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Assessment of the Health Status among Families of ICU Patients under Scheduled Visitation: A Quasi-Experimental Study

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Abstract

The purposeful presence and participation of families in the intensive care unit (ICU) may contribute to meeting the emotional and psychological needs of the patient's family, affecting the patient's recovery process. This study aimed to assess the health Status of patients' families admitted to the ICU under scheduled visitation.

This quasi-experimental study was performed on 197 patients' families admitted to the ICU of Shahid Sadoughi Hospital in Yazd, Iran, during 2022-2023. Participants were selected using convenience sampling. The patients' families were asked to be present in the ICU for one hour daily, for six consecutive days, and to perform the prescribed procedures. Questionnaires were completed by the patients' families before and six days after the intervention. Demographic information and Critical Care Family Needs Inventory (CCFNI) questionnaires with 5 subscales were used. The collected data were analysed using independent and paired samples t-tests using SPSS software (version 21).

Among the 197 participants, 66.4% were female, over half (53.2%) had a diploma or lower educational level, and approximately 40% were spouses of the patients. The intervention led to significant improvements in all subscales of the Critical Care Family Needs Inventory (CCFNI). The mean score for assurance and anxiety reduction decreased from 3.12 ± 0.31 to 2.43 ± 0.37, comfort from 2.93 ±0.38 to 2.55 ± 0.44, information needs from 2.95 ± 0.34 to 2.71 ± 0.38, proximity and accessibility from 2.78 ± 0.32 to 2.57 ± 0.34, and support needs from 2.64 ± 0.30 to 2.44 ± 0.31 (all $p \leq 0.001$). The total family needs score also decreased significantly from 2.84 ± 0.16 to 2.53 ± 0.20, demonstrating the effectiveness of scheduled visiting in addressing family needs in the ICU.

This study showed that the purposeful presence of a close family member in the ICU significantly reduces critical care needs, most notably support needs, while minimally affecting information needs.

Keywords: Patients' Families, Intensive Care Unit, Health Status

Introduction

Health care is grounded in patient-centred and family-centred approaches. A decline in an individual's health may result in hospitalization in the intensive care unit (ICU) (1). Unexpected ICU admission often induces stress and psychological tension in both patients and families due to the severity of life-threatening conditions and the anxiety associated with diagnostic and therapeutic procedures (2). In the ICU setting, family members are frequently unable to provide direct care, leading to emotional distance that can exacerbate patients' psychological stress (3).

Patients in the ICU face multiple challenges, including cognitive and psychological changes, physical disabilities, behavioural disturbances, and impaired perception (4). Therefore, reducing the emotional and psychological burden in this environment is critical. Emotional deprivation can worsen patient symptoms. Sensory stimulation is essential, but nurses often lack the time or energy to provide it for fully dependent patients. This highlights the importance of family presence at the bedside (5). Given the structure and philosophy of intensive care units, visiting is one of the basic needs of patients and families during hospitalization (6). Nurses, as integral members of the healthcare team, must recognize the importance of visitation and its potential advantages and disadvantages (7). Unexpected ICU admissions can leave families unprepared, leading to psychological trauma and emotional crises (8).

International organizations, including the Society of Critical Care Medicine (SCCM) and the European Society of Intensive Care Medicine (ESICM), emphasize that family-centered care is a core component of high-quality ICU practice. Recent evidence (2022–2025) shows that restrictive visiting policies increase anxiety, depression, helplessness, and even post-traumatic stress among family members. In contrast, structured visiting programs enhance satisfaction, reduce psychological distress, and strengthen trust in healthcare providers. Scheduled and structured family visitation is now recognized as an effective strategy to improve communication, support emotional stability, and facilitate shared decision-making (9).

Many critically ill patients cannot participate in their treatment decisions, necessitating reliance on family members for informed consent and decision-making (10). This responsibility increases the emotional burden on both families and healthcare providers (11). Nurses, often focused primarily on patient care, may inadvertently neglect family needs, highlighting the importance of early assessment and support (12). Assessing and responding to family needs at the beginning of a crisis is of particular importance (13). Providing emotional and psychological support is a core nursing duty and a prerequisite for holistic care (14,15). Although families can support patients and help reduce anxiety, restricted visiting hours—often limited to one hour per day or through a window—significantly constrain this opportunity (15).

Research has identified five key domains of family needs in the ICU—assurance, information, proximity, comfort, and support—as critical predictors of family well-being and psychological stability (16). Visiting policies vary internationally due to cultural attitudes, hospital infrastructure, geographic considerations, facility access, and staff readiness to implement changes (17). Despite advances in medical and nursing practice in Iran, family presence in ICUs remains limited, with most hospitals imposing strict visitation restrictions. Given these challenges, this study aimed to examine the impact of scheduled family visitation on

the health and well-being of families of ICU patients.

Methods

Study design and population

This quasi-experimental study employed a one-group pre-post design without a control group and was conducted from February 2022 to July 2023. Due to practical constraints and ethical considerations, a control group was not included, which limits the ability to draw causal inferences. The participants were members of the families of patients admitted to the ICUs of Shahid Sadoughi Hospital in Yazd, Iran. Participants were recruited using convenience sampling. While this approach facilitated timely recruitment, it may introduce selection bias.

Intervention

The objectives of the study were explained to the participants. Then, the members of the patients' families were asked to complete the CCFNI questionnaire. For six consecutive days, the patients' families spent one hour a day in the ICU. During this time, they talked to the patient, recounting positive memories, and massaging the patient as instructed, provided there were no contraindications. The questionnaires were completed again by families after six days. Additionally, the families of three patients were excluded from the study after declaring their unwillingness to continue participation. To reduce possible bias in data collection, the researcher personally distributed the questionnaires among nurses who met the inclusion criteria.

Inclusion and exclusion criteria

The inclusion criteria for the patients' families were being a relative of a patient admitted to the ICU for any reason (father, mother, sister, brother, spouse, child) and being over 18 years of age. Participants were also required to be proficient in Persian and have no history of diagnosed neurological disorders. Furthermore, the exclusion criteria for patients' families were unwillingness to participate in the study, disability and old age, and inability to speak Persian (18).

Sample Size

Considering 95% confidence level, 80% power, and the standard deviation was 17. The expected difference in mean attitude scores before and after the intervention was 5 units. Based on these parameters, the minimum sample size was estimated to be 200 patients and an equal number of their family members.

$$n = \frac{(Z_{\alpha/2}+Z_{\beta})^2\sigma^2}{D^2}$$

Ethical considerations

The researcher received permission and a written letter of introduction from Shahid Sadoughi University of Medical Sciences, Yazd, and presented the letter to the authorities and managers of the research environment (IR.SSU.REC.1398.144). The participants signed a written consent form for participation in the study .The form stated that they could withdraw at any time. It also ensured that all personal information, including their names, would remain confidential.

Data collection

Data were collected using two instruments: 1) a demographic information form, which included gender, education, and relationship to the patient; and 2) the Critical Care Family Needs Inventory (CCFNI) (Molter et al., 2010).

Molter et al. generated a list of the needs of families of patients admitted to the ICU for the first time in 1979. Seven years later, Molter and Leske developed the first version of the Critical Care Family Needs Inventory (CCFNI). The inventory consists of 45 items

that are organized into five subscales, including information, proximity, support, assurance, and comfort (5). The items are scored on a four-point Likert scale ranging from 1 to 4. Each item with a positive expression was rated as strongly disagreed (1), disagreed (2), agreed (3), and strongly agreed (4) (19). The support subscale contains 14 items that refer to the need of family members for support structures during the illness of an individual who is a loved one. The comfort subscale contains 7 items that refer to families' comfort, including the waiting room, telephone access, restroom facilities, availability of good food, and the family's need for comfort and relief from grief. The information subscale contains 9 items that refer to the family's need for information about patient care and contact with medical staff. It also indicates the family's need to obtain real information about their critically ill patient. The proximity subscale uses 8 items related to frequent visits, receiving regular information, telling the patient's condition over the phone, and the patient's transfer to another ward, indicating the family's need for personal contact and staying close to the critically ill patient, both physically and emotionally. The assurance subscale includes 7 items related to honesty, confidentiality, and hope and reflects the family's need for a desirable outcome. This subscale also shows the accuracy of the care system. In Iran, Bandari et al. (2012) assessed the validity of CCFNI in their study on 150 family members of patients admitted to the ICU and 150 family members of patients admitted to the general ward. The Cronbach's alpha coefficient for the whole scale was 0.926 (20).

Statistical analysis

After data collection, all questionnaire responses were entered into SPSS version 21 for statistical analysis. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were calculated to summarize participants' demographic characteristics and baseline family needs scores. To evaluate the effect of the intervention, paired-samples t-tests were conducted to compare pre- and post-intervention scores for each CCFNI subscale and the total family needs score. Independent-samples t-tests were also used to examine differences between demographic groups where applicable. All statistical tests were two-tailed, and a p-value of less than 0.05 ($P < 0.05$) was considered statistically significant.

Results

Table 1 shows the characteristics of patients' families in the study, in terms of demographic variables, such as sex, education, and relationship with the patient. According to Table 1, more than 60% of the participants were women (66.4%). Besides, more than half of the participants hold a diploma and lower education (53.2%). While the rest hold a bachelor's degree or higher education. Further, approximately 40% of the patient's family members were the patient's spouse.

Table 1. Demographic characteristics of patients' families

Variables	Category	Frequency (Percentage)
Gender	**Female**	131 (66.4)
	male	66 (33.6)
Education	**Diploma and lower**	105 (53.2)
	Bachelor's degree	60 (30.4)

	Master's degree and above	32 (16.4)
Relationship with the patient	**Father**	15 (7.61)
	Mother	63 (31.9)
	sister	32 (16.4)
	Brother	10 (5.01)
	Spouse	77 (39.08)

The results showed a significant reduction in the mean scores of all family needs following the intervention across all five CCFNI subscales. In the Assurance and Anxiety Reduction subscale, all items showed notable decreases, indicating enhanced reassurance, clearer communication, and reduced anxiety among family members. The Comfort subscale also improved significantly, particularly regarding environmental factors, such as accessibility of facilities, and perceived acceptance by hospital staff. In the Information subscale, most items exhibited statistically significant reductions, suggesting that families felt better informed about the patient's condition, treatment procedures, and available services. Similarly, the Proximity and Accessibility subscale showed meaningful improvements in families' ability to receive updates, visit the patient, and interact with healthcare personnel. The Support subscale reflected decreased needs for emotional, spiritual, and practical assistance, indicating strengthened psychosocial support for families. Overall, the total family needs score declined significantly from 2.84 ± 0.16 at baseline to 2.53 ± 0.20 post-intervention ($p < 0.001$), confirming the effectiveness of the intervention in addressing family needs across all domains (Table 2).

Table 2. A comparison of the mean scores of critical care family needs before and after the intervention

Factor	Needs	Before Means ± SD	After Means ± SD	P-value
Assurance And Anxiety reduction	7) To feel there is hope	3.10 ± 0.94	2.41 ± 1.03	< 0.001
	2) To know specific facts concerning patients progress	3.15 ± 0.91	2.29 ± 1.1	< 0.001
	5)To know the expected outcome	3.12 ± 0.93	2.39 ± 1.01	< 0.001
	3) To have questions answered honestly	2.87 ± 1.03	2.63 ± 1.1	< 0.001
	1)To be assured the best possible care is being given	3.48 ± 0.54	2.38 ± 1.08	< 0.001
	4)To feel that hospital personal care about the patient	2.94 ± 1.02	2.63 ± 1.13	< 0.001
	6)To have explanations given that are understandable	3.15 ± 0.95	2.27 ± 0.99	< 0.001
	Total	**3.12 ± 0.31**	**2.43 ± 0.37**	**< 0.001**
Comfort	12)To feel accepted by the hospital staff	2.7 ± 1.02	2.64 ± 1.07	0.019
	11)To have good food available while in the hospital	2.67 ± 1.08	2.53 ± 1.13	< 0.001
	10)To have a telephone near the waiting room	2.95 ± 0.95	2.86 ± 1	0.005
	9)To have a bathroom near the waiting room	3.16 ± 0.85	2.37 ± 1.05	< 0.001
	8)To have comfortable furniture in the waiting room	2.94 ± 1	2.64 1.09	< 0.001

	13)To be assured it is all right to leave the hospital for a while	3.16 ± 0.88	2.29 ± 1.09	< 0.001
	Total	**2.93 ± 0.38**	**2.55 ± 0.44**	**< 0.001**
Information	22)To talk to the doctor every day	2.62 ± 1.12	2.46 ± 1.09	< 0.001
	15)To know exactly what is being done for the patient	3.39 ± 0.71	3.09 ± 0.91	< 0.001
	19)To know why things were done for a patient	2.95 ± 0.94	2.81 ± 1.05	< 0.001
	14)To know how the patient is being treated medically	3.46 ± 0.55	2.93 ± 1.05	< 0.001
	16)To have a specific person to call at the hospital	2.59 ± 1.14	2.54 ± 1.14	0.049
	18)To know which staff members could give what information	2.48 ± 1.03	2.26 ± 1.03	< 0.001
	17)To know about the types of staff members taking care of the patient	3.44 ± 0.59	2.8 ± 1.12	< 0.001
	21)To help with the patients' physical care	2.94 ± 1.01	2.89 ± 1.04	0.025
	20)To be told about chaplain services	2.65 ± 1.10	2.59 ± 1.11	0.039
	Total	**2.95 ± 0.34**	**2.71 ± 0.38**	**< 0.001**
Proximity And accessibility	26)To be told about transfer plans while they are being made	3.42 ± 0.64	3.0 ± 0.98	< 0.001
	29)To see the patient frequently	3.36 ± 0.73	3.0 ± 0.96	< 0.001
	23)To be called at home about changes in the condition	2.45 ± 1.06	2.23 ± 1.04	< 0.001
	24)To receive information about a patient once a day	2.63 ± 1.08	2.57 ± 1.1	0.021
	27)To have the waiting room near the patient	2.81 ± 1.06	2.75 ± 1.08	0.019
	28)To have visiting hours start on time	2.47 ± 1.04	2.32 ± 1.02	0.001
	31)To have visiting hours changed for special conditions	3.39 ± 0.68	2.97 ± 0.97	< 0.001
	25)To talk to the same nurse every day	2.01 ± 0.95	2.1 ± 0.99	0.029
	30)To visit at any time	2.46 ± 1.04	2.18 ± 1.06	< 0.001
	Total	**2.78 ± 0.32**	**2.57 ± 0.34**	**< 0.001**
Support	43)To have directions as to what to do at the bedside	2.84 ± 1.02	2.66 ± 1.11	< 0.001
	42)To have friends nearby for support	2.41 ± 1.05	2.11 ± 1.08	< 0.001
	38)To have someone to help with financial problems	2.41 ± 1.06	2.24 ± 1.04	< 0.001
	37)To have explanations of the environment before going into the critical care unit for the first time	2.41 ± 1.02	2.17 ± 1.03	< 0.001
	32)To have a pastor visit	2.88 ± 1.01	2.68 ± 1.06	< 0.001
	35)To have someone be concerned with your health	3.31 ± 0.77	3.09 ± 0.95	< 0.001
	36)To be told about people who could help with problems	2.40 ± 1.05	2.17 ± 1.05	< 0.001
	33)To have a place to be alone while in the hospital	3.38 ± 0.69	3.08 ± 0.97	< 0.001
	39)To have another person with you when visiting the critical care unit	2.31 ± 1.07	2.19 ± 0.99	0.001
	34)To be told about people who could help with problems	3.32 ± 0.76	3.17 ± 0.89	< 0.001
	40)To be alone at any time	2.46 ± 1.03	2.29 ± 1.10	< 0.001

	44)To talk about feelings about what has happened	2.30 ± 1.06	2.15 ± 0.99	0.001
	41)To feel it is all right to cry	2.26 ± 1.09	2.13 ± 0.98	< 0.001
	45)To talk about the possibility of the patient's death	2.27 ± 1.08	2.09 ± 1.0	< 0.001
	Total	**2.64 ± 0.30**	**2.44 ± 0.31**	**< 0.001**
Total Needs		**2.84 ± 0.16**	**2.53 ± 0.2**	**< 0.001**

Data presented as means ± SD. t-test was used for comparison.

Table 3 summarizes the mean scores of the five CCFNI subscales before and after the intervention. All subscales showed statistically significant reductions, indicating that the intervention effectively improved family reassurance, access to information, comfort, support, and proximity to the patient. These results highlight the overall positive impact of scheduled family visitation on meeting ICU family needs.

Table 3. A summary of the data presented in the table above

Subscales	Pre-intervention (Mean ± SD)	Post-intervention (Mean ± SD)	p-value
Assurance and anxiety	3.12 ± 0.31	2.43 ± 0.37	< 0.001
Comfort	2.93 ± 0.38	2.55 ± 0.44	< 0.001
Information	2.95 ± 0.34	2.71 ± 0.38	< 0.001
Proximity and accessibility	2.78 ± 0.32	2.57 ± 0.34	< 0.001
Support	2.64 ± 0.30	2.44 ± 0.31	< 0.001

Data presented as means ± SD.

Discussion

The findings of this study showed that the mean score of critical care family needs for all items and subscales was significantly different before and after the intervention. This means that the presence of a close family member can meet to some extent the critical care needs of the families of patients admitted to the ICU. Although family members find critical care needs important, the priority of these needs varies across different wards.

As shown in Table 2, the families considered assurance as their most urgent need and information as their least important need. This finding is supported by recent studies that also identified assurance as a top priority among ICU families (21). In the same direction, Gundo (2010) found that assurance was one of the most important issues for families (22). Also in their descriptive study, Obringer et al. (2012) examined the needs of 50 family members of patients admitted to the ICU using the CCFNI and showed that the need for assurance was the most important need for families (23). Despite the different methods, they confirmed the present study.

In contrast, Davidson (2009) reported the need for information is the most important psychosocial need of families, and the proximity and access to medical staff to provide information for families is the most important way to help families adapt to the situation (24). Furthermore, Bahrami et al. (2017) reported that information is the most important need of families with a patient admitted to the ICU (25). The reason for the difference in results can be due to differences

in the research process. Additionally, recent studies indicate that family needs may vary depending on educational level, ICU type, and the transition of patients from the ICU to the general wards. It can affect the perceived importance of information and assurance (26). For instance, in Bahrami et al.'s study, families were only trained to control stress before and after the intervention. It can also be stated that in the present study, because almost half of the patients' families had a bachelor's degree or higher, they needed less information from the healthcare team.

In their descriptive study, Sarhadi et al. (2013) examined the critical care needs of family members of patients admitted to the special inpatient unit ICU and the coronary care unit (CCU). The participants were 197 family members who were selected using convenience and critical case sampling and completed the CCFNI. The results of the study suggested that assurance and information were the most important needs of the two groups. Due to the complexity of devices and patients' conditions, these needs were more important for the families of patients admitted to the special inpatient unit ICU than those admitted to the CCU (27). The similarity in the results can be due to the similarity of the type of disease of the patients in both studies. Besides, Sarhadi et al. (2013) found that proximity was ranked as the fourth most important need of families. It partially confirms the results of the present study. This is due to the long-time of hospitalization of patients in the intensive care unit.

Some studies showed that comfort is the least important need reported by families (28), while the present study showed that comfort was the second most important need of families. It seems that this case is due to the limited facilities of the hospital, which did not meet the comfort needs of the patient's family members.

Strengths and Limitations

This study had several limitations. Nurses' mental state, workload, and crowded ICUs may have affected interactions with patients and family engagement. Some family members were initially hesitant to provide care due to a lack of awareness, so essential training was provided to ensure proper care delivery. The COVID-19 pandemic caused a significant interruption in study activities, as hospitals prioritized crisis management. Although data collection began in fall 2019, the study was suspended and only resumed in 2022, which may have affected data consistency and study conditions.

Despite these limitations, the study offers valuable insights into family needs in the ICU and demonstrates the effectiveness of the scheduled visitation intervention. Nevertheless, given the pandemic-related interruptions and specific ICU context, the findings should be interpreted with caution. Future research should include larger samples, diverse ICU settings (e.g., cardiac, trauma, paediatric), and uninterrupted implementation periods to enhance the generalizability and robustness of the results.

Conclusion

The present study showed that the purposeful presence of patients' families at the bedside of patients admitted to the ICU was effective. A review of the literature reveals that families of patients may report different needs depending on the ward the patient is admitted to. Also, these needs may be ranked differently in terms of their importance for the families.

It is essential to address the critical care needs of patients' families based on the issues they report. However, further studies

are essential to explore this issue more profoundly. Additionally, some measures are needed to raise public awareness of this issue and increase their cooperation with the treatment system.

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Author's contributions

MRN, FS, and FSH participated in the study design. FSH and MRN participated in the sequence alignment and drafted and revised the manuscript. MRN, FS, and FSH participated in the data acquisition. MRN, FS, and FSH participated in the critical review. All authors read and approved the final manuscript.

Conflicts of interest

The authors report no competing or conflict of interest regarding this study.

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