49	11.00	6.00	12.00
Total BEES cardiac surgery version	3.46	51.94±6.15	53.00	28.00	60.00

*The Coping Strategy Indicator (CSI) is calculated on 3 points; Barnason Efficacy Expectation Scale (BEES) Cardiac Surgery Version is calculated on 4 points. ** Mean±Standard deviation.

subscales of patients in research group and BEES Cardiac Surgery Version subscales, and weak-level negative relationship only with CSI's Avoidance subscale were detected (p<.005, Table 4).

In multivariate analyses performed, it has been determined that patients' CSI scores rise as long as BEES Cardiac Surgery Version scores of patients with CABG surgery history increase (β=.480), and so long as their ages decrease (β=-.152), or if they have a disease history (β=-.095) (p<.05). These three variances accounted for approximately 30% of variation in patients' CSI scores (R^2=.299, Table 5).

Discussion

CSI score averages of post-CABG surgery patients in the research, 70.69±8.32, were found quite above median level when considering 99 points as the utmost score that can be attained from the scale. Problem Solving was determined as the subscale with highest score and Avoidance subscale with the lowest. It was detected that coping strategies of patients are generally high and they mostly use effective coping strategy (Problem Solving). While in the study which Karabulutlu and her colleagues[7] did on cancer patients, Seeking Social Support (26.95±3.96) as one of CSI's subscales was the most commonly used one, Problem Solving scale was used more in this study. In both Karabulutlu and her colleagues' and this study the levels of Avoidance subscale (score averages respectively 19.34±3.53, 18.65±3.06) were pretty close to each other and ranked at the last. In a study done in Taiwan with participation of 100 post-CABG surgery patients, Problem-Focused Thinking was found the most used coping strategy by the patients.[6] Sadr Bafghi et al.[21] reported that 53.6% of with acute myocardial infarction patients used emotion-focused coping strategy and who used emotion-focused coping strategy had negative perceived stress. Also they stated in study that people with higher levels of stress are more likely to use inefficient coping strategies. Diversity of findings acquired from studies done with different patient groups are expected. These research findings, when considering that they get family support and feel satisfied with hospital services, can be interpreted in the manner that they focus on problem solving strategy rather than seeking for help or avoidance.

It was detected that patients' BEES Cardiac Surgery Version total score average was 51.94±6.15 which is at quite high level of self-efficacy when considering that 60 points are the highest score that one can acquire. On the other hand, in Turkish-adapted version of study patients' score average from this scale was 47.26±7.58.[20] This study finding is higher than the scale's Turkish-adapted version of study. In a cross-sectional study reported low cardiac self-efficacy score of 193 patients undergoing coronary artery angioplasty.[22] In this research, the highest scores belonged to

Table 4. The correlations between the Coping Strategy Indicator (CSI) scores and Barnason Efficacy Expectation Scale (BEES) Cardiac Surgery Version scores (n=384)

	Barnason Efficacy Expectation Scale (BEES) Cardiac Surgery Version					
	Physical Function	**Self-Care Management**	**Diet Modification**	**Psychosocial Function**	**Exercise-Activity Modification**	**Total**
Coping strategy Indicator (CSI)						
Problem solving	0.442*	0.592*	0.289*	0.510*	0.632*	0.642*
Seeking social support	0.327*	0.397*	0.168**	0.455*	0.428*	0.466*
Avoidance	-0.184*	-0.283*	-0.146**	-0.229*	-0.238*	-0.280*
Total	0.364*	0.451*	0.207*	0.460*	0.507*	0.519*

Pearson correlation test r values; *p<0.001; **p<0.005.

Table 5. Multiple Linear Regression Model of Patients' Coping Strategy Scale (BSI) Scores* (n=384)

CSI scores, R^2=0.299	**Standardize Beta β**	**Standard error**	**t**	**p**
Constant			10.718	0.000
Barnason efficacy expectation scale (BEES) cardiac Surgery version score (Numeric)	0.480	0.060	10.860	0.000
Age (Numeric)	-0.152	0.036	-3.440	0.001
Significant disease history? (Categorical: 0. Yes, 1. No)	-0.095	0.866	-2.198	0.029
				Durbin Watson= 1.523

*Stepwise method was applied. In the last model, there are no "educational status, marital status" variables removed from the model in previous steps.

Self-Care Management and Diet Modification subscales. The lowest subscale was detected as Psychosocial Function. Incision of breast and sternum in CABG surgery requires careful care for this incised part concerning surgical site infection.[4] Cebeci and Celik[23] stated that patients who underwent CABG surgery need their relatives' assistance, a good consulting service and supportive services after discharge so as to be efficient on self-care in their lives. It was also determined that patients who are provided with post-discharge home care, training and consultancy services are better at self-care. Although changing pre-operative dietary habit after CABG surgery seemed difficult, patients in this research group accommodated themselves. In fact, in Turkish version of the scale Diet Modification score average was found quite low.[20] In a study done with patients who underwent CABG surgery, it was determined that patients had mostly nutrition problem (95.6%) in the first week of their home care process.[24] It might be considered that the difference between the findings of these two studies might result from the fact that BEES Cardiac Surgery Version total scores of patients in this study are higher than of the other study.

In univariate analysis done, CSI score averages of patients aged 61 and below, at high-school and above educational level, married, having significant disease history and at high efficacy level (above median level) were found higher at statistically significant level ($p<.05$). There were detected a medium-level positive relationship between CSI's and BEES Cardiac Surgery Version scores ($p<.005$). Multivariate analyses determined that as long as BEES Cardiac Surgery Version scores of patients who had CABG surgery increase, as their ages decrease, and if they have disease significant history, their CSI scores increase. These three variances accounted for approximately 30% of change in patients' CSI scores. In the research done in Taiwan with 100 post-CABG surgery patients, similar coping behaviors were reported by both men and women but only in women there were found more self-accusation.[6] In this study, the fact that married patients' coping score averages were found high can be interpreted as a finding referring to buffer role of social support in coping with stress and problems.

In a study performed by Gozum[15] on an assumption stating that conceptually there might be a directly proportional relationship between the highness of a person's self-efficacy perception and of his perception of coping with stress, and there was found a positive but not strong relationship ($r=.26$, $p<.005$). In another related research, beliefs such as coping and self-efficacy were described as means in recovery process.[25] The study done on post-CABG surgery patients stated that the belief of patients who play more roles in daily life and believe that he should overcome the stress in order to fulfill his role functions properly helped them form health promoting behaviors.[6] Coping was analyzed as a cognition and behaviors that person reacts against stressful moments rather than a permanent personality structure.[19] Self-efficacy theory in literature was determined that it may be beneficial in explaining emotional and behavioral reactions based on heart disease, and it can produce practical methods to detect and change psychological barriers of recovery.[26] Borzou et al.[27] clinical trial study reported that the cardiac rehabilitation program were significant statistical icrease in the total score of self-efficacy after the intervention among patients with post-CABG patients ($p<.001$). In a cross-sectional study with 220 CABG patients, Mohsenipoua et al.[28] emphasized that behavioral feelings affect health through self-efficacy. Accordingly, if CABG patients have a positive feeling about their self-care behaviors, their self-efficacy will increase, which will lead to further positive impacts. Carroll's[29] study reported that self-efficacy expectation mediates for self-care and recovery behaviors in healing process of post-CABG surgery patients over the age of 65. In this study patients' coping strategies were found compatible with literature owing to moderately positive relationship with their self-efficacy perceptions. The descriptive-correlational another study on 400 patients with previous coronary angioplasty in Iran reported that self-efficacy was a suitable variable for preventive behaviors in cardiovascular disease and there is a correlation between self-care behaviors of patients and self-efficacy levels.[30]

Conclusion

In conclusion, three questions of the study were answered. It was detected that the coping strategies of post-CABG surgery patients (having regard to 70.69 points they had out of 99 which is the highest score in the scale) had been quite above mediate level, that they had used effective strategies. The self-efficacy levels of post-CABG surgery patients (considering 51.94 points they have out of 60 which is the highest score in the scale) were found quite high. It was stated that the self-efficacy levels of post-CABG surgery patients are the strongest determiner in their coping strategies followed by age and significant disease history. Well-provided health care in post-CABG surgery process will affect patient's preparation for coping process. It shall be remembered that health care service, especially for old patients, as from pre-operative process should be interdisciplinary-approach-based, develop patient's skill on coping with problems, and involve patient, his/her family and other caregivers. Interventions for increasing the level of

self-efficacy which is seen as an optimistic outlook of a person's capacity for coping with stress might accelerate the recovery of cardiovascular function in post-operative process by easing coping for post-CABG surgery patients. Thus these self-efficacy increasing attempts can reduce the level of patients' stress and improve life quality.

Limitations of the Study

The data were collected from the CABG-operated patients hospitalized in the Cardiovascular Service of an Education and Research Hospital in Bursa and their generalizability is limited with this stated hospital. In some data (such as significant disease history), answers acquired from patients' self-efficacy-based expressions created another limitation.

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References

1. World Health Organization. Noncommunicable diseases country profiles 2018. Geneva: World Health Organization; 2018. Licence: CC BY-NC-SA 3.0 IGO.p:9-10 Available at: https://www.who.int/nmh/publications/ncd-profiles-2018/en/. Accessed April 02, 2019.
2. Turkey Statistical Institute. Death cause statistics, 2018. Number: 27620. Available at: http://tuik.gov.tr/PreTabloArama.do?metod=search&araType=hb_x. Accessed April 26, 2019.
3. Dursun M, Şanlı Ş. Evaluation of coronary bypass grafts. Turkish Radiology Seminars 2013;1: 83-92.
4. Erdil F, Özhan Elbaş N. Surgical Nursing. Ankara:Tasarım Offset 2001.
5. Redeker NS, Allen MN, Jensen L, Mishel MH. The relationship between uncertainty and coping after coronary bypass surgery. West J Nurs Res 1992;14:48–8.
6. Tung H, Hunter A, Wei J. Coping, anxiety and quality of life after coronary artery bypass graft surgery. J Adv Nurs 2008;61:651–63.
7. Karabulutlu EY, Bilici M, Çayır K, Tekin SB, Kantarcı R. Coping, anxiety and depression in Turkish patients with cancer. Eur J Gen Med 2010;7:296–302.
8. Folkman S, Lazarus RS, Gruen RJ, DeLongis A. Appraisal, coping, health status, and psychological symptoms. J Pers Soc Psychol 1986;50: 571–9.
9. Theobald K, Worrau CL, Mcmurray A. Psychosocial issues facilitating recovery post-CABG surgery. Aust Crit Care 2005;18:76–85.
10. Chan TH, Ward S. Coping process theory: a tool to reduce stress and cardiovascular disease. AAOHN J 1993;1:499–503.
11. Öztekin SD, Aksoy G, Akyolcu N, Oztekin I, Kanan N. Concerns and desires of spouses experienced by coronary artery bypass surgery (CABG). Nursing Bulletin 1999;11:187–98.
12. Zulkosky K. Self-efficacy: A concept analysis. Nursing Forum 2009;44:93–102.
13. Glanz K, Rimer BK, Lewis FM. Health Behavior and Health Education Theory, Research and Practice. San Fransisco: Wiley & Sons; 2002.
14. Williams DM, Rhodes RE. The confounded self-efficacy construct: conceptual analysis and recommendations for future research. Health Psychol Rev 2014;10:113–28.
15. Gözüm S. The construct validity of the Turkish form of the Self Efficacy Scale: The relationship between self-efficacy competence and coping with stress. Atatürk Univ. Journal of School of Nursing 1999;2:35–43.
16. Sherer M, Adams CH. Construct validation of the self-efficacy scale. Psychol Rep 1983;53:899–902.
17. Lev EL, Owen SV. Counseling women with breast cancer using principles developed by Albert Bandura. Perspect Psychiatr Care 2000;36:131–8.
18. Bandura A, Cioffi D, Taylor CB, Brouillard ME. Perceived self-efficacy in coping with cognitive stressors and opioid activation. Journal of Pers Soc Psychol 1988;55:479–88.
19. Aysan F. Turkish Version of Coping Strategy Indicator. Ege Education Journal 2003;1:123–32.
20. Avcı Işık S, Karahan A. The reliability and validity of Barnason efficacy expectation scale cardiac surgery version for Turkey. Turkish Journal of Thoracic and Cardiovascular Surgery 2013;21:691–8.
21. Sadr Bafghi SM, Ahmadi N, Yassini Ardekani SM, Jafari L, Bitaraf Ardekani B, Heydari R, et al. A survey of coping strategies with stress in patients with acute myocardial ınfarction and ındividuals without a history of fixed myocardial infarction. Cardiol Res 2018;9:35–9.
22. Salari A, Rouhi Balasi L, Moaddab F, Zaersabet F, Nouri Saeed A, Habib NS. Patients' cardiac self-efficacy after coronary artery angioplasty. Jundishapur J Chronic Dis Care 2016;5:e60308.
23. Cebeci F, Celik SS. Discharge training and counselling increase self-care ability and reduce postdischarge problems in CABG patients. J Clin Nurs 2008;17:412–20.
24. Yılmaz M, Çiftçi ES. A model defining the needs of patient care at home after open heart surgery: Functional health patterns. Turkish Journal of Thoracic and Cardiovascular Surgery 2010;18:183–9.
25. Schröder KEE, Schwarzer R, Konertz W. Coping as a mediator in recovery from cardiac surgery Psychology and Health 1998;13:83–97.
26. Ewart CK. Self-Efficacy and Recovery from Heart Attack. In: Maddux JE. editör. Self-Efficacy, Adaptation, and Adjustment. The Plenum Series in Social/Clinical Psychology. Boston: Springer, MA, 1995.
27. Borzou SR, Amiri S, Salavati M, Soltanian AR, Safarpoor G. Ef-

fects of the first phase of cardiac rehabilitation training on self-efficacy among patients undergoing coronary artery bypass graft surgery. J TEH UNIV HEART CTR 2018;13:126–31.
27. Mohsenipoua H, Majlessi F, Shojaeizadeh D, Rahimiforooshani A, Ghafari R, Habibi V. Predictors of health-promoting behaviors in coronary artery bypass surgery patients: An application of Pender's Health Promotion Model. Iran Red Crescent Med J 2016;18:e38871.
28. Carroll DL. The importance of self-efficacy expectations in elderly patients recovering from coronary artery bypass surgery. Heart Lung 1995;24:50–9.
29. Alizadeh M, Feizollahzadeh H, Abdollahzadeh F, Hasankhani H, Dadashzadeh A, Rezaei T. The Relationship between self-efficacy and compliance with self-care behaviors in patients with acute coronary syndrome after coronary angioplasty in Shahid Madani Hospital, 2016: A Health Belief Model. Journal of Research in Medical and Dental Science 2018;6:415–20.