

Effect of comprehensive nursing intervention in preventing postoperative pain, complications, and psychological pressure in the otolaryngology department

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Abstract

This study aims to analyze the influence of comprehensive nursing intervention on the postoperative pain, complications, and psychological pressure of otolaryngology patients.

A total of 300 otolaryngology patients in our hospital from February 2016 to October 2017 were selected and randomly divided into 2 groups using the random number table: control group (n = 150), patients were given routine nursing; experimental group (n = 150), patients were given comprehensive nursing intervention. Postoperative pain, complications, and psychological pressure between the 2 groups were analyzed.

Residual pain in the experimental group at 3 months after the operation was lower than that in the control group ($P < .05$). The postoperative complications in the experimental group was lower than that in the control group ($P < .05$). The acute psychological pressure score and the psychological pressure self-test score in the experimental group were both lower than that in the control group ($P < .05$).

Comprehensive nursing intervention for otolaryngology patients was associated to relieving pain after the operation and psychological pressure of patients in the short and long term. Besides, comprehensive nursing intervention for otolaryngology patients was associated with a lower risk of complications.

Abbreviations: APP = application, ENT = ear, nose, and throat, SASRQ = stanford acute stress reaction questionnaire, TV = television.

Keywords: complications, nursing, otorhinolaryngology, pain, psychological pressure

1. Introduction

Otolaryngology is a discipline which focus on otolaryngological infectious diseases. High-quality clinical nursing intervention can effectively promote the recovery of patients.^[1,2] With the development of nursing science, nursing interventions have shifted from the previous disease-centered to patient-centered. Besides, nursing service has been extended to post-discharge in order to improve the disease impact on patients.^[3–5]

Otolaryngology is accompanied by a number of clinical care problems, such as: patients on admission approximately knew nothing about diseases, and these patients suffered from

respiratory obstruction, bleeding, pain, and relatively serious unhealthy emotions. In addition, the degree of comfort and sleep mode would be impacted by the disease which subsequently induce enhance psychological pressure, decrease therapeutic compliance, and reduce quality of life.^[6,7] It is the key point that offering effective care to patients with ENT could enhance work efficiency and avoid nursing oversight.

The advantages of comprehensive nursing interventions were as follows: the integrated nursing intervention utilized the mobile phone application (APP) to significantly improve the patient's quality of life. Patients were only required to obtain relevant knowledge provided by the professionals through mobile phones and networks. In addition, the relevant knowledge included a variety of nursing knowledge, such as diet and self-care, which effectively supplied traditional methods of health education. Patients could make inquiries at any time, avoiding the impact of events and locations. This method altered previous dependence and passive activities, allowing patients to actively participate in regular nursing.^[8–10] Performing skin cleaning care was the aim placed with high priority on basic care, in order to fully recognize the significance of the self-cleaning of patients. Furthermore, the lesion sites of these otolaryngology patients were located on the head and neck. Therefore, enhanced skin cleaning can prevent the frequencies of infections, reduce the morbidity of respiratory infections, improve treatment compliance, and establish the patient's life confidence.^[11–13] Pain care enabled nurses to focus on the patient's painful feelings, allowing them to carefully relieve the pain and improve their quality of life during the therapy.^[14–16] Diversified psychological care could effectively reduce the anxiety

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and depression of patients, alleviate their pessimistic and desperate metal status, and finally improve negative emotions.^[17–19] In the present study, patients with ear, nose, and throat (ENT) symptoms were selected as subjects, and the close and distant impact of comprehensive nursing on patients was subsequently analyzed. The report is presented, as follows.

2. Materials and methods

2.1. Materials

A total of 300 otolaryngology patients admitted in our hospital from February 2016 to October 2017 were selected as research subjects. This study met ethical requirements, and all patients signed informed consent. The participants were placed in separate rooms. Inclusion criteria: patients who were admitted and received surgical treatment in the Department of Otolaryngology, patients who had an expected postoperative admission period of >7 days, patients who had complete clinical data and accomplished the follow-up period, patients who provided a written informed consent, patients who were within 18 to 70 years old, and patients and dependents who were familiar to and skilled using smart-phones. In addition, the main types of disease were tumors, the surgery included pharyngeal tumor resection, laryngoscopic laryngeal tumor resection, and so on. Ethmoid sinus tumor resection, sphenoidal sinus tumor resection, nasopharyngeal tumor resection under nasal endoscope, nasopharyngectomy, etc. The duration of hospital stay was >7 days. Exclusion criteria: patients who were lost to follow-up or withdrew from the study, patients who were illiterate, patients with mental diseases and a family history of mental illnesses, patients who have experienced severe domestic calamities in the past 6 months, and patients with severe communication disorders. These patients were randomly divided into 2 groups using the random number table: control group (n=150) and experimental group (n=150).

2.2. Methods

In our study, randomization was performed by a computer-generated number. Allocation was issued using opaque, sealed, numbered envelopes. Patients in control group were administered with regular nursing, including a variety of therapeutic operations according to the doctor's advice, the introduction of relative knowledge on otolaryngology and self-care methods, offering personal metal conciliations, and etc.

Patients in the experimental group underwent an integrated nursing intervention strategy, which included the following:

Nursing service by mobile phone application (APP): at postoperative first day, the patients and dependents uploaded the "Rehabilitation Assist" software in their mobile phones with the assistance of the nurse, and subsequently obtained relative knowledge about otolaryngology. They finally made use of these with nurse's help. The Rehabilitation Assist software comprised of relative disease knowledge, inspection items, significance, methods of postoperative care, notice for discharge, and continuity care contents. The patients could access these knowledge in time via the APP. In addition, the APP could continue to notify the nurses every week up to 3 months after discharge, and remind the patient to regularly follow-up.

Skin cleaning care: More attention was given on the patient's skin cleaning and drying, informing patients on how to carry out

self-cleaning and self-maintenance. The skin condition of patients was assessed at duty shift spots and recorded in written form, encouraging patients who had better accomplishments. Skin-cleaning care was accomplished by both the patients and nurses. Patients needed to complete the head and neck skin self-cleaning and sterile operations, while nurses should focus on the cleaning of the operative site, and select the appropriate dressing according to the patient's condition, in order to prevent incision infection. The routine nursing care in the control group was accomplished by nurses.

Pain nursing: Improving and strengthening pain care, and evaluating the patient's pain perception as the key point for nursing content. Visual blur scales were used to assess these symptoms 3 times a day at 07:00, 14:00, and 20:00 hours. After the operation, the pain assessment scale was issued to the patients and dependents, and they were informed on how to use the scale. The instructions were repeatedly explained to the patients until they could correctly master these. After the assessment was completed, the cause of the pain was introduced to the patient, in order to relieve the negative emotions and pressure caused by the pain. Full respect was given to the patient's pain response. Furthermore, they tried to satisfy the patient's reasonable requirements, and advised these patients to read books and watch television (TV). Relax massage and other methods were introduced to the patients to distract their attentions. The routine nursing care in the control group was giving a small amount of painkiller depending on the patient's pain.

Diversified psychological interventions: first, the acute stress scale was postoperatively used to evaluate the patient's acute stress status and psychological pressure, and the reasons for evaluating the psychological status were explained. After the assessments were completed, the patient's mental loads were inquired, and a diversified psychological intervention was performed. Second, the patients were cognitively reconstructed to evaluate the relationship between the patient's disease and bad mood, and misunderstandings were pointed out to eliminate the vicious circle between the patient's mood and disease, allowing the patient to change his or her knowledge of otolaryngology. Furthermore, they combated their belief in the fight against disease to establish a virtuous cycle. Third, the patients were instructed to relax their inner images and appreciate more of their favorite things, such as landscape pictures, beautiful videos, and interesting TV programs, integrating themselves into these. The joint music care method was performed, in which soothing music was played for 30 minutes in the ward daily, for 2 to 3 times a day, such as "the original scenery of my hometown." Fourth, nurses assisted the patients to establish family support psychological intervention, and demonstrated to dependents knowledge related to the disease and the significance of good emotions to the patient. The dependents cooperated with the nurses to encourage and comfort the patient, and increase their own life enthusiasm. The routine nursing care in the control group was conducted by comforting the patients with words.

2.3. Observation indicators

The pain, complications, and psychological pressure were observed in both groups. Pain 19: The 1-week postoperative pain grade was evaluated, and this was assessed through the fuzzy digital method. The patients chose a number from 0 to 10, which represented the most intense pain, and a follow-up survey performed at 1 month and 3 months after surgery to determine

Table 1
The general data between the 2 groups of patients.

Index	The experimental group	The control group	P
N	150	150	
Gender (male/female)	73/77	79/71	.564
Age (years old)	48.75 ± 9.16	48.21 ± 9.23	.611
Junior college degree	38	37	.866
Finished high school	74	78	
Finished primary school	38	35	

whether there was any residual postoperative pain in the relative sites. The cutoff of the presence of pain in 1 month and 3 months after surgery was defined as “the patients chose 0 as their pain level in 1 month and 3 months after surgery.” Then, the complications were statistically analyzed from the postoperative moment to discharge. The complication included bleeding, infection, xerostomia, respiratory tract obstruction, etc. The doctors decided these complications according to the clinical standard.

The psychological stress assessment evaluated the psychological pressure in the acute phase and long-term phase (postoperative 1 month and 3 months). In the acute phase, the stanford acute stress reaction questionnaire (SASRQ) was utilized, which included 30 items, with a total of 6 grade scoring methods. Out of the 150 points, the higher the score, the heavier the psychological pressure, and stress disorder became. The psychological pressure self-rating scale was adopted for long-term psychological pressure, which included 20 items. Out of the 20 points, the higher the score, the greater the pressure became.^[20]

2.4. Data processing

The data of all otolaryngology patients were accurately verified and recorded, and analyzed using the SPSS 17.0 software (SPSS Inc, Chicago, Illinois). Measurement data were analyzed by *t* test, while count data were analyzed by X^2 -test. $P < .05$ implied that there was a significant difference in pain, complications, and psychological pressure between the 2 groups.

3. Results

3.1. General data

These patients were randomly divided into 2 groups using the random number table: control group (n = 150) and experimental group (n = 150). The control group comprised of 79 male and 71 female patients, and the age of these patients range within 19 to 68 years old, with an average age of 48.21 ± 9.23 years old.

Table 3
The complications among patients between the 2 groups.

Groups	Cases	Bleeding	Infected	Xerostomia	Respiratory tract obstruction	Ulcer	Total
The experimental group	150	4	5	4	4	2	19 (12.67%)
The control group	150	13	8	7	5	4	37 (24.67%)
T/X^2							7.114
P							.008

Table 2
The postoperative pain after surgery between the 2 groups.

Groups	Cases	7 days after surgery	1 month after surgery	3 months after surgery
The experimental group	150	2.01 ± 0.77 ^a	54 (36.00%)	21 (14.00%)
The control group	150	3.81 ± 0.59 ^a	61 (40.67%)	39 (26.00%)
T/X^2		22.726	0.691	6.750
P		.000	.406	.009

^aThe mean postoperative pain score of patients.

Among these patients, 37 patients had a junior college degree or higher, 78 patients finished high school, and 35 patients finished primary school. The experimental group comprised of 73 male and 77 female patients, and the age of these patients ranged within 18 to 69 years old, with an average age of 48.75 ± 9.16 years old. Among these patients, 38 patients had a junior college degree or higher, 74 patients finished high school, and 38 patients finished primary school. There was no significant difference in sex, age, and degree of education between these 2 groups ($P > .05$), and there was good comparability and equilibrium characteristics (Table 1).

3.2. Postoperative pain

The mean postoperative pain score of patients in the experimental group was 2.01 ± 0.77. A total of 21 patients had residual pain at 3 months after the surgery. In the control group, the mean postoperative score of patients in the control group was 3.81 ± 0.59. The mean postoperative score of patients in the experimental group at 3 months after the operation was lower than that in the control group ($P < .05$) (Table 2).

3.3. Complications

Postoperative complications occurred in 19 patients in the experimental group, postoperative complications occurred in 37 patients in the control group. The postoperative complications in the experimental group was lower than that in the control group ($P < .05$). The difference was statistically significant, as depicted in Table 3.

3.4. Psychological stress

The acute psychological pressure score was 67.21 ± 9.21 minutes after the operation, and the psychological pressure self-test score at 1 month and at 3 months after the operation was 13.21 ± 1.01 and 10.03 ± 0.66 points, respectively, in the experimental group. In the control group, the acute psychological pressure score was 83.87 ± 10.86 minutes after the

Table 4
The mental pressure among patients between the 2 groups.

Groups	Cases	Acute phase	1 month after surgery	3 months after surgery
The experimental group	150	67.21 ± 9.21	13.21 ± 1.01	10.03 ± 0.66
The control group	150	83.87 ± 10.86	16.22 ± 2.67	12.97 ± 1.78
T/χ^2		14.329	12.914	18.967
<i>P</i>		.000	.000	.000

operation, and the psychological pressure self-test score at 1 month and at 3 months after the operation was 16.22 ± 2.27 and 12.97 ± 1.78 points, respectively. Therefore, the acute psychological pressure score and the psychological pressure self-test score in the experimental group were both lower than that in the control group ($P < .05$), and the difference was statistically significant (Table 4).

4. Discussion

In the present study, otolaryngology patients were selected as subjects, and the effects of comprehensive nursing interventions were analyzed and studied. As implied from the results, in the experimental group, the mean score for postoperative pain was 2.01 ± 0.77 at 7 days after surgery. A total of 21 patients had residual pain at 3 months after the surgery, which was lower than that in the control group ($P < .05$). Furthermore, postoperative complications occurred in 19 patients in the experimental group, which was lower than that in the control group ($P < .05$). In the experimental group, the mean postoperative acute stress score was 67.21 ± 9.21 , the mean postoperative psychological stress self-measurement score was 13.21 ± 1.01 , and the mean postoperative score at 3 months was 10.03 ± 0.66 . These were all lower than that in the control group ($P < .05$), and the differences were statistically significant. The effectiveness of comprehensive nursing intervention was further illustrated. In the present study, comprehensive nursing was evaluated using the assessment method as the main method of care, allowing nursing intervention measures to be more in line with the needs of patients. Furthermore, the number of people selected for the study was more and the coverage was broader, which was beneficial in analyzing the quality of nursing service. The analysis was mainly due to the fact that this nursing service was easily accepted by nurses, while nursing measures were much more systematic.

5. Limitation

Firstly, no specific information about the TNM staging of the patients in our study. Secondly, the surgical methods of the patients were not analyzed in detail. Thirdly, the follow-up time was only 3 months, further research is needed on the long-term results. Fourthly, although this is a randomized controlled trial, the sample size is still limited. Fifthly, this study design is not blinded, and potential bias existed.

In summary, comprehensive nursing intervention for otolaryngology patients was associated to relieving pain after the operation and psychological pressure of patients in the short and long term. Besides, comprehensive nursing intervention for otolaryngology patients was associated with a lower risk of complications.

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