

ORIGINAL RESEARCH

The Impact of a Humanized Nursing Model on the Nursing Outcomes of Emergency Transfusion Patients

Jinxia Chen, MD; Dongsheng Ding, MD

ABSTRACT

Background • Emergency transfusion is a frequently performed invasive medical procedure. Patients often experience negative emotions and exhibit poor compliance during transfusion. Therefore, it is imperative to proactively implement effective nursing interventions.

Objective • This study aims to investigate the impact of a humanized nursing model on the nursing outcomes of emergency transfusion patients.

Design • This research was conducted as a randomized controlled experiment.

Setting • The study was conducted in the emergency department of Suzhou Hospital of Integrated Chinese and Western Medicine.

Participants • A total of 120 patients who underwent emergency transfusion treatment in our hospital from February 2021 to October 2022 were selected. They were divided into two groups, the control group, and the observation group, using a random number table method, with 60 patients in each group.

Interventions • The control group received standard nursing care, while the observation group received humanized nursing.

Primary Outcome Measures • The primary outcome

measures included (1) assessment of psychological states, (2) evaluation of physical and mental comfort, (3) assessment of transfusion compliance, (4) incidence of adverse transfusion events, and (5) assessment of nursing satisfaction.

Results • Prior to nursing interventions, anxiety and depression scores were not significantly different between the two groups ($P > .05$). After nursing interventions, both groups exhibited a decrease in scores, with the observation group showing a more significant reduction compared to the control group ($P < .05$). In all aspects of physical and mental comfort, the observation group scored significantly higher than the control group ($P < .05$). Transfusion compliance and nursing satisfaction were significantly higher in the observation group compared to the control group ($P < .01$). The incidence of adverse transfusion events in the observation group was significantly lower than in the control group ($P < .01$).

Conclusions • Humanized nursing significantly improves anxiety and depression in emergency transfusion patients, enhances their physical and mental comfort, and increases transfusion compliance while reducing adverse transfusion events. It leads to high patient satisfaction with nursing services. (*Altern Ther Health Med*. [E-pub ahead of print.])

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INTRODUCTION

Emergency transfusion is a frequently performed invasive medical procedure.¹ Patients undergoing emergency transfusion often exhibit characteristics such as high mobility, diverse disease types, and the administration of various transfusions and medications, making nursing during the transfusion process particularly challenging.² Moreover,

patients frequently experience anxiety, depression, and other negative emotions during transfusion. Excessive tension can result in physical and mental stress, which may adversely affect the success of the transfusion treatment.³ Hence, it is crucial to proactively implement effective nursing interventions.

In the course of routine nursing development, practices are often dictated by the doctor's advice, which may be arbitrary and lack the humanistic elements of nursing. Humanized nursing is an approach to healthcare that places the patient at the heart of the nursing process. It goes beyond the traditional medical model and recognizes the importance of addressing not only the physical but also the emotional, psychological, and social needs of patients.²⁻³

Humanized nursing emphasizes compassionate care, effective communication, and the establishment of a strong

patient-nurse relationship.^{4,5} Humanized nursing provides a more holistic and patient-centered approach to healthcare by tailoring nursing interventions to each individual's unique needs and preferences. This approach improves patient outcomes and enhances the overall patient experience, promoting a sense of dignity, respect, and well-being throughout their healthcare journey.⁵

Humanized nursing in emergency transfusion is a natural outcome of the evolving humanistic nursing concept, perfectly aligning with the current healthcare model's demands.⁶ The application of humanized nursing has been extensively documented across various medical conditions. For instance, implementing humanized nursing for glaucoma patients during the perioperative period under local anesthesia has been shown to alleviate patients' negative emotions and enhance their treatment compliance.⁷

Humanized nursing interventions have proven to significantly enhance patient cooperation during surgical anesthesia, reduce surgical pain and fear, and improve the prognosis of elderly patients with femur intertrochanteric fractures.⁸ Therefore, this study aims to investigate the impact of the humanized nursing model on the nursing outcomes of emergency transfusion patients. This research contributes to the advancement of patient-centered care and enhances the quality of healthcare delivery in emergency settings.

METHODS

Study Design

A randomized controlled trial was conducted, and a total of 120 patients who underwent emergency transfusion treatment at our hospital between February 2021 and October 2022 were selected. Patients were randomly assigned to either the control group (CG) or the observation group (OG). Random numbers were generated by a research statistician using a computer system, ranging from 1 to 60. Odd numbers were designated as the control group, while even numbers were assigned to the observation group. These random numbers were sealed in sequentially numbered envelopes and delivered by the study nurse to the research coordinator of our study group the day before the surgery. This study obtained approval from the hospital's Ethics Committee, and informed consent was obtained from the patients or their families.

Baseline Characteristics of Patients

In the CG, there were 39 males and 21 females, with ages ranging from 18 to 72 years and an average age of (48.64±4.89) years. In the OG, there were 38 males and 22 females, aged between 18 and 73 years, with an average age of (48.65±4.86) years. There were no significant differences in basic data between the groups ($P > .05$), ensuring comparability.

Inclusion and Exclusion Criteria

Inclusion criteria: (1) Patients receiving intravenous fluids in the emergency department; (2) Patients in a sober state; (3) Patients willing to voluntarily participate in the

study. Exclusion criteria: (1) Individuals with abnormal coagulation function or immune dysfunction; (2) Patients with mental illness or cognitive impairment; (3) Participants with incomplete general information; (4) Individuals suffering from serious infectious diseases or infectious diseases; (5) Patients diagnosed with malignant tumors or other critical illnesses. All patients provided informed consent for their participation in the study.

Nursing Care for the Control Group (CG)

In the control group, patients received routine nursing care, which included strictly adhering to the doctor's instructions for administering transfusions and performing related nursing procedures. The nursing staff also patiently answered patients' inquiries.

Humanized Nursing for the Observation Group (OG)

In the observation group, patients received humanized nursing, which included the following components:

Pre-Transfusion Education. Experienced nursing personnel provided comprehensive explanations about the necessity of transfusion therapy and related knowledge. This educational approach aimed to alleviate patients' negative emotions and enhance their understanding of the procedure.

Needle Insertion Techniques. During needle insertion, techniques such as attention diversion were employed to alleviate tension and ensure successful punctures on the first attempt. This approach contributed to building trust between patients and the medical staff.

Transfusion Process. Nurses in the observation group provided psychological interventions and attentive transfusion care. Regular patients were accommodated in either the pediatric or adult transfusion rooms, while special patients received bedside transfusions. A call bell was made available at the patient's bedside, enabling prompt responses from nursing staff as needed.

Post-Puncture Inspection. After successful punctures, nursing staff conducted thorough inspections to monitor patients' condition during the transfusion process. It involved checking for unblocked tubing, assessing for needle displacement, and evaluating the patient's comfort level at the puncture site. This approach not only allowed for the timely detection of abnormalities but also instilled a sense of security in patients.

Post-Transfusion Information. After completion of the transfusion, patients were informed of relevant precautions, potential adverse reactions, and coping strategies to enhance their confidence in the recovery process. Throughout the entire treatment process, a patient-centered approach was emphasized to ensure that care was tailored to each patient's unique needs and preferences.

Observation Indexes

The study employed several key observation indexes to assess various aspects of patient experiences during emergency transfusion:

Anxiety and Depression Assessment. Anxiety and depression levels were evaluated using the Self-Rating Anxiety Scale (SAS) and Self-Rating Depression Scale (SDS).⁹ SAS comprises 20 items, with a score exceeding 50 indicating the presence of anxiety, while SDS, also comprising 20 items, considers a score exceeding 53 indicating depression. Higher scores reflect more significant levels of anxiety and depression.

Evaluation of Comfort. Patients' physical and mental comfort during transfusion was assessed using Kolcaba's General Comfort Questionnaire (GCQ).¹⁰ This evaluation encompassed various comfort dimensions, including environmental, psychological, physiological, and social comfort. Each dimension was quantified on a hundred-point scale, with higher scores signifying greater comfort.

Compliance Evaluation. The assessment of compliance encompassed various factors, such as patients' emotional states during transfusion, their cooperation during puncture and needle extraction, and their level of activity throughout the transfusion process. Nursing staff conducted comprehensive evaluations, with a total score of 30 points. Scores exceeding 24 indicated high compliance, scores between 15 and 24 indicated general compliance, and scores below 15 indicated non-compliance.

Adverse Events. The assessment of adverse transfusion events considered factors such as unreasonable transfusion rates, transfusion reactions, transfusion extravasation, puncture technique quality, timely inspections, and adherence to post-transfusion protocols.

Patient Satisfaction Evaluation. Patient satisfaction was assessed using the hospital's internally developed satisfaction scale, which employed a hundred-point scoring system. Scores exceeding 80 indicated high satisfaction, scores below 60 indicated dissatisfaction and scores between 60 and 80 were considered indicative of general satisfaction. Total satisfaction was calculated as the sum of the very satisfied and general satisfaction rates.

Total Satisfaction = Very Satisfaction Rate + General Satisfaction Rate

Statistical Analysis

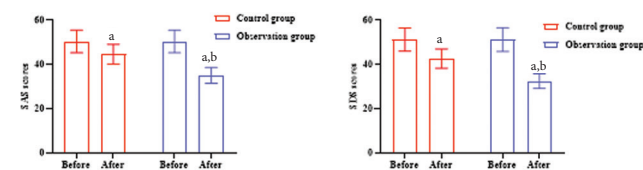
Data in this study were analyzed using SPSS 12.0 statistical software (International Business Machines Corporation, USA). Measurement data were presented as mean ($\bar{x} \pm s$), and group comparisons were performed using the *t* test. Categorical data were presented as [n (%)], and intergroup comparisons were conducted using the χ^2 test. A significance level of $P < .05$ was used to determine statistical significance.

RESULTS

Psychological States in Both Groups

Before the nursing intervention, the SAS and SDS scores in the OG were 50.43 ± 5.09 and 51.25 ± 5.31 , respectively, while in the CG, they were 50.45 ± 5.12 and 51.23 ± 5.24 . There were no significant differences in SAS and SDS scores between the two groups prior to nursing intervention ($P > .05$), as illustrated in Figure 1. After nursing interventions,

Figure 1. SAS and SDS Scores in Both Groups



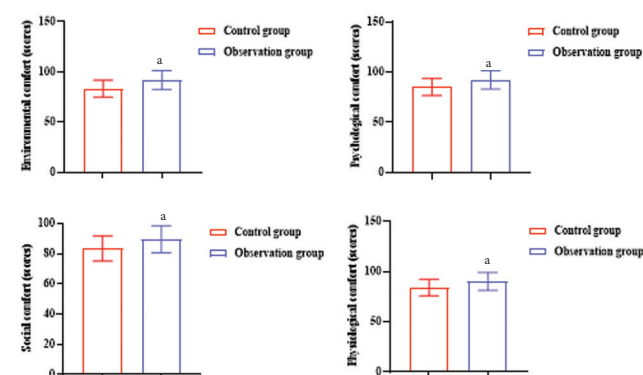
^a $P < .05$ indicates statistical significance relative to scores before nursing

^b $P < .05$ indicates statistical significance relative to the control group.

Note: The figure illustrates the self-rating anxiety scale (SAS) and self-rating depression scale (SDS) scores in both groups before and after nursing.

Abbreviations: SAS: self-rating anxiety scale; SDS: self-rating depression scale.

Figure 2. Physical and Mental Comfort in Both Groups



^a $P < .05$ indicating statistical significance.

Note: The figure depicts the comparison of physical and mental comfort scores in both groups.

the SAS and SDS scores in the OG decreased to 35.06 ± 3.54 and 32.48 ± 3.35 , respectively, while in the CG, the scores were 44.67 ± 4.53 and 42.67 ± 4.34 . Both sets of scores showed a decline after nursing, with the scores in the OG exhibiting a more significant reduction compared to the CG ($P < 0.05$).

Physical and Mental Comfort in Both Groups

The scores for environmental comfort, psychological comfort, physiological comfort, and social comfort in the OG were 92.09 ± 9.23 , 92.38 ± 9.18 , 90.18 ± 9.03 , and 89.57 ± 9.01 , respectively. In the CG, these scores were 83.45 ± 8.42 , 85.24 ± 8.49 , 84.26 ± 8.36 , and 83.45 ± 8.37 . Compared to the CG, the OG achieved significantly higher scores in all dimensions of physical and mental comfort ($P < .05$), as illustrated in Figure 2.

Transfusion Compliance in Both Groups

After nursing interventions, the transfusion compliance rate in the CG decreased to 83.33%, which was significantly lower than the 98.33% compliance rate observed in the OG. ($P < .01$), as shown in Table 1.

Adverse Transfusion Events in Both Groups

After nursing interventions, the incidence rate of adverse transfusion events in the OG was 6.6%, significantly lower

Table 1. Transfusion Compliance in Both Groups [n (%)]

Groups	n	Compliance	General Compliance	Non-Compliance	Compliance Rate (%)
Control Group	60	23	27	10	50 (83.33%)
Observation Group	60	35	24	1	59 (98.33%)
χ^2		8.11			
P value		<.01			

Note: The table presents data on transfusion compliance in both the control and observation groups. The Compliance Rate (%) indicates the percentage of patients who adhered to transfusion protocols. The χ^2 value of 8.11 with $P < .01$ signifies a statistically significant difference in transfusion compliance between the two groups.

Table 2. Adverse Transfusion Events in Both Groups [n (%)]

Groups	n	Transfusion Reaction	Unreasonable Transfusion	Transfusion Extravasation	Poor Puncture Technique	Untimely Inspection	Non-Standard Disposal After Transfusion	Total Incidence Rate (%)
Control Group	60	1	4	1	3	4	3	16 (26.67%)
Observation Group	60	0	1	0	1	1	1	4 (6.67%)
χ^2		8.64						
P value		<.01						

Note: The table presents data on adverse transfusion events in both the control and observation groups. The Total Incidence Rate (%) represents the percentage of patients experiencing adverse events. The χ^2 value of 8.64 with $P < .01$ indicates a statistically significant difference in adverse transfusion events between the two groups.

Table 3. Nursing Satisfaction in Both Groups [n (%)]

Groups	n	Very Satisfied	Generally Satisfied	Unsatisfied	Total Satisfaction Rate (%)
Control Group	60	25	26	9	51 (85.00%)
Observation Group	60	33	26	1	59 (98.33%)
χ^2		6.98			
P value		<.01			

Note: The table presents data on nursing satisfaction in both the control and observation groups. The Total Satisfaction Rate (%) represents the combined percentage of patients who were either very satisfied or generally satisfied. The χ^2 value of 6.98 with a $P < .01$ indicates a statistically significant difference in nursing satisfaction between the two groups.

than the 26.67% observed in the CG ($P < .01$), as indicated in Table 2.

Nursing Satisfaction in Both Groups

Nursing satisfaction in the OG was 98.33%, demonstrating a significant increase compared to 85.00% in the CG ($P < .01$), as shown in Table 3.

DISCUSSION

Emergency transfusion is a common clinical treatment measure and a vital component of emergency outpatient care.¹¹ This critical medical intervention is often the first point of contact for patients in the emergency transfusion room, shaping their initial perception of the hospital's medical quality.¹² The emergency outpatient department's unique challenges distinguish it from other departments, with a higher incidence of emergencies and more complex diseases. Given the inherent urgency and complexity, any lapse in the transfusion process can potentially lead to adverse events, compromising the quality of service in the emergency department and escalating the risk of doctor-patient disputes.¹³

In emergency transfusions, nursing plays a pivotal role in ensuring the safe and efficient administration of blood products. Nurses oversee patient assessment, monitor vital signs, address potential complications, and provide crucial emotional support, contributing significantly to the overall success of emergency transfusion interventions.¹²⁻¹⁴ Therefore, it is recommended to enhance the provision of effective nursing care for patients undergoing such critical interventions

to address potential challenges arising during emergency transfusions. Enhancing nursing practices is important to ensure the seamless execution of transfusion treatments and foster improved patient recovery.

As most emergency transfusion patients experience rapid disease progression, quick onset, and intense pain, there is minimal time for psychological preparation post-illness. Coupled with the distressing nature of their condition, these patients are susceptible to negative emotions such as tension, depression, and anxiety, resulting in a compromised mental state. This heightened emotional vulnerability can manifest as irritability and sensitivity during transfusion treatment, potentially leading to instances of emotional distress and an overall heightened state of stress.¹⁴

The traditional clinical nursing model tends to prioritize addressing patients' physical discomfort, focusing on the provision of transfusion care. However, there is a noticeable lack of emphasis on patients' psychological and emotional guidance and comfort, resulting in a deficit of nursing pertinence and humanization. Therefore, when caring for emergency transfusion patients, addressing their diverse needs becomes challenging, inhibiting the effective alleviation of adverse psychological states. This limitation imposes constraints on the clinical application of nursing practices to a certain extent.

Considering the main characteristics of emergency patients, the scheme of humanized nursing services focuses on enhancing the overall nursing quality.¹⁵ Humanized nursing represents an evolving nursing model built upon a foundation of human-centered care. It necessitates implementers with a scientific understanding of human nature and genuinely prioritize patient-centered care. It involves promptly recognizing and addressing both the physiological and psychological needs of patients, aiming to deliver the most personalized and compassionate care possible.¹⁶

Humanized nursing represents a nursing philosophy and aligns with the inevitable trend following the transformation of the modern medical model into the bio-psycho-social medical model.¹⁷ As the term implies, humanized nursing is inherently people-oriented, specifically patient-centered. Throughout the nursing process, it places increased emphasis on the psychological well-being of patients, prioritizing their mental and emotional experiences.¹⁸

Considering the urgent and critical condition of emergency transfusion patients, the adoption of effective humanized

nursing services proves helpful in elevating both nursing efficiency and overall effectiveness. These services have a substantial impact on enhancing patient satisfaction by genuinely attending to the psychological well-being of patients. This approach requires nursing staff to engage in continuous learning, exhibit high-quality skills, and demonstrate strong professional abilities. It is imperative for them to skillfully navigate the dynamic shifts in patients' psychological states and keenly observe subtle changes in their emotional well-being.¹⁹

In this study, the results indicate that after nursing, SAS and SDS scores in the OG decreased compared to the CG. Furthermore, the OG demonstrated significantly higher scores in all aspects of physical and mental comfort compared to the CG. These findings suggest that the implementation of humanized nursing services can notably enhance the comfort level and alleviate adverse psychological states in emergency transfusion patients.

Our results align with previous studies, affirming that humanized nursing effectively improved the psychological state of patients undergoing interventional embolization for subarachnoid hemorrhage caused by intracranial aneurysm during the perioperative period.²⁰ Furthermore, Cong et al.²¹ have demonstrated that humanized nursing can enhance patients' physiological well-being, psychological state, and comfort levels in the operating room. In this study, the CG exhibited a decreased transfusion compliance rate and nursing satisfaction relative to the OG.

Additionally, adverse transfusion events were reduced in the OG compared to the CG. These outcomes collectively suggest that implementing humanized nursing services tailored to the characteristics of emergency patients can enhance patient compliance, build trust in nursing staff, and facilitate subsequent nursing and diagnostic efforts. These findings align with previous literature.^{22,23}

Study Limitations

This study is constrained by the relatively small sample size, potentially introducing deviations between the obtained data results and the actual values. The limited sample size might not fully capture the broader population characteristics, affecting the generalizability of the findings. Additionally, the absence of long-term follow-up data prevents a comprehensive assessment of the sustained impact of humanized nursing on emergency transfusion patients. The absence of prolonged observation makes it difficult to fully understand the long-lasting effects and potential variations over an extended period. Recognizing these limitations, future research should involve the expansion of the sample size and the incorporation of extended follow-up periods to provide a more robust and nuanced understanding of the long-term implications of humanized nursing interventions in emergency transfusion scenarios.

CONCLUSION

Our study concludes that the implementation of humanized nursing in emergency transfusion patient care offered substantial benefits. This approach significantly enhances patients' emotional well-being by reducing anxiety

and depression, improves both physical and mental comfort, increases transfusion compliance, and minimizes adverse transfusion events. The high level of patient satisfaction highlights the effectiveness of humanized nursing services in this context. The findings strongly advocate for the clinical promotion and widespread adoption of humanized nursing practices in emergency transfusion patient care, highlighting its potential to positively impact various aspects of patient outcomes and overall satisfaction with nursing services.

ACKNOWLEDGEMENT

None

CONFLICT OF INTERESTS

The authors report no conflict of interest.

AVAILABILITY OF DATA AND MATERIALS

The data supporting the findings of this study are available from the corresponding author upon request, subject to reasonable conditions.

FUNDING

No funding was received.

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