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Post-discharge Learning Needs of Patients Undergoing Open Heart Surgery

Açık Kalp Cerrahisi Geçirecek Hastaların Taburculuk Sonrası Öğrenme Gereksinimleri

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ABSTRACT Objective: Understanding the learning needs of patients who have undergone open heart surgery is important in establishing the training program. It is known that sociocultural differences affect patient learning needs. Even in different regions in the same country, the learning needs of these patients can change. The aim of this study was to investigate the learning needs of hospitalized patients who have undergone open heart surgery. **Material and Methods:** Descriptive design was adopted using a questionnaire survey that included the Patient Learning Needs Scale (PLNS) and sociodemographic and clinical datasheets. 148 patients participated in the study. **Results:** The end of the study, it was determined that the areas where the patients needed the most information were related to the areas where the surgical wound care, the effect of the operation on the activities of the operation, how and when to use the drugs and when to take a bath. Additionally, the difference between the groups in mean of total scores of scale and the feelings about the situation, treatment and complications, life quality subscales were significant. **Conclusion:** This study supports the necessity of carefully prioritizing patient education topics in line with patient learning needs. Patient learning needs to be individually based, and learning needs must be determined in order to meet the needs of patients.

Keywords: Open heart surgery; patient education; learning needs

ÖZET Amaç: Açık kalp cerrahisi geçiren hastaların öğrenme ihtiyaçlarını anlamak, eğitim programının oluşturulmasında önemlidir. Sosyokültürel farklılıkların hasta öğrenme ihtiyaçlarını etkilediği bilinmektedir. Aynı ülkede farklı bölgelerde bile hastaların öğrenme ihtiyaçları değişebilir. Bu araştırmanın amacı açık kalp cerrahisi geçiren hastanede yatan hastaların öğrenme ihtiyaçlarını araştırmaktır. **Gereç ve Yöntemler:** Tanımlayıcı nitelikte yapılan araştırmada veriler Hasta Öğrenim Gereksinimleri Ölçeği (HÖGÖ) ve Sosyodemografik Özellikler Formu ile toplanmıştır. Araştırmaya 148 hasta katıldı. **Bulgular:** Araştırma sonucunda, hastaların en çok bilgiye ihtiyaç duydukları alanların cerrahi yara bakımı, ameliyatın yaşam aktivitelerine etkisi, ilaçların nasıl ve ne zaman kullanılacağı ve ne zaman banyo yapılacağı ile ilgili olduğu saptandı. Ayrıca toplam öğrenme gereksinimi, duruma ilişkin duygular, tedavi ve komplikasyonlar, yaşam kalitesi alt boyutlarında da gruplar arasındaki farkın anlamlı olduğu görüldü. **Sonuç:** Bu çalışma hasta eğitimine hasta öğrenim gereksinimleri doğrultusunda dikkatlice öncelik verilmesi gerekliliğini desteklemektedir. Hasta eğitiminin bireysel temelli olması, hastaların ihtiyaçlarını karşılaması için öncelikle öğrenme gereksinimlerinin saptanması gereklidir.

Anahtar Kelimeler: Açık kalp cerrahisi; hasta eğitimi; öğrenme gereksinimleri

Heart Disease is the leading cause of death worldwide. As stated in the World Health Organization (WHO, 2016) report, these diseases cause 17.9 million deaths per year. Medications as well as surgical treatments are used in the treatment of heart diseases caused by many factors such as age and genetic factors.[1,2]

Surgical interventions such as open-heart surgery are important experiences that affect the patient physically, psychologically, socially and economically.[3,4] In a study conducted by Kutlu et al. found that 53.9% of the patients experienced anxiety and 86.1% of patients had depression in the cardiology intensive care unit.[5] The fact that the changes open heart surgery brings about in the life of the individual are many and that these changes are not known in advance cause anxiety in the individuals and the patients feel their health under threat and their future and aims in danger and they feel anxious about not to be able to return to their prehospital life.[6]

It is possible for the patients who had surgery to adapt to the new lifestyle, to accept the change in the body image and to maintain their lives afterwards as independent as possible if they learn the necessary knowledge and skills.[3,4]

For this, patient requires to balance between the new arrangements the surgery has caused and the activities of daily living after discharge. This can only be achieved by providing good counseling and good post-discharge education. However, in order to determine the boundaries and scope of discharge education and to eliminate the anxiety of the patients through the acquisition of information, it is first necessary to determine in what areas the information is needed. In which issues should patients undergoing open heart surgery need information, and what issues should be prioritized when preparing a training program for these patients? This research was deemed necessary to answer these questions.

MATERIAL AND METHODS

STUDY DESIGN

Descriptive and cross-sectional study design was used in this study.

SAMPLE AND SETTING

This descriptive study was conducted in cardiovascular surgery service of a special hospital. The study's universe consisted of 241 patients who underwent open heart surgery between August 2016 and August 2017 in the Department of Cardiovascular Surgery while the sample of the study consisted of 148 patients who were over 18 years old, who had no communication problems and who agreed to participate in the study. No sampling method was used in the study. All patients who met the research criteria and accepted to participate in the study were included in the study.

ETHICAL CONSIDERATION

Institutional permission was taken from the hospital before the study and ethical approval was obtained from Hasan Kalyoncu University Health Sciences Institute Non-Interventional Research Ethics Committee (no: 2016/10). Before the study, the necessary information was provided to the participants, and a volunteer informing form was signed.

MEASUREMENTS

Sociodemographic Characteristics Form

The sociodemographic characteristics form was prepared by the researcher in accordance with the literature.[2,7] The data collection form consists of 5 questions including year of birth, gender, marital status, education status, profession, questions.

Patient Learning Needs Scale (PLNS)

PLNS was developed by Bubela, Galloway, McCay, Mckibbon, Pringle Nagle, Ross, Shamin in 1990 in order to determine the informations needs of patients in discharge.[8] Turkish validity reliability study was carried out in 2008 by Çatal & Dicle.[9] This scale consists of 50 items. There are 7 subscales including medication, life activities, community and follow-up, feelings about the situation, treatment and complications, quality of life and skin care. The alpha value of the scale was found to be 0.93 in the validity reliability study. Alpha value was found 0.84 in the present study.

Scale items are evaluated with Likert type scaling method as "1= not important", "2= somewhat important", "3= less or more important", "4= very important", "5= extremely important". The lowest score to be obtained from the scale is 50, the highest score is 250. As the score increases, the need for learning is also increasing.

DATA COLLECTION

The data was collected by the researcher via face-to-face interview method. The patients' learning needs after open heart surgery were evaluated within 24-48 hours before discharged with the PLNS. Data collection was completed with the administration of the socio-demographic characteristics form, the PLNS the night before patients were discharged. The patients were interviewed in the patient rooms in the evening. The data were collected in the evening with the reason that the researcher had a busy work schedule during the day and that the patients were suitable for answering questions during the night. The researcher identified all of the eligible participants and explained the purpose of the study to them. The duration of each data collection session ranged between 20 minutes and 1 hour.

DATA ANALYSIS

SPSS 20.0 package program was used for statistical analysis of the data. The statistical significance was based on 95% confidence interval and $p<0.05$ was accepted as the margin of error. Mean ± standard deviation for continuous variables, number (n) and percentage (%) representations for categorical variables were used in the presentation of the data. Kruskall Wallis, t test, Mann Whitney U were used to compare two independent groups.

RESULTS

The mean age of the patients participating in the study was 58.45±10.07 years. 67.6% of the patients were male and 76.4% were primary school graduates. Their professional status was examined and 42.6% of them were found to be self-employed (Table 1).

TABLE 1: Socio-demographic characteristics and diseases of patients (n=148)

Socio-Demographic Characteristics	Number	Percentage
Age (year)		
20-45	34	22.9
46-65	72	48.6
66-over	42	28.4
Gender		
Female	48	32.4
Male	100	67.6
Education Status		
Primary	113	76.4
High school	25	16.9
University or higher	10	6.8
Profession		
Housewife	45	30.4
Self-employed	63	42.6
Civil servant	22	14.9
Worker	18	12.2
Mean Age (year)	X±SS	Min-Max
	58.45±10.07	23-80

The areas where the patients needed information the most were examined. It was seen that the items such as caring of the surgical wound, the effect of the disease on the future, how and when to take the drugs and when to take the baths had the highest rate (Table 2).

The ages of the patients and the total scores of PLNQ subscales were compared and it was found

TABLE 2: The most information needed 10 items (n=148).

The Most Information Needed 10 items	N	%
How should I take care of the surgical wound?	119	80.4
How will this disease affect my future?	114	77
How should I take each of my medicines (empty or full stomach)?	114	77
When can I take a shower or take a bath?	107	72.3
What should I do if there is a side effect associated with medications?	99	66.9
What are the possible side effects of my medications?	98	66.2
How long should I use each of my medicines?	96	64.9
How will this disease affect my life?	95	64.2
What are the side effects that can occur depending on the treatment?	94	63.5
When should I take each of my medicines?	90	60.8

that the medication, treatment and complications of the 20-65 age groups, the life activities, community and follow-up, and the feelings about the situation of the patients in the age group of 66 and above are higher than the other age groups. Among the age groups, the information need of the patients in the age group of 66 and above was found to be higher in the quality of life and skin care subscales than the others. When the total PLNQ score averages were compared, the highest mean was in the 66 and above age group. When the age of the patients were compared with the community and follow-up subscales, the difference between the groups was found significant ($p<0.05$) (Table 3).

When the mean scores of total and subscale scores of PLNQ according to gender were compared, it was found that the information need of women were higher in all subscales and total scores than males. It was found that the difference between the mean of the community and the follow-up ($p<0.01$), the feelings about the situation ($p<0.001$), treatment and complications ($p<0.01$), quality of life ($p<0.05$) and gender were statistically significant (Table 3).

Comparing the educational status of the patients with the scores of the total and subscale scores of the PLNQ, it was seen that those who have university or higher education level had higher information needs than the primary and high school education in the subscales of medications, life activities, feelings about the situation, treatment and complications. It was also found that the primary school graduates had higher information needs in the community and the follow-up, quality of life and skin care subscales than the other groups. When all the subscales and educational status were compared, it was found that the difference between the groups was not significant (Table 3).

When the mean of total and subscales scores of the patients' professions and the patient's learning needs scale were compared, it was observed that housewives had higher learning needs in the life activities, community, feelings about the situation, treatment and complications, quality of life and skin care subscales, and they had higher learning needs than self-employed, civil servant and workers in terms of mean of the scale total scores. Additionally, the difference between the groups in mean of total scores of scale and the feelings about the situation ($p<0.05$), treatment and complications ($p<0.05$), life quality ($p<0.05$) subscales were significant.

DISCUSSION

It is important that the patient with heart surgery should change his/her lifestyle after the surgery. Patients need a detailed training in order to adapt to their changed lifestyle after the surgery according to their socio-economic and information levels. For the planning and implementation of the training, the information needs of the patients should be analyzed first. This analysis provides a comprehensive training process in which the information that the patient needs is recognized and the patient can be adapted to the life style change earlier. In this respect, determining the learning needs in preparing a useful training process for the patient is significant.

When the age learning needs were compared, the need for learning in the early years was high for medications, treatment and complications. Older people had higher learning needs in terms of living activities, community and follow-up, feelings about the situation, quality of life and skin care. Tan et al. and Suhonen & Kipli also found that younger age groups need more information than other age groups. The lower incidence of illnesses and less surgery at younger ages might cause less hospital and surgery experience. In this case, the less experienced group may have led to a greater need for learning.[10,11]

When the mean scores of the total and subscale scores of PLNQ related to gender were compared, it was found that the information needs of the women were higher than the males in all subscales.

Yalçın et al., Tan et al. and Suhonen et al. also found that female patients had higher information needs than male patients.[10-12] Research conducted by Ong and collegues in patients with heart failure

TABLE 3: Socio-demographic characteristics of patients and learning needs total and subscale score averages (n=148).

Sociodemographic characteristics	Patient Learning Needs Scale (PLNS) Subscale							
	Medications X±SD	Life Activities X±SD	Community and Follow-up X±SD	Feelings about the situation X±SD	Treatment and Complications X±SD	Quality of Life X±SD	Skin Care X±SD	Total X±SD
Age (year)								
20-65	31.31±6.47	30.44±7.58	16.93±4.95	14.23±4.91	31.10±6.74	29.26±6.37	16.38±4.28	169.67±32.39
66 and over	29.95±7.77	31.76±8.10	18.09±6.38	14.97±4.97	30.64±8.31	29.42±6.60	17.00±5.07	171.85±39.97
	p=0.122	p=0.657	p=0.019	p=0.731	p=0.105	p=0.667	p=0.136	p=0.090
Gender								
Female	16.87±5.03	32.29±8.17	19.06±5.68	16.66±4.78	33.45±6.53	31.25±5.77	16.87±5.03	181.68±35.26
Male	16.41±4.26	30.11±7.45	16.40±5.07	13.38±4.64	29.78±7.23	28.38±6.53	16.41±4.26	164.83±33.05
	p=0.55	p=0.10	p=0.005	p=0.000	p=0.003	p=0.01	p=0.55	p=0.05
Education Status								
Primary	30.82±7.14	31.07±7.78	17.67±5.49	14.39±5.01	31.14±7.54	29.67±6.63	16.88±4.65	171.66±36.57
High school	30.48±6.53	29.44±7.98	15.56±5.08	14.04±4.45	30.04±6.28	28.56±6.12	16.20±3,71	164.32±29.52
University and higher	33.20±3.88	31.40±6.73	16.90±4.70	16.00±5.18	31.40±5.54	27.10±3.98	13.80±3.99	169.80±20.96
	p=0.66	p=0.61	p=0.30	p=0.51	p=0.69	p=0.19	p=0.08	p=0.56
Profession								
Housewife	32.08±7.12	32.60±8.28	19.20±5.74	16.46±4.85	33.73±6.36	31.53±5.77	17.06±5.02	182.68±35.79
Self-employed	30.26±6.85	30.41±7.40	16.36±5.01	13.15±4.50	29.85±7.67	28.71±6.45	16.28±4.34	165.06±33.76
Civil Servant	32.27±5.70	29.63±7.82	16.00±5.06	14.50±4.95	29.59±6.95	27.31±6.67	16.22±4.20	165.54±30.08
Worker	28.66±7.23	29.22±7.10	17.11±5.38	13.83±5.20	29.66±6.36	28.27±4.49	16.66±4.39	163.44±34.12
	p=0.14	p=0.17	p=0.05	p=0.01	p=0.02	p=0.02	p=0.67	p=0.02

also found that women had higher learning needs in many subscales.[13] The results of the present study are correlated with these studies. The fact that women's information needs are higher than men may be due to the fact that they have to take more responsibility at home in the care of their children than men and feel obliged to keep their responsibilities as soon as possible. This finding may also be due to the fact that women are structurally more emotional in situations that can cause trauma such as open heart surgery and need as much information as possible to have full knowledge of the situation.

When the educational status of the patients were compared with the PLNQ subscales and the total score means, the information needs of the patients with low education status in the society and the follow-up, quality of life and skin care subscales and total score were found higher. Accordingly, Demirkıran and Uzun found that the information needs of patients with low education status were higher in terms of community and follow-up, quality of life, skin care subscales and total score.[14]

Yalcın state that patients with lower educational status had more information needs in all subscales of PLNQ.[12] According to the findings in the literature and the present study, it is expected that the

general information needs of the patients with low education status are high. In the subscales of medications, life activities, feelings about the situation and treatment and complications, the information needs of the patients with high educational status were found to be high.[12] Accordingly, Tan et al. (2013) found that patients with high educational status had a higher information needs in medications, life activities, treatment and complications subscales, which is similar to the findings of the present study.[10]

When the means of the total scores and subscales of patients' professions and patient learning needs scale were compared, it was found that housewives had higher information needs in all subscales except medication dimension than the other groups.

When the subscales and total scores of PLNQ of the patients who underwent coronary artery bypass graft surgery were compared, Demirkıran found that the housewives had more information needs than the other professions in medication, life activities, community and follow-up, feelings about the situation, treatment and complications and skin care subscales and total scores.[14]

The findings of the current study are similar to literature findings. When the distributions of professions of the patients participated in the study were examined, it was seen that the majority consisted of housewives and self-employed ones. It is believed that a group of patients who have not received health education and are not working in this area are expected to need information in many subscales after a complex treatment process such as heart surgery.

CONCLUSION

Open heart surgeries may require serious lifestyle changes in patients. The adaptation of patients to the new lifestyle also depends on the complete knowledge of the patients. The effectiveness of this information depends on determining the learning needs. As a result of this study, it was determined that patients who had open heart surgery had different learning needs according to their age, gender, education level ect. Considering these characteristics of patients before planning an education in this group of patients may positively affect the success and usefulness of education.

Limitations

One of the limitations of this study is that it was conducted in specific area, which restricts the generalizability of the findings. Time limit and small number of samples participated in the study is other limitations of the study.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Çiğdem Köçkar;* ***Design:*** *Çiğdem Köçkar;* ***Control/Supervision:*** *Çiğdem Köçkar;* ***Data Collection and/or Processing:*** *Merve Gökçen;* ***Analysis and/or Interpretation:*** *Çiğdem Köçkar;* ***Literature Review:*** *Merve Gökçen, Çiğdem Köçkar;* ***Writing the Article:*** *Çiğdem Köçkar, Merve Gökçen;* ***Critical Review:*** *Çiğdem Köçkar;* ***References and Fundings:*** *Merve Gökçen;* ***Materials:*** *Merve Gökçen.*

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