


Intensive Care Experiences of Postoperative Patients

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Abstract

Objective: The aim of this study is to examine the intensive care experience of postoperative patients. **Methods:** This descriptive study was conducted between February and May 2021 with the participation of 75 surgical intensive care patients. Data were collected using the patient identification form and The Intensive Care Experiences Scale (ICES). Shapiro-Wilks test, Mann-Whitney *U*, Kruskal-Wallis *H* test, Bonferroni Corrected Mann-Whitney *U* test, and Spearman correlation analysis were used in analyzing the data. **Results:** The mean patient age was 62.8 ± 14.9 year (min: 23 and max: 95); 53.3% ($n = 40$) were male. The patients' mean length of stay in the intensive care unit was 1.4 ± 1.0 days. The mean ICES score of the patients was 57.4 ± 3.9 . It was found that the patients' mean scores of the "satisfaction with care" subscale varied according to the surgical procedure applied, connection to mechanical ventilation, and status of seeing other individuals receiving treatment. **Conclusions:** Patients' intensive care experiences were partially positive. Being aware of the patients' experiences, supporting them in biopsychosocial aspects, and being in contact will contribute to the improvement of their postsurgical intensive care experience.

Keywords

experience, intensive care, nursing, patient, surgery

Introduction

In intensive care units, care and treatment are provided to patients with high mortality and morbidity rates and critical conditions (1,2). Intensive care units, where technological tools are used, vital clinical decisions are made and multidisciplinary interventions are made, are units where 24-h uninterrupted service is provided (2–4).

Intensive care units are stressful environments for patients, their relatives, and healthcare professionals (5). Patients have negative experiences with intensive care settings due to pain, sleep disorders, being connected to a mechanical ventilator, tube insertion into the mouth or nose, and other invasive procedures (6,7). Along with the treatment and care practices applied to patients, the physical conditions of the intensive care unit, such as smell, noise, and light, also affect the intensive care experience of patients (8). It is indicated that patients feel restless, painful, frightened, and helpless during their stay in the intensive care unit, and their sleep quality is poor (9–11). It is stated that some patients experience depression, anxiety, and intensive care unit syndrome due to the negative conditions of intensive care units and negative experiences (6,12,13).

Furthermore, it is reported that some patients remember the confusion, panic, anxiety, and discomfort experienced during their stay in the intensive care unit (14). Intensive care experiences can leave negative traces on patients, and patients want to leave these traces in the past (15).

Some supportive approaches are recommended for patients in the intensive care unit to feel safe and have positive experiences (15). The physical discomfort and negative emotions experienced by patients in the intensive care setting can be reduced with effective healthcare professionals (9). Therefore, it is important that healthcare professionals

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are aware of patients' experiences to meet the needs of patients and prevent physiological and psychological morbidities (11,15).

The inability to meet the needs of patients adequately and physiological and psychological morbidities adversely affect the recovery (16). With the prolongation of the recovery period of patients, the length of stay in the intensive care setting is prolonged, which may trigger negative experiences (17). Examining the intensive care experience of the patients increases the awareness of the health care professionals and contributes to the improvement of the service quality of the institution (18,19). In this way, the quality of life of patients can be improved both in the intensive care unit and after discharge from the intensive care unit (19,20). It is emphasized that the intensive care experiences of patients should be evaluated objectively using professional measurement tools to propose solutions to prevent negative experiences (16). The aim of this study is to examine the intensive care experience of postoperative patients.

Methods

Study Design and Sample

This descriptive study was conducted between February and May 2021 with the participation of 75 surgical intensive care patients. The study population consisted of patients who were treated in the surgical intensive care unit of a university hospital and stayed in the intensive care unit for at least 24 h. Within the scope of the findings obtained from the study conducted by Karahan et al (21) in 2020, according to the standard deviation value ($SD = 4.64$) determined for the Intensive Care Experiences Scale (ICES), the minimum number of people that should be included in the sample was determined as 75 by predicting 3% tolerance and 80% power at a 95% confidence level. Adult patients who stayed in the surgical intensive care unit for at least 24 h, volunteered to participate in the study, had mental competence, and did not have communication problems in Turkish were included in the study. Patients who were diagnosed with psychiatric or neurological disease, developed postoperative delirium, reoperated and who were patients with intensive care experience were not included in the study. Since the cardiovascular and thoracic surgery intensive care units of the hospital are independent and in different localizations, patients who underwent cardiothoracic surgery and were treated in these units were excluded from the study.

Ethical Considerations

The Declaration of Helsinki, Good Clinical Practice Guidelines, and the local Ethics Committee requirements were taken into account during the study process. Permissions have been received from the Trakya University Faculty of Medicine Scientific Research Ethics Committee (protocol no: 2020/458, decision no: 21/10 and date:

21.12.2020) and Trakya University Health Research and Application Center (2021/60-14413). Before the study, patients were informed about the study, and written informed consent has been obtained.

Data Collection Tools

Data were collected using the "Patient identification form" and "The Intensive Care Experiences Scale".

Patient Identification Form

The form prepared by the researchers in line with the literature (9,22) consists of a total of 8 questions (age, gender, educational status, marital status, type of surgery performed, status of being connected to the mechanical ventilator, and length of stay in the intensive care unit) questioning the patient's individual variables.

The Intensive Care Experiences Scale (ICES)

In 2004, Rattray et al (23) developed The Intensive Care Experiences Scale, and Demir et al (3) carried out its Turkish reliability and validity studies. According to 19 items with scale, the individual may determine his or her experiences in the intensive care unit. The Intensive Care Experiences Scale is scored between 19 and 95. Questions 7, 8, 9, 10, 15, and 17 on the scale are scored reversely. The scale has 4 subscales: "Awareness of surroundings," "Frightening experiences," "Recall of experience," and "Satisfaction with care." As the total score obtained from the scale increases, it is evaluated that the patient's experience is positive and his/her awareness is high. The Cronbach α for the Turkish version of The Intensive Care Experiences Scale was 0.79. In this study, the coefficient of Cronbach α was calculated to be 0.62 for the scale.

Data Collection

Written informed consent was obtained from the patients after informing the patients about the study by the research nurse. Data collection forms were filled out by the research nurse on the day the patients were to be transferred to the ward by the face-to-face interview method at the bedside. Data collection was terminated after all questions were answered. The data collection process took an average of 15 to 20 min.

Statistical Analysis

In the study, IBM SPSS version 22.0 was used for data analysis. Descriptive data of the study were analyzed through numbers, percentages, means, and standard deviation. Shapiro-Wilks test was used to test the compatibility of the data to normal distribution. The Mann-Whitney U test and the Kruskal-Wallis H test were used to assess intergroup

differences in sociodemographic characteristics and ICES scores. Mann-Whitney *U* test with Bonferroni correction was used as post hoc test for the type of surgery performed. Spearman correlation analysis was used to reveal the relationship between variables (age and length of stay in the intensive care unit) and the ICES score. The level of statistical significance was considered as $P < .05$.

Results

The mean patient age was 62.8 ± 14.9 year (min: 23 and max: 95); 53.3% ($n=40$) were male; and 56.1% ($n=37$) were primary school graduates. The patients' mean length of stay in the intensive care unit was 2.4 ± 1.0 days (Table 1).

The mean ICES score of the patients was 57.4 ± 3.9 . The subscale scores were determined as awareness of surroundings 20.3 ± 2.0 , frightening experiences 14.2 ± 1.5 , recall of experiences 13.7 ± 1.7 , and satisfaction with care 10.0 ± 2.2 (Table 2).

It was found that the patients' mean scores of the "satisfaction with care" subscale varied according to the surgical procedure applied, connection to mechanical ventilation, and status of seeing other individuals receiving treatment ($P < .05$). A weak negative correlation was determined between the length of stay in the intensive care unit and the mean scores of the "awareness of surroundings" and "recall of experience" subscales ($P < .05$) (Table 3).

Of the patients, 45.3% ($n=34$) saw other patients during hospitalization, and while 44.1% of these patients stated that they did not feel uncomfortable seeing other patients, 29.4%

indicated that they were demoralized, and 20.6% felt fear that the same procedures would be applied to them.

Discussion

It was determined that patients who underwent orthopedic surgery were less satisfied with care than patients who underwent general and neurological surgery. Although there are no studies in the literature comparing the experiences of patients according to the surgical procedure applied, it is thought that the reason for this result is that the extra mobilization of patients who underwent orthopedic surgery was restricted in the intensive care unit (fixator, plaster cast, etc.).

It was found that patients who were not mechanically ventilated had a higher level of satisfaction with their intensive care experiences than those who were mechanically ventilated. Zaybak and Güneş (16) revealed that the experiences of patients who were connected to mechanical ventilators were adversely affected. It was determined that patients who were mechanically ventilated in the intensive care unit experienced feelings such as fear and helplessness at the time of awakening (9). Reinberger et al (24) revealed that being connected to a mechanical ventilator was a source of stress in intensive care patients. As a result, it is thought that the exposure of patients to mechanical ventilation may adversely affect their intensive care experiences.

It was determined that with the prolongation of the length of stay in the intensive care unit, the environmental awareness of patients decreased, and it became more difficult for them to remember their intensive care experiences. Likewise, Sekmen and Ünsar (25) found a decrease in environmental awareness in patients treated in the coronary intensive care unit for more than 5 days. In their study, Edeer et al (9) determined that with the prolongation of the length of stay in the intensive care unit, intensive care experiences were adversely affected. Fukuda et al revealed that one week after discharge from the general intensive care unit, 15.0% of patients had memory loss and 48.1% had unrealistic experiences (14). Another study revealed that patients with a long length of stay had more pessimistic experiences (15). Since the short length of stay in the intensive care unit is accepted as an indicator of the rapid response to treatment (21), it can be said that the short length of stay of patients in the intensive

Table 1. Patients' Sociodemographic Characteristics ($n = 75$).

Characteristics	N	%
<i>Age_{year}</i>		
Mean \pm SD	62.8 ± 14.9	
<i>Gender</i>		
Female	35	46.7
Male	40	53.3
<i>Education status</i>		
Primary education	38	50.7
High school	24	32.0
University	13	17.3
<i>Married status</i>		
Married	67	89.3
Single	8	10.7
<i>Type of surgery performed</i>		
General surgery	44	58.7
Orthopaedic surgery	18	24
Neurosurgical surgery	13	17.3
<i>Status of being connect to the mechanical ventilator</i>		
Yes	53	70.7
No	22	29.3
<i>Length of stay in the ICU_{days}</i>		
Mean \pm SD	2.4 ± 1.0	

Abbreviations: ICU, intensive care unit; N, number of patient; SD, standard deviation.

Table 2. Patients' Total and Subscale Scores of the Intensive Care Experiences Scale ($n = 75$).

The intensive care experiences scale	Mean \pm SD	Min-Max
Total scale	57.4 ± 3.9	49-68
Awareness of surroundings	20.3 ± 2.0	14-25
Frightening experiences	14.2 ± 1.5	12-20
Recall of experience	13.7 ± 1.7	10-17
Satisfaction with care	10.0 ± 2.2	6-16

Abbreviation: SD, standard deviation.

Table 3. Comparison of Patients' Sociodemographic Characteristics According to the Intensive Care Experiences Scale Scores (n = 75).

Characteristics	Total scale Mean \pm SD	Awareness of surroundings Mean \pm SD	Frightening experiences Mean \pm SD	Recall of experience Mean \pm SD	Satisfaction with care Mean \pm SD
Age _{year}	$r^s = -0.154$ $P = .188$	$r^s = -0.054$ $P = .647$	$r^s = -0.060$ $P = .612$	$r^s = -0.115$ $P = .326$	$r^s = 0.098$ $P = .404$
Gender					
Female	57.8 \pm 3.9	20.5 \pm 1.5	14.4 \pm 1.6	13.9 \pm 1.9	10.4 \pm 2.1
Male	57.2 \pm 4.0	20.1 \pm 2.3	14.0 \pm 1.3	13.5 \pm 1.6	9.7 \pm 2.3
	U = 652.000 $P = .608$	U = 622.000 $P = .401$	U = 601.500 $P = .284$	U = 608.500 $P = .323$	U = 556.500 $P = .123$
Education status					
Primary education	56.9 \pm 3.7	20.1 \pm 1.9	14.0 \pm 1.2	13.6 \pm 1.6	9.9 \pm 1.9
High school	58.3 \pm 3.7	20.3 \pm 2.3	14.4 \pm 1.8	13.9 \pm 1.7	10.0 \pm 2.2
University	57.3 \pm 5.0	20.7 \pm 1.7	14.3 \pm 1.7	13.6 \pm 2.2	10.3 \pm 3.0
	KW = 1.803 $P = .406$	KW = 0.771 $P = .680$	KW = 1.075 $P = .584$	KW = 0.350 $P = .840$	KW = 0.128 $P = .938$
Married status					
Married	57.4 \pm 4.1	20.3 \pm 2.0	14.2 \pm 1.5	13.8 \pm 1.7	9.9 \pm 2.2
Single	57.6 \pm 2.5	20.3 \pm 1.9	14.0 \pm 1.5	13.1 \pm 1.8	10.6 \pm 1.8
	U = 255.500 $P = .829$	U = 255.000 $P = .821$	U = 244.000 $P = .673$	U = 208.000 $P = .295$	U = 203.500 $P = .263$
Type of surgery performed					
General surgery	57.9 \pm 4.0	20.7 \pm 1.8	14.4 \pm 1.7	13.9 \pm 1.8	10.2 \pm 2.1
Orthopaedic surgery	56.1 \pm 3.0	19.6 \pm 2.4	13.5 \pm 1.1	13.4 \pm 1.3	8.7 \pm 1.6
Neurosurgical surgery	57.7 \pm 4.3	19.8 \pm 1.8	14.2 \pm 0.9	13.5 \pm 1.1	11.0 \pm 2.5
	KW = 3.468 $P = .177$	KW = 4.753 $P = .093$	KW = 4.205 $P = .122$	KW = 1.657 $P = .437$	KW = 10.207 $P = .006$ * $p^{1-2} = .004$ * $p^{1-3} = .272$ * $p^{2-3} = .012$
Status of being connect to the mechanical ventilator					
Yes	57.1 \pm 3.8	20.4 \pm 2.0	14.0 \pm 1.3	13.9 \pm 1.7	9.6 \pm 1.8
No	58.4 \pm 4.2	20.0 \pm 1.9	14.6 \pm 1.7	13.3 \pm 1.7	11.1 \pm 2.7
	U = 450.500 $P = .121$	U = 495.500 $P = .302$	U = 465.500 $P = .162$	U = 459.500 $P = .144$	U = 393.000 $P = .025$
Length of stay in the ICU _{days}	$r^s = 0.148$ $P = .205$	$r^s = -0.319$ $P = .005$	$r^s = -0.024$ $P = .835$	$r^s = -0.322$ $P = .005$	$r^s = -0.056$ $P = .630$

Abbreviations: ICU, intensive care unit; SD, standard deviation; U, Mann-Whitney U test; KW, Kruskal-Wallis test; r^s , Spearman correlation analysis.
*Bonferroni Corrected Mann-Whitney U test.

care unit has a positive effect on their intensive care experiences.

It was determined that the patients' intensive care experiences were partially positive. Likewise, some studies investigating patients' intensive care experiences show that their ICES scores are high and experiences are positive (9,13,18,21,25,26), while other studies demonstrate that their ICES scores are below the average and patients' intensive care experiences are negative (22,27,28). The variability in many factors such as the diversity of the patient population, the quality of care, the treatment applied, etc. can be shown as the reason for the variability of the intensive care experience of patients. The fact that our patients could survive the operation may have provided hope and confidence since they would also be able to survive the intensive care process. Moreover, the fact that the study data were collected on the day the patient was transferred to the surgical

clinic may also have positively affected the intensive care experiences of patients.

The patients' awareness of the intensive care setting was moderate. A similar study (27) determined patients' awareness of the intensive care setting as moderate. Another study revealed that 82% of patients were aware of the intensive care setting (15). Udchumpisai and Peerakavee (29) determined that patients' awareness of their environment was at a high level. The short length of stay of patients in the intensive care unit (1.4 ± 1.0) may have affected environmental sensitivity positively. Thus, the study determined that with the prolongation of the hospitalization period, patients' environmental awareness decreased, and it became more difficult for them to remember their intensive care experiences.

Patients partially remembered their intensive care experiences. Tuğcu and Yılmaz (27) stated in their study that patients could remember their intensive care experiences. Alasad et al

(15) found that most of the patients remembered their intensive care experiences. In the literature (29,30), it is reported that 17.6% to 58.6% of patients remembered their intensive care experiences. The study results show that patients remember their intensive care experiences at different levels.

Although the satisfaction of patients was observed at a moderate level, similarly, Tuğcu and Yılmaz (27) determined in their study that the intensive care patients who underwent orthopedic surgery were moderately satisfied (12.4). Studies examining the intensive care experience of cardiovascular surgery intensive care patients reported that satisfaction was high level (15–20) (8,13). Ariffin et al (30) revealed that 43% of patients were extremely satisfied with health service. Patient satisfaction may have been adversely affected due to reasons such as the prevention of patient visits by relatives to the intensive care unit during the pandemic and standard intensive care stressors (noise, loneliness, the inability to speak, etc.).

Of the patients, 45.3% (n = 34) saw other patients during hospitalization, and while 44.1% of these patients stated that they did not feel uncomfortable witnessing the care and treatment of other patients, 29.4% indicated that they were demoralized, and 20.6% felt fear thinking that the same procedures would be applied to them. In their study, Çam and Şahin (22) revealed that patients who experienced discomfort were most frequently demoralized, thought they looked frightening and thought the same procedures would be applied to them. In the study carried out by Çağlayan and Dağ (26), it was reported that 9.6% of patients treated in the surgical intensive care unit due to cardiac reasons were emotionally affected by the intensive care setting. In a systematic review revealing the experiences of intensive care patients, it was determined that patients psychologically experienced hallucination, fear, anxiety, etc. (10). Kılıç et al (13) reported that intensive care patients experienced anxiety and that there was a negative relationship between anxiety level and intensive care experiences. As a result, intensive care units are settings where patients cannot receive adequate social support, are under strict care and treatment due to their diseases, experience pain during some treatments and care, are physically active and where environmental stressors are intense. The fact that the early recovery period after surgery is spent in intensive care settings due to these characteristics may affect patients' biopsychosocially, which may cause some patients to experience negative emotions.

Limitations of Study

This study has some limitations. It is not possible to generalize the findings since they have a single-center experience. Multicenter studies should be performed at this stage.

Conclusion

The study revealed that the intensive care experience of the patients was partially positive. It has been shown that the

type of surgery performed, status of being connected to the mechanical ventilator, and length of stay in ICU performed affects the intensive care experience of the patients. Being aware of the patients' experiences, supporting them in biopsychosocial aspects and being in contact will contribute to the improvement of their postsurgical intensive care experience. Nurses' knowledge of patient experiences can accelerate recovery, increase nurses' awareness of stressors, and improve care quality and satisfaction. In order to improve environmental awareness in patients whose hospitalization period is prolonged in the intensive care unit, it is recommended to orient the patients and to continue informing them.

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Authors' Note

Ethical approval to report this case was obtained from Trakya University Faculty of Medicine Scientific Research Ethics Committee (2020/458) and Trakya University Health Research and Application Center (2021/60-14413). All procedures in this study were conducted in accordance with the Trakya University Faculty of Medicine Scientific Research Ethics Committee (2020/458) and Trakya University Health Research and Application Center (2021/60-14413) approved protocols. Written informed consent was obtained from the patients for their anonymized information to be published in this article.


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