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Original Article

Effects of preoperative nursing visit on stresses and satisfaction of patients for selective surgery

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Abstract: Objective: To explore the effects of preoperative nursing visit (PNV) on operating room patients' levels of anxiety, depression, systolic blood pressure (SBP), heart rate (HR) and nursing satisfaction. Methods: A total of 460 patients close to selective operation were enrolled and randomized into control group (n=230) and observation group (n=230). Patients in the control group underwent routine preoperative preparation and routine preoperative nursing (RPN), while on the basis of which, patients in the observation group had extra PNV. Self-rating anxiety scale (SAS) and self-rating depression scale (SDS) were adopted to evaluate patients' anxiety and depression levels, the same types of sphygmomanometer and stopwatch were applied to measure SBP and HR, and questionnaire was used to investigate patients' nursing satisfaction in the two groups. Results: Before the nursing, the differences of SAS and SDS scores between the two groups were not significant (both P>0.05); while after the nursing, SAS and SDS scores (37.12±10.02, 38.62±4.84 respectively) in the observation group were lower than those (52.27±11.45, 42.96±7.03 respectively) in the control group (both P<0.05), with statistically significant differences. Compared with before PNV, SAS and SDS scores after PNV in the observation group remarkably decreased (both P<0.01), but no obvious change was found in the control group before and after RPN (both P>0.05). Before the nursing, no statistically significant difference was found in the two groups' levels of SBP and HR (both P>0.05). However, after the nursing, levels of SBP and HR in the observation group were both lower than those in the control group, and the differences were statistically significant (both P<0.01). Compared with before PNV, levels of SBP and HR in the observation group comparatively reduced after PNV (both P<0.05), but no change occurred in the control group before and after RPV (both P>0.05). After the nursing, nursing satisfaction degree of the observation group (95.65%) was higher than that of the control group (81.74%), and the difference was statistically significant (P=0.0073). Conclusion: PNV is beneficial for patients, which can ease patients' preoperative anxiety and depression, and relieve their physiological stress (PHS) reaction, thereby enhancing nursing satisfaction.

Keywords: Preoperative visit, operating room patient, anxiety, depression, physiological stress

Introduction

Anxiety, tension, fear and other psychological reactions commonly occur in operation room patients during preoperative waiting and surgery [1, 2]. As a stressor, operation can bring patients physiological stress, thereby influencing operation and even leaving plenty of complications to patients' postoperative recovery [3-5]. Operation nursing worker's responsibility lies on how to make patients with selective operation remain a comfort and healthy condition psychologically and physiologically [6]. Relevant researches about nursing have demonstrated that preoperative nursing visit (PNV) can alleviate perioperative patients' adverse factors including psychological stress (PSS) and physiological stress (PHS), and increase the success rate of operation and recovery effect [7, 8]. However, comprehensive researches on PNV were relatively inadequate. This study proposed PNV on patients admitted in our hospital with selective operation from December 2015 to January 2017, and synthetically discussed its effects on patients' levels of anxiety, tension, depression, systolic blood pleasure (SBP), heart rate (HR) and nursing satisfaction. The reports are as follows.

Materials and methods

Clinical information

This study was approved by the Ethic Committee, and it enrolled 500 patients admitted in our

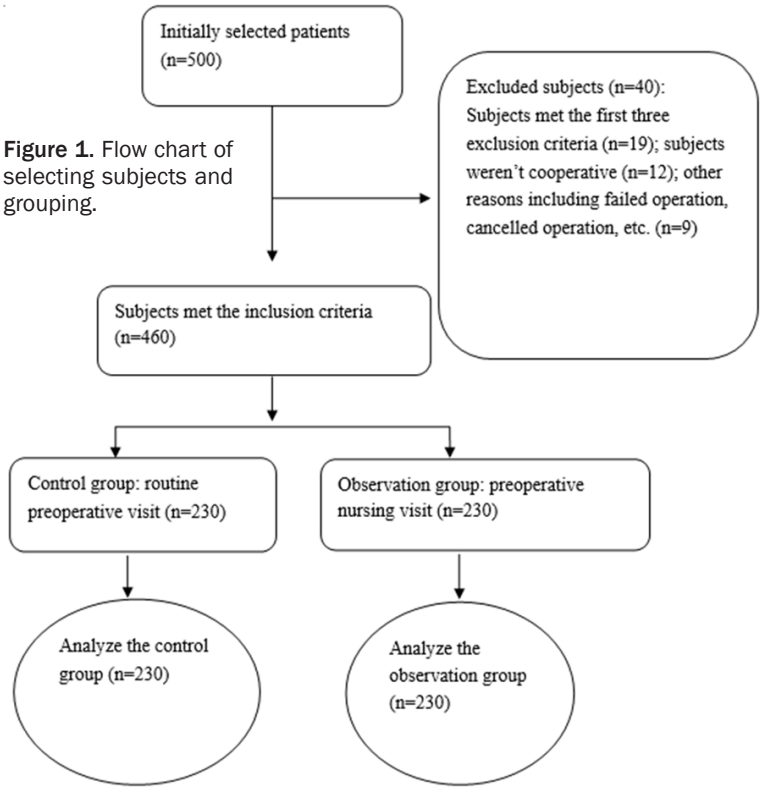

Figure 1. Flow chart of selecting subjects and grouping.

hospital and close to selective operation from December 2015 to January 2017. After being selected and signing informed consents, a total of 460 cases were as the subjects in this study. They were numbered according to the hospitalized sequence, and randomized into control group (n=230) and observation group (n=230) in terms of odd-even order.

Inclusion criteria: Patient would be performed selective operation; patient had right mind and could verbally communicate; patient voluntarily participated in this study and signed the informed consent.

Exclusion criteria: Patient had hepatorenal dysfunction and cardiac insufficiency; patient had mental disease; patient was not cooperative.

The subject selecting process is depicted in **Figure 1**.

Methods

Routine preoperative nursing (RPN) was applied in the control group, on the basis of which, extra PNV was conducted in the observation group.

According to the notification, before 16:00 on the day before the surgery, RPN was performed to the patient in ward, including investigating patient's general information and making brief introduction about routine surgery precautions.

PNV was as follows. Firstly, PNV team was set up before the operation, so as to make a plan of PNV in terms of patient's information, namely a preoperative visit list, including PNV's composition, implementing, follow-up, etc. Secondly, before 16:00 on the day before the surgery, medicine and nursing combined with PNV was carried out on patient by preoperative visit list, and the process were: 1) self-introduction, visiting purpose and safety of operation were illustrated to relieve patient's stress; 2) environment of operation room, anesthesia method, operative position, anesthesia process, risk and attention during the operation were introduced, so patients could make good preoperative preparation, including fasting, preoperative washing, defecation, no make-up, etc.; 3) during PNV, concerns of patients and their families needed to be patiently answered in a proper manner, resulting in an efficient communication to enhance patient's trust in doctor; 4) concern and patient listening to patients were vital in the course of PNV, because only when doctors know the sources of patients' negative emotion, can they encourage, ease and give preoperatively psychological supports to the patients.

Observation indexes

Patients' emotion before (9:00-10:00 a.m. on the day before the operation) and after (9:00-11:00 a.m. on the operative day) the nursing in the two groups were compared. Anxiety evaluation was measured by self-rating anxiety scale (SAS) and more than 50 scores is considered as anxiety: specifically, 50-59 scores, mild anxiety; 60-69 scores, moderate anxiety; more than 69 scores, severe anxiety. Depression

Table 1. Comparison of patients' general information in the two groups

Term	Control group (n=230)	Observation group (n=230)	t/χ^2	P
Sex (male/female)	120/110	123/107	0.78	0.079
Age (years old)	48.32±6.8	49.79±7.4	1.11	0.351
Educational degree			0.92	0.166
Junior high school and below	89	85		
Senior high school	65	68		
College and above	76	77		
Surgery types			0.93	0.46
Orthopedics	63	59		
Cardio-thoracic Surgery	45	47		
Obstetrics and Gynecology Surgery	67	64		
Ear-nose-throat surgery	55	60		

Table 2. Comparisons of the two groups' SAS and SDS scores before and after the nursing ($\bar{x}$ ± sd, score)

Group	Control group (n=230)	Observation group (n=230)	t	P
SAS				
Before nursing	55.65±10.16	57.32±9.86	1.5392	0.6563
After nursing	52.27±11.45	37.12±10.02	10.4942	0.0000
P	0.0852	0.0002		
SDS				
Before nursing	43.39±6.13	43.78±5.61	0.7521	0.5329
After nursing	42.96±7.03	38.62±4.84	8.3478	0.0001
P	0.0646	0.0005		

Note: SAS, self-rating anxiety scale; SDS, self-rating depression scale.

Table 3. Comparisons of patients' SBP and HR after the nursing in the two groups ($\bar{x}$ ± sd)

Group	Control group (n=230)	Observation group (n=230)	t	P
SBP (mmHg)				
Before nursing	134.32±13.45	133.86±12.33	0.8635	0.7328
After nursing	137.45±12.72	130.08±11.12	12.6921	0.0003
P	0.0690	0.0225		
HR (times/min)				
Before nursing	80.26±6.21	79.79±5.63	1.2305	0.6835
After nursing	81.96±8.65	78.14±7.34	10.5636	0.0000
P	0.0753	0.0085		

Note: SBP, systolic blood pleasure; HR, heart rate.

evaluation was calculated by self-rating depression scale (SDS, 20-80 scores), and the higher the score is, the severer the depression level is: specifically, 50-59 scores, mild depression; 60-69 scores, moderate depression; more than 69 scores, severe depression.

Systolic blood pleasure (SBP) and heart rate (HR) of patients before and after the nursing in the two groups were observed. In the same time period, before (on the morning of the day before the operation) and after (morning of the operative day) the nursing, the same types of sphygmomanometer and stopwatch were provided to measure patients' SBP and HR in the two groups.

Before discharge, patients were asked to complete the questionnaire for testing nursing satisfaction in 15 items, including service attitude, health education, technology for professional nursing, etc. In each term, there were three grades: very satisfied, basically satisfied and dissatisfied. Among the 15 items, dissatisfied >3 showed that the result of the questionnaire was dissatisfied; very satisfied ≥12 indicated very satisfied; the rest manifested basically satisfied. Nursing satisfaction degree (%) = (number of "very satisfied" + number of "basically satisfied")/total number of cases * 100%.

Statistical analysis

SPSS 19.0 software was adopted for statistical analysis. Measurement data were expressed by $\bar{x}$ ± sd; between-group comparison was conducted by t test. Count data were expressed by χ^2 test, and $P<0.05$ was considered statistically significant.

Table 4. Comparison of nursing satisfaction degree of patients in the two groups (n, %)

Group	Control group (n=230)	Observation group (n=230)	χ^2	P
Very satisfied	70 (30.43)	149 (64.78)	6.7568	0.0073
Basically satisfied	118 (51.30)	71 (30.87)		
Dissatisfied	42 (18.26)	10 (4.35)		
Satisfaction degree (%)	81.74	95.65		

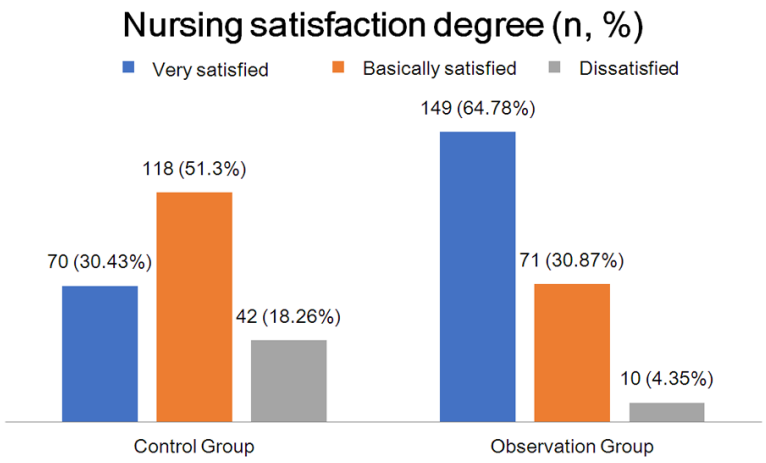

Figure 2. Comparison of patients' nursing satisfaction in the two groups.

Results

Patients' general information

There were no statistically significant differences in patients' sex, age, educational degree or disease type (all P>0.05), and these terms were comparable. In the control group, there were 63, 45, 67, 55 cases in Department of Orthopedics, Cardio-thoracic Surgery, Obstetrics and Gynecology Surgery and Ear-nose-throat Surgery respectively (120 males and 110 females, aged 5-82 years old, average age of 48.32±6.8 years old); their educational degrees were 89 cases of junior high school and below, 65 cases of senior high school and 76 cases of college and above. In the observation group, there were 59, 47, 64, 60 cases in Department of Orthopedics, Cardio-thoracic Surgery, Obstetrics and Gynecology Surgery and Ear-nose-throat Surgery respectively (123 males and 107 females, aged 3-81 years old, average age of 49.79±7.4 years old); their educational degrees were 85 cases of junior high school and below, 68 cases of senior high school, and 77 cases of college and above. See **Table 1**.

Patients' anxiety and depression scores

There were no remarkable differences in patient's SAS and SDS scores before the nursing between the two groups (both P>0.05). After the nursing, patients' SAS and SDS scores in the observation group were both lower than those in the control group (both P<0.05), and the differences were statistically significant. What's more, compared with before PNV, SAS and SDS scores of patients in the observation group obviously decreased after PNV (both P<0.01). However, no apparent difference was found in patients' SAS and SDS scores before and after RPN in the control group (both P>0.05). See **Table 2**.

Patients' SBP and HR

Comparisons of patients' SBP and HR before and after the nursing were conducted between the two groups. Before the nursing, there were no apparent differences in the two groups' SBP and HR (both P>0.05). While after the nursing, SBP and HR of patients in the observation group were both lower than those in the control group (both P<0.05), and the differences were statistically significant. For patients in the observation group, their SBP and HR correspondingly decreased after PNV (both P<0.05), and the differences were statistically significant; on the contrast, no decrease happened to SBP and HR of patients in the control group after RPN (both P>0.05). See **Table 3**.

Patients' nursing satisfaction

The nursing satisfaction degree of patients in the observation group was 95.65%, which was notably higher than that in the control group (81.74%). To be more specific, the amount of "very satisfied" in the observation group (n=149) was twice more than that in the control group (n=70), and the percentage of "dissatisfied" in the observation was comparatively lower, with a statistically significant difference (P<0.05). See **Table 4** and **Figure 2**.

Discussion

As surgery is an efficient method for patient's treatment, adequate preoperative preparation is a crucial subject for patients with selective operation, aiming for a favorable operation time [9]. However, during the waiting time, patient's worry, anxiety, fear and other psychological states caused by the lack of operative acknowledgement can influence patient's preoperative physiological conditions, increase the difficulties of anesthesia and operation, and even impact patient's postoperative rehabilitation [10-15]. It was reported that preoperative SAS scores of patients were significantly higher than those of the normal, and preoperative SAS scores of females were higher than those of males [16]. Furthermore, anxiety mostly comes from unknowns of operation; therefore, increasing patients' preoperative education can relieve their anxiety and stabilize their emotion [17]. Relative studies have indicated that corresponding mental intervention in perioperative patients can relax patients' preoperatively negative emotion, thus promote the success of operation, improve the recovery and finally improve satisfaction of patients and their families [18-21].

In this study, PNV was applied for patients with selective operation. Significant reduction of patients' SAS and SDS scores after the nursing in the observation group was seen, compared with the control group (both $P<0.05$), revealing that PNV was able to improve patients' negative emotion like anxiety, depression, increase patients' acknowledgement about operation and help them prepare themselves psychologically for the upcoming operation, which was similar to the finding of Leila et al. that PNV in the application of patients with laparoscopic resection could decrease patients' anxiety level [22]. Besides, in the observation group, patients' SBP and HR after the nursing were both observably lower than those in the control group (both $P<0.01$), suggesting that PNV could alleviate patients' stress reaction. What's more, the nursing satisfaction degree of the observation group was higher than that of the control group ($P=0.0073$), indicating that PNV was able to enhance patients' satisfaction and trust in medical workers, so as to improve and maintain a harmony doctor-patient relationship. This finding was alike to the results of the relevant study about the increase of patients' satisfaction due to PNV [23].

On account of the time limit, classified study about patient's anxiety levels wasn't conducted in different operation rooms. The results were influenced by different anxiety levels of patients in different departments and various surgical stresses. Consequently, further study will be performed to explore the effects of PNV on patient's PSS and PHS in the operation room.

In summary, this study comprehensively compared the effects of PNV from three aspects: patient's PSS and PHS reactions, and nursing satisfaction. The results clarified that, with good clinical effects like improvement of psychological condition, reduction of physiological stress reaction, enhancement of satisfaction, PNV was worthy of promotion and application in clinic and it should be heeded by correlative nursing department.

Disclosure of conflict of interest

None.

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