

Postoperative problems experienced by patients undergoing coronary artery bypass graft surgery and their self-care ability after discharge

Koroner arter baypas greft cerrahisi yapılan hastaların taburcu edildikten sonra yaşadıkları sorunlar ve öz bakım yetileri

Fatma Direk,¹ Sevilay Şenol Çelik²

¹Department of Cardiovascular Surgery Intensive Care Unit, Dr. Nicosia. Burhan Nalbantoğlu State Hospital, Lefkoşa, Kuzey Kıbrıs TC;

²Department of Nursing, Hacettepe University, Faculty of Health Sciences, Ankara, Turkey

Background: In this research, we aimed to assess the postoperative problems experienced by patients who underwent coronary artery bypass graft (CABG) surgery and their self-care ability after discharge.

Methods: A total of 53 patients who underwent CABG surgery in the Cardiology Department of a state hospital affiliated with the Turkish Republic of Northern Cyprus Ministry of Health between September 2010 and February 2011 were included in this descriptive and cross-sectional study. The data was collected using the "Personal Information" form, the "Problems Experienced by Patients after Discharge" form, and the Turkish version of the Exercise of Self-Care Agency (ESCA) Scale. Statistical analysis was performed using the SPSS version 15.0 software program. The Kruskal-Wallis and Mann-Whitney U tests were used to compare the frequency and distribution statistics.

Results: Male participants made up 71.7% (n=38) of the study group while 43.4% (n=23) of the subjects were primary school graduates, 83% (n=44) were married, 75.5% (n=40) were overweight, 45.3% (n=24) had undergone triple bypass surgery, and 84.9% (n=45) were connected to a heart-lung machine. After discharge, the patients reported fatigue, dyspnea, pain at the wound site, weakness, sleeplessness, loss of appetite, fear, pessimism, edema in the legs, wound dehiscence, palpitation, and constipation. When patients were asked how they handled these problems, 81.1% (n=43) stated that they simply waited until they were over, 71.7% (n=38) slept sitting up, 66% (n=35) took medication, and 15.1% (n=8) did breathing exercises. The mean self-care ability score of the patients was 108.5±17, indicating that the patients had a moderate level of self-care ability. It was also found that these problems decreased over time. No statistically significant difference was found between the self-care ability scores and the problems experienced by the patients (p>0.05).

Conclusion: It was found that all patients experienced at least one problem after discharge. Discharge education programs with an interdisciplinary perspective, and consultancy services in conjunction with home care and follow-up should be implemented with an improvement in quality so as to reduce and eliminate the problems faced by the patients.

Key words: Coronary artery bypass grafting; post-discharge problems; self-care.

Amaç: Bu araştırmada, koroner arter baypas greft (KABG) ameliyatı olan hastaların taburcu edildikten sonra yaşadıkları sorunlar ve öz bakım yetileri değerlendirildi.

Çalışma planı: Bu tanımlayıcı ve kesitsel çalışmaya Kuzey Kıbrıs Türk Cumhuriyeti Sağlık Bakanlığı'na bağlı bir devlet hastanesinin Kalp Damar Cerrahisi kliniğinde Eylül 2010 - Şubat 2011 tarihleri arasında KABG ameliyatı olmuş toplam 53 hasta dahil edildi. Araştırmanın verileri "Kişisel Bilgi" formu, "Hastaların Taburcu Edildikten Sonra Yaşadıkları Sorunlar" ve "Öz Bakım Gücü" ölçeği (Exercise of Self-Care Agency (ESCA) Scale'nin Türkçe versiyonu) ile toplandı. İstatistiksel analiz, SPSS 15.0 versiyon yazılımı programı ile yapıldı. Sayı ve dağılım istatistikleri, Kruskal-Wallis ve Mann-Whitney U-testleri kullanılarak karşılaştırıldı.

Bulgular: Hastaların %71.7'sinin (n=38) erkek, %43.4'ünün (n=23) ilköğretim mezunu, %83'ünün (n=44) evli, %75.5'inin (n=40) şişman olduğu, %45.3'üne (n=24) üç damar baypas yapıldığı ve %84.9'unun (n=45) kalp akciğer makinesine bağlandığı belirlendi. Hastalar taburcu edildikten sonra sırtüstü pozisyonda yatamama, yorgunluk, dispne, yara yerinde ağrı, halsizlik, uykusuzluk, iştahsızlık, korku, karamsarlık, bacaklarda ödem, yara bölgesinde açılma, çarpıntı ve konstipasyon yaşadıklarını ifade etti. Sorunlara yönelik yapılan girişimler incelendiğinde, hastaların %81.1'i (n=43) sorunun geçmesini beklediğini, %71.7'si (n=38) oturarak uyuduğunu, %66'sı (n=35) ilaç aldığını ve %15.1'i (n=8) solunum egzersizi yaptığını belirtti. Hastaların öz bakım gücü puan ortalaması 108.5±17 idi; bu da hastaların orta düzeyde öz bakım güçlerinin olduğunu göstermekteydi. Ayrıca bu sorunların zamanla azaldığı belirlendi. Hastaların öz bakım gücü puanları ile yaşadıkları sorunlar arasında istatistiksel olarak anlamlı fark bulunmadı (p>0.05).

Sonuç: Hastaların tümünün taburcu olduktan sonra en az bir sorun yaşadığı belirlendi. Hastaların yaşadığı sorunları azaltmaya veya ortadan kaldırmaya ve kaliteli bir iyileşmeye yönelik olarak disiplinler arası bir bakış açısıyla taburculuk eğitiminin, danışmanlık hizmetinin, evde izlemin ve bakımın geliştirilmesi ve uygulanması önerilmektedir.

Anahtar sözcükler: Koroner arter baypas greftleme; taburcu sonrası sorunlar; öz bakım.



Available online at
www.tgkdc.dergisi.org
doi: 10.5606/tgkdc.dergisi.2012.101
QR (Quick Response) Code

Received: August 17, 2011 Accepted: November 10, 2011

Correspondence: Sevilay Şenol Çelik, Hacettepe Üniversitesi, Sağlık Bilimleri Fakültesi Hemşirelik Bölümü, 06100 Sıhhiye, Ankara, Turkey.

Tel: +90 312 - 305 15 80 e-mail: sevilay@hacettepe.edu.tr

Although there have been many new developments in coronary artery bypass graft (CABG) surgeries performed today, patients also experience many physical, psychological, and social problems postoperatively. Studies on the problems experienced after CABG surgeries show that patients can experience a vast array of symptoms such as the following: pain in the chest or in the legs, wound infections, leg edema due to the incision, numbness in the arms, dyspnea, arrhythmia, constipation, nausea, vomiting, loss of appetite, weight loss, sleep disturbance, fatigue, weakness, dizziness, cognitive problems, poor psychosocial adaptation, and decreased sexual activity as well as psychological and thoracic problems.^[1-8] Patients may also have difficulty performing self-care because of the problems experienced after discharge. On the other hand, patients with self-care capability are able to satisfy their needs sufficiently and properly, assume responsibility for their health, and perform activities of daily living (ADLs) without help from others. The aim of nursing care for patients who have undergone CABG surgery is to help them until they are able to perform ADLs by themselves and to ensure that they are able to perform self-care and satisfy their needs in the shortest possible time while maintaining and improving their health. Home care and post-discharge educational and consultancy services provided to the patients after CABG surgery could play an important role in reducing the problems experienced after discharge.^[1,2,6,8-10]

No studies have been conducted in the Turkish Republic of Northern Cyprus (TRNC) on this subject. According to our clinical observations, patients who underwent CABG surgery experience various problems and cannot perform sufficient self-care at home after being discharged from the hospital. This study aims to evaluate the problems experienced by the patients in the first four weeks after discharge and assesses their level of self-care ability so that discharge education and consultancy services provided to the patients may be improved on the basis of actual findings.

PATIENTS AND METHODS

This descriptive cross-sectional study was conducted to determine which problems were experienced by patients who had undergone CABG surgery. Their self-care abilities in the first four weeks after discharge from the hospital were also evaluated. The research was conducted in the cardiovascular surgery clinic of a state hospital affiliated with the Ministry of Health in the TRNC. The study sample consisted of a total of 53 volunteer and literate patients without any communication difficulties. Their first CABG surgery was performed between September 15, 2010 and February 20, 2011.

Instrument and analysis

Data collection tools: Data was collected using the “Personal Information” form and “Problems Experienced by Patients after Discharge” form prepared by the researchers according to the existing literature and the Turkish version of the Exercise of Self-Care Agency Scale (ESCA). The “Personal Information” form consisted of 21 questions covering patient characteristics such as age, gender, level of education, marital status, profession, and economic status as well as other details such as the dates of hospital admission, surgery and discharge, the number of veins grafted, heart-lung machine use status, dietary habits, and smoking and drinking status. The “Problems Experienced by Patients after Discharge” form had 40 questions covering physical and psychosocial problems experienced after discharge along with the way the patients handled these problems and whether these problems were actually eliminated. The ESCA has 43 items and was developed by Kearney and Fleischer^[11] in 1979. When the scale was adapted for use in Turkey by Nahcivan^[12] in 1993, the number of items was reduced to 35. Cronbach’s alpha was found to be 0.92 in the validity and reliability test conducted by Nahcivan. The scale is organized as a 5-point Likert scale with a maximum score of 140. Scores below 82 indicate a low level of self-care ability, scores between 82 and 120 were considered moderate, and scores of 120 and demonstrate a high level of self-care ability.

Data collection processes

This study was carried out between September 15, 2010 and February 20, 2011, and the patients were contacted on the day of discharge. The researcher read the forms out loud and explained how they should be filled in. Patients who volunteered to participate in the research were asked for their written or oral consent. The researcher filled in the forms using the face-to-face interview method. Details such as the weight and height of the patient, hospital admission date, CABG surgery date, hospital discharge date, and the number of veins grafted were obtained from patient files. The researcher also used these files to determine whether or not the patient had been connected to a heart-lung machine and to learn from where the veins had been taken. The researcher then gave the “Problems Experienced after Discharge from Hospital” form to the patients and explained how it should be filled in. The researcher double-checked with the patients to avoid any confusion on their part and told them to write down the problems they faced in the first four weeks after they were discharged from hospital and the ways they handled them. Considering the likelihood that the patients could forget about their experiences a month after being discharged, they were

asked to partially fill in the “Problems Experienced after Discharge from Hospital” form at the end of each week, along with the ESCA which was to be completed at the end of the fourth week. The patients were contacted by the researcher at the end of each week to remind them to fill in the form. On the 26th day after discharge, the researcher called the patients to check to see if they were going to visit the polyclinic and asked them about the potential date. The forms were double-checked and collected by the researcher when the patients visited the polyclinic, and the researcher met 17 patients at a place of their choosing to retrieve their forms. Patients needed about 20 minutes on average to complete these forms.

Ethical considerations

Written consent was obtained from the Ministry of Health of the TRNC prior to conducting the research. Thirty patients gave oral consent, and 23 gave written consent.

Data analysis

The data was analyzed using the Statistical Package for the Social Sciences (SPSS Inc., Chicago, Illinois, USA) version 15.0 software package. Frequency and distribution analyses were used to describe the data, and the Kruskal-Wallis and Mann Whitney U-tests were utilized to test the differences between the groups by level of education, gender, and marital status.

RESULTS

The research results showed that 52.8% of the patients were between 61-78 years of age, 71.7% were male, 83% were married, 43.4% were primary school graduates, 81.1% had resided in the TRNC since birth, and 35.8% were living with their spouses. Being overweight was an issue for 75.5% of the patients, 20.8% had hypertension and diabetes mellitus, 35.7% were taking antihypertensive and antidiabetic medication, 75.5% were obese, and 69.8% did not engage in any physical exercise. The percentages of nonsmokers was 45.6%, and 86.8% did not drink alcohol. Additionally, 64.1% of the patients had been diagnosed with coronary artery disease for less than three months, and all patients had previously undergone medical therapy or percutaneous interventions (coronary angioplasty or intracoronary stent). Furthermore, 45.3% of the patients had undergone triple bypass surgery, 77.3% had had their internal mammary artery and saphenous vein grafted, and 84.9% had been connected to a heart-lung machine.

The problems experienced by the patients after being discharged from the hospital are shown in Table 1. All patients had experienced at least one problem and had dealt with sleep difficulties. Patients experienced

sleeplessness (n=19), difficulties falling asleep (n=15), sleep disruption (n=13), and excessive daytime sleeping (n=6). A majority of the patients (77.4%) could not participate in social activities and had felt tired and weak while 71.7% could not sleep on their back, 43.4% had experienced dyspnea and pain around the chest incision, and 62.2% had encountered wound-related problems such as pain around the wound (n=15), redness (n=5), dehiscence (n=5), swelling (n=4), and drainage (n=4). Some patients had also been constipated and had experienced an infection of the urinary system. It was found these issues decreased after a few weeks.

When the patients were asked about how they managed these problems, 81.1% stated that they simply waited until the problem was over, 71.7% refrained from accepting visitors and taking part in social activities as advised, 71.7% slept sitting up instead of lying down, 69.8% went for a check-up, and 66% took medication. It was also found that 56.6% of the patients rested, 43.4% called their doctors, 33.9% did not stay alone in their home, and 15.1% did breathing exercises to find relief from these issues.

Although not shown in the table, study results determined that fatigue, weakness, and an inability to sleep lying down were the most common problems

Table 1. Problems experienced by the patients after discharge from hospital (n=53)

Problems	n*	%
Sleep-related problems	53	100.0
An inability take part in activities	41	77.4
Fatigue-weakness	41	43.4
An inability to recline	38	71.7
A refusal to see visitors	37	69.8
Wound-related problems	33	62.2
Respiratory distress	23	43.4
Pain around chest incision	23	43.4
Loss of appetite	18	34.0
Fear	18	34.0
Pessimism	16	30.2
Edema in the legs	14	26.4
Back pain	11	20.8
Introversion	10	18.9
Palpitations	9	17.0
Attention deficit problems	6	11.3
An inability to quit smoking	6	11.3
Constipation	5	9.4
Infection of the urinary system	5	9.4
Other**	12	22.2

* If a patient had one problem over four weeks, the patient was considered to have “had a problem” and was accordingly included in the column percentage calculations; ** Comprises nausea (3), weight gain (n=3), being easily hurt (n=3), GIS bleeding (n=2) and weight loss (n=1).

Table 2. Self-care ability scores of the patients (n=53)

	n	Mean±SD	%
Score		108.5±17	
82 and below (low)	6		11.3
Between 82-120 (moderate)	31		58.4
Between 120-130 (high)	16		30.1

SD: Standard deviation.

among the patients aged 61 and over who had diabetes and hypertension and who had been taking antihypertensive and antidiabetic medications. The likelihood that these problems would develop among these patient groups was higher, and it was found to be statistically significant ($p<0.05$). However, the analytical results showed that a statistically significant difference was not found among those having problems according to gender, marital status, level of education, smoking and drinking status, body mass index (BMI), heart-lung machine use status, length of stay in the hospital, and the type and number of veins grafted ($p>0.05$).

Table 2 presents the self-care ability scores of the patients. The mean self-care ability score was 108.5 ± 17 . This value suggests that the patients had a moderate level of self-care ability. The lowest score was 64 while the highest was 130. Most patients (58.4%) had a self-care ability score between 82 and 120.

As shown in Table 3, the male patients and those who were married along with those who had graduated from high school or university had a higher self-care ability score. These differences were found to be statistically significant ($p<0.05$). However, the results of the analysis showed that a statistically significant difference was not found between patients' self-care ability scores as they related to smoking and drinking alcohol status, the use of anti-diabetic and antihypertensive drugs

simultaneously, BMI, heart-lung machine use status, length of stay in the hospital, and the type and number of veins grafted ($p>0.05$).

Although not shown in the table, no statistically significant difference was observed between self-care ability scores and the problems the patients experienced ($p>0.05$).

DISCUSSION

After CABG surgery, patients experience many problems such as pain around the leg and chest incisions, weight loss, respiratory distress, sleep disturbances, fatigue, weakness, loss of appetite, constipation, difficulty taking a bath, limited body movements, unhappiness, and an inability to cope with stressors. They also experience role confusion in the family as well as problems concerning their lifestyle, level of engagement with social activities, relationships with their spouses and other family members and friends, and their sex life.^[1,4,5,8,9,13]

All patients in this study had sleep-related issues (Table 1) caused by back pain, pain in the chest and leg incisions, fear of death, dyspnea, wound-related problems, palpitations, and constipation. Çiftçi's study,^[13] found that 88.9% of the patients who underwent CABG surgery had sleep-related problems such as hypersomnia, and sleep-onset insomnia. Gallagher's study^[4] also found that sleeplessness was the most common problem among patients who had undergone CABG surgery.

More than half of the patients in our study were unable to participate in social activities, felt tired and weak (77.4%), could not recline (71.7%), and did not want to see visitors (60.4%) (Table 1). Other studies also suggest that patients who underwent CABG surgery experienced some of the same problems, for example

Table 3. Mean self-care ability scores according to personal characteristics (n=53)

Personal characteristics	Self-care ability score		
	n	Mean±SD	Statistical analysis
Level of education			
Primary school	23	100.9±19.7	Z=2.500 p=0.012
Secondary school	14	112.6±11.3	
High school and beyond	16	115.7±12.9	
Gender			
Male	38	112.9±13.8	U=2.924 p=0.003
Female	15	97.1±19.5	
Marital status			
Married	44	111.6±15.6	U=3.081 p=0.002
Single	9	93.2±16.2	

SD: Standard deviation.

the inability to recline, rejection of visitors, and the inability to participate in social activities.^[8,13] Patients who have undergone CABG surgery are strongly urged to avoid strenuous activities and to limit the number of visitors they have. This helps reduce the risk of infection, especially for patients whose infection is active. However, rather than limiting visitors, patients tend to avoid visitors altogether to avoid any infection. They also avoid simple physical exercises, like walking, for fear of wound dehiscence. Among the reasons why patients could not recline are sternotomy, pain due to chest tubes, fear of wound dehiscence, pain around the wound, back pain, and respiratory distress. In a study conducted by Cebeci and Çelik^[1] it was found that 48.1% of the patients experience lethargy, weakness, and fatigue one month following discharge. The percentage of patients experiencing fatigue and weakness was even higher in our study (43.4%).

Among the wound-related problems after CABG surgery are infection and dehiscence in the wound, sternal infection and sternal dehiscence, tenderness, local swelling, redness, pain, warmth around the wound, and hematoma.^[1,5,14-17] We found that over half of the patients (62.2%) in our study had suffered from a wound-related problem at least one of these symptoms (Table 1). Wound infections are not common in cardiac surgery with rates of infection varying between 1.9% and 15% from the area from where the saphenous vein was taken.^[18] Discharge training and counseling services regarding wound care, bathing, and nutrition have been effective in decreasing wound-related problems.

We found that some patients reported respiratory distress and pain in the chest incision and back (Table 1). Some of these problems could be traced to pain, wound-related issues, palpitations, immobilization, a longer than normal surgery time, the presence of a chest tube, fear, or constipation. Aydın^[8] and Lindsay et al.^[19] also reported that patients suffered respiratory difficulty postoperatively. One study found that 63.5% of the patients in a control group who were not given education and consultancy services at the time of discharge had constipation, whereas only 10.5% of the patients in the experimental group that received such services had constipation.^[1] In this regard, the findings of our study are supported by the results of previous studies.

In our study, the patients had loss of appetite (34.0%) (Table 1), so discharge training and counseling must include information on how to boost patients' appetites. Patients need to be informed about the positive effects of proper nutrition which can aid in their healing. This will allow them to experience a lesser degree of anorexia and appetite changes.

Possible reasons for the prevalence of swelling in the legs in the patients (26.4%) could be because of their limited movement and failure to correctly position the leg during rest (Table 1). They were also possibly unaware of the importance of physical activity in preventing edema and regulating circulation.

We found that 9.4% of the patients had constipation (Table 1). Constipation and abdominal distention can lead to serious problems in individuals with heart disease by increasing thoracic pressure through the Valsalva maneuver.

The results of this study showed that a majority of the patients experienced fear, pessimism, introversion, or attention deficit problems after their discharge (Table 1). These issues can be explained by the fact that the patients had experienced difficulties with their hospitalization such as an unfamiliar environment, separation from loved ones, dependency on others, and a lack of specific information about CABG surgery.^[8,9,20]

The mean self-care ability score was 108.5±17, indicating a moderate level of self-care ability among the patients (Table 2). Similar to the findings of our study, Cebeci and Çelik^[1] also found that the mean self-care score for patients who underwent a CABG surgery was moderate.

In addition, our study showed that the patients who were high school or university graduates had higher self-care ability scores compared with those who were primary school graduates ($p<0.05$) (Table 3). A study by Bakoğlu and Yetkin^[10] found that the mean self-care ability scores drastically increased as the education level of patients and their spouses also increased. Similarly, citing Durademir's study, Tuncay^[21] also stated that university graduates have higher self-care ability scores compared with primary school graduates. This finding shows that there is a close relationship between the level of education and health care. The increase in the self-care scores of the patients with a higher level of education can be explained by the fact that people with a higher level of education have better learning and research skills, so they can comprehend the necessities of self-care better and put their knowledge into practice more effectively. Therefore, discharge training and counseling services must be provided for patients undergoing CABG surgery since they have been found to have a positive effect on self-care and they reduce the problems and rehospitalizations that the patients can experience after returning home. However, this training should actually begin when patients are first hospitalized and is most effective when the information and written materials are presented with adult learning principles in mind and while using specific teaching methods such as brochure and video.

The mean self-care ability score for male patients was higher ($p<0.05$) (Table 3). Other studies also suggest that male patients have higher self-care ability scores.^[1,9,10] This may be attributed to the fact that males within Turkish society generally receive care from their spouses.

It was also found that married patients who live with their spouses and children had higher self-care ability scores ($p<0.05$) (Table 3). Other studies also confirm these findings.^[1,21] The high self-care ability scores among married patients can be explained by the fact that they receive physical, psychological, and social support from their spouses and children.

In conclusion, the findings of our research show that all patients who had CABG surgery experienced at least one problem after being discharged from the hospital and that these problems decreased over time. Furthermore, the majority of the patients did not know how they had coped with their problems. The participants had a moderate level of self-care ability. In light of these findings, we recommend that discharge education programs with an interdisciplinary perspective, consultancy services, home care, and follow-ups be implemented with an improvement in quality in order to reduce or eliminate the problems faced by these patients. Repeating this study with a larger sample could also yield better results.

Declaration of conflicting interests

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding

The authors received no financial support for the research and/or authorship of this article.

REFERENCES

1. 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.
2. Hanözü M. Açık kalp damar cerrahisi sonrası gelişen torasik komplikasyonlar. [Uzmanlık Tezi], İstanbul: Siyami Ersek Göğüs Kalp Damar Cerrahisi Eğitim ve Araştırma Hastanesi; 2006.
3. Careaga Reyna G, Aguirre Baca GG, Medina Concebida LE, Borrayo Sánchez G, Prado Villegas G, Argüero Sánchez R. Risk factors for mediastinitis and sternal dehiscence after cardiac surgery. *Rev Esp Cardiol* 2006;59:130-5. [Abstract]
4. Gallagher R, McKinley S, Dracup K. Post discharge problems in women recovering from coronary artery bypass graft surgery. *Aust Crit Care* 2004;17:160-5.
5. Theobald K, McMurray A. Coronary artery bypass graft surgery: discharge planning for successful recovery. *J Adv Nurs* 2004;47:483-91.
6. Sarıtaş A, Uzun A, Çağlı K, Sarıtaş Ü, Taşdemir O. Koroner arter bypass cerrahisi sonrası gastrointestinal sistem komplikasyonları. *Türk Gogus Kalp Dama* 2001;9:205-9.
7. Diegeler A, Hirsch R, Schneider F, Schilling LO, Falk V, Rauch T, Mohr FW. Neuromonitoring and neurocognitive outcome in off-pump versus conventional coronary bypass operation. *Ann Thorac Surg* 2000;69:1162-6.
8. Aydın ÇF. Koroner arter bypass greft ameliyatı geçiren hastaların taburculuk sonrası iki aylık dönemde yaşadıkları güçlükler. [Bilim Uzmanlığı Tezi], Ankara: Hacettepe Üniversitesi Sağlık Bilimleri Enstitüsü; 2000.
9. Özcan H. Açık kalp damar ameliyatı sonrası hemşireler tarafından verilen taburculuk eğitiminin hastalar tarafından kullanılma oranları. [Yüksek Lisans Tezi] Edirne: Trakya Üniversitesi; 2008.
10. Bakoğlu F, Yetkin A. Hipertansiyonlu hastalarda özbakım gücünün değerlendirilmesi. *Cumhuriyet Üniversitesi Hemşirelik Yüksekokul Dergisi* 2000;4:41-9.
11. Kearney BY, Fleischer BJ. Development of an instrument to measure exercise of self-care agency. *Res Nurs Health* 1979;2:25-34.
12. Nahcivan ÖN. Sağlıklı gençlerde öz bakım gücü ve aile ortamının etkisi. [Doktora Tezi], İstanbul: İstanbul Üniversitesi Sağlık Bilimleri Enstitüsü; 1993.
13. Çiftçi SE. Açık Kalp ameliyatı geçirmiş bireylerin fonksiyonel sağlık örgütlerine göre evde bakım gereksinimlerinin belirlenmesi. [Yüksek Lisans Tezi], Sivas: Cumhuriyet Üniversitesi; 2006.
14. Ghotaslou R, Yagoubi AR, Khalili AA, Mahmodian R. Mediastinitis after cardiac surgery in Madani Heart Center, Tabriz, Iran. *Jpn J Infect Dis* 2008;61:318-20.
15. Çeviri editörleri: Sarıgül A, Gökaslan G. Erişkin kalp cerrahisinde perioperatif yaklaşım el kitabı. 4. Baskı, Ankara: Atlas Kitapçılık; 2007.
16. Bingöl H, Bolcal C, Yılmaz AT, Demirkılıç U, Tatar H. Açık kalp cerrahisinde safen ven ve radyal arter greft insizyonlarında yara yeri problemleri. *Turkish J Thorac Cardiovasc Surg* 2003;11:216-8.
17. Softah A, Hendry P, Masters RG, Goldstein W, Brais M, Keon W. Wound infection in cardiac surgery. *Ann Saudi Med* 2002;22:105-7.
18. Bardak M, Boğa M, Özkısacık A, Gürcün U, Gülman Ş, Dişçigil B. Açık kalp damar cerrahisinde profilaktik nazal mupinosin uygulaması. *Türk Gogus Kalp Dama* 2005;13:350-3.
19. Lindsay GM, Smith LN, Hanlon P, Wheatley DJ. The influence of general health status and social support on symptomatic outcome following coronary artery bypass grafting. *Heart* 2001;85:80-6.
20. Cebeci F, Celik SS. Effects of discharge teaching and counselling on anxiety and depression level of CABG patients. *Türk Gogus Kalp Dama* 2011;19:170-6.
21. Tuncay P. Koroner kalp hastalığı olan bireylerin özbakım gücü. [Yüksek Lisans Tezi], Lefkoşa: Yakın Doğu Üniversitesi; 2010.