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Impact of a Stepped Individualized Nursing Intervention Model on the Quality of Life of Elderly Critically Ill Patients in the Emergency Department

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Abstract: Objective To investigate the impact of a stepped individualized nursing intervention model on the quality of life of elderly critically ill patients in the emergency department. **Methods** A total of 82 hospitalized patients admitted to the emergency ward of our hospital between March 2024 and March 2025 were selected as the study subjects. All were elderly patients aged 65 and above who met the criteria for critical illness. The subjects were randomly divided according to admission order into a control group (n=41) and an intervention group (n=41). The control group received basic nursing care, while the intervention group received an additional stepped individualized nursing intervention on top of the basic care. The differences in quality of life between the two groups were compared on the day of discharge across four dimensions: physical health, psychological health, social relationships, and environment. **Results** The quality of life scores of the intervention group were significantly higher than those of the control group across all four dimensions—physical health, psychological health, social relationships, and environment ($P<0.001$). **Conclusion** The stepped individualized nursing intervention model can effectively improve the quality of life of elderly critically ill patients in the emergency department. This nursing model is worthy of promotion as an important means to improve the overall health status of elderly critically ill patients.

Keywords: Stepped Intervention; Individualized Nursing; Elderly Patients; Critically Ill; Emergency Department; Quality of Life.

1. Introduction

In recent years, the accelerating aging of the population has led to a significant increase in the number of elderly critically ill patients in the emergency department, accounting for approximately 45%-50% of all emergency visits and up to 60% of resuscitation cases. This trend is expected to worsen as societal aging continues to advance. Due to declined physiological functions and multiple comorbidities, elderly critically ill patients often require complex treatments, which not only pose serious threats to their lives but also increase the burden on the healthcare system, prolong hospital stays, and create dual challenges for both patients' quality of life and socioeconomic resources [1]. In light of this, optimizing the nursing model for elderly critically ill patients in the emergency department has become an urgent issue. Traditional nursing models, often standardized, fail to meet the individualized needs of these patients. The stepped individualized nursing intervention model, as an emerging nursing concept, has gradually gained attention. This model emphasizes implementing graded and layered personalized nursing strategies based on multidimensional factors such as the patient's specific condition, physiological status, psychological state, and social support [2]. By early identification of high-risk factors, dynamic assessment of patient status, and timely adjustment of treatment and nursing plans, it aims to achieve full coverage from basic life support to advanced life maintenance and further to rehabilitation guidance. The goal is to enhance the targeting and effectiveness of nursing care, reduce wastage of medical resources, and improve patient quality of life and prognosis [3].

This study implemented the stepped individualized nursing intervention model in the care of elderly critically ill patients in the emergency department. Through meticulous nursing care, satisfactory outcomes were achieved. The details are reported as follows.

2. Materials and Methods

2.1. General Information

A total of 82 hospitalized patients admitted to the emergency ward of our hospital between March 2024 and March 2025 were selected as study subjects. All patients were elderly (aged 65 or above) with critical illnesses. The inclusion criteria were as follows: age >= 65 years; presence of at least one critical condition such as acute myocardial infarction, acute stroke, chronic obstructive pulmonary disease, or gastrointestinal bleeding; and provision of informed consent by the patient or their legal representative. Exclusion criteria included: expected survival of less than 24 hours; severe cognitive impairment or other conditions preventing cooperation with the study; refusal or inability to provide informed consent; and unplanned discharge. A total of 84 eligible patients were randomly assigned according to admission order into a control group (n = 42) and an intervention group (n = 42). The randomization process was based on a computer-generated random number sequence to ensure balance between the two groups. Ultimately, 82 patients completed the entire study—41 in the control group and 41 in the intervention group. Two patients withdrew from the study due to reasons such as transfer to another hospital or discontinuation of treatment.

2.2. Methodology

Both groups of patients received routine hospital care.

Additionally, the intervention group received a stepped individualized nursing intervention model based on routine care. The specific implementation steps were as follows:

2.2.1. Phase I: Establishment and Training of the Nursing Team

A multidisciplinary nursing team was first established, consisting of senior nurses, experienced physicians, professional nutritionists, psychological consultants, and other specialists [4]. All team members possessed extensive experience in caring for elderly critically ill patients and underwent rigorous specialized training. The training curriculum covered not only skills for assessing the condition of elderly critically ill patients—ensuring accurate evaluation and the development of individualized care plans—but also effective communication techniques aimed at enhancing mutual trust and understanding between team members, patients, and their families. Additionally, particular emphasis was placed on methods of psychological support to enable team members to accurately identify and effectively address patients' psychological issues, such as anxiety and depression.

2.2.2. Phase II: Development of Individualized Nursing Plans

The intervention group received a stepped individualized nursing intervention model based on indicators such as severity of condition, level of care, educational background, and knowledge acceptance. The nursing team conducted a comprehensive assessment of each patient to identify their specific needs and developed personalized care plans accordingly. The specific measures included the following aspects:

Adjusting monitoring frequency and methods based on condition: For patients with severe conditions, the nursing team increased the frequency of vital signs monitoring and employed more precise monitoring techniques [5].

Developing personalized medication regimens: In close collaboration with physicians, the nursing team formulated tailored medication plans according to the patient's specific condition and drug response. Detailed medication education was provided to ensure that patients and their families understood the mechanisms of action, correct administration methods, and potential side effects of the drugs. This approach aimed to enhance medication adherence and reduce unnecessary adverse drug reactions [6].

Providing personalized nutritional guidance and support: Considering the unique physical condition and nutritional requirements of each patient, the nursing team developed customized dietary plans based on recommendations from professional nutritionists.

Offering personalized psychological support and counseling based on patient needs: Psychological consultants within the nursing team assessed each patient's mental state and provided corresponding psychological support services [7]. For patients experiencing anxiety or depression, one-on-one psychological counseling was offered to help them cope with the emotional stress associated with illness, thereby strengthening their courage and confidence in facing the disease.

2.2.3. Phase III: Implementation of the Nursing Plan

The nursing team members strictly implemented all nursing measures according to the individualized care plan and meticulously recorded vital signs data and disease progression in the nursing records. The frequency of vital signs monitoring was adjusted based on the patient's condition. For patients with unstable conditions or deteriorating trends, monitoring was intensified to promptly identify and manage abnormalities, thereby avoiding delays in treatment [8]. The nursing plan was promptly modified in response to changes in the patient's status or inadequate effectiveness of existing measures. The nursing team communicated in a timely manner with physicians, reassessed the patient's condition, and adjusted the nursing plan accordingly. To ensure effectiveness and relevance, the nursing team closely monitored each patient's specific situation, ensuring that every nursing measure was tailored to the actual condition. In cases where new complications emerged, the team enhanced monitoring and adapted the focus of care based on emerging symptoms to prevent further deterioration [9].

2.2.4. Phase IV: Quality Control and Continuous Improvement

A quality control team consisting of experienced healthcare professionals was established. Its primary task was to ensure the effective implementation of every aspect of the nursing plan and to promptly identify existing problems. The team regularly reviewed the execution of the nursing plan to verify that all nursing measures were carried out as scheduled [10]. Weekly quality audits were conducted to evaluate the effectiveness of the nursing plan and to correct any identified issues in a timely manner. Feedback from patients and their families was collected through questionnaires, interviews, and other forms of communication to understand their actual needs and perceptions. This feedback served as an important reference for improving nursing procedures and helped the nursing team continuously optimize the quality of care. For issues frequently raised by patients, thematic discussions were organized to identify solutions, which were then incorporated into routine nursing practices. To ensure ongoing improvement in the nursing team's competency, regular retraining and assessments were conducted. Monthly professional skill refresher training sessions were held to update nursing knowledge and techniques, thereby enhancing the professional proficiency of the nursing staff.

2.3. Observation Indicators

On the day of discharge, patients were assessed using a self-designed questionnaire. Quality of life was evaluated across four dimensions: physical health, psychological health, social relationships, and environment, using a 100-point scoring system.

2.4. Statistical Methods

Statistical analysis was performed using SPSS version 27.0. Independent samples t-tests and chi-square (χ^2) tests were applied for data comparison between groups.

3. Results

3.1. Comparison of General Data Between the Two Groups

No significant differences were observed in baseline demographic and clinical characteristics between the two groups ($P > 0.05$), indicating that the groups were comparable. See Table 1.

Table 1. Baseline Demographic and Clinical Characteristics

Characteristics	Total (n=82)	Control Group (n=41)	Intervention Group (n=41)	P-value
Demographic Characteristics				
- Age (years), mean ± SD	72.5 ± 6.5	72.6 ± 6.4	72.4 ± 6.6	0.87
- Gender, male/female	44 / 38	22 / 19	22 / 19	1.00
Clinical Characteristics				
Medical history, n	64	32	32	1.00
- Circulatory system diseases	32	15	16	0.81
- Respiratory system diseases	18	10	8	0.59
- Digestive system diseases	14	7	8	0.78
- Length of stay (days), mean ± SD	12.3 ± 3.4	12.5 ± 3.3	12.1 ± 3.5	0.64

3.2. Intervention Effects

Comparison of quality of life between the two groups: Patients in the intervention group demonstrated significantly higher quality of life scores than those in the control group, and the difference was statistically significant ($P < 0.001$). See Table 2.

Table 2. Comparison of Quality of Life Between the Two Groups (mean ± SD, points)

Group	Physical Health	Psychological Health	Social Relationships	Environment
Intervention (n=41)	90.73± 0.703	95.90± 0.603	98.62± 0.803	97.73± 0.703
Control (n=41)	82.23± 1.203	89.63± 0.623	92.59± 0.513	90.33± 0.489
t-value	39.06	46.31	40.52	55.35
P-value	<0.001	<0.001	<0.001	<0.001

4. Discussion

The stepped individualized nursing intervention model has demonstrated significant effectiveness not only in enhancing treatment safety but also in improving the quality of life of elderly critically ill patients. Therefore, this model represents a valuable and effective nursing approach worthy of promotion, serving as an important means to improve the overall health status of this patient population [11]. As an emerging nursing concept, the stepped individualized nursing intervention model has gradually gained recognition. It emphasizes the implementation of graded and personalized nursing strategies based on multidimensional factors, including the patient's specific condition, physiological status, psychological state, and social support [12]. Research indicates that adopting an individualized stepped pain management model can significantly enhance pain control. By conducting personalized assessments of pain levels and developing corresponding multi-level care plans, it is possible to not only effectively alleviate pain but also strengthen patients' confidence in treatment, thereby improving overall nursing quality [13]. Furthermore, studies have shown that integrating stepped goal nursing with individualized nutritional guidance is also of great significance for patient recovery. This comprehensive approach helps improve nutritional status, reduce cancer-related fatigue, and enhance psychological resilience, enabling patients to better cope with the challenges posed by their illness.

In summary, the stepped individualized nursing intervention model has exhibited favourable outcomes across different types of elderly critically ill patients in the emergency setting. Through scientifically sound design and implementation of nursing plans, it can significantly enhance both treatment efficacy and quality of life. Future research should focus on refining the design of individualized care pathways to achieve optimal clinical nursing outcomes.

5. Conclusion

This study thoroughly investigated the impact of a stepped individualized nursing intervention model on the quality of life of elderly critically ill patients in the emergency department. The results demonstrate that this model can significantly improve patients' quality of life, demonstrating its important role in enhancing nursing quality and meeting the diverse needs of patients. However, the study has certain limitations. The relatively small sample size may affect the generalizability of the findings. Moreover, variations in implementation across different hospitals and departments may pose challenges to the standardized promotion of the intervention model. In addition, long-term follow-up evaluation of the intervention effects remains insufficient. Future research should further explore the long-term impact of this model on patient prognosis. Despite these limitations, this study provides a new perspective and robust evidence for the nursing practice of elderly critically ill patients in the emergency setting. It emphasizes the importance of individualized and precision nursing, laying a solid foundation for further in-depth research in related fields, and holds significant academic and practical value.

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