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Targeted Care in Comatose Patients with Head Injury: A Qualitative Content Analysis

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Abstract

Background: Brain injury and coma after trauma are major health problems all over the world as the hemodynamic indicators of patients fluctuate and their clinical conditions deteriorate. Consequently, the demand for professional care will increase. Accordingly, this study aimed to explain the experiences of people caring for comatose patients with head injury.

Methods: The present study was conducted using a conventional qualitative content analysis approach. The participants were selected through purposive sampling and the sampling process continued until data saturation. A total of 17 nurses and 3 head nurses working in the intensive care units (ICUs) of Sabzevar University of Medical Sciences in 2022 participated in the study.

Results: Data analysis led to the identification of three main categories and nine subcategories including clarification of needs (understanding patients' needs based on symptoms, intensive vision, application of care knowledge), continuous care to facilitate transition (skilled and quality care, progress monitoring, continuity in care and teamwork), and empathic support (living in the patient's world, therapeutic relationship, and conscience-oriented actions. As a result, "targeted care" was detected as the main theme of the study.

Conclusion: According to the results of the current study, in order for nurses to perform targeted care to get patients out of critical situations as quickly as possible, first a detailed examination is required to identify the patients' needs and problems. Then, continuous nursing care with comprehensive support should be provided to the patients. The results of this study can instill motivation in care and improve its quality, ultimately leading to patient-centered nursing and treatment.

Keywords: Care, Head injury, Coma, Brain trauma, Content analysis

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Introduction

Coma is a clinical condition caused by various diffuse and localized injuries and disconnection of the reticular activating system in the brainstem. It involves a decrease in excitability and responsiveness in patients and the patient does not show targeted responses to internal and external painful stimulation (1,2). Traumatic brain injury is the major cause of coma. It is estimated that 322 out of every 100 000 people in the United States, England, and Australia experience traumatic brain injuries. According to the Red Crescent Organization, this figure in Iran is 433 out of every 100 000 people (3). However, a population-based study conducted in 2013 showed the prevalence of traumatic brain injuries worldwide is almost 6 times higher than the official statistics published by the World Health Organization (WHO) (4). Coma caused by traumatic brain injury leads to direct tissue damage, blood flow disorders, acute and debilitating functional disorders such as decreased level of consciousness and memory loss, and neurological disorders (ataxia, vision disorders, sensory deprivation, paralysis, and aphasia) (1,2). These conditions lead to long-term hospitalizations and patient isolation in intensive care units (ICUs). Increasing awareness of mortality and reducing interpersonal problems of the hospital staff, especially nurses who have the most interaction with patients, have a direct effect on patient care (5). In addition, the acute situation forces these patients to repeatedly undergo invasive and non-invasive procedures, making their care unique and distinct from that of other comatose patients (6).

During hospitalization, all patients experience frequent changes in their health conditions which overshadows the achievement of better treatment outcomes, including physical and mental health and better-quality care (7). Low-quality care for comatose patients worsens their clinical conditions, causes unwanted side effects, and results in long-term hospitalizations, as well as an ethical dilemma for nurses (8,9). On the other hand, identifying

and discovering factors effective in behavioral care, as well as their appropriate and targeted implementation with the aim of improvement will facilitate the transition from these conditions with minimal damage and complications (10,11).

Understanding the care experiences of comatose patients is significantly valuable because, in addition to being recognized as a key influencing factor in rehabilitation, recovery, maintaining safety, and continuing care by other members of the treatment team, it can also facilitate care to ultimately improve the hospitalization experience of patients and reduce side effects. Accordingly, this study aimed to explain targeted care in comatose patients with traumatic brain injury.

Methods

This study was conducted using a qualitative content analysis method. Qualitative studies analyze narrative data and reveal, explain, and describe the unknown phenomena before identifying and extracting a pattern to provide practical guidance for the subject under investigation (12). In this regard, the naturalistic paradigm serves as a research paradigm and philosophical foundation. Naturalistic methods explain human complexities and provide a profound database of people's experiences that can clarify various aspects of a subject (13). The participants in this study were selected using purposive sampling from among nurses and head nurses working in ICUs of Sabzevar University of Medical Sciences in 2022. Nurse-patient ratio in this unit was one to two and nurses used the case method to provide care. The inclusion criteria for nurses were having at least a bachelor's degree and at least 6 months of working experience with comatose patients with traumatic brain injury. According to the answers given by a number of nurses after the interview, three ICU head nurses were also selected to participate in the study. The exclusion criteria were unwillingness to continue cooperation and expressing opinions instead of experiences.

Data were collected through interviews which lasted 45-90 minutes. The interviews began with some open-ended questions about the research topic, and the participants were asked to elaborate on the subjects at hand. The following general question was asked in all interviews: "Would you please describe your experience of caring for a comatose patient with traumatic brain injury?" Data were saturated after 18 interviews and two additional interviews were conducted to ensure saturation (Table 1).

The interviews were analyzed using the guidelines on conventional content analysis proposed by Elo and Kyngas. The proposed method consists of four steps including decontextualization (identifying meaning units, creating code lists, repeating and starting at new pages), recontextualization (including content, excluding dross), categorization (identifying homogeneous groups), and compilation (drawing realistic conclusions) (14). In this study, at the end of each interview, the recorded audio files along with non-verbal cues such as crying, laughing, and silence were observed during the interview and then transcribed in MAXQDA software, version 10 (VERBI, Berlin, Germany). After reading all data repeatedly and word-by-word, the unit of analysis and meaning units were defined. The next steps taken were open coding, creating categories, grouping codes, and abstraction. The major theme was extracted in the final step after data analysis and deduction.

To ensure the trustworthiness of qualitative content analysis, the criteria proposed by Guba and Lincoln including credibility, dependability, confirmability, and transferability were utilized (15). Allocating sufficient time to the study, establishing rapport with the participants, and long-term interaction with them were crucial steps to promote the credibility of the findings. It is worth mentioning that the researcher has been working as an ICU nurse for one year at the time of the study. Over the course of the study, the maximum possible variation was achieved through selecting nurses and head nurses of different ages and professional backgrounds from three ICUs in three hospitals. To ensure the rigor of the study, several measures were taken including member checking, selecting the most suitable meaning units, establishing agreement among co-researchers for identifying codes,

Table 1. Demographic characteristics of nurses in ICU

No.	Gender	Job position	Degree	Work experience in ICU (year)
P1	Female	Nurse	BSc	8
P2	Female	Nurse	BSc	12
P3	Male	Nurse	BSc	1
P4	Female	Nurse	BSc	4
P5	Female	Nurse	BSc	10
P6	Female	Nurse	BSc	7
P7	Male	Nurse	BSc	5
P8	Female	Nurse	MSc	7
P9	Male	Head nurse	MSc	18
P10	Male	Head nurse	MSc	16
P11	Male	Nurse	BSc	6
P12	Female	Nurse	BSc	8
P13	Female	Nurse	BSc	5
P14	Male	Nurse	BSc	9
P15	Female	Nurse	BSc	3
P16	Female	Nurse	BSc	12
P17	Male	Nurse	MSc	19
P18	Male	Nurse	BSc	8
P19	Female	Head nurse	MSc	21
P20	Male	Head nurse	BSc	5

providing clear descriptions of the context, and using annotations.

All ethical considerations including seeking permission for recording the interviews, the confidentiality of personal information, anonymity, and the right to withdraw from the study were followed. Moreover, after providing the necessary information regarding the research plan and procedure, informed consent was obtained from all participants.

Results

A total of 20 nurses and head nurses (11 females and 9 males) participated in this study. The average working experience of the participants was 9 years and 2 months. Data analysis revealed 1623 initial codes. After removing similar ones, 597 units, 54 codes, 9 subcategories, 3 main categories, and one main theme were identified.

Main theme: targeted care

Nursing care typically starts with examining patients, and then, continues with guiding the patients toward recovery. The act of caring for and monitoring patients based on recovery criteria was part of the general and main principles expressed in the interviews to eventually be able to guide the patients along a safe path with minimal complications toward health and discharge from the ICU. This led to the development of "targeted care" as the main theme of the study which was further divided into 3 main categories including *clarification of needs*, *continuous care to facilitate transition*, and *empathic support* in order of priority (Table 2).

Clarification of needs

Every action in nursing is based on the needs of the patients. Based on this, one of the most important principles and prerequisites for any care activity is examining the patients and creating a background of everything the patient needs.

Understanding patients' needs based on symptoms

The first subcategory extracted in this category was understanding the needs of patients based on their symptoms. The vital signs are an objective measure and at the same time, they are the most reliable data that can be obtained from the patient during assessment. The majority of the study participants also stated that it is a part of the initial measures. "*The first measure in the morning is recording a patient's vital signs. We compare the vital signs sheet, intake, and output with the previous day*" (Participant 6).

Intensive vision

The ability to pay special attention to patients, along with tact and knowledge leads to appropriate response to the needs of the patients. "*I had a patient whose blood pressure suddenly increased. We had just taken him from the operating room. His blood pressure should not have increased. I followed all orders, but it did not work. I went to the patient's side and saw that her sphygmomanometer cuff was loose. Since then, before doing anything, I carefully check the patient, devices, and everything*" (Participant 7).

During the work period in the department, it was observed that the nurses were attentive to equipment

Table 2. Theme, categories, and subcategories of the study

Theme	Category	Subcategory	Initial codes
Targeted care	Clarification of needs	Understanding patients' needs based on symptoms	Assessment of the patient's vital signs, assessment of pain, adequacy of ventilation, nutrition and gavage, assessment of the skin, circulation, assessment of the patient's experiments
		Intensive vision	Considering the complexities of patient care problems, finding the cause of patient problems, closely monitoring the performance of tasks assigned to other personnel, paying attention to symptoms and clues, paying more attention to pregnant mothers and children, paying attention to all dimensions of care, taking action before the problem occurs
		Application of care knowledge	Transferring past experiences to a new clinical situation, caring for any disease is a source of learning, applying research and therapeutic experiences
	Continuous care to facilitate transition	Skilled and quality care	Relieving the patient's pain, physical care, preventive actions, protecting the patient from dangers, implementation of measures based on protocols and policies and management priorities, complete care
		Progress monitoring	Continuous patient comparison, checking the patient's progress and recovery, continuous monitoring, summarizing and rescheduling, creating alternative solutions
		Continuity in care and team work	Providing full report during shift delivery, coordination for physiotherapy, reporting the nutritionist about the conditions of patients at risk, transferring the patient and coordinating treatment measures, following the orders of other members of the treatment team
	Empathic Support	Living in the patient's world	Mutual consent, putting ourselves in patient's shoes, contributing to the patient's experience, seeing the patient as a member of the family, paying attention to the patient's wishes, presence in the physical dimension of the patient
		Therapeutic relationship	Notices, presenting the existing facts, giving hope to the family, talking to the patient, awareness of time and place, encouraging patients to do personal activities, playing music or the voice of loved ones for patients
		Conscience-oriented actions	Humility, let's make it our own, commitment to work, behaving responsibly, effective and productive work, accurate and exhausting work, go whole hog

alarms, changes in the patients' conditions, facial expressions, and the vital signs of the patients. They also managed the airway and held the patient's head, when changing the position.

Application of care knowledge

The provision of care based on updated science, according to some of the nurses who had postgraduate education or paid greater attention to general knowledge of care, is one of the key components of care. "*During the delivery shift, my patient was tachycardic and agitated. My colleague suspected an increase in brain pressure so he quickly checked the pupils and discovered them to be dilated*" (Participant 8).

Continuous care to facilitate transition

The most practical objective of nursing in specialized wards is to help patients get through this stage by implementing continuous care.

Skilled and quality care

Over a bridge to accomplish the ultimate goal of all health-promoting behaviors, in the opinion of some participants, is the provision of care appropriate to the situation that complies with the major standards. "*At midnight, I was alone in the ward. My patient became agitated and wanted to pull his tracheal tube. The monitors and ventilators were constantly alarming. I remembered that in the policies of chemical restraint, there was some explanation about these patients. I did the same orders, and then my patient calmed down*" (Participant 3).

Progress monitoring

One of the main measures that the participants frequently pointed to be taken at the start of every care process was examining the patients in general and comparing the results with those of the previous day and with the expected level of improvement through the recovery process. "*Some time ago, I was working with a patient ventilated with CMV mode. When I was changing his dressing, I saw he had spontaneous breathing. I raised the trigger of the ventilator and saw he was taking a few spontaneous breaths. I waited until the end of the shift and saw his breathing volume was enough. I reported to the doctor, and he changed the mode of the ventilator. The patient was disconnected from the ventilator 3 days later*" (Participant 2).

Continuity in care and teamwork

Patients' conditions are constantly changing. One of the major responsibilities of nurses is to ensure continuity of care for the patients. The continuity in care and teamwork are the chain of communication between all care actions. "*The beginning of each care in each shift is to carry out the written follow-ups from the previous shift, and at the end of the shift, I write the follow-ups again for the next shift*" (Participant 1).

Empathic support

As a complement to all measures taken, it is highly essential to try to understand the patients and support them in all circumstances and for all issues that have a special meaning for them. This was pointed out by the participants as a critical phase in the prosses of care.

Living in the patient's world

In order to provide care, one must become involved in the patient's experience with all its associated conditions. "*I saw the intubated patient wanted to speak. I cried as the situation reminded me of my father who died on the same bed a few years ago*" (Participant 13).

Therapeutic relationship

Nursing care is always provided through a two-way relationship and interaction between the patients and the nurses. "*A few years ago, I had an accident and was hospitalized in the ICU for a week. The ward staff said good morning and greeted me. This voice is very healing for me*" (Participant 16).

Conscience-oriented actions

This subcategory was expressed in the interviews as one of the major challenging concepts to realize empathic support. "*We admitted a boy with a ruptured brain aneurysm due to an accident. He went to the operating room. We were all awake and working the whole shift. All colleagues were worried about him. When we delivered the patient in the morning, his conditions were stable*" (Participant 18).

Discussion

The findings of this study indicated that the nurses provided targeted care to guide patients to get out of critical situations. To discharge the patient as soon as possible with the fewest complications, it is essential to take the steps to disconnect the patient from the ventilator. In the meantime, the nurses called it care only when the service was provided for the patient's recovery (11).

The three main categories identified in this study were *clarification of needs*, *continuous care to facilitate transition*, and *empathic support*, which are nearly consistent with the conditions of care explored by Finfgeld-Connett in a meta-analysis study. The three necessary conditions for care action in this study were being aware of the patient and his care needs, taking the necessary actions, and evaluating the provided services to enhance the patient's well-being (16).

Clarification of needs was one of the main categories mentioned at the beginning of many interviews. Nurses stated that they attempted to have a holistic view of the

physical conditions of their patients together with a scrutinizing look based on the experiences they have gained. In this way, they could plan more accurately to meet the needs of their patients at the beginning of each shift. Hanefeld et al. also considered having experience and responding to the patient's needs to be important in care (17). The scope of nursing should be determined based on what is needed, not on what the nurse is able to do. In addition, nurses who want to achieve high capabilities in planning and providing quality care must have proper knowledge and awareness of the components of care (16). Swanson expanded cognition in his theory of caring, with some sub-concepts such as comprehensive evaluation, finding clues, focusing on the person receiving the service, and avoiding speculation (18). Moreover, in a study to explain the concept of care in the ICU, Rezaee et al showed the assessment of needs was based on the standards of implementation of safe care (19).

The primary aim of care for the entire treatment team, according to some nurses, is to help patients get through the crisis stage. The findings of this study indicated that providing care based on the existing principles and constant comparison of the patients' conditions with what had been intended for them, accelerated the achievement of this goal. To provide comforting care, nurses apply advanced principles to take actions based on their comprehension of patients' needs and priorities (20). The findings of the study by Rezaee et al showed that compliance with standards is a primary requirement in the ICU to be able to provide optimal care. If these conditions are not fulfilled in specialized wards, optimal care and consequently the quality of care will decrease (19). Moral stress is a critical problem facing nurses in providing special care, which is often neglected. If this is not addressed, it will limit the ability of nurses to provide optimal care and may not provide high-quality services. Lack of sufficient time, lack of manpower, and unfair distribution of power among colleagues are some of the relevant factors (21).

Entering the unknown world of patients with the help of knowledge from past experiences and the use of interpersonal skills, if accompanied by commitment and ethics, led to the formation of the empathic support. In this regard, Shokati Ahmad Abad and Manoochehri ⁋also identified living with the patient as a main category with the subcategories of effective communication, mutual satisfaction, belief in death by the caregiver, and attention to the patient. They pointed to the effort to revive the patient as a main category with effective and fruitful work and giving hope as its subcategories, which is consistent with the subcategories detected in the present study (22). Nursing care is always provided through a bilateral relationship. In his theory of care, Watson defined "interpersonal care" as entering the sphere of another person's life. He considered communication based on commitment and responsible behavior, which is in line with the subcategory of therapeutic communication and its related concepts in the present study (23). If an interaction occurs between the nurse and the patient, the possibility of obtaining the common goal of restoring health increases (18). Holopainen et al viewed care as a philosophical concept in his theory of care with the human mode of being. He developed a framework of care with a focus on behavioral categories in the direction of professional care. Moral obligation, conscience, sympathy, merit, and cooperation are among the main principles of his framework, which is consistent with the subcategories of empathic support in this study (24). In a study, it was found that people with high moral intelligence connect their work with ethical principles, which increases the commitment and responsibility of the individuals and improves individual and group efficiency. Due to the special conditions of critical care units and the need for the presence of capable nurses in these units, it was recommended that married nurses with older age and more work experience provide care in these units (25).

One of the limitations of the present study was the lack of time for interviews due to the high workload of nurses. Therefore, the interviews were conducted at the time of the nurses' convenience. Another limitation was that the nurses might have been conservative in expressing their experiences, which was controlled to some extent by assuring the confidentiality of their personal information.

Conclusion

This study showed the most crucial issue in providing care for comatose patients hospitalized in the ICUs, was to always keep in mind that the ultimate goal of all therapeutic and non-therapeutic measures in the care process is the recovery of the patients and helping them to overcome the current crisis or in other words, provide targeted care. Therefore, all the measures taken should be carried out in this regard. Furthermore, the unique characteristics of each patient should be identified through an interpersonal relationship and taken into consideration during providing care. This study has the potential to instill motivation for providing care and enhance the standards of care, which could ultimately influence the direction of the nursing and treatment system toward high performance via the targeted care approach.

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Authors' Contribution

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Validation: Ali Taj.
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Competing Interests

There is no conflict of interest in this study.

Ethical Approval

This research project was approved by the ethics committee of Sabzevar University of Medical Sciences with the code (IR.MEDSAB.REC.1401.004).

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