ORIGINAL RESEARCH

Nursing Based on Humanistic Care Concept for Continuous Blood Purification for Patients with Severe Sepsis in the Intensive Care Unit

Meimei Fan, BM; Shengnan Zhu, MM; Mei Liu, MM; Aili Cao, BM; Fan Jiang, BM; Rui Wang, MM

ABSTRACT

Context • Mortality from severe sepsis has been declining in recent years but remains a challenge worldwide because it remains the most frequent cause of death in ICUs. High-quality nursing care during a patient's CBP can play an important role in promoting a patient's physical condition.

Objective • The study intended to explore the effects of nursing based on a humanistic care concept on continuous blood purification (CBP) treatment for patients with severe sepsis in an intensive care unit (ICU).

Design • The research team performed a prospective randomized controlled study.

Setting • The study took place at Minhang Hospital at Fudan University in Shanghai, China.

Participants • Participants were 80 patients with severe sepsis who had been admitted to the ICU of the hospital and who were receiving CBP between April 2021 and December 2022.

Intervention • The research team randomly divided participants into two groups according to their admission sequence, with 40 participants in each group: (1) an intervention group, the humanistic care group, who received CBP under humanistic care, and (2) a control group who received CBP under routine nursing.

Outcome Measures • At baseline and postintervention, the research team: (1) measured participants' negative emotions using the Self-rating Anxiety Scale (SAS) and the Self-rating Depression scale (SDS), (2) assessed participants' hope levels using the Herth Hope Index (HHI), and (3) evaluated participants' health statuses using the Acute Physiology and Chronic Health Evaluation (APACHE-II). The team also measured the complication rate and determined participants' treatment compliance.

Results • Postintervention compared to the control group, the humanistic care group's: (1) SAS and SDS scores were significantly lower, with $P < .001$ and $P < .001$, respectively; (2) HHI score was significantly higher, with $P < .001$; (3) APACHE-II scores and complication rate were significantly lower, with $P < .001$ and $< .001$, respectively; and (4) treatment compliance was significantly higher, with $P = .0186$.

Conclusions • Nursing based on a humanistic care concept in ICUs can effectively alleviate the negative mood of patients with severe sepsis receiving CBP, enhance their hope levels and the treatment effect, improve their health statuses and treatment compliance, and reduce the occurrence of complications. (*Altern Ther Health Med.* 2024;30(7):96-102).

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INTRODUCTION

As a syndrome of physiological, pathological, and biochemical abnormalities from systemic infections, sepsis requires treatment because such infections can lead to organ failure.[1] Severe sepsis is a multi-organ-dysfunction syndrome that infection can cause.[2] It's the main cause of admissions to an intensive care unit (ICU) and of patients' deaths.[3] Hospitals treat about half of patients with severe sepsis in the ICU, and these patients account for 10% of all ICU patients.[4] Moreover, individuals admitted to the ICU who do not initially present with sepsis may subsequently acquire this condition during their hospitalization, culminating in a surge in sepsis occurrences within the ICU.[5]

Mortality from severe sepsis has been declining in recent years but remains a challenge worldwide because it remains the most frequent cause of death in ICUs.[6] Continuous blood purification (CBP) is the main method of clinical treatment of severe sepsis.[7] Hospitals use CBP to filter a patient's blood

to reduce inflammation and purify it, thereby allowing them to treat the original diseases that resulted in a patient's hospitalization and reduce mortality.[8]

Continuous Blood Purification

CBP has significant effects in reducing inflammatory cytokines in the blood and improving the hemodynamics and microcirculation of patients' blood.[9] As a widely used technique for treatment of severe sepsis in ICUs, CBP has significant effects.[10] It can reduce the systemic inflammatory response, inhibit the progression of sepsis by eliminating inflammatory factors, improve capillary permeability, and reduce pulmonary interstitial edema.[11] In addition, CBP can improve the prognosis of patients with sepsis.[12]

However, as a means of treatment, Tuerdi et al found that CBP can lead to complications during its application.[13] Zhou et al also found that CBP treatment can lead to complications, including hypotension, coagulation dysfunction, and catheter-related infections.[14]

Patients' Statuses

Sepsis' impact on patients isn't limited to physiological aspects but also has a serious impact on their psychological statuses.[15] Hou et al found that patients frequently lack a precise comprehension of their condition, resulting in heightened concern regarding their well-being, consequently, the inclusion of CBP in the therapeutic regimen may induce adverse emotional states like depression and anxiety in patients.[16] Those researchers also found that this emotional state inhibits patients' active participation in medical care and their brave confrontation of the illness.

Leviner also found that sepsis can affect patients' moods negatively, such as increasing anxiety and depression significantly.[17] Song et al found that this increase in negative moods can not only dampen a patient's hope level but also harm his or her recovery.[18] Therefore, relieving patients' anxiety and depression during treatment is one of the focuses of nursing care for sepsis patients.[19]

Also, noncompliance with prescribed treatment protocols is an important and widespread behavioral health problem in disease management.[20] Lack of compliance can have a significant impact on disease control and on patients' long-term prognoses.[21]

CBP and Nursing Care

High-quality care during a patient's CBP can play an important role in promoting a patient's physical condition.[22] Nursing staff should be involved in the whole process to ensure the therapeutic effects of CBP.[23] To alleviate any adverse effects that patients may experience during the CBP process, the nursing staff needs to pay attention to improving the quality of patients' care.[24]

However, in current routine nursing in China, based on the limited nursing background and a dearth of compassion towards the patient, the nurse was unable to deliver thorough care for the individual afflicted with acute septicemia, likewise, nurses, constrained by their professional capacities and limitations, exhibit a diminished emphasis on blood purification, so it's not always possible to provide high-quality nursing services for patients.[25]

Humanistic Nursing Care

Infusing humanistic compassion into the nursing process is essential for elevating the standard of care.[26] The application of nursing rooted in the ethos of humanistic care can augment nurses' compassion towards patients, nurturing a harmonious physician-patient rapport, and improve the overall quality of the nursing team, aiming to provide patients with more systematic and comprehensive quality services.[27]

Current Study

The current study intended to explore the effects of nursing based on a humanistic care concept on CBP treatment for patients with severe sepsis in an ICU.

METHODS

Participants

The research team performed a prospective randomized controlled study, which took place at Minhang Hospital at Fudan University in Shanghai, China. Potential participants were patients with severe sepsis who had been admitted to the ICU at the hospital and who were receiving CBP between April 2021 and December 2022. Qualified patients will be sequentially assigned a distinct identifier according to their visit order, and they will be randomly allocated into a humanistic care group and a routine nursing care, utilizing a randomization technique. Subsequent to the allocation, distinct interventions will be administered based on the assigned cohorts. Subsequently, the patient's attending physician and designated nurse will assess and appraise the efficacy of the interventions using diverse forms of communication, such as follow-up phone calls, home visits, hospital revisits by the patients, and email correspondences.

The study included potential participants if they had: (1) received a diagnosis of severe sepsis, (2) shown compliance with the procedures for the CBP treatment, and (3) been admitted to the ICU.

The study excluded potential participants if they had: (1) heart disease or a history of heart disease, (2) a serious coagulation disorder or blood system disease, (3) diabetes, (4) mental-health problems or consciousness disorders, or (5) unable to cooperate during the study.

The Clinical Research Ethics Committee of Minhang District Central Hospital of Shanghai approved the study's protocols. This study upholds the principles outlined in the Helsinki Declaration, with all participants and their families having duly furnished written informed consent with regard to this research.

Procedures

Groups. The research team randomly divided participants into two groups according to their admission

sequence: (1) an intervention group, the humanistic care group, who received CBP under humanistic nursing care, and (2) who received the control group under routine nursing care. The team used the random number method for randomization.

CBP treatment. Patients in both groups received CBP treatment, with femoral-vein catheterization and replacement fluid with bicarbonate being selected. The catheterization flow was 3000-4000 ml/h; the blood flow was 200-250 ml/min; and the treatment occurred for 9-24 h/d. During the treatment, patients required heparin anticoagulation.

Outcome measures. At baseline and postintervention, the research team: (1) measured participants' negative emotions using the Self-rating Anxiety Scale (SAS) and the Self-rating Depression scale (SDS),[28] (2) assessed participants' hope levels using the Herth Hope Index (HHI),[29] and (3) evaluated participants' health statuses using the Acute Physiology and Chronic Health Evaluation (APACHE-II),[30] The team also measured the complication rate and determined participants' treatment compliance.

Interventions

Routine care. In the routine care, the nurses: (1) observed changes in patients' vital signs, (2) measured patients' blood pressure and pulse once every 15 minutes and body temperature once an hour, (3) adjusted patients' blood flow and ultrafiltration rate according to the results of blood gas analysis and changes in vital signs, (4) used appropriate methods for health education, (5) provided daily oral care to prevent oral infections, (6) turned patients over and massaged them to prevent bedsores, and (7) gave some comfort and encouragement to patients with psychological problems.

Humanistic care. In the humanistic care the hospital: (1) changed the ward's internal environment, mainly to make it warm and similar to home, to reduce patients' anxiety and depression; (2) located the ward in a relatively quiet place to avoid noise, and (3) provided curtains between the beds to provide private space;

The nurses: (1) the nurses provided light music for music therapy during hospitalization; (2) paid close attention to patients' psychological conditions and fully respected their privacy; (3) met patients' reasonable requests as far as possible; (4) assisted patients to familiarize themselves with the ward's environment as soon as possible when they were first hospitalized, to eliminate strangeness and fear; (5) communicated effectively with patients' families, to develop some understanding of such factors as patients' personal interests, hobbies, and personality, which could help in patients' psychological treatments; (6) The active participation of family members in the patient's treatment is vital, communicated with them using a video phone during hospitalization and informed the families of the patients' degree of recovery in a timely manner and how to care for them, to increase the sense of family members' participation and the closeness of the patient to the family; (7) during the blood purification, strengthened the monitoring of vital signs and maintained a timely grasp of patients' changes in blood pressure and blood gases; (8) kept vascular access smooth, preventing blockages, and avoided all kinds of catheters from falling off; (9) paid attention to whether a patient had a bleeding tendency and informed the doctor immediately for targeted treatment for patients with bleeding tendencies; (10) in all nursing operations, strictly observed the principle of aseptic operation to avoid iatrogenic infection; and (11) paid attention to the patient's wound conditions, and if bleeding or secretions occur, treating the wounds immediately.

Outcome Measures

Mood. The research team used the Self-rating Anxiety Scale (SAS) and Self-rating Depression Scale (SDS)[28] to evaluate participants' anxiety and depression. The SAS and SDS scales, developed by Professor Cao Jieqiong, are extensively verified self-assessment tools for evaluating symptoms of depression and anxiety. They are primarily intended for self-evaluation, to be completed by the individual under assessment. These scales are widely utilized instruments for evaluating short-term symptoms of depression and anxiety. The SDS scale comprises 20 elements, with each element delineating a specific presentation or encounter of melancholy; the SAS scale comprises 20 elements, with each element delineating a specific presentation or encounter of unease. Participants evaluate their emotions and encounters from the preceding week on a scale ranging from 1 (absent) to 4 (recurring). The higher a participant's score on the scale, the more serious the negative mood, depression, and anxiety.

Hope level. The research team used the Herth Hope Index (HHI) to evaluate participants' hope levels. The scale was devised by Dr. Shirley M. Herth in 1991 as a instrument for evaluating the extent of an individual's sense of hope, principally gauging one's sanguine projections and convictions regarding the future, assisting in the scrutiny of the individual's degree of hopeful expectation, and has been broadly authenticated. The scale includes the three subdimensions—positive attitude, positive action, and intimate relationship—with a total of 12 items. The score runs from 1 to 4 points, with the full score being from 12 to 48 points. The higher the score, the higher the hope level.

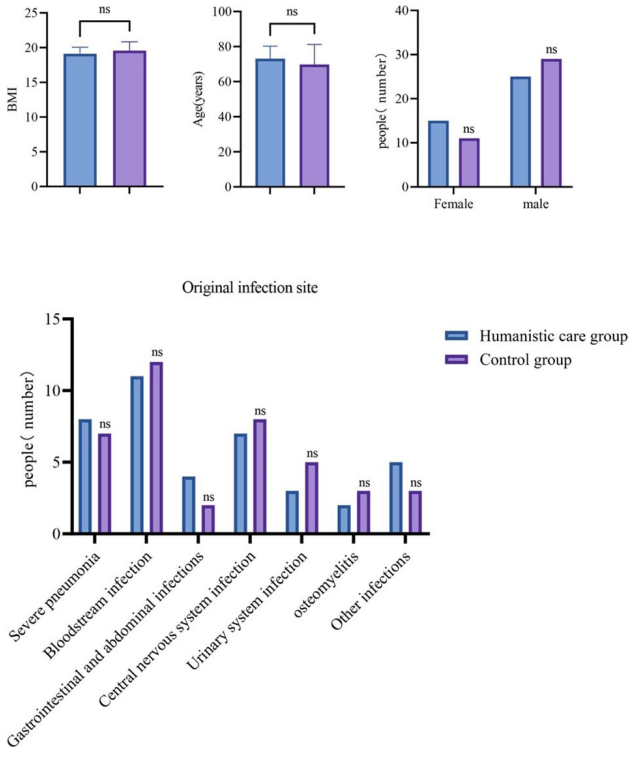
Health status. The research team used the Acute Physiology and Chronic Health Evaluation (APACHE-II) to evaluate participants' health statuses. The assessment tool was formulated by Knaus and associates in 1985, establishing itself as a commonly employed evaluation instrument in the domain of critical care medicine. Its main function is to assess the gravity of a patient's ailment and the potential risks to their prognosis by gathering the patient's physiological indicators and clinical information, and has been subject to thorough validation. The assessment includes 12 physiological parameters and 6 clinical indicators, encompassing metrics like blood pressure, heart rate, respiratory rate, body temperature, blood pH level, among others. A higher cumulative score signifies a more critical state for the patient, correlating with a poorer prognosis. The scores are negatively correlated with health status.

Table 1. Participants' Demographic and Clinical Characteristics (N=80)

Characteristics	Humanistic Care Group Mean ± SD n (%)	Control Group Mean ± SD n (%)	t/χ^2 value	*P* value
Age, y	73.13 ± 7.11	69.78 ± 11.43	1.5740	.1195
Gender			0.9117	.3397
Male	25 (62.50)	29 (72.50)		
Female	15 (37.50)	11 (27.50)		
BMI	19.12 ± 0.93	19.58 ± 1.26	1.8577	.0670
Original Infection Site			0.1389	.7745
Severe pneumonia	8 (20.00)	7 (17.50)		
Bloodstream infection	11 (27.50)	12 (30.00)		
Gastrointestinal and abdominal infections	4 (10.00)	2 (5.00)		
Central nervous system infection	7 (17.50)	8 (20.00)		
Urinary system infection	3 (7.50)	5 (12.5)		
Osteomyelitis	2 (5.00)	3 (7.50)		
Other infections	5 (12.50)	3 (7.50)		

Abbreviations: BMI, body mass index.

Figure 1. Participants' Demographic and Clinical Characteristics at Baseline (N=80)



Complication rate. The research team recorded the occurrence of complications during treatment, such as hypotension, coagulation dysfunction, and catheter-related infections.

Treatment compliance. The research team evaluated participants' treatment compliance in the course of treatment. Noncompliance = complete lack of cooperation with various measures, with obvious negative emotions; partial compliance = able to cooperate, with fewer negative emotions than noncompliant patients; and complete compliance = full cooperation with the treatment, with no negative emotions.

Statistical Analysis

The research team analyzed the data using SPSS23.0 statistical software (IBM, Almonk, New York, USA). The team: (1) expressed continuous data as means ± standard deviations (SDs) and compared the groups using the t test, (2) expressed categorical data as numbers (N) and percentages (%) and compared the groups using the Chi-square (χ^2) test, and (3) used the F test for comparison among multiple groups. $P < .05$ indicated statistical significance.

RESULTS

Participants

The research team included and analyzed the data of 80 participants, with 40 participants in the humanistic care group and 40 in the control group (Table 1 and Figure 1). The humanistic care group included 25 men (62.50%) and 15 women (37.50%), with a mean age of 73.13 ± 7.11 and a mean BMI of 19.12 ± 0.93. The control group included 29 men (72.50%) and 11 women (27.50%), with a mean age of 69.78 ± 11.43 and a mean BMI of 19.58 ± 1.26.

Regarding participants' original sites of infection: (1) 15 had severe pneumonia (37.50%), (2) 23 had bloodstream infections (57.50%), (3) 6 had gastrointestinal and abdominal infections (15.00%), (4) 15 had central nervous system infections (37.50%), (5) 8 had urinary system infections (20.00%), (6) 5 had osteomyelitis (12.50%), and (7) 8 had other infections (20.00%). No significant differences existed between the groups at baseline ($P > .05$).

Negative Mood

At baseline, the humanistic care group's SAS score was 56.11 ± 3.08, and the group's SDS score was 57.74 ± 3.55 (Table 2, Figure 2). At baseline, the control group's SAS score was 56.28 ± 3.04, and the group's SDS score was 57.93 ± 3.61. No significant differences existed between the groups in the SAS and SDS scores ($P > .05$).

Postintervention, the humanistic care group's SAS score was 23.41 ± 3.79 and the group's SDS score was 24.47 ± 3.71. Postintervention, the control group's SAS score was 38.82 ± 3.71, and the group's SDS score was 38.51 ± 3.83.

Between baseline and postintervention, both groups' SAS scores significantly decreased, with $P < .001$ and $P < .001$, respectively, as did the SDS scores, with $P < .001$ and $< .001$, respectively,

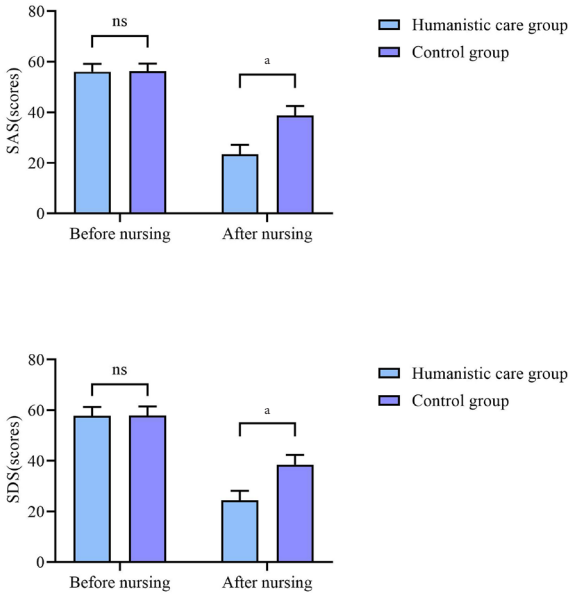
The humanistic care group's scores postintervention were significantly lower than those of the control group ($P < .001$).

Hope Levels

At baseline, the humanistic care group's intimate relationship score was 9.33 ± 1.24, positive action score was 10.25 ± 1.42, and positive attitude score was 9.37 ± 1.28 (Table 3, Figure 3). At baseline, the control group's intimate relationship score was 9.21 ± 1.55, positive action score was 10.22 ± 1.31, and positive attitude score was 9.16 ± 1.39. No significant differences existed between the groups in the intimate relationship, positive action, and positive attitude ($P > .05$)

Postintervention, the humanistic care group's intimate relationship score was 15.39 ± 1.61, positive action score was 13.54 ± 1.52, and positive attitude score was 14.51 ± 1.23.

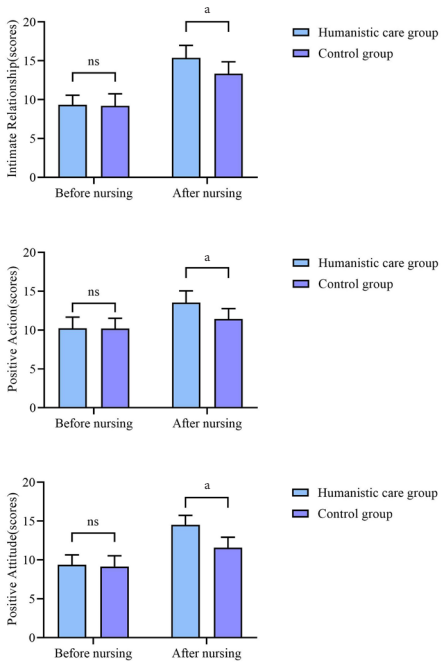
Figure 2. Comparison of Participants' Negative Moods (N=80)



[a]*P* < .05, indicating that both groups' SAS and SDS scores significantly decreased between baseline and postintervention

Abbreviations: SDS, Self-rating Depression Scale; SAS, Self-rating Anxiety Scale.

Figure 3. Comparison of Participants' Hope Levels (N=80)



[a]*P* < .05, indicating that both groups' scores on the subdimensions intimate relationships, positive actions, and positive attitudes significantly increased between baseline and postintervention

Postintervention, the control group's intimate relationship score was 13.37 ± 1.52, positive action score was 11.43 ± 1.35, and positive attitude score was 11.58 ± 1.34.

Between baseline and postintervention, both groups' scores had significantly increased: (1) for intimate relationship $P < .001$, with $P < .001$ and $P \leq .001$, respectively; (2) for positive action, with $P < .001$ and $P < .001$, respectively; and (3) for positive attitude, with $P < .001$ and $P < .001$, respectively.

Postintervention, the humanistic care group's scores were significantly higher than those of the control group ($P \leq .001$).

Table 2. Comparison of Participants' Negative Moods (N=80)

	SAS				SDS			
Group	Baseline Mean ± SD	Postintervention Mean ± SD	Difference Between Periods *t* value	Difference Between Periods *P* value	Baseline Mean ± SD	Postintervention Mean ± SD	Difference Between Periods *t* value	Difference Between Periods *P* value
Humanistic care group, n=40	56.11 ± 3.08	23.41 ± 3.79	42.3476	<.001	57.74 ± 3.55	24.47 ± 3.71	40.9785	<.001
Control group, n=40	56.28 ± 3.04	38.82 ± 3.71	23.0227	<.001	57.93 ± 3.61	38.51 ± 3.83	23.3363	<.001
t value	0.2484	18.3765	.8130		0.2373	16.6527		
P value	.8044	<.001			<.001			

Abbreviations: SDS, Self-rating Depression Scale; SAS, Self-rating Anxiety Scale.

Table 3. Comparison of Participants' Hope Levels (N=80)

	Intimate Relationship				Positive Action			
Group	Baseline Mean ± SD	Postintervention Mean ± SD	Difference Between Periods *t* value	Difference Between Periods *P* value	Baseline Mean ± SD	Postintervention Mean ± SD	Difference Between Periods *t* value	Difference Between Periods *P* value
Humanistic care group, n=40	9.33 ± 1.24	15.39 ± 1.61	18.8601	<0.001	10.25 ± 1.42	13.54 ± 1.52	10.0033	<.001
Control group, n=40	9.21 ± 1.55	13.37 ± 1.52	12.1193	<0.001	10.22 ± 1.31	11.43 ± 1.35	4.0682	<.001
t value	0.3823	5.7700	0.9220		0.0982	6.5642		
P value	.7032	<.001	<0.001					
	Positive Attitude							
Group	Baseline Mean ± SD	Postintervention Mean ± SD	Difference Between Periods *t* value	Difference Between Periods *P* value				
Humanistic care group, n=40	9.37 ± 1.28	14.51 ± 1.23	18.3125	<.001				
Control group, n=40	9.16 ± 1.39	11.58 ± 1.34	7.9273	<.001				
t value	0.7029	10.1878						
P value	.4842	<.001						

Health Status

At baseline, the humanistic care group's score for health status was 24.31 ± 3.40, and the control group's was 24.23 ± 3.51. No significant difference in health status scores existed between the groups, with $P > .05$ (Table 4, Figure 4).

Postintervention, the humanistic care group's score for health status was 12.14 ± 1.76, and the control group's was 15.55 ± 2.13. The humanistic care group's health status score was s than that of the control group ($P < .001$).

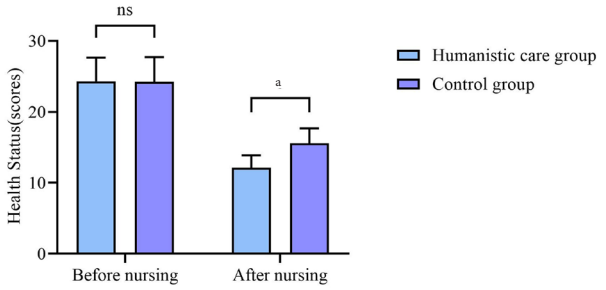
Complication Rate

In the humanistic care group (Table 5, Figure 5), one participant had hypotension (2.50%), and one had a coagulation dysfunction (2.50%), for a total of two participants experiencing a complication (5.00%). In the control group, four participants had hypotension (10.00%), five had a coagulation dysfunction (12.50%), and one had a

Table 4. Comparison of Participants' Health Statuses (N=80)

Group	Baseline Mean ± SD	Postintervention Mean ± SD
Humanistic care group, n=40	24.31 ± 3.40	12.14 ± 1.76
Control group, n=40	24.23 ± 3.51	15.55 ± 2.13
t value	0.1035	7.8054
P value	.9178	<.001

Figure 4. Comparison of Participants' Health Statuses (N=80)

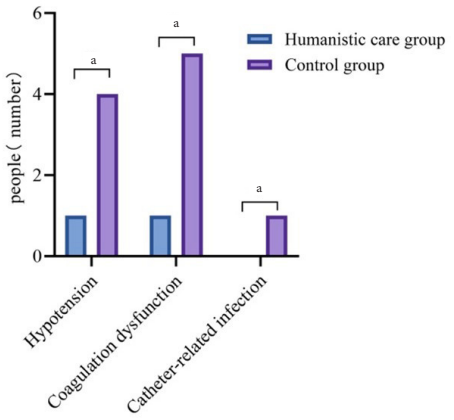


[a]*P* < .05, indicating that the health status of both groups after intervention was better than that of baseline.

Table 5. Comparison of Participants' Complication Rates (N=80)

Group	Hypotension n (%)	Coagulation Dysfunction n (%)	Catheter-related Infection n (%)	Complication Rate n (%)
Humanistic care group, n=40	1 (2.50)	1 (2.50)	0 (0.00)	2 (5.00)
Control group, n=40	4 (10.00)	5 (12.50)	1 (2.50)	10 (25.00)
χ^2	16.3333			
P value	<.001			

Figure 5. Comparison of Participants' Complication Rates (N=80)



[a]*P* < .05, indicating that the number of participants' in the humanistic care group who had hypotension, coagulation dysfunction, or catheter-related infections was significantly lower than the number in the control group

catheter-related infection, for a total of 10 participants experiencing a complication (25.00%).

The humanistic care group's complication rate was significantly lower than that of the control group (*P* < .001).

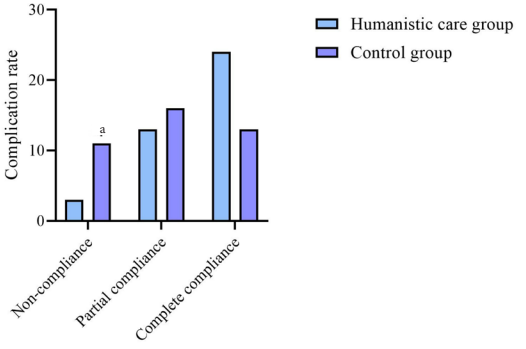
Treatment Compliance

In the humanistic care group (Table 6, Figure 6), three participants were noncompliant (7.50%), 13 were partially compliant (32.50%), and 24 were completely compliant (60.00%). In the control group, 11 participants were noncompliant (27.50%), 16 were partially compliant (40.00%), and 13 were completely compliant (32.50%). The humanistic care group's treatment compliance rate was significantly higher than that of the control group (*P* = .0186).

Table 6. Comparison of Participants' Treatment Compliance (N=80)

Group	Noncompliance n (%)	Partial Compliance n (%)	Complete Compliance n (%)	Total Compliance n (%)
Humanistic care group, n=40	3 (7.50)	13 (32.50)	24 (60.00)	37 (92.50)
Control group, n=40	11 (27.50)	16 (40.00)	13 (32.50)	29 (72.50)
χ^2				5.5411
P value				<.0186

Figure 6. Comparison of Participants' Treatment Compliance (N=80)



[a]*P* < .05, indicating that the humanistic care group's treatment compliance was significantly higher than that of the control group

DISCUSSION

Despite notable advancements in sepsis treatment, the mortality rate for severe sepsis continues to be elevated.[31] For patients with severe sepsis who received CBP in an ICU, the current study found that nursing based on the concept of humanistic care could effectively alleviate participants' negative mood, enhance their hope levels and the treatment effect, improve their health statuses and treatment compliance, and reduce the occurrence of complications.

The provision of expert and impactful nursing care has the capacity to uplift patients' spirits, empowering them to actively participate in their treatment.[32] In current study, the humanistic care group, compared with the control group, the SAS scores and SDS scores were significantly lower while the HHI scores for hope level were significantly higher. These results indicate that nursing based on the concept of humanistic care can effectively alleviate the negative mood of patients and enhance their hope levels. This is in alignment with the discoveries of Zhang et al.[33] This leads to a decrease in adverse emotions among patients diagnosed with severe sepsis following the implementation of human-centered care, empowering patients to actively engage with healthcare providers for ongoing treatment.

CBP has demonstrated promising effectiveness in enhancing the health condition of patients suffering from severe sepsis.[34] In the current study, the humanistic care

group's health status scores and complication rates were significantly lower than those of the control group, indicating that nursing based on the humanistic care concept can improve the health status of patients with severe sepsis receiving CBP in an ICU and reduce the incidence of complications. This is consistent with the results of prior studies.[7] This underscores the significance of nursing care grounded in the tenets of humanistic care for individuals with severe sepsis receiving CBP therapy, as it has the potential to greatly amplify the therapeutic benefits of CBP, resulting in a notable amelioration of the patients' physical state. This also underscores the impact of nursing in the management of severe sepsis with CBP.

Patient adherence is paramount for the successful management of the illness.[35] In the current study, the humanistic care group's treatment compliance was significantly higher than that of the control group, indicating that nursing based on the humanistic care concept can improve the treatment compliance of patients with severe sepsis receiving CBP in an ICU. This is consistent with the results of prior studies.[36] This enables critical care nurses to deliver nursing services grounded in the principles of humanism during continuous blood purification therapy for patients with severe sepsis, fostering increased patient cooperation with healthcare professionals, fostering a more harmonious physician-patient rapport, and ultimately bolstering the quality of nursing care.

This research possesses a number of significant constraints that merit highlighting. The investigation was carried out exclusively within the confines of a single hospital's Intensive Care Unit, featuring a somewhat limited sample size, and deficient in comprehensive application data and associated research. Furthermore, the study's duration was brief, prompting a deeper inquiry into the enduring impacts of person-centered care on critically ill septic patients. Lastly, the metrics employed in this study were assessed and documented by either patients or nurses, introducing a measure of potential inaccuracies.

CONCLUSIONS

Nursing based on a humanistic care concept in ICUs can effectively alleviate the negative mood of patients with severe sepsis receiving CBP, enhance their hope levels and the treatment effect, improve their health statuses and treatment compliance, and reduce the occurrence of complications.

CONFLICTS OF INTEREST

Minhang Hospital at Fudan University Discipline Construction Project (YJXK-2021-17) and the National Key Research and Development Program of China (2019YFF0216502-L21) supported the study. The authors declare that they have no conflicts of interest related to the study.

AUTHOR CONTRIBUTIONS

Meimei Fan and Shengnan Zhu are co-first authors of the manuscript

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