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Cardiovascular Surgery Patients' Intensive Care Experiences and Transfer Anxiety

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SUMMARY

Aim: To examine the intensive care unit experiences and anxiety of patients following their referral to the clinic.

Patients and Methods: A descriptive study involving 93 patients who had been in a cardiovascular surgery intensive care unit and then transferred to the clinic. The patients' socio-demographic characteristics, and intensive care unit experiences and anxiety levels were evaluated using a questionnaire and scales (intensive care unit experiences scale and hospital anxiety and depression scale-anxiety section).

Results: We found that the intensive care experiences of the patients were positive. It was apparent that the patients' satisfaction regarding the care service they had received was high but awareness of their surroundings and anxiety levels were low. Their transfer anxiety levels was found low.

Conclusion: Regular explanation of the conducted processes, treatments, and surrounding atmosphere, responding to the questions of the patients, and maintenance of effective communication with the patients and their relatives likely benefit the patients' awareness.

Key Words: *Cardiac Surgery, Intensive Care Nursing, Patient Transfer From ICU, Post-Operative Care, Psychological Care of Patients.*

Introduction

Intensive care units (ICU) are "basic and advanced life support application fields in which patient care is the most complex and expensive one and which is closely associated with technology, various organs and systems and which bring the treatment into the forefront in life-threatening situations"(1). Although survival of the patients is regarded as a successful result, it is known that patients are often subject to negative emotions during their ICU stay (2,3). In particular, intubated patients lose such skills as moving, protection of privacy, and communication (4). Although the physical care of ICU patients has progressed much, progress in patient psychological care has been slow, as emphasized in a recent literature review (5).

Patients who are accepted to the ICU can remain there for treatment, post-operative care, and observation, before being transferred to the clinic. Patients can have different experiences of the transfer from intensive care to the clinic. While some patients have a positive and satisfying experience of transfer, this can be a challenging experience for other patients. Even if transfer from the ICU to the clinic is an indicator of recovery, many families and their parents complain due to the sudden atmosphere change and report negative experiences (6).

Transfer anxiety is the physiologic and psychological problems that families and their parents have during transfer from the ICU to the clinic atmosphere (7). Gender, ICU stay period, and social support are three risk factors associated with transfer anxiety (8). If patients and their families do not prepare for the transfer, levels of their anxiety and isolation, lack of confidence, hopelessness, and feelings of insignificance increase (9). Decreases in the intensive care level and fewer nurses per patient increase the patients' transfer anxiety (10). The transfer of a patient from the ICU to the clinic is routine for health care professionals. For this reason, the impacts of the transfer on the patients may be ignored by the care providers (11). But if nurses check up the patients' anxiety levels, they can be able to provide holistic support (12).

The ICU experiences of patients have been evaluated in various studies. According to these, patients are aware of their surroundings during their stay in the ICU and their dependence on the mechanical ventilator and their urgent or planned stay affect their ICU experiences negatively (13,14,15). Patients have negative experiences regarding "feeling safe" and the pleasure they have for the care decreases with increased frequency of bad experiences (14,15).

In patient care, individual and integrated approaches enable the adaptation of the patients to their diseases and treatment processes. Integrated care is impossible unless

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the nurse sufficiently understands the patients' diagnosis, treatment, emotional state, and thoughts associated with the events (16). In accordance with the integrated care approach, it is recommended that patients' transfer anxiety levels are determined (17). Thereby, patients with anxiety can be determined and appropriate treatment and care can be given. Various studies have addressed ICU experiences and transfer anxiety (14,15,17). However, to our knowledge, no study has yet examined the relationship between the ICU experiences and the anxiety levels of the patients receiving treatment in the cardiovascular surgery clinic. We aim to examine the ICU experiences of patients receiving treatment in the cardiovascular surgery ICU and their anxiety regarding the transfer from intensive care to the clinic.

Methods

Design

This descriptive and prospective study was conducted in the ICU of the cardiovascular surgery unit of a university hospital in Ankara, Turkey between January and April, 2013.

Participants

The research population is composed of patients transferred to the clinic after treatment in the cardiovascular surgery ICU. The only inclusion criterion was at least 16 hours of ICU treatment. The research was completed with 93 patients. Only one patient declined to speak about their intensive care experience, and was therefore excluded from the study.

Ethical Considerations

Required permissions were received from the ethical committee of the university where the study has been conducted. Information has been provided for the participants and their written and verbal approvals have been received. Patients were told that they could leave the study at any point. Names were not used in the research and, therefore, the confidentiality of the participants was assured.

Data Collection

Research data was collected between 16 and 48 hours after transfer to the clinic from intensive care. Data collection forms were collected in the patient room by the face-to-face interview method. The interviews lasted 15 to 20 min.

The data collection form was prepared by the researchers and included; the patient information form, the intensive care experiences scale, and hospital anxiety depression scale-anxiety section. In the patient information form, questions addressed; the stay period in the intensive care, treatment of mechanical ventilator, type of admission to the intensive care, previous ICU experiences, and the socio-demographic characteristics of the patient. In addition, there was an open-ended question aimed at learning what the patient felt following transfer to the clinic.

The intensive care experiences scale was developed to evaluate the experiences of ICU patients (2). The Turkish validity and reliability of the scale was demonstrated in 2009 (18). The scale was prepared in the format of the Likert scale, composed of 19 items and 5 categories. The Cronbach alpha coefficient of the scale was determined (0.8). Total score that may be acquired from the scale ranges from 19 to 95. A low score indicates that consciousness is low and ICU experiences are bad, whereas a high score indicates the opposite (18).

The hospital anxiety and depression scale was developed by Zigmont and Snaith (19). The purpose of the scale was not to make a diagnosis, but rather to rapidly scan anxiety and depression characteristics and determine the risk group. The Turkish validity and reliability of the scale was demonstrated by Aydemir (20) and the Cronbach alpha of the anxiety sub-scale was calculated (0.9). The scale is composed of 14 items, 7 of which address symptoms of anxiety. The answers are evaluated as quartet Likert-type and scored between 0 and 3. The anxiety subscale break point of 10 has been determined. In the scale scoring, "7 and below" is evaluated as "anxiety absent", "8-10" as "tendency to anxiety", and "11 and above" as "anxiety".

Data Analysis

Statistical analyses were made using SPSS (version 15.0). According to the normality of data, the Student's t, Mann Whitney u, Kruskal-Wallis, ANOVA and Pearson Correlation tests were used. The normality of data evaluated with the Kolmogorov-Smirnov test.

Results

Patients' socio-demographic characteristics and ICU treatments are shown in Table 1. The study included 93 patients (75 men [80.6%] and 18 women [19.4%]) with a mean age of 53.8 years (25 and 75 quarter: 44.5 to 67 years). The educational status of 49 participants (52.7%) was primary education and 75 (80.6%) of the patients were married. Patients' median stay in the ICU was 24 hours (25 and 75 quarter: 22 to 28 h). The median of mechanical ventilator period for 89 patients who received this treatment was 5 hours (25 and 75 quarter: 4 to 7 h). Forty-nine patients (52.7%) were treated in the ICU for a planned operation, with 33 (35.5%) patients being treated for an urgent operation. Fifty-six (60.2%) patients had a coronary artery by-pass graft operation. The median of the ICU period for the 43 patients (46.2 %) that have previous experience of ICU was 2 days (25 and 75 quarter: 1-4 days).

The answers given by the participants for the open-ended question, which asks how the patients feel after they are transferred to the clinic, are shown in Table 2. It was determined that patients mostly felt glad because they were with their family in the clinic (61 [29%]), they carried out their daily activities more comfortably (57 [27%]), and they were free of drains and other catheters (19 [9%]).

The mean total scores of the ICU experience questionnaire sections were as follows: 69.1 ± 6.5 (from a potential maximum of 95) for the ICU experience scale; 16.2 ± 3.1 (from a potential maximum of 30) for the "consciousness of the environment in the intensive care" sub-scale; 14.6 ±1.3 (from a possible maximum of 20) for the "bad experiences in intensive care" sub-scale; 15.4 ± 3.1 (from a potential maximum of 20) for the "remembering the experiences in intensive care" sub-scale; and 20.9 ± 3.2 (from a potential maximum of 25) for the "satisfaction from the intensive care" sub-scale. A strong positive correlation was found between the sub-scale score of "remembering the experiences in intensive care" and the scale total score ($p<0.01$ $r=0.790$).

Total and sub-scale scores of ICU experiences scale and socio demographic characteristics' comparisons were presented in

Table 1 **Socio-demographic characteristics and intensive care treatments**

		n (%)
Number of patients		93 (100)
Female		18 (19.4%)
Male		75 (80.6%)
Age		53.8[a] (44.5;67)[b]
Educational status	No literacy	9 (9.7%)
	Primary education	49 (52.7%)
	High school	17 (18.3%)
	University	18 (19.4%)
Marital status	Married	75(80.6%)
	Single	18 (19.4%)
Intensive care stay time by hour		24[c] (22;28)[b]
Mechanical ventilator treatment	No	4 (4.3%)
	Yes	89 (95.7%)
	Mechanical ventilation time by hour	5[c](4;7)[b]
Intensive care acceptance	Urgent surgery	33(35.5%)
	Urgent observation	1(1.1%)
	Planned surgery	49(52.7%)
	Surgery after urgent observation	10(10.8%)
Intensive care treatment	Thorax surgery*	78 (83.9%)
	Peripheral vessel surgery **	14(15.1%)
	Observation***	1(1.1%)
Previous ICU experiences	No	50(53.8%)
	Yes	43(46.·2%)
	Previous ICU stay time by day	2[c](1;4)[b]

* Atrial Septal Defect, Coronary Artery Bypass Greft (CABG), Mitral Valve Replacement (MVR), Atrial Valve Replacement (AVR), MVR + CABG, Ventricular Septal Defect, AVR+MVR, Benthall procedure
** Femaro-Popliteal Bypass, shotgun injuries, aneurysm repair.
*** Urgent observation (Aort dissection)
a) average, **b)** interquartile ranges, **c)** Median values

Table 3. No statistically significant relationship was identified between the total and sub-scale score averages of the ICU experience scale and gender, educational status, treatment of mechanical ventilator, urgent or planned treatment, previous treatment in the intensive care, or received thoracic peripheral vessel treatment. Patients who stayed in the ICU for at least 24 h and who have previous experience of ICU had higher total scale scores. The “bad experiences in the intensive care” sub-scale score was higher in the married patients.

No statistically significant correlation was identified between the age of the patients, period of stay in the intensive care, treatment period of the patients getting mechanical ventilator treatment, treatment period of the patients who have previous ICU treatment, or scale total and sub-scale score averages. Correlations are shown in Table 4.

According to the anxiety levels of the patients, anxiety was identified in 5 patients (5.4%), tendency to anxiety in 5 patients (5.4%), in absence of anxiety in 83 patients (89.2%). The anxiety score average of the participants was 2.9 ± 3.4 from a potential maximum of 21. A strong negative correlation was identified between anxiety scores and ICU total scale scores ($p<0.01$ $r=-0.531$). There was no statistically significant difference between the anxiety levels and independent variables.

Discussion

High-risk patients are treated in intensive care units, where they can report positive or negative experiences. The experiences of patients can be used as an indicator of the quality of care. When we compare the total scale scores acquired in our study with the scores of other studies, the ICU experiences of the patients in our study were more positive (13,14,21). This indicates that the care provided for the patients in the ICU influences their experiences of intensive care.

When patients are given information about the treatment processes performed in intensive care, patients’ awareness increases and as a result they feel more comfortable (22). Here we found that patients had a lower awareness of their surroundings than reported in other studies (13,14,21). Moreover, we found that our scores of "bad experience sub

Table 2 **Opinions of the participants regarding their transfer from ICU to the clinic**

	n (%)
I was happy to be with my family	61(29%)
I felt comfortable as I started to carry out my daily life activities on my own	57(27%)
I got rid of the drains, tube in my throat and other catheters	19(9%)
I felt more secure in ICU (I was closely being followed, contacting with the personnel was easier)	14(6.7%)
ICU was very crowded/noisy/busy	13(6.2%)
Availability of TV (I am aware of th world)/I was watching news	9(4.4%)
Not seeing the other patients who has just undergone an operation and patients on whom emergency action is applied	9(4.4%)
I can wear pajamas	8(3.8%)
I have a separate room	5(2.4%)
There was a fear of death in ICU	4(1.9%)
Everything is positive	4(1.9%)
ICU is boring	4(1.9%)
Being aware of if it is day time or night	3(1.4%)
Total	210(100%)

Table 3 ICU Experiences total scale, subscales scores and socio- demographic characteristics comparisons

		Scale total	Consciousness of the environment	Bad experiences in intensive care	Remembering the experiences in intensive care	Satisfaction from the intensive care
		Mean±Standart Deviation	Mean±Standart Deviation	Mean±Standart Deviation	Mean±Standart Deviation	Mean±Standart Deviation
Gender	Female	68.5±7.5	16.7±2.9	14.6±1.5	14.8±2.6	20.7±2.9
	Male	69.3±6.3	15.9±3.1	14.5±1.3	15.5±3.2	20.9±3.2
	Test Result	t*=-0.451	Z**=-1.002	Z**=-0.482	Z**=-1.123	Z**=-0.348
	p	0.545	0.316	0.630	0.261	0.728
Educational status	No literacy	65.0±9.2	18.0±2.3	14.2±1.8	13.6±2.9	19.3±3.4
	Primary education	68.9±6.1	16.1±3.5	14.6±1.2	15.1±3.1	20.8±3.3
	High school	70.4±6.5	15.2±2.4	14.5±1.0	16.1±3.1	21.5±3.2
	University	70.4±5.8	15.8±2.5	14.5±1.6	16.3±2.9	21.0±2.7
	Test Result	F***=1.697	KWX²****=5.410	KWX²****=0.357	KWX²****=5.933	KWX²****=3.514
	p	0.173	0.144	0.949	0.115	0.319
Mechanical ventilator treatment	No	66.0±8.4	18.0±3.4	13.2±2.2	14.2±6.5	19.0±4.8
	Yes	69.3±6.5	15.9±3.1	14.6±1.2	15.4±2.9	20.9±3.1
	Test Result	Z**=-0.853	Z**=-1.161	Z**=-1.419	Z**=-0.086	Z**=-0.810
	p	0.394	0.246	0.156	0.932	0.418
Intensive care acceptance	Urgent surgery	69.3±6.4	16.0±3.2	14.3±1.5	15.2±3.4	21.1±3.4
	Planned surgery	68.2±6.8	15.9±2.9	14.6±1.2	15.1±2.9	20.6±2.9
	Surgery after urgent observation	73.4±4.3	16.8±3.5	15.3±0.8	17.1±2.2	21.2±3.7
	Test Result	F***=2.080	KWX²****=0.485	KWX²****=5.378	KWX²****=6.676	KWX²****=1.503
	p	0.108	0.922	0.146	0.083	0.682
Previous ICU experiences	No	68.2±7.0	15.9±2.9	14.5±1.3	14.9±3.2	20.8±3.3
	Yes	70.2±5.8	16.2±3.3	14.6±1.3	15.9±3.0	20.9±3.1
	Test Result	Z**=-1.277	Z**=-0.376	Z**=-0.333	Z**=-1.360	Z**=-0.132
	p	0.202	0.707	0.739	0.174	0.895
Intensive care treatment	Thorax surgery	68.9±6.6	16.1±3.1	14.6±1.3	15.2±2.9	20.8±3.1
	Peripheral vessel surgery	70.1±6.4	15.9±3.1	14.3±1.4	16.4±3.7	21.0±3.5
	Test Result	Z**=-0.591	Z**=-0.105	Z**=-0.948	Z**=-1.859	Z**=-0.184
	p	0.555	0.916	0.343	0.063	0.854
Previous experiences of ICU (Patients with at least 24 hours of intensive care stay.)	No	67.6±7.3	15.9±3.0	14.4±1.3	15.0±3.2	20.1±3.5
	Yes	72.0±5.4	16.9±3.3	14.8±1.3	16.3±2.9	21.33.1
	Test Result	F***=-2.273	F***=-1.098	Z**=-1.309	Z**=-1.385	Z**=-1.249
	p	0.060	0.761	0.191	0.166	0.212
Marital status	Married	69.5±6.5	16.0±2.9	14.6±1.3	15.6±2.8	20.9±3.1
	Single	67.3±6.5	16.3±3.9	14.0±1.1	14.4±3.9	20.6±3.5
	Test Result	Z**=-1.441	t*=-0.307	Z**=-2.108	Z**=-1.108	Z**=-0.235
	p	0.150	0.058	0.035	0.268	0.814

* Student t test, **Mann Whitney U test, ***ANOVA test, **** Kruskal Wallis Ki Kare test

Table 4 Correlations of scale total and sub-scale score averages

		Scale total	Consciousness of the environment	Bad experiences in intensive care	Remembering the experiences in intensive care	Satisfaction from the intensive care
Age	r*	0.085	0.121	0.065	0.153	-0.009
	p	0.420	0.250	0.534	0.144	0.929
Period of stay in the ICU	r*	0.150	0.171	0.079	0.078	-0.010
	p	0.151	0.102	0.453	0.456	0.922
Period of mechanical ventilator treatment	r*	-0.033	-0.041	-0.083	-0.029	0.126
	p	0.754	0.697	0.430	0.785	0.228
Period of previous ICU treatment	r*	-0.002	0.049	0.138	-0.032	-0.106
	p	0.986	0.642	0.186	0.762	0.314

r* Pearson correlation test

scale", are higher than in other studies (14,21). Bad experiences of ICU was associated with remembering ICU atmosphere and bad communication in some articles (14,21). This can likely be accounted for by the fact that the patients' stay in the cardiovascular ICU is typically shorter than in other ICUs and that patients are intubated for part of this period. A short stay period in the ICU decreases the patients' awareness. It is thought that if nurses, especially those working in ICUs, inform the patients frequently about the surrounding atmosphere and conducted processes, this increases the awareness of the patients and enables them to have positive experiences (23).

Unlike in other studies, we found that patients' ICU experiences are highly remembered and that patient satisfaction is high (13,14,21). The positive relationship between remembering the experiences in the ICU and the scale total score shows that patients' impression of their experiences change positively when they better remember their ICU experiences.

The literature emphasizes the point that some patient variables can influence their ICU experiences. Here we found that married patients have worse experiences than reported in other studies (13,21).In Zaybak's study (14), the patients' ICU experiences are stated to be more negative than reported here. This might resulted from the fact that patients do not carry out their responsibilities during their ICU stay. In other studies (13,14), it is stated that patients' previous ICU experiences do not influence their current ICU experiences. However, in this study we found that previous experiences of ICU positively influenced the current ICU experiences. However, in our research, we did not assess whether any previous ICU experience had been positive or negative. We propose that if the patient knows the ICU atmosphere and its characteristics, this might positively influence their ICU experiences.

The anxiety that patients have following transfer might negatively influence the process. Especially, patients who transferred to clinic at night are more anxious (24). For this reason, nursing applications that are appropriate for those patients with high levels of anxiety following the transfer should be planned and applied. Education before accepting ICU decreases the anxiety of patients and their families (25). In this study, when ICU experiences increase the patients' anxiety scores decrease. In Gustad's research (17), the average anxiety score was 4 ± 4, while Brodsky-Israel reported a mean anxiety score of 8 (median=7; standard deviation=4.2) (8). The anxiety levels in our research were lower than those reported in other studies. Informing the patient about the ICU atmosphere, procedures, treatments, and health personnel is significant for decreasing the anxiety following operation (26).

In a qualitative study in which the opinions of the patients following operation were examined, it was stated in the classified themes that patients have complex emotions regarding the transfer. It is stated that some patients are satisfied about being transferred to the clinic and are happy to be progressing towards returning home, whereas other patients have feelings of uncertainty or cannot articulate their feelings (7). In another study, the majority of the patients express positive feelings about leaving the ICU, which they associated with recovery (11). In another study, it was found that if the patients are with their families, this helps to calm them and decreases their fears (27). These emotions are similar to the emotions of the patients in our research. Based on the typically family-centered characteristic of the traditional Turkish family structure, a relative generally undertakes the role of care provider. In the hospital where the research is conducted, one person is allowed to stay as a hospital attendant following the transfer from the ICU to the clinic. This arrangement is thought to positively influence the satisfaction of the family.

Conclusion

We found that, in our hospital, the satisfaction of the patients regarding the ICU is high. Patients' satisfaction with intensive care can be an indicative of the quality of nursing care. Less awareness of their surroundings may be due to their short stay in the intensive care unit. It can be change when patients stay for a long time in ICU. The patients' transfer anxiety levels are low. nursing care should be planned by evaluating anxiety during patient transfer. Provision of careful and appropriate care for the patients is a significant factor in the development of the patient-nurse relationship, and though this quality of care can be increased (22). Regular explanation regarding the conducted processes, treatments and surrounding atmosphere, responding to patients' questions, and maintenance of effective communication with the patient and relatives likely improve patients' awareness. Advanced research is needed in which patients stay longer in intensive care and more participants take part.

Implications for Practice

Regular evaluation of the ICU experiences of the patients enables the health personnel and employees to evaluate and improve the patient care quality.

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