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## Research Article/Özgün Araştırma

### Satisfaction, struggles, and suggestions: ICU experiences of open-heart surgery patients in Türkiye

### Memnuniyet, mücadeleler ve öneriler: Türkiye'de açık kalp ameliyatı hastalarının yoğun bakım deneyimleri

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#### Abstract

**Aim:** The experiences of patients who undergo open-heart surgery in the intensive care unit (ICU) have been insufficiently explored. This study aims to investigate the ICU experiences of open-heart surgery patients in Türkiye.

**Materials and Methods:** This qualitative research was conducted with 15 patients who underwent open-heart surgery. Data were collected through semi-structured in-depth interviews, recorded, transcribed, and analyzed using inductive content analysis.

**Results:** Participants identified four main themes: i) satisfaction, ii) physical problems, iii) emotional feelings, iv) physical environment. They expressed gratitude towards healthcare professionals and family, discussed postoperative challenges, and emphasized the need for improved privacy. Healthcare professionals played a key role in decision-making and alleviating psychological stress.

**Conclusion:** This study sheds light on the experiences of open-heart surgery patients in the ICU, highlighting the importance of addressing both physical and emotional needs. The findings suggest that incorporating patient feedback can improve patient-centered care and enhance outcomes.

**Keywords:** Open-heart surgery; Coronary artery bypass grafting; Qualitative research; Life experiences; Intensive care unit.

#### Öz

**Amaç:** Açık kalp cerrahisi geçiren hastaların, yoğun bakım ünitesinde (YBÜ) geçirdiği süre zarfındaki deneyimleri sınırlı bir şekilde araştırılmıştır. Bu çalışma, Türkiye'deki açık kalp cerrahisi hastalarının YBÜ deneyimlerini keşfetmeyi amaçlamaktadır.

**Gereç ve Yöntem:** Bu nitel araştırma, açık kalp cerrahisi geçiren 15 hasta ile yapılmıştır. Veriler, yarı yapılandırılmış derinlemesine görüşmelerle toplanmış, ses kaydına alınmış ve içerik analizi yöntemiyle değerlendirilmiştir.

**Bulgular:** Katılımcılar, dört ana tema etrafında deneyimlerini paylaşmışlardır: i) memnuniyet, ii) fiziksel problemler, iii) duygusal hisler, iv) fiziksel çevre. Katılımcılar, sağlık profesyonelleri ve ailelerine teşekkür ederken, postoperatif zorlukları ve gizlilik ihtiyacını dile getirmişlerdir. Sağlık profesyonelleri, karar alma süreçlerinde önemli bir rol oynamış ve psikolojik stresi azaltmada destek sağlamıştır.

**Sonuç:** Bu çalışma, açık kalp cerrahisi hastalarının YBÜ'deki deneyimlerini aydınlatmakta ve hastaların fiziksel ve duygusal ihtiyaçlarının karşılanmasının önemini vurgulamaktadır. Bu bulgular, hasta odaklı bakımın iyileştirilmesine katkı sağlayacaktır.

**Anahtar Kelimeler:** Açık kalp ameliyatı; Koroner arter baypas greft; Nitel araştırma; Yaşam deneyimleri; Yoğun bakım ünitesi.

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## Introduction

Cardiovascular disease (CVD) is the leading global cause of death, accounting for approximately 17.9 million deaths annually.<sup>1</sup> Open-heart surgery, a common treatment for CVD, is on the rise due to increased life expectancy and medical advancements.<sup>2,3</sup> However, it brings postoperative complications, posing challenges for both patients and healthcare professionals.<sup>4-6</sup> Factors such as severity of clinical conditions, high-risk status, age, and comorbidities contribute to complications.<sup>7</sup> Post-surgery complications range from 15% to 30%,<sup>5</sup> impacting resource utilization, ICU, and hospital stays, as well as morbidity and mortality.<sup>8</sup>

ICU stays post-heart surgery, lasting 1-3 days or longer, present complex challenges and stress for patients. Stress factors include invasive procedures, immobility, mechanical ventilation, orotracheal intubation, and pain.<sup>9</sup> The ICU environment introduces anxiety-inducing factors like separation from family, communication difficulties, continuous noise, disorientation, and presence of unfamiliar individuals.<sup>10</sup> These factors can impact patients' well-being, clinical outcomes, and care experiences.<sup>10</sup> Despite some studies addressing ICU experiences,<sup>10-12</sup> there's a scarcity of research on ICU experiences after open-heart surgery,<sup>4</sup> particularly in Turkish patients. This study aims to explore Turkish patients' ICU experiences post-open-heart surgery qualitatively, contributing to personalized care decision-making for healthcare professionals.

## Materials and Methods

### Research design

The Standards for Reporting Qualitative Research (SRQR) checklist has been used to report this study.<sup>13</sup> This research utilized a qualitative descriptive framework and a phenomenological approach, specifically adopting a descriptive phenomenological design to unveil life experiences following open-heart surgery.<sup>14</sup>

## Sample of the research

The study employed purposive sampling method and criterion sampling technique for participant selection. Eligible participants for this research must have undergone open-heart surgery with a median sternotomy approach, be clinically stable (normal blood pressure, no heart rhythm alterations, normal oxygen saturation), be 18 years or older, and proficient in speaking and understanding Turkish. Exclusions were made for those with evident cognitive impairments or unwillingness to participate. The ultimate research sample comprised 15 participants (10 males, 5 females) observed at the post-op cardiovascular surgery clinic of a training and research hospital. Before data collection, participants received and signed an informed consent form detailing the research. Following this, demographic information was collected, and in-depth interviews were conducted.

Those who had open-heart surgery and fulfilled the inclusion criteria were interviewed in a secluded space. The selection of this particular room in the post-op cardiovascular surgery clinic was based on its suitability for facilitating in-depth interviews, ensuring optimal conditions concerning sound, noise, light, and temperature. Precautions were implemented to prevent disruptions during interviews: a notice indicating an ongoing interview was affixed to the door, and team members were briefed accordingly. Data collection concluded after the interview with the 15th participant, as data saturation was reached, no novel information emerged, and responses became repetitive.<sup>16-18</sup>

## Data collection

Data for the research were collected through a comprehensive semi-structured interview. The interview guide was crafted based on insights from existing literature,<sup>4,15</sup> and pilot tests were conducted before finalizing the form (See Appendix 1). The semi-structured interview questions focused on patients' experiences and emotions following open-heart surgery. Participants were asked to describe their feelings after surgery, share their intensive care experiences, and reflect on how these experiences impacted their lives.

The interviews were conducted by the initial researcher, possessing pertinent experience in qualitative studies, in a private space that guaranteed participant comfort and provided essential conditions for secure data collection. The second researcher documented field notes derived from their observation of participants' non-verbal cues. Following each interview, demographic information about the participant was collected, along with their confirmation regarding the utilization of their results and feedback.<sup>14</sup> The interviews, on average, lasted for 36 minutes (ranging from a minimum of 20 minutes to a maximum of 65 minutes). They were recorded using an audio recorder and transcribed verbatim. The transcriptions were subsequently reviewed for accuracy.

### Data analysis

The data underwent inductive content analysis. All interview recordings and notes from the interviews were amalgamated with the collected data. These were documented without additional comments, aligning with the nature of the data, and were analyzed by two researchers following the steps recommended by Graneheim and Lundman (2004).<sup>16</sup>

- Raw data were repeatedly reviewed for overall comprehension
- Text content was segmented into meaningful units, coded, and condensed.
- Codes were interpreted, scrutinized for differences and similarities, leading to subthemes.
- A back-and-forth examination across all text units was conducted.
- Subthemes were consolidated, and overarching study themes were identified.

Following the establishment of the final code version, an assessment of coder compatibility was conducted by two individuals external to the study. The inter-coder consistency ratio, measured through Cohen's kappa (k) value, was determined to be 0.86. A kappa value falling between 0.81 and 1.00 is considered indicative of a perfect agreement between raters.<sup>14</sup>

### Rigor, trustworthiness, and authenticity of data

To assess the internal authenticity, a team of four experts, comprising a cardiovascular surgeon and three nurses, reviewed and finalized the semi-structured interview guide. The data analysis process was independently carried out by each researcher. Two authors separately encoded the participants' statements to enhance the authenticity of the emerging themes and sub-themes. The codes were compared, common codes identified, discrepancies discussed, and new categories established through a re-evaluation process.<sup>16,18</sup> Additionally, to bolster the external trustworthiness of the research, the researchers forwarded their perceptions, notes, and conclusions that underpin the report, along with all the tools used for data collection, raw data, and encoded data to an external specialist for verification.<sup>14,19</sup>

### Ethics committee approval

Approval was granted by an ethics board (No: 33-33-08, dated 05.01.2023), institutional permission (E-45786011-602.02.01) and written informed consent was obtained from all participants. The research adhered to the ethical standards outlined in the Helsinki Declaration throughout all stages. Participants were guaranteed the confidentiality of the collected data, and pseudonyms were employed in data submission.

### Results

#### Sample characteristics

Five women and ten men, totalling 15 patients who underwent open-heart surgery, participated in the study. The average age of the patients was 58.4 (range: 46-76). The majority of the patients were married ( $n=13$ ) and unemployed ( $n=9$ ). Most of the patients ( $n=12$ ) had undergone coronary artery bypass grafting (CABG) surgery. The most common comorbidity observed was hypertension. The average length of stay in the intensive care unit (ICU) was 6.4 days (range: 4-13). Ten patients reported having no prior knowledge about the ICU. Information regarding age, gender, marital status, education level, employment status, comorbidities, type of surgery, and length of stay in the ICU and hospital is presented in Table 1.

**Table 1.** Demographic data of the participants in the study.

Participant	Age	Sex	Marital status	Education	Employment status	Comorbidities	Type of surgery	Length of hospital stay (day)	Length of stay in ICU (day)	Previous information about the ICU
P1	72	F	Single	Primary	Retired	Mitral regurgitation, Thyroid	CABG	24	5	No
P2	58	F	Married	Middle school	Retired	HT, DM, HL	CABG	28	7	No
P3	61	F	Married	Primary	Retired	Thyroid	CABG	25	5	No
P4	51	M	Married	High school	Employed	HT, HL	CABG	18	8	Yes
P5	59	M	Married	Middle school	Retired	HT, DM, HL	CABG	19	6	No
P6	60	M	Married	Middle school	Retired	HT, KOAH, HL	CABG	20	13	No
P7	76	F	Married	Primary	Retired	DM, HL	Valve surgery	19	4	Yes
P8	49	M	Married	Middle school	Employed	HT, HL	CABG	18	6	No
P9	54	M	Married	Middle school	Employed	HT, DM	CABG	29	13	Yes
P10	48	M	Married	High school	Employed	HT, DM, HL	CABG	16	4	No
P11	62	F	Single	Primary	Retired	HT, DM	Valve surgery	14	4	No
P12	46	M	Married	University	Employed	HT, DM, HL	CABG	14	5	Yes
P13	54	M	Married	High school	Retired	HT	CABG	17	5	Yes
P14	62	M	Married	Primary	Retired	HT, HL	Valve surgery	14	6	No
P15	64	M	Married	Primary	Retired	HT, HL, COPD	CABG	19	5	No

Abbreviations: HT, hypertension; DM, diabetes mellitus; HL, hyperlipidaemia; COPD, chronic obstructive pulmonary disease; CABG, coronary artery bypass grafting

## Themes

Open-heart surgeries, being major operations, have various impacts on patients in many ways. In-depth interviews closely examined patients' individual intensive care experiences after open-heart surgery. As a result of the content analysis of qualitative interviews, four main themes and

22 sub-themes were obtained (Table 2). In this section, four main themes, namely "satisfaction," "physical problems," "emotional feelings," and "physical environment," along with their sub-themes, were discussed. All quoted participants were anonymized, and the quotes were presented in the form of participant number, age, and gender, such as (P1, 58, F).

**Table 2.** The main and sub-themes related to the experiences of patients in the intensive care unit following open-heart surgery.

Main Theme	Sub-themes
Satisfaction	Interest of healthcare professionals
	Satisfaction with treatment and care
	Family support
	Beliefs and encouragement
Physical Problems	Difficulty lying on the back
	Pain
	Difficulty eating
	Not being able to sleep
Emotional Feelings	Desire to leave/escape from the intensive care unit
	Relief
	Comparing oneself with other patients
	Feeling dependent on others
	Fear of death
	Concerns about not recovering
	Feeling alone
	Not remembering
	Developing a positive perspective
	Difficulty coping with surgery
Physical Environment	Noise
	Crowdedness
	Feeling cold
	Privacy

### 1. Main theme: Satisfaction

In the study, most patients ( $n=13$ ) reported high satisfaction with ICU care, citing confidence, moral support, cheerfulness, and effective communication from doctors and nurses. They expressed gratitude for healthcare providers and conveyed satisfaction.

*"...he (the doctor) comes and goes, 'don't worry, I'll make you feel better,' comes and caresses my head, gives me morale; may God be pleased, a very good doctor. When he enters through that door, a great sense of morale comes to you because he comes towards you with such kindness..." (P2, 58, F)*

Patients in the ICU also expressed satisfaction with nursing care, with seven noting complete fulfilment of their needs. Some conveyed their contentment with care as follows:

*"Intensive care, my God, may nobody experience it. It's really tough, but there are people working there, you know. It's like they're superhuman. They take care of everything so attentively. They peeled my apple for me. I don't know, they peeled my egg. They shredded my chicken. Their effort, you know? They're all very good people. I can't say anything bad about them." (P8, 49, M)*

Patients, in addition to being satisfied with healthcare workers, reported receiving support and morale from their families during and after the intensive care process ( $n=8$ ). P1's statements included:

*"They were shattered, but now I am pleased with my children. They all rallied around me... They said, 'We are always behind you,' they said, 'We pray for you every day.'" (P1, 72, F)*

Upon waking up in the ICU, patients ( $n=11$ ) expressed gratitude to God for surviving the challenging postoperative period. Coping with the intensive care process, some ( $n=5$ ) mentioned relying on prayer, instilling belief in recovery, and maintaining hope, as reflected in their statements:

*"I was receiving treatment, and I was always praying to God. I was constantly trying to pray in my mind, and when I prayed, I felt a bit relieved." (P2, 58, F)*

### 2. Main theme: Physical problems

Patients ( $n=9$ ) reported physical challenges during the postoperative ICU process, with lying on their backs continuously being the most common issue.

They mentioned discomfort, back pain, fatigue, pressure sores, and difficulty attending to toilet needs as associated challenges.

*"Seriously, there's nothing else but lying down there. Does a person ever get tired of lying down?" (P10, 48, M)*

Postoperative pain was a commonly mentioned issue, with over half of the patients ( $n=8$ ) experiencing pain in the intensive care unit. This included pain in incision areas, and two patients reported pain related to urinary catheters.

*"Look, I swear, on the day they removed the catheter, it felt like a tractor lifted off me, just imagine that." (P10, 48, M)*

Patients also reported the inability to eat as another physical problem. Factors such as post-anaesthesia nausea-vomiting, loss of appetite, and difficulty adhering to a salt-free diet were cited by patients ( $n=8$ ). Patient P7 expressed this issue as follows:

*"Until yesterday evening, whatever I ate came back up. My tongue is dry, my palate is burning, my body is thirsty, I even wet my feet. It's very difficult. I would be fine if there wasn't any nausea..." (P7, 76, F)*

The necessity of lying on their backs continuously, pain, being dependent on mechanical ventilation, and environmental factors led patients to experience sleep problems. They expressed using medication for sleep ( $n=6$ ).

*"I took sleeping pills. I couldn't sleep continuously, you know. I can't sleep in this position. Because I always turn and sleep on my side." (P9, 54, M)*

### 3. Main theme: Emotional feelings

After open-heart surgery, ICU patients reported intense emotions, emphasizing a significant psychological impact. Over half of the study participants ( $n=8$ ) expressed a strong desire to leave the ICU promptly.

*"Seriously, you just want to get out as soon as possible. You're dependent on everything there. You can't even clean yourself. Freedom is something else. It's not there. Okay, they take care of you for a certain period and all, but it*

*doesn't mean anything. It doesn't fill that emotional void of yours..." (P12, 46, M)*

The predominant emotion expressed by patients was relief, as the surgery went better than expected ( $n=7$ ). Patients conveyed happiness and gratitude for surviving open-heart surgery, with one (P15) expressing a sense of revival upon waking up in the ICU for the first time.

*"Not an easy surgery. It's a very serious surgery... It's like I've died, but I'm coming back to life. I didn't think I would come back, but thanks to God, we made it..." (P15, 64, M)*

After open-heart surgery, there were multiple patients in the same environment in the ICU. Some of the participating patients ( $n=5$ ) mentioned observing other patients, comparing themselves, feeling hope when they saw patients in better conditions, feeling sad when they saw patients in worse overall condition, and experiencing psychological impact when others suffered ( $n=3$ ).

*"You see those who are doing better than you, and you see those who are doing worse than you. When you see the worse, you're grateful for your own condition. And when you see someone in a better condition leaving, you hope that you'll be taken out too. I mean, you experience the emotions of the world. You look at someone who's struggling, yelling, screaming. You look at them, then you look at yourself and feel grateful for your own situation..." (P12, 46, M)*

Patients in the ICU after surgery also expressed the challenge of meeting self-care needs due to limited mobility. They mentioned feeling dependent on others and experiencing a sense of freedom loss because they couldn't attend to their own needs ( $n=5$ ).

*"You're just tied to a bed, constantly needing help from someone. It really gets to you. Of course, you can't get up and drink water from the table, you can't grab a tissue, you can't adjust your pillow. The simplest things, you know... It's really distressing." (P4, 51, M)*

Patients raised the topic of the fear of death, experiencing it both in the preoperative and ICU phases. They mentioned feeling upset at

the thought of not seeing their family and loved ones again ( $n=5$ ).

*"...I don't have my children by my side; I panicked at the thought of dying and not being able to see them..." (P2, 58, F)*

During the ICU process, patients expressed anxiety stemming from the fear of not recovering, pondering on their chances of recovery, and experiencing a sense of uncertainty ( $n=4$ ).

*"There, no one else but yourself can help you. It puts a person under stress in that regard. What will happen to me, will I die, will I survive, will I get out, or won't I be able to get out?" (P13, 54, M)*

In the ICU process, some patients mentioned feeling lonely as family visits were limited to specific times (twice a day). They expressed getting emotional and crying upon seeing their family and children ( $n=3$ ).

*"No one is around, when I look around, none of my children are there. I felt that feeling strange, it's not easy. You feel lonely..." (P7, 76, F)*

Patients after surgery mentioned the inability to remember the first moments of waking up after the operation ( $n=5$ ). Statements from P3 and P5 on this matter were as follows:

*"Honestly, I don't remember waking up at all. I opened my eyes like this, looked around. Someone said, 'Sleep, sleep.' I slept a little more, then they removed the tube (endotracheal tube)." (P5, 59, M)*

Post open-heart surgery, some patients mentioned a shift in their perspectives on life. They developed a positive outlook, gained a better understanding of the value of life, living, and being healthy, and expressed a commitment to avoiding harmful habits ( $n=5$ ).

*"Well, I can only say this: a person who has been in the ICU looks at life from a more beautiful and positive perspective, really looking at the positive side of life and events... You learn to overlook some things, that's one thing. Secondly, your instinct to say 'no' to people increases. According to my logic, in the past, if you came to me, said something, even if*

*I felt hurt, I couldn't react. I didn't want to hurt them either. But after the ICU, people change. You say, 'Life is not really long enough to be upset for someone else...' (P4, 51, M)*

Patients expressed that the surgery was very challenging, with five individuals highlighting the difficulty of both the surgery and the postoperative process ( $n=5$ ).

*"Once you come to your senses, once you get out of the intensive care unit, there is a feeling of happiness in a person as if they have been freed from prison, to be honest. You not only feel a sense of happiness but also become quite happy. However, the intensive care unit is not an easy place; it's a difficult process, but I think it's a necessary process." (P13, 54, M)*

*"...It's like a very heavy surgery; I felt as if two trucks had passed over me. I felt that kind of pain." (P15, 64, M)*

#### 4. Main theme: Physical environment

Some of the patients who underwent open-heart surgery mentioned problems related to the physical environment of the ICU. Three patients were uncomfortable due to the stressful and noisy environment, three patients felt discomfort due to the high number of people in the room and the fear of getting an infection, and one patient felt cold due to the low room temperature. One of the most frequently mentioned issues related to the physical environment was privacy. Some patients expressed discomfort about men and women sharing the same space, and feeling uneasy when their hair or upper body was exposed. They emphasized the need for more attention and care for privacy ( $n=6$ ).

*"It bothered me personally, for example, you are uncomfortable here, you want to sleep, the patient next to you has come back from surgery and he wants to scream, he is screaming, you cannot stop anyone, you have no right to do anything anyway." (P4, 51, M)*

Patients made suggestions regarding the physical environment, emphasizing the need for improved privacy. One patient suggested individual rooms in ICUs, while two proposed separate ICUs for male and female patients. Another patient recommended a more spacious arrangement of the physical space.

*"Let me give you an example; the intensive care unit I stayed in was right next to it, an eight-bed room... If you divide those eight people into two rooms, it fits, and if you make separate rooms for them, no one will disturb each other." (P4, 51, M)*

*"They could make it a bit more comfortable (spacious). I mean, there are already six, seven, eight patients, seven, eight staff, plus there's a shift change. The noise gets quite loud during the shift change. The shift change could be done elsewhere..." (P9, 54, M)*

## Discussion

Open-heart surgery is a common major procedure with patients spending the initial postoperative period in the ICU, crucial for care. This study explores the experiences of individuals after open-heart surgery in the ICU, offering valuable insights into the challenges and emotions faced. Recognizing and understanding these experiences are paramount to enhancing the postoperative ICU journey for those undergoing open-heart surgery.<sup>4</sup> Our study findings were classified under four main themes, namely "satisfaction," "physical problems," "emotional feelings," and "physical environment," obtained through the content analysis of qualitative interviews.

The study found that the majority of ICU patients expressed high satisfaction with both doctors and nursing staff. This positive sentiment was attributed to the healthcare professionals' establishment of trust, provision of moral support, cheerful demeanour, and effective communication. Previous research on post-cardiac surgery experiences underscores the crucial role of healthcare professionals, particularly nurses, in providing attention and care.<sup>20–22</sup> Patients specifically praised the nurses for meeting all their needs, reflecting positively on the nursing profession. Similar satisfaction with care has been observed in studies on cardiovascular surgery patients in the ICU.<sup>23–24</sup> Additionally, over half of the patients highlighted the significance of family support in navigating the recovery process, aligning with findings from previous studies emphasizing the importance of psychological and social support from families after cardiac surgery.<sup>24</sup>

Study participants, all Muslim, expressed gratitude to God for surviving the challenging postoperative period in the ICU. They highlighted the importance of prayer as a coping mechanism during critical care, similar to previous qualitative research that underscores patients relying on spirituality, prayer, and self-motivation to navigate the surgical process.<sup>20,22,25</sup> This finding underscores the critical need for integrating spiritual support into ICU care to address patients' emotional and psychological well-being during recovery.

The second major theme in our study focused on physical problems reported by patients in the ICU. These issues included challenges like discomfort lying on their backs, pain, difficulty eating, sleep disturbances, and reliance on medical equipment. Various qualitative studies corroborate these findings.<sup>4,20,21,25</sup> Over half of our participants experienced varying levels of pain in the ICU, consistent with existing literature.<sup>4,20–23</sup> Nurses should be aware of the physical problems of patients in the ICU and provide the necessary support. In particular, effective pain management in the ICU is paramount, necessitating nurses to assess postoperative pain and implement suitable interventions for its reduction or alleviation. Success in pain management has been shown to improve when nurses actively listen to patients' feelings, provide feedback regarding their pain, and implement evidence-based nonpharmacological pain relief methods. Notably, therapeutic communication and redirecting patients' attention have been found to significantly reduce the perception of pain.<sup>26</sup>

Study participants cited challenges in eating, including post-anesthesia nausea-vomiting, loss of appetite, and difficulty adhering to a salt-free diet. Similar issues of appetite loss have been noted in qualitative research.<sup>4,20</sup> Additionally, participants reported sleep problems due to lying on their backs, pain, mechanical ventilator connection, and environmental factors. They used medication for sleep, consistent with findings in prior studies.<sup>4,20</sup> Given the impact of these issues on recovery, integrating dietary counseling, nonpharmacological sleep



interventions, and a multidisciplinary care approach could help improve patients' nutritional intake, sleep quality, and overall well-being. However, further studies are needed to confirm their impact in the ICUs.

ICU patients post open-heart surgery reported intense emotions, often experiencing the ICU for the first time. Notable emotions included the desire to leave the ICU quickly, postoperative relief, self-comparisons with other patients, dependency on others, fear of death and non-recovery, feelings of loneliness, inability to recall the initial awakening, developing a positive outlook on life, and the challenges of the surgery. Our findings align with various qualitative studies.<sup>4,20-22,25</sup> It is important for nurses to provide psychosocial support so that the individual can effectively cope with the emotions they experience in the ICU. In this context, the nurse should evaluate the patient's reaction to events; allow the patient to express themselves; observe the patient's facial expressions, hand and arm movements, tone of voice and eye contact. In addition, the patient's support systems (spouse, relatives, etc.) should be learned and support should be obtained from them. Appropriate coping methods should be chosen together with the patient, and if necessary, the patient should be provided with support from psychologists/psychiatrists.<sup>27</sup>

In this study, the majority of patients expressed a strong desire for prompt discharge from ICU. Post-cardiac surgery, patients experience elevated stress levels, both postoperatively and during ICU stays.<sup>4,25,26</sup> Consequently, exploring interventions to reduce anxiety in post-cardiovascular surgery patients is crucial. Nurses should know effective methods of coping with stress and introduce them to patients.<sup>27</sup> A meta-analysis highlights the efficacy of post-heart surgery music therapy in anxiety reduction.<sup>29</sup> Reducing anxiety through these practices warrants further investigation.

In our study, the physical environment of the ICU emerged as another key theme. Participants conveyed discomfort from the stress and noise in the ICU, expressed concerns about infection due to the crowded space, and reported feeling cold from low room

temperatures. Some specifically noted noise issues during shift changes. Prior research has similarly documented complaints about ICU noise.<sup>4,25</sup> Healthcare professionals should be mindful of the physiological and psychological impact of noise on patients, making efforts to minimize loud conversations.

Our study identified a significant concern regarding privacy in the physical environment. Patients expressed discomfort with mixed-gender spaces and exposure of hair or upper body, highlighting the urgent need for enhanced privacy measures. Maintaining privacy, especially in situations where patients lose control (e.g., under anaesthesia, in intensive care, or connected to medical equipment), is crucial for physical, social, and informational confidentiality.<sup>30</sup> The cardiovascular surgery ICU in the hospital where the study was conducted has a capacity of nine beds. Eight beds are located in the same area, while one bed is in a glass-partitioned section reserved for isolated patients. Curtains separate the beds; however, they are closed during procedures such as cardiopulmonary resuscitation, body care, and perineal care. However, in the early postoperative period, the curtains are kept open to facilitate close monitoring of patients.

Healthcare professionals, particularly nurses, play a pivotal role in ensuring privacy awareness. A study has shown that nurses exhibit higher levels of privacy awareness compared to other healthcare professionals, and education on patient rights can further enhance this.<sup>30</sup> In another study, it was found that privacy violations often occur due to an insufficient number of nurses to provide care to a large number of patients.<sup>31</sup> Therefore, institutional arrangements such as increasing the number of nurses in the ICU can help reduce privacy violations.

### Limitations

The study has some limitations. For instance, the sample only includes patients admitted to a training and research hospital. Therefore, it can be acknowledged as a limitation that the findings of the study may not be generalizable to the entire population. The interviews were conducted in the

cardiovascular surgery ward where post-ICU patients are admitted. The fact that patients are still hospitalized and undergoing continued care and treatment may have influenced their comments on their experiences. Despite these limitations, the study provides significant contributions to the literature in terms of improving patients' ICU experiences and enhancing the quality of care.

## Conclusion

This study highlights the emotional and physical challenges faced by patients in the ICU after open-heart surgery, including pain, discomfort, anxiety, and concerns about privacy. Based on these findings, specific recommendations include improving communication training for healthcare professionals, providing psychosocial support, enhancing ICU privacy measures, and integrating nonpharmacological pain management strategies. These insights can help improve patient-centered care, increase satisfaction, and enhance postoperative outcomes in cardiovascular surgery ICUs.

## Ethics Committee Approval

Approval was granted by the non-interventional clinical research ethics board (No: 33-33-08, dated 05.01.2023). The research adhered to the ethical standards outlined in the Helsinki Declaration throughout all stages. Participants were guaranteed the confidentiality of the collected data, and pseudonyms were employed in data submission.

## Informed Consent

Written informed consent was obtained from all participants.

## Authors' contributions

BA and SS contributed to the conceptualization or design of the work. BA and SS contributed to the acquisition, analysis, or interpretation of data for the work. BA and SS drafted and critically revised the manuscript. All authors gave final approval to be accountable for all aspects of the work, ensuring accuracy and integrity.

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## Conflict of Interest

The authors have no competing interests.

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## Availability of the data material

The data that support the findings of this study are available from the corresponding author upon reasonable request.

## Peer-review

Externally peer-reviewed.

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