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Effect of Evidence-Based Nursing Intervention on MIGILL Score of Patients after Endoscopic Resection of Nasal Polyps

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Abstract: This study aimed to investigate the effect of evidence-based nursing intervention on patients undergoing nasal endoscopic resection of nasal polyps, particularly focusing on its impact on MIGILL's pain scores. A total of 74 patients who underwent endoscopic nasal polyp resection were randomly divided into two groups using a random number table method. The outcomes of evidence-based nursing intervention in the observation group were compared with those of the control group. The results showed that the MIGILL pain scores in the observation group were significantly lower than those in the control group, and both hospitalization time and cost were notably reduced ($P < 0.05$). Additionally, patients in the observation group demonstrated better psychological states and experienced fewer postoperative complications compared to the control group ($P < 0.05$). Furthermore, the quality of life scores were significantly higher in the observation group ($P < 0.05$). These findings suggest that evidence-based nursing intervention after endoscopic resection of nasal polyps is highly effective in alleviating postoperative pain, improving emotional well-being, minimizing complications, reducing hospital stay and expenses, and enhancing overall quality of life, indicating its potential value for broader clinical application.

Keywords: Evidence-based nursing; Nasal endoscopic surgery; Nasal polyps; MIGILL pain score

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1. Introduction

The occurrence of nasal polyps is mainly related to immune deficiency, heredity, and other factors. It is a kind of hyperplastic tissue growing in the nasal cavity and sinus mucosa, which is more common in the adult population. The incidence of this disease is not only high, but also the recurrence rate is relatively high. It can seriously reduce patients' quality of life and affect their daily activities, making active treatment particularly important [1]. Surgery is the main treatment for nasal polyps, however, traditional surgery has a lot of trauma and postoperative

complications. In recent years, endoscopic resection of nasal polyps has emerged and gained widespread attention due to its advantages of minimal trauma, fewer postoperative complications, and reduced pain. To further ensure the surgical effect, postoperative nursing intervention is also essential [2]. Routine nursing primarily focuses on postoperative outcomes and is limited to procedural interventions, which are often insufficient to meet the comprehensive needs of patients, resulting in unsatisfactory nursing outcomes. Evidence-based nursing is a nursing measure developed based on relevant literature and combined with the patient's condition and previous clinical nursing experience, which can control the therapeutic effect of the disease and improve the prognosis [3]. Based on this, this paper takes patients after resection of nasal polyps under nasal endoscopy as an example to analyze the effect of evidence-based nursing intervention, as follows.

2. Data and methods

2.1. Clinical data

A total of 74 patients who underwent endoscopic resection of nasal polyps from January 2023 to December 2023 were included in this study. Using a random number table method, the patients were divided into two groups. The control group included 37 patients, with 21 males and 16 females, aged between 22 and 69 years, with a mean age of 45.49 ± 7.83 years. The observation group also consisted of 37 patients, with 22 males and 15 females, aged between 21 and 70 years, with a mean age of 45.47 ± 8.17 years. There were no statistically significant differences in baseline characteristics between the two groups ($P > 0.05$).

The inclusion criteria were: (1) confirmed diagnosis of nasal polyps; (2) clear surgical indications; (3) ability to communicate and understand; and (4) complete and accurate clinical data [4]. Exclusion criteria included: (1) absence of surgical indications; (2) diagnosis of nasal malignancy; (3) cognitive or behavioral disorders; and (4) incomplete clinical data or poor treatment compliance.

2.2. Methods

2.2.1. Control group

The control group received routine nursing care, including preoperative oral education, completion of necessary preoperative examinations, and surgical preparation. Nurses monitored patients' emotional changes and provided psychological counseling, advising patients to follow medical instructions, adhere to preoperative precautions, and use medications as directed.

2.2.2. Observation group

For the observation group, an evidence-based nursing team was established, consisting of nurses with more than five years of clinical experience. All team members received systematic training in evidence-based nursing principles to ensure professional and standardized care, with clear division of responsibilities to enhance the effectiveness of nursing interventions. Based on the specific conditions of patients, the team identified potential nursing problems through thorough discussion and analysis of previous clinical cases. Each problem was examined in depth to explore its underlying causes, and corresponding nursing measures and care plans were developed to address these issues effectively. To support these interventions, the team conducted extensive reviews of relevant literature, sought input from professional consultations, and engaged in collective brainstorming to formulate practical, evidence-based solutions. All measures were carefully reviewed and refined to ensure they were both

scientifically sound and clinically feasible. On this basis, evidence-based nursing interventions were systematically implemented which includes:

(1) Basic nursing: After surgery, patients should be sent to the ICU for observation, to monitor the vital signs of patients and observe the changes in their condition. Initially, patients were positioned supine without pillows, with ice packs applied to the forehead to reduce swelling. The head was turned to one side to facilitate oral secretion drainage. Once awake, patients were adjusted to a semi-recumbent position, with regular checks for discomfort or abnormalities and timely symptomatic interventions.

(2) Nasal care: Three days post-surgery, nasal packing was removed, followed by nasal irrigation with saline. Patients were instructed to lean forward, lower their heads, and use a nasal irrigator gently to flush out secretions and clots, promoting healing.

(3) Respiratory management: Patients were guided to practice mouth breathing daily and airway humidification was performed using gauze covering or nebulization therapy, avoiding direct mouth humidification.

(4) Emotional support: Psychological assessments were conducted to identify anxiety or depression. Patients were encouraged to express feelings, and personalized counseling was provided. Family members were also guided to offer emotional support and companionship to alleviate negative emotions.

(5) Pain management: Nurses assessed patients' pain levels through verbal and non-verbal cues. For mild pain, distraction techniques and cold compresses were used; for severe pain, analgesic pumps were administered as prescribed by physicians.

(6) Dietary care: Four to six hours after surgery, patients were allowed to consume liquid foods such as rice soup or milk. From the second day, a semi-liquid diet including soft foods like tofu, noodles, and egg custard was introduced, focusing on light, nutritious meals with ample fruits and vegetables.

(7) Complication care: Absorbable hemostatic materials were used to prevent bleeding. For orbital hematoma, tamponade removal and head elevation were advised. In cases of cerebrospinal fluid rhinorrhea, patients were positioned semi-sitting. If visual disturbances or abnormal light reflexes occurred, ocular massage was provided to reduce intraocular pressure.

2.3. Observation indicators

The evaluation indicators in this study included pain score, length of stay, hospitalization cost, psychological state, incidence of complications, and quality of life. Pain was assessed using the MIGILL pain question-answering method, which is divided into five levels: 0 indicates no pain; level 1 indicates mild, non-severe pain; level 2 indicates slight but tolerable pain; level 3 indicates obvious pain that causes discomfort; level 4 indicates severe pain; and level 5 indicates extremely intense pain. Psychological state was measured using the Self-Rating Anxiety Scale (SAS) and Self-Rating Depression Scale (SDS), each containing 20 items scored on a 1–4 point scale, with a total score range of 20–80 points, where higher scores reflect more severe emotional distress. Complications observed included bleeding, pain, nasal adhesions, and periorbital edema. Quality of life was evaluated using the SF-36 quality of life scale, covering eight dimensions, with a total score of 100 points, where higher scores represent better quality of life.

2.4. Statistical methods

Statistical software SPSS26.0, counting data (%) 2 test; Measurement data (±s) t test, $P < 0.05$, indicating data differences.

3. Results

3.1. Pain score, length of stay, and hospitalization cost

Before intervention, MIGILL was compared between the two groups ($P > 0.05$). After the intervention, the MIGILL score of the observation group was lower than that of the control group, the length of hospitalization was shorter, and the hospitalization cost was less than that of the control group ($P < 0.05$), as shown in **Table 1**.

Table 1. Comparison of pain score, length of stay, and hospitalization cost between the two groups (±s)

Group	MIGILL (points)		Length of stay (d)	Hospitalization expenses (ten thousand yuan)
	Pre-intervention	Post-intervention		
Observation group (n = 37)	4.21 ± 1.37	1.52 ± 0.27[a]	6.85 ± 1.01	1.09 ± 0.21
Control group (n = 37)	4.19 ± 1.52	2.09 ± 0.74[a]	8.07 ± 1.03	1.25 ± 0.31
t	0.059	4.402	5.144	2.599
P	0.953	< 0.001	< 0.001	0.011

3.2. Psychological state

Before intervention, the two groups were compared ($P > 0.05$). After intervention, the score of the observation group was lower than that of the control group ($P < 0.05$), as shown in **Table 2**.

Table 2. Comparison of mental state between the two groups (±s, points)

Group	SAS		SDS	
	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention
Observation group (n = 37)	45.07 ± 4.31	25.49 ± 4.19[a]	54.13 ± 4.45	30.37 ± 4.11[a]
Observation group (n = 37)	45.09 ± 4.71	34.41 ± 4.49[a]	54.27 ± 4.31	37.41 ± 4.29[a]
t	0.019	8.835	0.137	7.208
P	0.985	< 0.001	0.891	< 0.001

3.3. Complications

The observation group was less than the control group ($P < 0.05$), as shown in **Table 3**.

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

Group	Hemorrhage	Pain	Nasal adhesions	Eye edema	Incidence rate
Observation group (n = 37)	1	2	1	1	4(10.81)
Control group (n = 37)	3	4	3	2	12(32.43)
c^2					5.103
P					0.024

3.4. Quality of life

The observation group was higher than the control group ($P < 0.05$), as shown in **Table 4**.

Table 4. Comparison of quality of life between the two groups (±s, points)

Group	Mental health	Mental health	Social function	Physiological function	Emotional intelligence	Somatic pain	Vital vitality	General health
Observation group (n=37)	78.80 ± 5.00	78.90 ± 5.77	73.80 ± 5.47	75.20 ± 5.88	86.00 ± 5.37	80.89 ± 5.38	78.98 ± 6.03	83.00 ± 6.43
Control group (n=37)	61.80 ± 5.10	60.00 ± 5.27	63.50 ± 5.54	68.79 ± 5.72	73.00 ± 6.88	65.86 ± 5.79	69.00 ± 5.94	75.90 ± 6.63
t	14.478	14.712	8.047	4.753	9.060	11.567	7.172	4.676
P	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001

4. Discussion

Endoscopic resection of nasal polyps is currently a common operation for the treatment of nasal polyps and its effect is far more ideal than that of conservative treatment. Polyps can be removed through surgery to achieve the purpose of treatment. However, to further improve the therapeutic effect of surgery, postoperative nursing is also essential, and nursing intervention can prevent complications and improve prognosis [5]. The content of routine nursing is relatively simple; there is no unified standard to regulate nursing behavior, it is not systematic and targeted, and cannot meet the needs of patients so the nursing effect is not ideal [6]. Evidence-based nursing is a nursing model formulated based on existing scientific research results and combined with previous nursing experience. The nursing model is both scientific and professional and helps to improve the nursing effect.

This study showed that the degree of pain in the observation group was significantly lower than that in the control group, the length of hospital stay was shorter, and hospitalization costs were reduced ($P < 0.05$), indicating that the evidence-based nursing model can effectively alleviate postoperative pain, shorten hospital stays, promote faster recovery, and reduce patients' economic burden. The underlying reasons may be that postoperative pain is an inevitable physiological response, and routine nursing often lacks systematic pain management, resulting in higher pain intensity. In contrast, evidence-based nursing helps patients understand the causes of pain, psychologically prepares them to face postoperative discomfort, and provides targeted interventions based on pain severity, such as positioning guidance, cold compresses, and appropriate psychological support, thereby reducing pain and improving patient comfort. Furthermore, when patients follow standardized nursing guidance, it promotes quicker recovery and reduces the duration and cost of hospitalization.

Additionally, the psychological state of patients in the observation group was better than that of the control group ($P < 0.05$), suggesting that the evidence-based nursing model effectively improves patients' psychological well-being. This may be because postoperative breathing difficulties often cause anxiety and irritability, and during sleep, mouth breathing due to nasal obstruction further aggravates patients' distress. Evidence-based nursing incorporates respiratory management techniques, such as humidifying the nasal and oral cavities to alleviate oropharyngeal discomfort, thus easing psychological tension. Emotional support, including reassurance, psychological counseling, and family companionship, also plays a crucial role in addressing negative emotions and enhancing patients' emotional stability.

Moreover, the incidence of complications in the observation group was significantly lower than that in the control group ($P < 0.05$), indicating that evidence-based nursing helps reduce postoperative complications. This outcome may be attributed to the use of absorbable hemostatic materials to minimize bleeding, effective pain management to alleviate suffering, and meticulous nasal care, including saline rinsing to keep the nasal cavity

moist and prevent adhesions [7]. Finally, the quality of life scores in the observation group were higher than those in the control group ($P < 0.05$), suggesting that evidence-based nursing improves patients' overall quality of life. By addressing both physical and psychological needs, evidence-based care enhances patients' comfort and well-being, thereby contributing to a higher quality of life [8].

5. Conclusion

Evidence-based nursing (EBN) has proven to be highly effective in the postoperative care of patients who have undergone endoscopic resection of nasal polyps. By integrating the best available clinical evidence with patient preferences and clinical expertise, EBN significantly enhances patient outcomes across multiple dimensions. Specifically, it plays a crucial role in managing postoperative pain, addressing psychological distress, and minimizing the risk of complications.

In terms of pain management, evidence-based interventions such as tailored analgesic regimens and non-pharmacological techniques (e.g., cold compresses or relaxation exercises) have been shown to reduce discomfort and improve recovery times. Psychologically, EBN strategies, including patient education, counseling, and stress-reduction techniques, help alleviate anxiety and depression, which are common among patients recovering from surgery. This holistic approach not only fosters emotional well-being but also promotes faster healing.

Moreover, EBN is instrumental in preventing and managing complications such as infections, bleeding, or recurrence of polyps. By adhering to evidence-based protocols for wound care, medication administration, and follow-up monitoring, healthcare providers can significantly reduce the likelihood of adverse events.

Overall, the application of evidence-based nursing in the postoperative care of nasal polyp patients leads to a marked improvement in their quality of life. Patients experience less pain, better psychological adjustment, and fewer complications, which collectively contribute to a smoother recovery process. Given these benefits, the widespread adoption and promotion of evidence-based nursing practices in this context are strongly recommended to optimize patient outcomes and enhance healthcare delivery.

Disclosure statement

The author declare no conflict of interest.

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