

Impact of Nursing Interventions Based on Self-Efficacy Theory on HAMA and HAMD Scores in Patients with Hepatitis B Cirrhosis

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Abstract: *Objective:* To explore the effect of nursing interventions based on self-efficacy theory guidance on psychological stress indicators in patients with hepatitis B cirrhosis. *Methods:* 70 patients with hepatitis B cirrhosis from October 2023 to May 2024 were selected and grouped by random number table. The observation group received nursing intervention based on self-efficacy theory, while the control group received routine nursing. The differences in psychological stress indicators, self-efficacy indicators, and nursing satisfaction were compared between the two groups. *Results:* Hamilton Anxiety Rating Scale (HAMA) and Hamilton Depression Rating Scale (HAMD) scores of the observation group were significantly lower than those of the control group ($P < 0.05$); Chronic Disease Self-Efficacy Scale (CDSES) scores of the observation group were significantly higher than those of the control group ($P < 0.05$); and nursing satisfaction scores of the observation group were significantly higher than those of the control group ($P < 0.05$). *Conclusion:* Hepatitis B cirrhosis patients receiving nursing care based on self-efficacy theory can stimulate patients' self-efficacy, calm their emotions, and their overall satisfaction is high.

Keywords: Self-efficacy theory; Nursing intervention; Hepatitis B cirrhosis; Psychological stress score

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1. Introduction

Hepatitis B cirrhosis is a common chronic disease, which is related to diffuse liver damage caused by multifactorial effects. When it progresses to the decompensated stage, it can lead to complications such as infections, upper gastrointestinal bleeding, hepatic encephalopathy, hepatic hyperactivity, and so on, and even endanger the lives of patients, so the treatment needs to be supplemented with nursing interventions. Conventional nursing only pays attention to medication guidance and basic education, but not to the psychological health of patients, resulting in low cooperation of hepatitis B cirrhosis patients in diagnosis and treatment^[1]. In recent years, the nursing model based on self-efficacy theory has gradually matured, combining the patient's condition to improve targeted and specific nursing strategies, and implementing individualized nursing care from five levels, which can stimulate the patient's self-efficacy, improve the patient's self-care ability, and then prompt the pa-

tient to cooperate with the clinical diagnostic and therapeutic operations ^[2]. In this paper, 70 patients with hepatitis B cirrhosis are taken as samples to explore the nursing value based on self-efficacy theory.

2. General information and methods

2.1. General information

70 cases of hepatitis B cirrhosis patients who visited the clinic from October 2023 to May 2024 were selected and grouped by random number table method. The observation group had 20 men and 15 women, aged 41–76 (56.71 ± 2.44) years old, disease duration was 1–9 (4.79 ± 1.18) years; the control group had 21 men and 14 women, aged 42–77 (56.68 ± 2.39) years old, disease duration was 2–9 (4.81 ± 1.24) years. Comparing the general information of the two groups, the difference was not statistically significant ($P > 0.05$).

Inclusion criteria: (1) Hepatitis B surface antigen (HbsAg) positive, and ultrasound suggests that the liver surface is uneven with blunted edges, and internal echoes are enhanced, thickened, and unevenly distributed; (2) Signed informed consent; (3) Did not take anxiolytics and antidepressants before enrollment; (4) Expected survival period > 6 months.

Exclusion criteria: (1) Psychosis; (2) Ketoacidosis, renal encephalopathy, hypoglycemia, and other metabolic encephalopathy; (3) Intracranial hemorrhage, intracranial tumors, intracranial infections, and other neurological diseases; (4) Toxic encephalopathy triggered by drugs or poisons.

2.2. Methods

Routine nursing care was adopted in the control group: assessing the condition of the patients after admission, popularizing relevant knowledge of the disease, providing good guidance on diet and medication, and implementing strategies for preventing and controlling the complications of hepatitis B cirrhosis.

The observation group adopted nursing interventions based on self-efficacy theory:

- (1) Motivation program: Nurses popularized the diagnosis and treatment program and nursing program for patients with cirrhosis of hepatitis B, and assisted patients in their initial understanding of liver disease. They regularly organized exchange meetings for patients to continue to deepen their knowledge of the disease, and provided patients with spiritual support and encouragement to enhance their self-efficacy; combined with patients' knowledge of the disease, nurses implemented targeted praise and encouragement measures to enhance patients' confidence in the treatment, so that they had a sense of achievement in the fight against the disease.
- (2) Direct experience guidance: Nurses guided patients to participate in the revision of the nursing program, so that they could comprehensively assess and understand changes in their own condition, and summarized the nursing strategy; guided patients to correct self-management and instructed patients' families to supervise the patients; assisted patients to grasp the principles of dietary planning and urged them to correctly plan their meals; monitored the changes in the patient's vital signs and fluctuations of the disease; urged the patients to pay attention to compliance with the medication and popularized the use of medication programs, the knowledge of medication regimen, pharmacological effects, adverse reactions, etc. These were to ensure the efficacy of medication as far as possible, to strengthen communication with patients, and to adjust and optimize the nursing strategy immediately if the nursing intervention was found to be insufficient to stimulate the patients' self-efficacy.
- (3) Alternative experience guidance: Nurses encouraged patients to participate in collective activities and guided those with excellent disease control to share their own nursing experience, in order to stimulate the self-care consciousness of other patients.

- (4) Monitoring and reinforcement: Nurses repeatedly emphasized self-care knowledge to patients and organized face-to-face Q&A activities and knowledge lectures to enhance patients' mastery of their own diseases. WeChat groups were created to facilitate communication between physicians, nurses, and patients, and to answer the patients' inner concerns in a timely manner.
- (5) Social and family support: Nurses guided patients to share their treatment and care experience with each other, provided spiritual support for each other, and created excellent nurse-patient relationships and an excellent nursing atmosphere, in order to enhance the quality of care and improve the satisfaction of patients. Nurses advised patients' family members to be more concerned about the patients and encourage them, create an excellent family atmosphere, and improve patients' compliance with the diagnosis and treatment.

2.3. Observation indicators

- (1) Psychological stress indicators: The Hamilton Anxiety Rating Scale (HAMA) includes 14 entries (0–4 points for each entry), including anxious state of mind, nervousness, fear, insomnia, cognitive function, state of mind, muscular system symptoms, sensory system symptoms, cardiovascular system symptoms, respiratory symptoms, gastrointestinal symptoms, genitourinary symptoms, vegetative nervous system symptoms, and behavioral performance during activities and discussions, with a total score of 0–56 points, which is positively proportional to patients' anxiety level; Hamilton Depression Rating Scale (HAMD) includes 17 entries (0–4 points for each entry) including mood, anxiety, weight, sleep problems, physical symptoms, facial expressions, speech, degree of reduced activity, tachycardia, morbid sense of responsibility, waking up early in the morning, reported lack of energy, reported frustration, reported a loss of hope, inability to eat, problems, and reported guilt, etc., totaling 0–68 points, with scores positively correlated with the patient's depression level.
- (2) Self-efficacy indicators: The Chronic Disease Self-Efficacy Scale (CDSES) consists of 6 entries (1–10 points for each entry), including pain and discomfort control, reasonable rest, management of health problems, emotional control, compliance with medication, self-care, etc., and the scores are positively proportional to self-efficacy.
- (3) Nursing satisfaction index: A self-made satisfaction scale assessment for patients with hepatitis B cirrhosis was used, including 4 entries (0–100 points for each entry), including health education, timeliness of nursing care, service attitude, comfort, etc., and the scores are positively proportional to the degree of satisfaction.

2.4. Statistical methods

Data were processed by SPSS21.0, % and χ^2 test for count data, mean \pm standard deviation (SD) and *t*-test for measurement data. Statistical differences were indicated by $P < 0.05$.

3. Results

3.1. Psychological stress index score

Before the intervention, the HAMA and HAMD scores of the observation group were not statistically significant when compared with those of the control group ($P > 0.05$). After the intervention, the HAMA and HAMD scores of the observation group were significantly lower than those of the control group ($P < 0.05$), as shown in **Table 1**.

Table 1. Comparison of psychological stress index scores (mean ± SD)

Groups	HAMA (points)		HAMD (points)	
	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention
Observation group (<i>n</i> = 35)	18.21 ± 1.25	9.71 ± 0.49	21.84 ± 1.21	12.79 ± 1.42
Control group (<i>n</i> = 35)	18.24 ± 1.26	13.08 ± 0.56	21.82 ± 1.19	16.18 ± 1.68
<i>t</i>	0.100	26.793	0.070	9.117
<i>P</i>	0.921	0.000	0.945	0.000

3.2. Self-efficacy index score

Before the intervention, the CDSSES score of the observation group was compared with that of the control group, and the difference was not statistically significant ($P > 0.05$). After the intervention, the CDSSES score of the observation group was significantly higher than that of the control group ($P < 0.05$), as presented in **Table 2**.

Table 2. Comparison of self-efficacy index scores (mean ± SD)

Groups	Pain and discomfort management (points)		Reasonable rest (points)		Managing health problems (points)	
	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention
Observation group (<i>n</i> = 35)	3.01 ± 0.47	7.91 ± 0.58	2.91 ± 0.41	8.25 ± 0.69	2.54 ± 0.44	8.19 ± 0.68
Control group (<i>n</i> = 35)	3.03 ± 0.44	5.82 ± 0.52	2.93 ± 0.43	6.01 ± 0.54	2.52 ± 0.46	5.81 ± 0.51
<i>t</i>	0.184	15.873	0.199	15.125	0.186	16.565
<i>P</i>	0.855	0.000	0.843	0.000	0.853	0.000

Groups	Emotional control (points)		Medication compliance (points)		Self-care (points)	
	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention
Observation group (<i>n</i> = 35)	3.12 ± 0.39	8.74 ± 0.48	3.01 ± 0.42	8.72 ± 0.58	3.03 ± 0.37	7.11 ± 0.46
Control group (<i>n</i> = 35)	3.13 ± 0.41	6.31 ± 0.42	3.03 ± 0.43	6.49 ± 0.53	3.02 ± 0.38	6.23 ± 0.42
<i>t</i>	0.105	22.540	0.197	16.792	0.112	8.358
<i>P</i>	0.917	0.000	0.845	0.000	0.912	0.000

3.3. Nursing satisfaction score

The nursing satisfaction score of the observation group was significantly higher than that of the control group ($P < 0.05$), as shown in **Table 3**.

Table 3. Comparison of nursing satisfaction scores (mean ± SD)

Groups	Health education	Timeliness of care	Service attitude	Comfort
Observation group (<i>n</i> = 35)	98.16 ± 0.58	97.44 ± 0.61	98.21 ± 0.57	98.19 ± 0.61
Control group (<i>n</i> = 35)	92.43 ± 0.43	92.51 ± 0.44	93.04 ± 0.39	92.64 ± 0.42
<i>t</i>	46.951	38.778	44.286	44.334
<i>P</i>	0.000	0.000	0.000	0.000

4. Discussion

Hepatitis B infection is a common liver disease; after the onset, the hepatitis B virus continues to proliferate and replicate in the body, which can induce an immune response, resulting in hepatocellular degeneration. Delayed diagnosis and treatment can lead to nodular hyperplasia of hepatocytes and connective tissues, or even fibrosis, which damages the hepatic lobular structure^[3]. The progression from hepatitis B infection to cirrhosis can cause portal hypertension, ascites, endocrine disorders, and other diseases, and can also damage the patient's respiratory system function and urinary system function^[4]. In addition, patients with hepatitis B cirrhosis in the decompensated stage have increased liver function damage and are at risk of death^[5]. At present, the clinical treatment of hepatitis B cirrhosis is mostly based on drug regimens, and nursing interventions need to be supplemented during treatment. Conventional nursing only focuses on diet, medication, education, prevention, and control of complications, patients' self-care effectiveness is low, and no attention is paid to patients' emotional guidance, resulting in psychological stress in some patients, which is inconducive to the control of hepatitis B cirrhosis^[6]. In recent years, nursing interventions based on self-efficacy theory have been gradually used in hepatitis B cirrhosis nursing, implementing incentives for patients to stimulate their sense of self-efficacy, enhance their sense of achievement, and improve their knowledge of their own disease, which can motivate patients to actively fight against the disease; it involves carrying out direct experience and alternative experience nursing, guiding patients to participate in the development of nursing programs, assisting them to understand the nursing care measures in-depth, and encouraging them to participate in the nursing care work and optimization of nursing strategies. The optimization of nursing work and nursing strategies can enhance the effectiveness and relevance of nursing services and meet the reasonable demands of different patients; the optimization of patients' quality of life, the creation of excellent patient-patient and nurse-patient relationships, and the creation of a positive nursing atmosphere can enhance patients' satisfaction with nursing care^[7].

Based on the results in this paper, the HAMA and HAMD scores of the observation group were significantly lower than those of the control group ($P < 0.05$). It suggests that hepatitis B cirrhosis patients have more stable emotions. To analyze the reason, in the nursing intervention based on self-efficacy theory, instructing patients to channel their negative emotions and guiding mutual encouragement among patients can reduce psychological stress and trauma and maintain their emotional stability^[8]. Another set of data showed that the CDSSES score of the observation group was significantly higher than that of the control group ($P < 0.05$). It suggests that self-efficacy is improved in patients with hepatitis B cirrhosis. Analyzing the reasons, excellent self-efficacy of patients with hepatitis B cirrhosis can improve their cognitive level, which prompts patients to actively cooperate with clinical diagnosis and treatment. Implementing the nursing intervention of self-efficacy theory includes instructing patients to learn the knowledge of hepatitis B cirrhosis, organizing communication between patients and patients, sharing relevant nursing experience, understanding the psychological stress relief program, and popularizing relevant knowledge through face-to-face knowledge lectures can enhance patients' self-care efficacy^[9]. In addition, based on the self-efficacy theory of nursing, improving the confidence of hepatitis B cirrhosis patients in disease control, strengthening the patients' out-of-hospital compliance behavior, and providing social support interventions to alleviate their psychological stress response can optimize the patients' prognosis^[10]. The last set of data showed that the nursing satisfaction score of the observation group was significantly higher than that of the control group ($P < 0.05$). It suggests that patients with hepatitis B cirrhosis have better satisfaction after receiving nursing interventions based on self-efficacy theory. The reason for this is that during the nursing intervention based on self-efficacy theory, patients with hepatitis B cirrhosis are directly involved in the development and regulation of the nursing plan, which can improve the rationality of the nursing plan, so the patients' satisfaction is better.

5. Conclusion

In conclusion, the nursing intervention based on the self-efficacy theory used in the nursing care of patients with hepatitis B cirrhosis can stimulate patients' self-care efficacy, calm their emotions, and improve patients' satisfaction, which has application and promotion values.

Disclosure statement

The author declares no conflict of interest.

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