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Perception of intensive care among survivor of critical illness in a tertiary care center

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Abstract:

Background: The ICU is a specialized unit for critically ill patients, requiring constant monitoring and support. Patients often experience discomfort due to illness, procedures, and alarms from monitors and equipment. Negative experiences can impact memory, concentration, and mental health. This study explores ICU survivors' comfort and safety.

Method: A cross-sectional descriptive study was conducted in medical ICU of Shree Birendra Hospital, Chhauni, Nepal between 23 Feb to 23 May 2024 using non probability convenience sampling to include adult patients with ICU stay >24 hours. Ethical approval was obtained. Oriented conscious patient perceptions were assessed during ICU transfer out. Likert scale and 24 items Intensive Care Experience Questionnaire with four main domains were used. Perception score, gender and length of stay were analysed in SPSS using t-test. A p-value <0.05 was considered significant.

Result: Out of 43 critically ICU patients, 26(60%) were male, mean age 60.2±19.27 years, ICU stay 6.5±4.5 days. Nineteen patients (44%) had respiratory failure due to chronic obstructive lung disease, and 21(48%) used non-invasive ventilation and 8(18.6%) mechanically ventilated. During ICU stay, 32(74%) were aware of surroundings, 24(56%) had frightening experiences, 25(58%) recalled events, and 24(56%) were satisfied with care. Females reported more fear than males, and increased with longer ICU stay.

Conclusion: Most patients (74%) remained aware of ICU surroundings, half of them could recall events, and were generally satisfied with the care. Over half (56%) reported frightening experiences related to illness.

Keywords: Intensive care experience questionnaire, Intensive care unit, Patient experience

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Introduction

Intensive Care Unit (ICU) is a specialized medical facility equipped to cater patients with critical illnesses.[1] Patients admitted to ICU are usually unconscious or have a low level of consciousness. Some conscious patients may experience panic, anxiety, restlessness, or fear of impending death.[2] To ensure their safety and well-being, patients in the ICU are connected to various equipment monitors to track vital signs, oxygen delivery, and intravenous lines for medications and fluids. The ICU staffs closely monitor these machines to ensure that the patient is receiving the appropriate care.[3]

It is difficult to determine the patient feeling as they may be too sick, either intubated, ventilated, sedated, or breathless to talk.[4] In addition to their medical condition, ICU patients feel trapped in an unfamiliar space with equipment and monitors, leading to a negative experience of isolation and loneliness. Negative experience can have long-lasting effects on survivors, including reduced memory and concentration, distressing memories leading to depression, anxiety, and Post Traumatic Stress Disorder (PTSD) after ICU.[5] These conditions can have a significant impact on the patient's quality of life, and crucial for healthcare professionals to prioritize patient comfort and safety during their ICU stay.[6]

Studies commonly focus on patient outcomes, but fail to evaluate patient perception and experiences. Negative experience can be mitigated so that the risk of developing post intensive care psychiatric conditions like depression, anxiety and PTSD will be minimized.[7] This study aims to examines ICU survivors' perceptions, focusing on awareness, frightening experiences, recall, and care satisfaction.

Method

A cross-sectional descriptive study was conducted between 23 Feb to 23 May 2024 in the medical ICU of Shree Birendra Hospital, Chhauni, Nepal. Ethical approval was taken from the Institutional Review Committee (IRC) of Nepalese Army Institute of Health Sciences, prior to the study. All cases of study period were enrolled in the study. Participants who were more than 18 years of age with a life-threatening illness and, ICU stay of more than 24 hours were included in the study. Patient admitted with severe neurological impairment were excluded from the study. Informed written consent was taken from the patient or the patient's healthcare proxy.

Patients intensive care experiences were assessed by the intensive care experience questionnaire (ICEQ) developed by Rattray et al. 2004.[4] The ICEQ measures patients' perceptions of their intensive care experience. It includes 24 items questionnaire that assess four domains of the intensive care experience. These are 'awareness of surroundings' (nine items) (e.g., I recognised my relatives); 'frightening experiences' (six items) (e.g., I seemed to have bad dreams); 'recall of experience' (five items) (e.g. most of my memories are blurred), and 'satisfaction with care' (four items) (my care could have been better). A Likert-type (strongly agree to strongly disagree) questionnaire was used to collect the response of the patient. Strong agrees in Likert denotes more satisfaction where as strong disagree indicates poor satisfaction. During the data collection Richmond agitation and sedation scale (RAAS) and Confusion Assessment Method in ICU (CAM–ICU) Scoring was done to ensure orientation and consciousness. Data was collected from patients who were awake, conscious, and clear-minded by the attending physician using the ICEQ questionnaire during their transfer from the ICU to the hospital wards. Data was entered in the Excel and analyzed by using Statistical Package for social Science version 20. The data were presented in frequency, percentage for categorical data and mean and standard deviation for continuous data. Inferential statistics t-test was used for determining associations of perception score and gender and length of stay.

Result

Out of the total 43 patients with critical illness who stayed in ICU for >24 hours, 26(60%) were male and 17(40%) female. The mean age was 60.2±19.2 years; mean stay in ICU was 6.5±4.5 days. Nineteen patients (44.1%) were admitted with COPD type II respiratory failure, 21(48%) patients used noninvasive ventilation, 8(18.6%) patients were mechanically ventilated, Table 1. Four patients were in septic shock, 5(11.6%) with upper GI Bleed, and 2(4.6%) with pulmonary edema and diabetic ketoacidosis. Total 5(11.6%) patients received emergency hemodialysis in ICU and 3(6.9%) patients had upper Gastrointestinal endoscopy. During ICU stay, majority of the patients reported high mean score of 33.33 for awareness of surrounding. Followed by frightening experiences of 17.02, recall of ICU stay of 14.6, and satisfaction of care 11, Table 2. There was varied experiences among survivors, on average the awareness scores were high and satisfaction scores low.

Table.1 Clinicodemographic of intensive care unit (ICU) survivors of critical illness, n=43

Variables	n(%)
Age (years) Mean±SD	**60.28±19.27**
Sex n(%)	
Male	26(60)
Female	17(40)
Stay in ICU (days) Mean±SD	**6.58±4.59**
Disease for ICU admission, n(%)	
COPD with type 2 respiratory failure	19(44.1)
Sepsis with septic shock	4(9.3)
Severe pneumonia	4(9.3)
Pulmonary edema	3(6.9)
Upper GI bleed	3(6.9)
Diabetic ketoacidosis	2(4.6)
Poisoning	1(2.3)
Others	7(16.2)
Intervention done in ICU, n(%)	
Non-invasive ventilation	21(48)
Invasive mechanical ventilation	8(18.6)
Hemodialysis	5(11.6)
Emergency Upper GI endoscopy	3(6.9)

Table 2. Response score of intensive care experience questionnaire (ICEQ) among ICU survivors, n=43

ICU patient response to ICEQ	Mean	SD	Minimum	Maximum
Awareness of surrounding	33.33	7.12	9	45
Frightening experience	17.02	5.91	6	30
Recall of ICU stay	14.60	4.51	4	23
Satisfaction of care	11.26	2.68	6	17

On positive experiences, awareness of surroundings and overall satisfaction with care were largely positive. On negative experiences, pain, blurred memories, sleep disruptions, and environmental factors (disturbances and noise) were commonly reported concerns. Analysis of individual questionnaire in Awareness with surrounding 23(53.4%) strongly agreed "I recognized my relatives", 14(32.5%) strongly agreed "I knew what was happening to me". In Frightening experience 13(30.2%) agreed "I felt scared", 13(30.2%) agreed "I thought I would

die", 22(51.1%) agreed "I seemed to be in pain". In recall 14(32.5%) agreed "Most of my memories are blurred", 23(53.4%) "I seemed to sleep too much", 9(20.9%) strongly agreed "I never knew whether it was day or night". In satisfaction of care 21(48.8%) agreed "My care was as good as it could have been" and 10(23.2%) "It was always too noisy", Table3.

Table 3. Percentage of patient response to frequency item of ICU experiences, n=43

SN	Domain	Strong disagree	Disagree	Neither agree/disagree	Agree	Strongly agree
A.	**Awareness of surroundings**					
1	I recognized my relatives	3	1	1	15	23
2	I was aware of someone near to me	2	0	3	18	20
3	I knew where I was	4	1	5	13	20
4	I knew what was happening to me	3	7	4	14	14
5	I remember my relatives being with me	1	2	2	18	18
6	I felt safe	1	3	9	15	15
7	I felt in control	2	8	11	13	7
8	I was able to let people know what I wanted	2	8	6	16	11
9	I have no recollection of being in intensive care	13	9	3	6	8
B.	**Frightening experiences**					
1	I seemed to have bad dreams	11	13	4	10	5
2	I felt scared	11	12	3	13	4
3	I saw strange things	12	10	3	15	3
4	I felt helpless	8	13	8	10	3
5	I thought I would die	11	9	4	13	6
6	I seemed to be in pain	4	5	6	22	6
C.	**Recall of experiences**					
1	I wish I remembered more about it	6	13	10	12	2
2	Most of my memories are blurred	8	14	3	13	5
3	I wish I had known more about what was happening to me	4	11	9	14	4
4	I seemed to sleep too much	4	11	3	23	1
5	I never knew whether it was day or night	11	11	1	11	9
D.	**Satisfaction with care**					
1	My care could have been better	9	25	6	2	1
2	My care was as good as it could have been	0	6	4	21	12
3	I was constantly disturbed	10	14	9	6	4
4	It was always too noisy	5	18	5	10	5

Frightening experience mean score was more in female patient (19.2) compared with male (15.4); awareness, recall, and satisfaction scores were similar across genders, Table 4.

Difference of score was 15 vs 17 in frightening and 12 vs 15 in recall. Experience scores were higher in patients staying longer in ICU, but not significant, p>0.05, Table 5.

Correlation with perception of ICU care and age revealed that, Awareness (-0.185) and Recall (-0.111) had weak negative correlation i.e., age has less or no meaningful relationship; Frightening (0.196) and Satisfaction of care (0.132) had weak positive correlation i.e., older patients might be slightly more frightened and more satisfaction with care. Correlation with ICU stay, Awareness (-0.042) and Recall (0.016) had almost no correlation with length of stay; Frightening (0.256) and Satisfaction of care (0.411) had a weak to moderate positive correlation i.e., longer ICU stays are slightly associated with increased frightening and increased satisfaction with care, Table 6.

Table 4. Difference in experiences of male and female intensive care survivors of critical illness, n=43

Experiences	Female				Male			
	Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
Awareness	33.65	5.511	25	45	33.12	8.111	9	44
Frightening	19.29	5.914	8	30	15.54	5.523	6	26
Recall	14.29	3.853	5	19	14.81	4.956	4	23
Satisfaction	11.12	2.998	6	17	11.35	2.513	7	17

Table 5. Correlation of length of stay in ICU and patient experiences

Experiences	ICU stay d	n	Mean	SD	CI		T	p-value
Awareness	<3	9	34.44	4.275	-4.028	6.858	0.525	0.602
	≥4	34	33.03	7.732				
Frightening	<3	9	15.00	6.519	-7.015	1.897	-1.160	0.253
	≥4	34	17.56	5.722				
Recall	<3	9	12.22	4.522	-6.336	0.309	-1.831	0.074
	≥4	34	15.24	4.356				
Satisfaction	<3	9	10.00	1.658	-3.582	0.405	-1.609	0.115
	≥4	34	11.59	2.819				

Table 6. Correlation of experiences with length of ICU stay and age of the patient

Experiences	Awareness	Frightening	Recall	Satisfaction of care
Age	-0.185	0.196	-0.111	0.132
ICU stay	-0.042	0.256	0.016	0.411

Discussion

This study was conducted on critical patients admitted in ICU to assess their experience and satisfaction of care. Out of 43 patients, 29(68%) were case of respiratory failure requiring either noninvasive or invasive ventilation. Despite the severe critical illness the result of this study shows that majority of patient during ICU stay had high level of awareness to the surroundings, with 74% of patients reporting fully aware of their surroundings during their ICU stay, which is similar to a study of Jordanian ICU patients, where 82.5% reported the same level of awareness.[8] Additionally, 53.4% of patients could clearly recognize their relatives, 46.5% knew who was around them and their location, and 37.2% were able to express their needs. These findings align with another exploratory study on ICU patients' perceptions, memories, and experiences.[9] Due to this heightened awareness, many patients reported feelings of fear and pain. Over 30% feared they would die, and one-fourth experienced bad dreams and difficulty sleeping.

The literature suggests bad dreams occur in up to 73% of ICU patients.[10]

Study of similar experiences response was done in "Patients' perceptions of intensive care" in which the response rate and frequency recorded was differ when compared with our study.[11] In our study, 50% of patients were satisfied with the treatment they received, though this level of satisfaction was lower than a similar study conducted in a Thai population.[12] However, half of them had a blurry memory of intensive care and they wished to have more recalls. Hence nurses and treatment team should orient their patient about time, place, person and surrounding regularly so that the patients recall and memory of ICU stay will be more.

Frightening experience was high among the participants which show positive correlation with the length of ICU stay. Female patients had more frightening experience when compared with males. Younger patients were more scared during ICU stay. They thought they were going to die. ICU experiences in our study had a positive correlation with length of stay and age of the patient, Table 6.

In one of the studies on "Patient perception of intensive care discomfort" ICU discomfort and anxiety were significantly related to ICU length of stay. Where there was a significant medium positive correlation between ICU length of stay and ICU discomfort ($r = 0.457$, $p < 0.001$).[13] Studies show that ICU patients often experience psychological distress, with fear and anxiety increasing by 40%, 30%, and 60% in some cases.[14] The quality of life for ICU survivors, especially those who had prolonged mechanical ventilation or were admitted for severe trauma or sepsis, is generally worse.[15] Psychological interventions in the ICU, provided by clinical psychologists and trained staff, aim to offer emotional support and coping strategies for patients and their families. Early intervention by clinical psychologists can help patients recover from the stress of critical illness.[16]

This study, limited to critically ill medical patients, may not reflect broader populations. Single interviews during ICU transfer risk recall bias, and responses might differ with repeated assessments. Larger, multi-interview studies are needed for deeper insights into patient ICU experiences.

Conclusion

This study found that most of the patients in ICU (74%) remained aware of surroundings, and half of them could recall events, and were generally satisfied with the care. Over half (56%) reported frightening experiences related to illness. They are frightened thinking of death and had a poor recall of intensive care. Hence, it's important to act towards humanizing ICU to improve patient satisfaction.

Author contribution

Conception or design of the work: CP; Data Acquisition, analysis: All; Data Interpretation of data: CP, NM; Drafting the work: All; Revision, review: All; Final approval of the version to be published: All; Agreement to be accountable for all aspects of the work: ALL.

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Conflict of interest

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Supplementary material

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

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