ORIGINAL RESEARCH

Study on the Effectiveness and Value of Evidence-Based Nursing and Predictive Nursing in Emergency Treatment of Upper Gastrointestinal Bleeding

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ABSTRACT

Objective • To study the effectiveness and value of evidence-based nursing and predictive nursing in emergency treatment of upper gastrointestinal bleeding.

Methods • A total of 100 patients with upper gastrointestinal bleeding in our hospital were selected. The period was from January 2020 to June 2022. They were grouped according to the double color ball method, 50 cases in the control group were given routine nursing, and 50 cases in the observation group were given evidence-based nursing combined with predictive nursing. The key points of evidence-based nursing are to identify the evidence-based question, search for relevant literature, identify scientifically effective nursing measures, and develop nursing care plans that are tailored to the patient's specific situation based on evidence and clinical experience. Predictive nursing requires nurses to have a high level of awareness and risk prevention consciousness to provide care for early signs of bleeding and prevent the occurrence of complications. The psychological state scores, clinical-related indicators, clinical efficacy, incidence of complications, nursing satisfaction, and quality of life scores of the two groups were compared.

Results • After the intervention, the SAS score (42.25 ± 1.67) and SDS score (43.59 ± 1.86) of the observation group were lower than those of the control group, the bleeding times (2.41 ± 0.45) of the observation group were less than those of the control group, the hemostasis time (30.12 ± 5.38d) and hospitalization time (5.01 ± 1.11d) of the observation group were shorter than those of the control group, and the difference was statistically significant (all $P < .05$). The total effective rate of hemostasis (96.00%), patient satisfaction (98.00%), and scores of physical health (88.98 ± 5.59), psychological function (91.08 ± 5.11), material life state (90.54 ± 6.46) and social function (89.59 ± 5.78) in GQOLI-74 scores in the observation group were higher than those in the control group. The incidence of complications (6.00%) in the observation group was lower than that in the control group, and the difference was statistically significant (all $P < .05$).

Conclusion • Upper gastrointestinal bleeding is a common emergency in gastroenterology, characterized by rapid onset, severe symptoms, and quick changes. Therefore, in order to expedite the recovery of patients with acute upper gastrointestinal bleeding and ensure their safety, it is necessary to provide effective clinical emergency nursing care. Evidence-based nursing can help nurses take appropriate nursing measures based on the best and latest evidence, to meet the reasonable individualized needs of patients. Predictive nursing is a nursing model that predicts potential nursing risks in advance and takes corresponding preventive measures. It can timely and systematically address risks in nursing and promote improvements in the effectiveness of disease treatment. The combined application of evidence-based nursing and predictive nursing can improve the hemostatic efficiency of patients with upper gastrointestinal bleeding, improve the psychological state and quality of life, reduce the incidence of complications, and obtain higher satisfaction. The combined application of these two nursing models has positive implications for improving nursing efficiency, enhancing patient cooperation during emergency care, improving hemostasis effectiveness, enhancing quality of life, and fostering a harmonious nurse-patient relationship.(*Altern Ther Health Med.* 2023;29(8):588-593).

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INTRODUCTION

Upper gastrointestinal bleeding is an emergency with a relatively high incidence of digestive system diseases and its mortality rate can reach 10% to 25%. Massive bleeding can result in a decrease in effective circulating blood volume and lead to shock.[1] Its common causes are peptic ulcer, acute gastric mucosal lesions, rupture of esophageal and gastric

varices, esophageal and cardiac The abstract section has been modified based on expert opinionsmucosal tear syndrome, etc., and patients will have hematemesis, melena, fever, hemorrhagic peripheral circulation failure and other symptoms.[2] When the bleeding is relatively large, it will lead to anemia in patients. If treatment is not timely, patients will also have serious complications, which will seriously threaten their life and health. Therefore, timely treatment of patients is needed.[3] In order to expedite the recovery and ensure the safety of patients with acute upper gastrointestinal bleeding, in addition to routine treatment, it is essential to provide efficient emergency nursing care. The quality of nursing care will directly impact the effectiveness of emergency and recovery outcomes for patients. Therefore, it is necessary to implement scientifically effective nursing interventions for such patients to promote their recovery and discharge.Evidence-based nursing is an important part of evidence-based medicine. It enables the provision of scientific evidence based on authoritative databases and targeted nursing interventions based on the specific conditions of patients, promoting the improvement of nursing effectiveness. Predictive nursing refers to observing and questioning the recovery status of patients, predicting nursing risks in advance, and formulating contingency plans, which is conducive to reducing the incidence of nursing complications and improving the quality of nursing. This study retrospectively analyzed the role of evidence-based nursing combined with predictive nursing in the emergency treatment of patients with upper gastrointestinal bleeding. The text is described as follows.

DATA AND MEDTHODS

Data and methods

Data. The research samples are 100 cases of emergency patients with upper gastrointestinal bleeding received in our hospital. The samples were included from January 2020 to June 2022. The double double-color ball method divided them into two groups, with 50 cases in each group.

Inclusion criteria. To ensure the accuracy, reliability, and feasibility of this study, the participating patients need to meet the following requirements: (1) Those who were diagnosed by blood routine, fecal occult blood test, digestive endoscopy and others, and in accordance with the diagnostic criteria in the "expert consensus on emergency diagnosis and treatment of acute upper gastrointestinal bleeding"; (2) Those with normal function of important organs; (3) Those with normal visual, auditory and verbal functions.

Exclusion criteria. To ensure the accuracy and reliability of the study results, the following regulations need to be included in the exclusion criteria to eliminate the interference of medication and other diseases: (1) Those with upper gastrointestinal bleeding caused by drugs; (2) Those with blood system diseases and other digestive system diseases; (3) Patients with cognitive impairment and mental illness; (4) Patients with infectious diseases.

In the control group, there were 30 males, accounting for 60.00%, and 20 females, accounting for 40.00%. The minimum age was 25 years old, the maximum was 71 years old, and the average age was (48.52 ± 4.11) years old. Causes of bleeding: peptic ulcer bleeding in 23 cases (46.00%), liver cirrhosis complicated with bleeding in 11 cases (22.00%), esophageal varices bleeding in 12 cases (24.00%), and others in 4 cases (8.00%).

Observation group: there were 32 males, accounting for 64.00%, and 18 females, accounting for 36.00%. The minimum age was 26 years old, the maximum age was 73 years old, and the average age was (48.64 ± 4.20) years old. Causes of bleeding: peptic ulcer bleeding in 24 cases (48.00%), liver cirrhosis complicated with bleeding in 10 cases (20.00%), esophageal and gastric varices bleeding in 13 cases (26.00%), and others in 3 cases (6.00%).

The information data obtained by the two groups were balanced ($P > .05$).

Methods

After admission, the patients in the two groups were treated with fluid infusion, oxygen inhalation, blood transfusion, fasting, correction of water-electrolyte disorders and acid-base imbalance, anti-shock and others.

Control group. Routine nursing. Nurses should create a comfortable and quiet patient environment and adjust indoor temperature and humidity. Nurses should closely monitor and record the parameters of patients' vital signs, and timely find and deal with abnormal conditions. Nurses should also strengthen the oral care of patients, clear the secretion of mouth and nasal cavity, and ensure the smooth airway. Patients with hematochezia should be instructed to wipe their hips with warm or light salt water. According to the doctor's advice, the nursing staffs assisted the patients to complete various treatments, and if necessary, fasting treatment was carried out. Patients with severe bleeding were told to stay in bed absolutely and take appropriate exercise after remission.

Observation group: Evidence-based nursing combined with predictive nursing. (1) Evidence-based nursing: (a) Establishment of the evidence-based nursing team: the members include head nurses (group leader) and responsible nurses. All team members participated in the unified training and were familiar with the concept, process, and methods of evidence-based nursing. At the same time, they were required to understand and master the knowledge and skills related to emergency treatment and nursing of upper gastrointestinal bleeding to enhance the risk awareness of nursing staffs. (b) Evidence-based questions: team members determined evidence-based questions according to the actual situations of patients, that is: how to improve their psychological state? How to improve the effects of first aid? How to reduce the incidence of complications? Etc. (c) Evidence based support and observation: according to the evidence-based problems, the relevant literature were found from the CNKI, Wanfang and other databases to find out the practical, effective, and scientific nursing measures, and the targeted, evidence-based nursing scheme was formulated according to the specific situations of patients and clinical

experience. Self-evaluation and in-hospital evaluation of evidence-based nursing plans were carried out to supplement the deficiencies. (d) Evidence-based application: 1) condition monitoring: during the first aid period, the nursing staff paid close attention to and recorded the patients' vital signs parameters and the changes of the patients' condition. At the same time, the 24-hour in and out volume was recorded. When the patients had a fever, increased blood loss and other conditions, the nursing staff notified and assisted the doctor in implementing the corresponding treatment. 2) Psychological nursing: during the bleeding period, the patients would have irritability, anxiety, fear, and other emotions due to hematemesis, hematochezia, and other symptoms. The nursing staff should pay close attention to their psychological changes, and strengthen psychological counseling while giving sedatives according to the doctor's advice, correct the patients' wrong cognition through cognitive intervention, think from the patients' perspective, and stabilize the patients' emotions through positive communication. In the process of patients' first aid, personalized health education and psychological intervention at the bedside of patients were strengthened to improve their cooperation. 3) Drug care: Venous channels were quickly established for patients after admission. The nursing staffs strictly controlled the infusion speed and volume of patients according to the doctor's advice, supervised the use of hemostatic drugs, and informed patients of the drug use methods, effects, and precautions. After medication, patients were guided to change body position, and adverse reactions were observed. 4) Symptomatic nursing: The nursing staffs should tell patients to stay in bed more during the bleeding period and maintain effective communication with patients. For those with microcirculation disorders, blood volume should be replenished in time. For patients with massive bleeding, red blood cells should be infused through venous channels in time, according to the doctor's advice to stabilize the blood pressure level. Patients with hematochezia should be guided to do well in perianal care. Patients were guided to choose the correct position for hematemesis to avoid aspiration. 5) Lifestyle guidance: The nursing staff should give patients dietary guidance, such as liquid food in the early stage after emergency treatment, and then gradually transition to general food. It was necessary to pay attention to balanced nutrition intake, appropriately eat -rich food, eat fewer meals, and fast on irritating and high-fat food. Patients were reminded to keep adequate rest time, and the precautions and nursing knowledge after discharge were explained to patients and their families in detail before discharge.

Predictive care. (1) Nursing for bleeding aura: the nursing staff should observe or regularly ask patients whether they have symptoms such as nausea, throat itching, or foreign body sensation, make predictive judgments on the patients' condition, prepare rescue drugs, prepare corresponding emergency plans and rescue preparations, and take preventive measures in time in case of bleeding aura. (2) Nursing in the acute stage of bleeding: for patients with acute bleeding coma, fasting for 48 hours. If the bleeding symptoms did not reappear, nasal feeding with liquid food was given, and a flat position was taken 1-2 hours after nasal feeding to avoid gastric content reflux and aspiration. When the patients had hematemesis, it was necessary to clean the respiratory tract, loosen the collar, raise the head of the bed by 15~30°, and deflect the head to one side. Those who could not discharge oral secretions and vomitus by themselves should be treated with sputum aspirator. Those with frequent stool and bloody stool should pay attention to the cleanness and dryness of the perianal area after defecation. (3) Psychological intervention: Upper gastrointestinal bleeding may occur repeatedly, leading to changes in the patient's mood. Therefore, nursing staffs should implement psychological nursing in a predictive way, and take targeted counseling according to the personality characteristics and understanding ability, to eliminate their wrong cognition and enhance their confidence in treatment. If the patients' condition permits, the patients would be organized to participate in the patients' communication meeting, and the patients with good recovery would speak by themselves to encourage the patients to treat the disease and treatment correctly. remind family members to care and encourage patients. (4) Assessment: The patients' diet, lifestyle, and other aspects were assessed, and the patients were informed of the risk factors that may lead to bleeding again, and the patients were helped to establish a scientific and reasonable diet structure and healthy eating habits. At the same time, the patients should be encouraged to exercise properly, maintain regular work and rest habits, quit smoking and alcohol, and fast from stimulating food. Both groups concluded the nursing interventions at the time of patient discharge.

Evaluation indicators and criteria

The psychological state of the two groups of patients at the time of enrollment and after the intervention was evaluated. Among them, the 20 items of the Self-rating Anxiety Scale (SAS) are scored by four levels (1-4 points), with 50 points as the critical value. The higher the score, the more serious the anxiety. The self-rating Depression Scale (SDS) has a total of 20 items, and a score of 53 points is the critical value, of which 53-62 points correspond to mild depression, 63-72 points correspond to moderate depression, and > 72 points correspond to severe depression. And the score is in direct proportion to the degree of depression.

The clinical-related indicators of patients in the two groups were observed, including bleeding times, hemostasis time, and hospitalization time.

The clinical curative effects were judged according to the bleeding stop time. The specific criteria: bleeding stopped within 24 hours after the intervention, which was cured. The bleeding stopped within 72 hours, which was effective. And bleeding still existed > 72 hours, which was determined to be invalid. The number of cured cases and the number of effective cases were counted, and the sum of the percentages of the two was calculated, which was the total effective rate of hemostasis.

The complications of patients in the two groups during the intervention were statistically analyzed.

The Newcastle Satisfaction with Nursing Scale (NSNS) was used to evaluate the nursing service of the two groups of

Table 1. Comparison of psychological state scores between the two groups

group	SAS score (points)		SDS score (points)	
	At the time of enrollment	After intervention	At the time of enrollment	After intervention
Control group (n = 50)	56.64 ± 3.12	47.42 ± 2.00[a]	59.76 ± 4.01	50.12 ± 2.79[a]
Observation group (n = 50)	56.72 ± 3.20	42.24 ± 1.74[a]	60.02 ± 4.09	43.64 ± 1.96[a]
t value	0.143	13.908	0.456	14.026
P value	.887	<.001	0.650	<.001

[a]*P* < .05, compared with the data at the time of enrollment

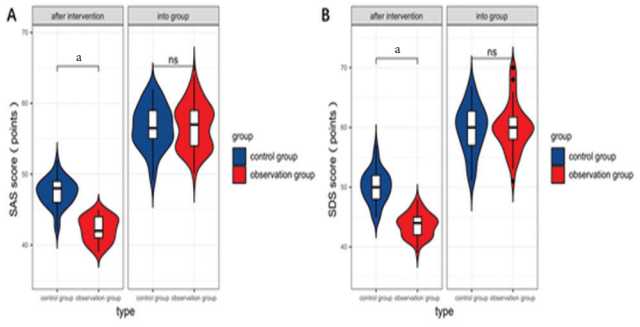
Table 2. Comparison of clinical-related indicators between the two groups

group	n	Bleeding times (Times)	Hemostasis time (H)	Length of stay (d)
Control group	50	7.30 ± 1.22	40.34 ± 7.59	7.32 ± 1.36
Observation group	50	2.36 ± 0.56	30.14 ± 5.33	5.06 ± 1.15
t value		27.145	7.798	9.184
P value		<.001	<.001	<.001

Table 3. Comparison of clinical efficacy between the two groups [n (%)]

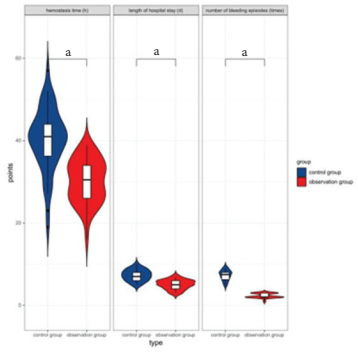
group	n	Cure	Effective	Invalid	Total effective rate
Control group	50	19 (38.00)	21 (42.00)	10 (20.00)	40 (80.00)
Observation group	50	34 (68.00)	14 (28.00)	2 (4.00)	48 (96.00)
χ^2 value					6.061
P value					.014

Figure 1. Comparison of psychological state scores between the two groups



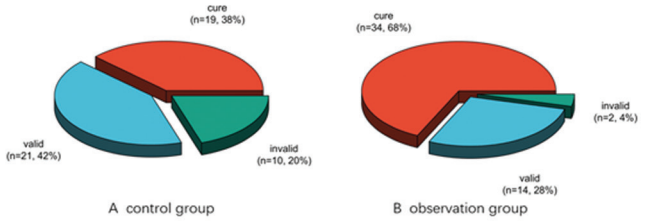
[a]*P* < .0001

Figure 2. Comparison of clinical-related indicators between the two groups



[a]*P* < .0001.

Figure 3. Comparison of clinical efficacy between the two groups



patients, with a total of 19 items. The score range of each item is 1-5 points, and the total score is 19-95 points. The higher the score, the higher the satisfaction of patients. Among them, a score of 19-56 points indicates dissatisfaction, a score of 57-75 points indicates satisfaction and a score of > 75 points indicates very satisfaction. Patient satisfaction = very satisfied percentage + satisfied percentage.

The General Quality of Life Inventory (GQOLI-74) was used to evaluate patients' quality of life in the two groups after the intervention. The scale has four dimensions, all of which are based on the percentage system. The higher the score, the more dominant.

Statistical treatment

The data were analyzed by SPSS 25.0 software. Quantitative data that follows a normal distribution is represented by the mean ± standard deviation ($\bar{x} \pm s$), and is compared using *t* test. Qualitative data is represented by frequency and percentage (%), and is compared using χ^2 test. $P < .05$ indicated that difference was statistically significant.

RESULTS

Psychological state scores

After intervention, the observation group's SAS and SDS scores were lower than those of the control group, and the difference was statistically significant ($P < .05$). Furthermore, after intervention, both groups had lower SAS and SDS scores than before intervention, and the difference was statistically significant ($P < .05$). See Table 1.

Clinical related indicators

The observation group had fewer bleeding instances than the control group, and the difference was statistically significant ($P < .05$). Additionally, the observation group had shorter hemostasis time and hospital stay compared to the control group, and the difference was statistically significant ($P < .05$). See Table 2.

Clinical efficacy

The total effective rate of hemostasis in the observation group (96.00%) was significantly higher than that in the control group (80.00%) ($P < .05$). See Table 3.

Incidence of complications

The incidence of complications in the observation group was 6.00%, significantly lower than 24.00% in the control group ($P < .05$). See Table 4.

Table 4. Comparison of the incidence of complications in each group [n (%)]

group	n	eczema	Aspiration pneumonia	Gastroesophageal reflux	Hepatorenal syndrome	Rebleeding	Total incidence
Control group	50	4 (8.00)	2 (4.00)	3 (6.00)	1 (2.00)	2 (4.00)	12 (24.00)
Observation group	50	1 (2.00)	1 (2.00)	1 (2.00)	0 (0.00)	0 (0.00)	3 (6.00)
χ^2 value							6.353
P value							0.012

Table 5. Comparison of patient satisfaction in each group [n (%)]

group	n	Extremely satisfied	Basically satisfied	Dissatisfied	Total satisfaction
Control group	50	15 (30.00)	27 (54.00)	8 (16.00)	42 (84.00)
Observation group	50	27 (54.00)	22 (44.00)	1 (2.00)	49 (98.00)
χ^2 value					5.893
P value					.014

Table 6. GQOLI-74 scores of the two groups (points)

group	n	Physical health	Psychological function	Material life state	Social function
control group	50	80.32 ± 4.38	78.72 ± 4.90	81.24 ± 5.07	80.42 ± 4.68
Observation group	50	89.00 ± 5.57	91.08 ± 5.06	90.54 ± 6.48	89.58 ± 5.86
χ^2 value		8.693	12.313	7.956	8.741
P value		<.001	<.001	<.001	<.001

Patient satisfaction

Compared with the control group (84.00%), the satisfaction data of patients in the observation group (98.00%) was higher ($P < .05$). See Table 5.

GQOLI-74 scores

After intervention, the observation group had higher scores in all dimensions of GQOLI-74 compared to the control group, and the differences were statistically significant ($P < .05$).See Table 6.

DISCUSSION

Upper gastrointestinal bleeding is generally a hemorrhagic disease caused by digestive tract lesions, which has the characteristics of repeated and critical illness and requires timely first aid.[4,5] There is a certain relationship between the incidence of upper gastrointestinal bleeding and seasonal changes, and the incidence is higher in the cold season. In addition, patients' sympathetic nerves are -excited and tense during sleep at night, making them more likely to have upper gastrointestinal bleeding at night.[6-8] Timely first aid for patients can help save lives of patients, and positive nursing intervention can help improve the curative effects.[9] Currently, nursing care after treatment for upper gastrointestinal bleeding is mainly focused on routine care, while some healthcare professionals also adopt meticulous care, risk stratification care, and timely incentive care.

Although conventional nursing intervention can play a certain role in patients with upper gastrointestinal bleeding, it has shortcomings in preventing complications and other aspects and does not pay attention to the changes in patient's psychological state during emergency treatment,[10] so the obtained effects are not ideal. Patients with upper gastrointestinal bleeding have a sudden onset and relatively critical condition, which puts forward relatively high requirements for the psychological quality and clinical nursing experience of nursing staff. In the process of first aid for patients, combined with their actual situations, targeted nursing intervention can promote the patients' condition to stabilize faster, and help improve rescue success rate.[11] The starting point of evidence-based nursing is to solve the actual problems in clinical practice, to provide scientific and practical nursing measures, and to provide guidance for nursing practice. Evidence based nursing can help nurses take corresponding nursing measures according to the best and latest Evidence, to meet the reasonable individual needs of patients.[12,13] Predictive nursing is a nursing model that predicts the possible nursing risks in advance and takes corresponding preventive measures, which can timely and orderly solve the risks in nursing to promote the improvement of disease treatment effects.[14]

Through the analysis of the results of this study, it can be found that the improvement of the psychological state score of the observation group after the intervention was greater than

Figure 4. Comparison of the incidence of complications in each group

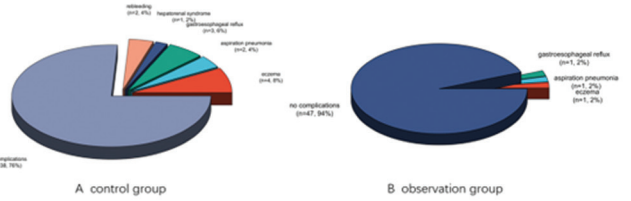


Figure 5. Comparison of patient satisfaction in each group

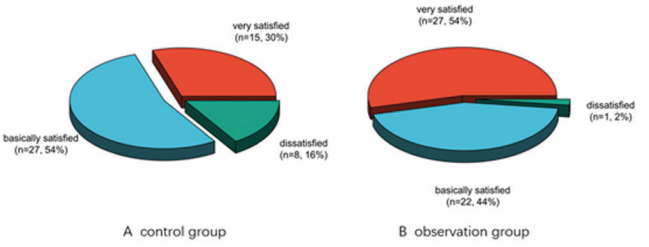
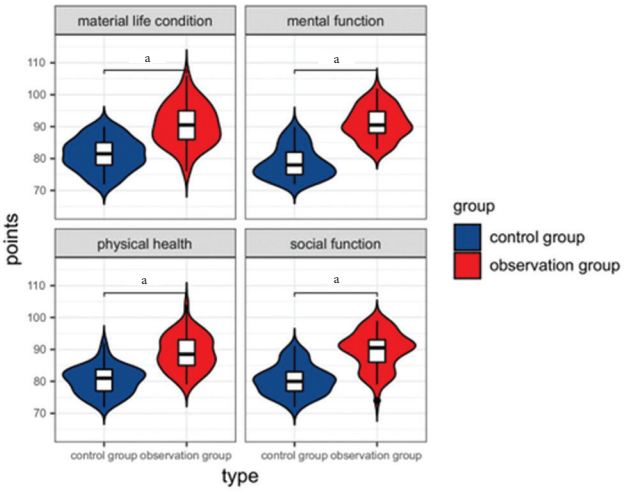


Figure 6. Comparison of GQOLI-74 scores between the two groups



[a]*P* < .0001.

that of the control group, and the bleeding times, hemostasis time and hospitalization time of the observation group were less than those of the control group. In contrast, the total effective rate and safety of hemostasis were higher. The patient satisfaction and GQOLI-74 scores were also higher, which fully shows that the effects of evidence-based nursing + predictive nursing are significant. The training of nursing team members in evidence-based nursing is conducive to improving their professional quality and comprehensive ability, which can provide patients with more comprehensive, efficient, and thoughtful nursing services, thereby helping to improve the quality of nursing.[15,16] Through evidence-based questions, evidence-based support, and evidence-based observation, the best and ideal nursing intervention measures can be taken for the problems found in the nursing practice of upper gastrointestinal bleeding to promote the continuous improvement of nursing quality.[17] In evidence-based application, abnormal conditions can be found and handled in time through condition monitoring, which is helpful to the problem of patients' condition. Psychological nursing can improve patients' disease cognition level, eliminate their negative emotions, and promote patients to maintain a positive and optimistic attitude to cooperate with treatment. Drug care can improve patients' medication compliance, promote the improvement of hemostatic effect, which is also conducive to reducing the incidence of adverse reactions and shortening the hospitalization time of patients. Symptomatic nursing can better improve the clinical symptoms of patients and reduce the occurrence of complications. Lifestyle guidance can help patients form a healthy diet and reduce the risk of bleeding again. Predictive nursing requires nurses to enhance predictive awareness and risk prevention awareness,[18] which can effectively prevent the occurrence of reflux aspiration, eczema and other complications from bleeding aura nursing and bleeding acute nursing. Psychological intervention can reduce the impact of adverse mental state on the recovery of the disease, and comprehensive assessment and intervention can promote the formation of healthy lifestyles of patients, and prevent re-bleeding, so it is helpful to improve the prognosis of patients. Evidence-based nursing is to intervene in the existing problems; it focuses on solving the problems. While predictive nursing is to prevent trouble before it happens, which can eliminate the risks and hidden dangers in the nursing process in advance, and pay attention to changes in patients' mentality.[19] The two nursing modes have their own advantages and disadvantages. While the combined application can complement each other's advantages, improve nursing efficiency, and promote patients' more active cooperation with clinical operation during emergency treatment at the same time so as to improve the hemostatic effect, help them recover and leave the hospital as soon as possible, and improve the quality of life. In addition, combined nursing can strengthen humanistic care and pay more attention to the changes of patient's psychological state during emergency treatment, which can not only obtain higher curative effects, but also help to build a harmonious nurse patient relationship and can meet the reasonable needs of patients, so it can speed up the recovery of patients.[20]

In a word, this study combined evidence-based nursing with predictive nursing and applied it to the emergency treatment of upper gastrointestinal bleeding patients, aiming to explore its effectiveness and value in clinical practice. A comparative study between the control and observation groups evaluated the impact of these two nursing models on patient's psychological state, clinical indicators, treatment outcomes, complication rates, nursing satisfaction, and quality of life. This study provides new ideas and methods for the nursing of emergency treatment of upper gastrointestinal bleeding, and it has certain guiding significance, contributing to improving patient outcomes and quality of life. However, there are still deficiencies in this study. Due to the relatively short follow-up time, it is not possible to follow up the incidence of rebleeding after discharge.In future research, the sample size will be expanded and the sustainability of long-term nursing interventions will be assessed. Additionally, the feasibility of applying evidence-based and predictive nursing in other fields will be explored.

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