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Original Article

Influence of nursing care in the operating room on the psychological recovery and complications of patients with the hepatobiliary surgery

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Abstract: Purpose: This study investigated the value of nursing intervention in the operation room on perioperative patients with hepatobiliary surgery. Methods: A total of 104 patients who were admitted into our hospital for hepatobiliary surgery from January 2017 to December 2019 were selected as the research subjects. These patients were divided into the control group (n=52, routine care) and the experimental group (n=52, nursing care in the operating room) based on a random number table method. This study compares the postoperative parameters, complications, psychological status, the quality of life and the stratification level with nursing care between the two groups. Results: The first flatulence time, off-bed activity time and hospital stay after the surgery in the experimental group were less than these in the control group, with a statistical difference (P<0.05). The occurrence of complications in experimental group was 3.85%, which is lower than that of the control group, 17.31%. The difference has statistical significance (P<0.05). The comparison of SAS and SDS scores of patients in two groups before intervention indicates no statistical difference (P>0.05). The SAS and SDS scores in two groups after intervention were significantly decreased. Also, the SAS and SDS scores in the experimental group were lower than these in the control group, with a statistical difference (P<0.05). The quality of life in the experimental group after intervention was higher than that in the control group, with a statistically significant difference (P<0.05). The nursing satisfaction rate in the experimental group was 96.15%, which is higher than that in the control group, 80.77%. The difference has statistical significance (P<0.05). Conclusion: Nursing care in the operating room can help ease patients who undergo hepatobiliary surgery relax their negative emotions during the perioperative period, reduce the occurrence of complications, and improve the quality of life as well as nursing satisfaction rate.

Keywords: Nursing care in the operation room, hepatobiliary surgery, perioperative period, psychological recovery, complications

Introduction

As a common clinical occurance, hepatobiliary diseases normally have an acute onset with severe symptoms [1, 2]. Surgeries are common treatments for hepatobiliary diseases [3]. Patients can easily have negative emotions, such as fear, anxiety and uncertainty due to their heavy mental burden [4, 5]. On the other hand, some complications may occur after the hepatobiliary surgery, such as lower limb venous thrombosis, infection and bile leakage [6, 7]. This can cause adverse effect on patients' conditions and the prognosis of the disease [8]. As a result, this condition still draws attention from nursing staff in order to better help ease the psychological burden for patients, improve the life quality and reduce the occurrence of complications. In recent years, with the in-depth development of nursing concepts, various nursing methods such as rapid rehabilitation surgical nursing concepts, psychological nursing, clinical pathway nursing, etc. have been introduced into nursing and have been widely used. Operating room nursing is based on the general characteristics, conditions and specific needs of patients as the starting point, and corresponding measures are taken to carry out nursing interventions to achieve the purpose of improving the quality of care and the treatment effect. The operating room is an important place for surgical treat-

ment in the hospital. The nursing work of the operating room is an important part of ensuring the safety of the operation. It also involves a wide range and strong expertise. This study aimed to research the value of nursing intervention in the operation room on patients of hepatobiliary surgeries. This study also provides references for clinical practice.

Materials and methods

General materials

This study selected 104 patients who were admitted into our hospital from January 2017 to December 2019 for hepatobiliary surgeries as research subjects. All patients involved received hepatobiliary surgeries. Inclusion criteria: Patients with clear consciousness; Patients who signed the informed consent form; Patients without psychological illness or mental issues. This study was approved by our hospital ethics committee. These patients were divided into the control group (n=52) and the experimental group (n=52) based on a random number table. The comparison of the general data between two groups showed no statistically significant difference (P>0.05).

Methods

Control group: Routine nursing care interventions were applied in the control group. Patients were requested to complete all examinations before the surgery. Nursing staff simply explained the disease conditions and surgical procedures to patients. Patients actively cooperated with surgeons to complete surgeries. Patients were closely monitored after surgery. Basic nursing care such as hygiene and healthy diets were provided to patients.

Experimental group: The experimental group received nursing care in the operating room on top of the routine care given to the control group. (1) Health education: The health knowledge brochure was given to patients on their admission. Nursing staff gave patients health knowledge education, including the basic knowledge about diseases, the purpose of surgical treatment and things patients need to pay attention to during the treatment. This can help patients develop a correct understanding of diseases. (2) Preoperative psychological nursing care: Nursing staff communicated with patients before surgeries, to understand patients' real feelings and needs, analyses patients' psychological burdens, gives specific support and encouragement and alleviate the negative emotions for patients. (3) Nursing care during the surgery: Patients may have negative emotions, such as anxiety and fear during the surgery. Nursing staff can talk about some light topics with patients during the process to distract their attention. Nursing staff adjusts the body positions for patients based on the operating situation to keep patients warm. Also, nursing staff needs pays attention to the facial expression and body reaction of patients, and comforts patients in a timely manner. (4) Postoperative nursing care: Nursing staff encouraged patients to take light diets, avoid spicy foods, eat foods with high protein and good nutrition and eat plenty fruits and vegetables. Nursing staff instructed patients to do abdominal breathing exercises. Patients slowly inhale through their noses, hold the breath and slowly breath out through their mouths. Patients allow their abdomen to rise when inhaling and allow their abdomen to fall when exhaling. Patients are asked to repeat abdominal breathing exercises 30 times every morning and night. Patients were encouraged to do limb exercises 24 hours after surgery. Patients start from passive exercises, and then transfer to active exercise, such as from in-bed limb exercises to sitting exercises, bed-supported exercises, bedside standing exercises, and eventually out of bed exercises.

Observation index

(1) The postoperative parameters include the first time of flatulence, off-bed activity time and the length of hospital stay. (2) Complications include lower limb venous thrombosis, infection and bile leakage. (3) Psychological status: 1 The self-rating anxiety scale (SAS) [9] is used for analysis. Anyone with scores over 69 has severe anxiety. Any score between 60 to 69 counts as moderate anxiety. Any score between 50 to 59 indicates mild anxiety. Anyone with scores below 50 is normal. 2 The self-rating depression scale (SDS) [10] is also applied for evaluation. Any score over 72 indicates severe depression. Any score between 63 to 72 indicates moderate depression. Anyone with scores between 53 to 62 has mild depression. Scores below 53 belong to the normal range. (4) The quality of life: The SF-36 is utilized for evaluation, which includes psychological, emo-

Table 1. The comparison of the general resources of patients between two groups (n)

Groups	N	Male/ Female	Disease types				Average ages ($\bar{x}$ ± s, year)
			Cholecystitis	Gallbladder polyps	Bile duct stones	Others	
Experimental group	52	30/22	22	12	10	8	53.16 ± 6.77
Control group	52	31/21	21	13	11	7	52.18 ± 6.32
t/χ^2		0.040		0.178			0.763
P		0.842		0.981			0.447

Table 2. The comparison of each postoperative parameter between two groups ($\bar{x}$ ± s, d)

Groups	n	Postoperative flatulence for the first time	Off-bed activity time	The length of hospital stay
Experimental group	52	1.12 ± 0.31	1.32 ± 0.40	7.69 ± 2.15
Control group	52	1.96 ± 0.63	2.13 ± 0.65	10.46 ± 2.98
T		8.627	7.653	5.436
P		<0.001	<0.001	<0.001

tional, physical and social sections. Each section has 100 points. The higher the score is, the better the life quality is. (5) The nursing satisfaction rate: The nursing satisfaction rate survey is designed by nursing staff for evaluation, which include 8 categories, ranging from "satisfied" to "unsatisfied" 3 levels. The satisfaction rate = (satisfied + averagely satisfied)/groups ×100%.

Statistical methods

The SPSS 23.0 statistical software was utilized for data process. The quantitative data with a normal distribution were expressed as ($\bar{x}$ ± s), and were analyzed with a tests *t*. The qualitative data was expressed as n (%), which was analyzed with X^2 tests, with rank sum test in an orderly manner. P<0.05 indicated a statistically significant difference.

Results

Comparison of general data

There were 61 patients who were male and 43 females in this study. No difference was found in disease types, average age and gender distribution. See **Table 1**.

The comparison of postoperative parameters between two groups

The first flatulence time, off-bed exercise time and the length of hospital stay after surgery in the experimental group were less than these in the control group (P<0.05). See **Table 2**.

The comparison of the occurrence of complications between two groups

The occurrence of complications in the experimental group was 3.85%, which was lower than 17.31% in the control group (P<0.05). See **Table 3**.

The comparison of psychological status between two groups

The SAS and SDS scores of patients before intervention between the two groups indicated no statistically significant difference (P>0.05). The SAS and SDS scores were significantly reduced after intervention. Also, the SAS and SDS scores in the experimental group were significantly lower than these in the control group (P<0.05). See details in **Table 4**.

The comparison of the quality of life between both groups

The quality of life in the experimental group after intervention was higher than that in the control group (P<0.05). See details in **Table 5**.

The comparison of nursing satisfaction between groups

The nursing satisfaction rate in the experimental group was 96.15%, which was higher than 80.77% of control group (P<0.05). See **Table 6**.

Table 3. The comparison of the occurrence of complications between two groups (%)

Groups	n	Venous thrombosis	Infection	Bile leakage	Total incidence (%)
Experimental group	52	1	0	1	2 (3.85)
Control group	52	4	3	2	9 (17.31)
χ^2					4.981
P					0.026

Table 4. The comparison of SAS and SDS scores between groups ($\bar{x} \pm s$, points)

Groups	n	SAS		SDS	
		Before intervention	After intervention	Before intervention	After intervention
Experimental group	52	57.46 ± 6.18	47.88 ± 4.46*	54.43 ± 6.17	45.75 ± 3.82*
Control group	52	57.11 ± 6.26	53.73 ± 5.27*	53.11 ± 6.33	50.44 ± 4.18*
T		0.287	6.110	1.077	5.973
P		0.775	<0.001	0.284	<0.001

Note: * indicates the result compared with results before intervention, P<0.05.

Table 5. The comparison of the quality of life between the two groups ($\bar{x} \pm s$, points)

Groups	n	Psychological	Emotional	Physical	Social
Experimental group	52	86.45 ± 5.78	84.46 ± 5.15	82.15 ± 5.75	87.49 ± 5.89
Control group	52	73.46 ± 5.21	74.34 ± 5.22	69.52 ± 5.71	73.16 ± 5.44
T		12.041	9.952	11.242	12.893
P		<0.001	<0.001	<0.001	<0.001

Table 6. Comparison of nursing satisfaction between the two groups

Groups	n	very satisfied	fairly satisfied	dissatisfied	satisfaction rate
Experimental group	52	31	19	2	96.15%
Control group	52	23	19	10	80.77%
χ^2					6.029
P					0.014

Discussion

The incidence of hepatobiliary diseases has been increasing all over the world in recent years [12]. Surgical treatments have certain effects on hepatobiliary diseases. However, surgical treatments can cause some trauma, which causes patients to have strong stress responses and affects the surgical effect of patients [13]. Patients who had the surgical treatment received scientific treatment and an effective nursing care intervention, which helps patients ease negative their emotions, improve life quality and promotes recovery [14, 15]. Therefore, it is important to implement nursing care in the operating room for patients.

Several main factors cause patients with the hepatobiliary surgery to suffer from poor psychological status. (1) Patients suffer from the disease for a long time due to the long course of the hepatobiliary disease. Some organ complications often occur as the hepatobiliary function decreases. Patients usually have unstable emotions due to the concerns about their bodies, including fear, anxiety, depression and insecurity [16, 17]. (2) The disease causes patients to have declined abilities to live and work, especially among middle-aged males who are supposed to develop their careers and support their families. The illness has a great influence on patients and their families in regard to family finances and peronal lives, which increases the psychological burden for patients and families [18]. (3) The medical expense for this disease is relatively high. Patients usually have negative emotions such as self-abandonment, anxiety and depression

due to their concerns of medical expenses. (4) Patients have a little understanding of the surgery. They worry about the safety and efficiency of the surgery. Also, patients may develop negative emotions because of the invasive checkups and stress response towards the surgery [19]. (5) Some patients lack the correct understanding of the disease. Some patients with cirrhosis or cholecystitis have negative emotions, such as rejection, discrimination, fear, even hostility, which worsen the sensitivity and low self-esteem of patients in certain extent [20]. (6) Patients suffer from a low self-esteem because friends and family cannot understand them and try to ignore them, which makes patients feel upset and lonely. Results of the research have shown that the SAS and SDS scores were significantly reduced after intervention. Also, the scores in the experimental group are lower than these in the control group, which indicates the nursing care in the operating room can efficiently ease negative emotions for patients. Some complications such as infection, venous thrombosis of lower limbs and bile leakage can easily occur after the hepatobiliary surgery, which causes adverse effects of the prognosis for patients. The results of the study have shown that the complication occurrence in the experimental group was 3.85%, which is lower than that in the control group, 17.31%. This shows that nursing care in the operating room can reduce the occurrence of complications for patients. Results of the study have shown that the first flatulence time after surgery, off-bed activity time and the length of hospital stay in the experimental group were less than these in the control group. The quality of life after intervention in the experimental group was higher than that in the control group. The nursing satisfaction rate in the experimental group was 96.15%, which is higher than that in the control group, 80.77%. This indicates that nursing care in the operating room can improve the recovery of patients with hepatobiliary surgery during the perioperative period, improve life quality and improve the nursing satisfaction rate. Nursing care in the operating room takes psychological care as one of the important components. Patients undergoing hepatobiliary surgery have negative emotions such as anxiety, fear, and ignorance of the disease and surgery, which aggravates the psychological pressure of the patients and often leads patients to fail to cooperate with the surgery. The nurses tell the patients the basic knowledge, situation and countermeasures during the perioperative period. At the same time, meticulous interventions are conducted to reduce the patient's physiological and psychological stress response, so that the operation can be performed smoothly and complications can be reduced. Regarding limitations, convenience sampling might limit the generalizability and robustness of the conclusions of this study. Therefore, samples from other hospitals should be included in our research in the future to verify our hypothesis and model. Nevertheless, we feel that the limitations do not nullify our conclusions.

In summary, nursing care in the operating room can ease negative emotions of patients with hepatobiliary surgery during perioperative period, reduce the occurrence of complications, improve the life quality and nursing satisfaction rate.

Disclosure of conflict of interest

None.

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References

[1] Wisneski AD, Hirose K and Roberts JP. Tu2046 contemporary management of hepatic cyst disease: techniques and outcomes at a tertiary hepatobiliary center. Gastroenterol 2020; 158: S-1599-S-1600.

[2] Yamamoto K, Ikeya T and Okuyama S. Su1632 HIGH serum bilirubin shows negative correlation with the development of any cancers among participants without hepatobiliary disease - a longitudinal retrospective study. Gastroenterol 2020; 158: S1365-S1365.

[3] Barnes A, Woodman RJ, Kleinig P, Briffa M, To T and Wigg AJ. Hepatobiliary and pancreatic: early palliative care referral in patients with end-stage liver disease is associated with reduced resource utilization. J Gastroenterol Hepatol 2020; 35: 840-845.

[4] Lee HE and Zhang L. Immunoglobulin G4-related hepatobiliary disease. Semin Diagn Pathol 2019; 36: 423-433.

[5] Naides SJ. Laboratory monitoring of gastrointestinal and hepatobiliary disease. Gastroenterol Clin North Am 2019; 48: i.

[6] Eksteen B, Vannan DT and Gysel S. FRI-066-Rituximab therapy is effective for inducing remission in IgG4-RD hepatobiliary disease: a retrospective case series. J Hepatol 2019; 70: e414-e415.
[7] De Lombaerde S, Devisscher L, Verhoeven J, Neyt S, Van Vlierberghe H, Vanhove C and De Vos F. Validation of hepatobiliary transport PET imaging in liver function assessment: evaluation of 3β-[18 F]FCA in mouse models of liver disease. Nucl Med Biol 2019; 68-69: 40-48.
[8] Motosugi U, Murakami T, Lee JM, Fowler KJ, Heiken JP and Sirlin CB. Recommendation for terminology: nodules without arterial phase hyperenhancement and with hepatobiliary phase hypointensity in chronic liver disease. J Magn Reson Imaging 2018; 48: 1169-1171.
[9] Wu JJ, Zhang YX, Du WS, Jiang LD, Jin RF, Yu HY, Liu JM and Han M. Effect of Qigong on self-rating depression and anxiety scale scores of COPD patients: a meta-analysis. Med 2019; 98: e15776.
[10] Dong X, Sun G, Zhan J, Liu F, Ma S, Li P, Zhang C, Zhang H, Xing C and Liu Y. Telephone-based reminiscence therapy for colorectal cancer patients undergoing postoperative chemotherapy complicated with depression: a three-arm randomised controlled trial. Support Care Cancer 2019; 27: 2761-2769.
[11] Albayrak I, Biber A, Çalışkan A and Levendoglu F. Assessment of pain, care burden, depression level, sleep quality, fatigue and quality of life in the mothers of children with cerebral palsy. J Child Health Care 2019; 23: 483-494.
[12] Yamashima M, Ozawa E, Ohnita K, Tabata K, Natsuda K, Ono S, Hidaka M, Eguchi S and Nakao N. Hepatobiliary and Pancreatic: pancreatic mixed serous neuroendocrine neoplasm in von Hippel-Lindau disease. J Gastroenterol Hepatol 2018; 33: 1821-1821.
[13] Runde J and Azzam RK. Hepatobiliary manifestations in systemic disease. Pediatr Ann 2018; 47: 458-464.
[14] Azuma S, Kurita A and Yazumi S. Hepatobiliary and Pancreatic: burkitt lymphoma mimicking IgG4-related disease. J Gastroenterol Hepatol 2018; 33: 1694-1694.
[15] Nuzio SG and Vajro P. P025 A systematic review on transition of adolescents with paediatric-onset hepatobiliary diseases. Dig Liver Dis 2018; 50: e367-e368.
[16] Nascimento FS, Sena NA, Ferreira TDA, Marques CDF, Silva LR and Souza EL. Hepatobiliary disease in children and adolescents with cystic fibrosis. J Pediatr 2018; 94: 504-510.
[17] Lin CJ, Lee SL, Wang WH, Hovhannisyan VA, Huang YD, Lee HS and Dong CY. Multiphoton dynamic imaging of the effect of chronic hepatic diseases on hepatobiliary metabolism in vivo. J Biophotonics 2018; 11: e201700338.
[18] Rajakannu M, Cherqui D and Ciacio O. Preoperative nomogram incorporating indocyanine green test to predict 90-day major complications after major hepatectomy (MH) for various hepatobiliary diseases in a western cohort. HPB 2018; 20: S434-S434.
[19] Kawamura I, Sano S and Kurai H. Perioperative infectious disease consultations in hepatobiliary and pancreatic surgery at a comprehensive cancer center. J Jpn Soc Surg Infect 2018; 15: 263-268.
[20] Subhamoy D, Srikanth K, Jegadish M, Anish B, Akshay K, Saxena, Lal SB and Ram TB. Correlation of ultrasonography and hepatobiliary scintigraphy for incidence of gall bladder dysfunction in children with celiac disease at presentation and post gluten withdrawal. J Clin Exp Hepatol 2018; 8: S114-S114.