

Postprint of a Qualitative Study on the Current Status of Prehospital Severe Trauma Care Skills Among Nurses in Yunnan Province

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Abstract

Objective To investigate the current status of pre-hospital severe trauma care skills among nurses in Yunnan Province, and to provide a reference for the construction of trauma centers at all levels and pre-hospital care skills training for nurses in Yunnan. **Methods** Semi-structured in-depth interviews were conducted with 9 experts from the Yunnan Province Trauma Center Construction Work Expert Committee, and Giorgi's phenomenological analysis method was used for data processing and analysis. **Results** Four themes were extracted: nursing staff are indispensable team members in pre-hospital care teams; nurses have low pre-hospital care skill levels with unclear job responsibilities; emergency response capabilities are weak, urgently necessitating the standardization of care procedures; and establishing scientific, objective, and quantifiable evaluation criteria is an urgent requirement for improving nurses' care capabilities. **Conclusion** Nurses in Yunnan Province have overall weak pre-hospital care capabilities and lack objective evaluation criteria. It is essential to strengthen pre-hospital care skills training for nurses and clarify care responsibilities, and it is necessary to develop evaluation indicators for nurses' pre-hospital severe trauma care skills to provide scientific and objective reference basis for standardizing nurses' pre-hospital care procedures and training.

Full Text

Preamble

Title: A Qualitative Study on the Present Situation of Nurses' Skills in Pre-hospital Treatment of Severe Trauma in Yunnan Province

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Abstract

Objective: To explore the present situation of nurses' skills in pre-hospital treatment of severe trauma in Yunnan Province, and to provide reference for the construction of trauma centers at all levels in Yunnan Province and the training of pre-hospital first aid skills for nurses.

Methods: Nine experts from the Yunnan Trauma Center Construction Expert Committee were interviewed using a semi-structured approach. Data were processed and analyzed using Giorgi's phenomenological analysis method.

Results: Four themes were extracted: (1) Nurses are indispensable members of the pre-hospital treatment team; (2) Nurses exhibit low levels of pre-hospital treatment skills with unclear job responsibilities; (3) Emergency response capabilities are weak, making it urgent to standardize treatment processes; and (4) Establishing scientific, objective, and quantitative evaluation standards is a pressing need for improving nurses' treatment capabilities.

Conclusion: The overall pre-hospital first aid ability of nurses in Yunnan Province is weak, and there is a lack of objective evaluation standards. It is necessary to strengthen training in nurses' pre-hospital treatment skills, clarify their treatment responsibilities, and construct an evaluation index for nurses' severe trauma pre-hospital treatment skills to provide scientific and objective reference for standardizing pre-hospital treatment processes and nurse training.

Keywords: severe trauma; nurse; pre-hospital; treatment skills; qualitative study

Introduction

Globally, severe trauma is the leading cause of death among populations. In China, trauma ranks as the third leading cause of death among the general population, but it is the foremost cause of death among young and middle-aged adults, posing severe challenges to China's healthcare system. In response to this situation, the National Health and Family Planning Commission issued the "Notice on Further Improving Trauma Treatment Capacity" in 2018, requiring innovation in emergency medical service models, promotion of regional trauma treatment systems, and enhancement of trauma treatment capacity.

Pre-hospital treatment is the foundation of trauma care and an effective measure to reduce mortality among severe trauma patients. Nurses' pre-hospital treat-

ment skills are crucial guarantees for successful rescue, and effective pre-hospital nursing can reduce trauma patient mortality. However, China currently lacks research on the current status of nurses' severe trauma pre-hospital treatment skills.

This study aims to understand the treatment capabilities of nursing personnel in severe trauma pre-hospital care in Yunnan Province, to provide reference and objective basis for nurse pre-hospital treatment skill training in the construction of trauma centers at all levels in Yunnan Province.

1. Materials and Methods

Study Design and Participants: Using purposive sampling, nine experts from the Yunnan Trauma Center Construction Expert Committee were interviewed in July 2023. The sample included three males and six females, all with associate senior professional titles or above. Sample size determination was based on data saturation, where no new themes emerged during analysis.

Interview Guide: The interview focused on the theme "Treatment skills nurses must possess when participating in severe trauma pre-hospital treatment." A preliminary interview guide was developed through literature review and pre-tested with two members of the expert committee before finalization. Key questions included: "How should nursing personnel carry out treatment work for severe trauma patients in pre-hospital settings?" "What treatment skills do you believe are essential for nurses in severe trauma pre-hospital treatment?" "What aspects need improvement and strengthening when nurses participate in pre-hospital treatment?" and "What suggestions do you have for improving nurses' severe trauma pre-hospital treatment skill levels?"

Data Collection: Experts were numbered according to interview order. Before each interview, the purpose and method were explained, and informed consent was obtained. Interviews were conducted in quiet, convenient locations without interference, lasting 30-60 minutes. All interviews were audio-recorded with simultaneous note-taking.

Data Analysis: Giorgi's phenomenological analysis method was used for data analysis, assisted by the qualitative research software Nvivo. The specific steps were: (1) Repeatedly listening to recordings and transcribing them into text; (2) Repeatedly reading transcripts to grasp the overall description, identify meaningful "units," and establish coding outlines and principles; (3) Further refining themes and categories, reflecting on participants' thoughts, feelings, and reactions within each category to form preliminary descriptions that reflect the studied phenomenon and relationships among its elements; and (4) Returning the final synthesized data to participants for content validity verification.

2. Results

Four main themes were extracted from the analysis:

Theme 1: Nursing Personnel Are Indispensable Team Members in Pre-hospital Treatment

As assessors, implementers, coordinators, and managers, nursing personnel play a pivotal role in the pre-hospital treatment process for severe trauma patients. As one expert noted: “Whether nurses or doctors, nursing plays a very significant role when treating severe trauma patients.” Another stated: “We often say ‘three parts treatment, seven parts nursing,’ which is even more true in pre-hospital settings. Without nursing staff, this team would be very difficult to operate.”

Theme 2: Low Level of Pre-hospital Treatment Skills and Unclear Job Responsibilities

Interviewees generally believed that nurses’ overall treatment capabilities in pre-hospital settings remain relatively weak. Most nurses are unclear about their functions when participating in pre-hospital treatment, particularly in pre-hospital environments. One expert commented: “Nurses in most hospitals are unclear about their responsibilities. Perhaps because there is no standard now, they are rather vague.” Another noted: “Nurses don’t know what to do or what their main tasks are in pre-hospital settings; they simply transport patients to the hospital.” A third observed: “I’ve found that most nursing personnel seem a bit dazed when arriving at the scene, not knowing what to do, with some just standing there with nothing to do.” Another emphasized: “During pre-hospital treatment, some hospitals have unclear nursing division of labor. We need to clarify what each person should do. Only when they know what they should do can they cooperate more closely with doctors to complete treatment quickly.”

Theme 3: Weak Emergency Response Capability, Urgent Need to Standardize Treatment Processes

Multiple interviewees mentioned that nurses’ emergency response capabilities in severe trauma pre-hospital treatment remain weak, and there is a lack of treatment standards specifically for nurses. One expert stated: “The emergency response of nursing personnel in pre-hospital settings actually needs further strengthening, and they need more drills for the entire treatment process.” Another noted: “In pre-hospital settings, nurses’ emergency response capabilities are relatively poor—they become ‘chaotic’ without standardized processes. A common issue is that for some severe trauma patients, intravenous access is not established, and casualties are not properly immobilized.” Another pointed out: “While there are some documents physicians can reference, nursing lacks specific standards. For example, regarding professional capabilities required at each level of trauma center, there are no requirements for nursing skills.” One expert concluded: “The lack of skills is currently very widespread and prominent. Many medical staff don’t know how to carry out treatment in pre-hospital settings, and this problem is particularly acute for nurses.”

Theme 4: Establishing Scientific, Objective, and Quantitative Evaluation Standards Is a Pressing Need for Improving Nurses’ Treatment Capabilities

Currently, there is a lack of research on evaluating nurses' severe trauma pre-hospital treatment skills, with no objective and detailed standards, and training practices vary across medical institutions. Constructing a specific, quantified evaluation system could help clarify and standardize the role functions and practice scope of nurses participating in pre-hospital treatment, thereby enhancing their treatment capabilities. One expert stated: "We need to establish standards with some quantitative indicators, such as specific measures like pupil dilation and respiratory rate to assess patients. This would be very helpful for standardizing and improving nurses' treatment skills." Another noted: "Having a reference, such as when each operation begins and how much time it takes to complete it, with quantifiable elements to reference, makes training more targeted." A third emphasized: "We need some clear, effective evaluation indicators, such as time quantification. Even though our assessment questions are randomly selected during acceptance, we have time node management. Which actions must be completed—in fact, this is the process and also the indicator, which is very important for improving nurses' skills."

3. Discussion

Improving Nurses' Pre-hospital Treatment Skills Is Important for Perfecting the Trauma Treatment System and Enhancing Trauma Treatment Capacity

With the development of pre-hospital emergency medicine, there are more opportunities to improve the physiological status of severe trauma patients. Inappropriate pre-hospital management can lead to increased mortality and disability rates. Therefore, rapid and effective treatment measures in the pre-hospital phase are crucial. Currently, China's overall trauma treatment level remains relatively low, with high mortality and disability rates that still cannot meet national and social needs.

Yunnan Province has complex terrain with steep mountains and rugged roads, making it highly prone to natural disasters and traffic accidents, with severe trauma being a major cause of population death. However, Yunnan Province's severe trauma treatment level still lags significantly behind other provinces and cities, and nurses' overall pre-hospital treatment capabilities are weak with uneven skill levels. In this context, the Yunnan Provincial Health Commission responded to the national policy and the "Notice on Implementing Ten Practical Matters for the People" issued by the General Office of Yunnan Provincial People's Government in 2019, which mentioned the need to establish an expert committee for trauma center construction to promote trauma center development. However, domestic policy documents often weaken the nurse role and do not specify the skills and responsibilities required for nurses. The trauma emergency medical system remains imperfect and focuses primarily on physicians, while nurses lack systematic and standardized training programs. Standardizing pre-hospital treatment processes, clarifying job responsibilities, and improving nurses' pre-hospital treatment skills are important measures to save patients'

lives and play a vital role in reducing mortality and disability rates among severe trauma patients. Therefore, it is necessary to explore and research nurses' severe trauma pre-hospital treatment skills, establish scientific and standardized treatment processes, clarify job responsibilities, and use standardized training and objective evaluation systems to urge nurses to improve their treatment capabilities and save lives.

Constructing Evaluation Indicators for Nurses' Severe Trauma Pre-hospital Treatment Skills to Enhance Treatment Capabilities

Nurses' pre-hospital treatment skills are crucial guarantees for successful rescue. Timely implementation of preliminary care measures—such as maintaining airway patency, establishing intravenous access, maintaining effective respiratory and circulatory support, hemostasis and bandaging, and fracture fixation—requires proficient nursing operations to win precious time for severe trauma treatment. However, there are few domestic literature reports on nurse pre-hospital treatment skill training, and China lacks a scientific and objective treatment capability evaluation system. Additionally, China lacks research on the specific components of nurses' severe trauma pre-hospital treatment skills. Current research on nurses' treatment skills mainly focuses on skills that emergency nurses should master in-hospital, which is not targeted to pre-hospital settings and lacks applicable evaluation indicators. Existing assessment tools cannot meet the requirements for evaluating nurses' severe trauma pre-hospital treatment skills. Therefore, combining relevant policies with this study's findings, it is necessary to create an appropriate tool to evaluate nurses' severe trauma pre-hospital treatment skills, specifically reflecting pre-hospital treatment nursing practice and standardizing training and practice for nurses in severe trauma pre-hospital treatment.

Conflict of Interest Statement: The authors declare no conflict of interest in this article.

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