Analysis of the Effectiveness of Detailed Nursing Combined with Psychological Nursing Based on Accelerated Rehabilitation Principles in Patients Undergoing Endoscopic Electrosurgical Resection for Benign Prostatic Hyperplasia

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Abstract: Objective: To explore the value of detailed nursing combined with psychological nursing in the application of accelerated rehabilitation principles in patients undergoing endoscopic resection of prostate hyperplasia. Methods: A total of 76 patients undergoing endoscopic electroresection for hyperplasia of prostate were selected as the study objects. All patients admitted to our hospital from February 2023 to February 2024 were divided into two groups according to different nursing methods, with 38 cases in each group. The control group received routine nursing, and the observation group received detailed nursing combined with psychological nursing under the principle of accelerated rehabilitation. Mood score, anxiety score, depression score, compliance score, prostate function index and postoperative recovery were compared between the two groups. Results: Compared with the control group, the positive emotion score was higher and the negative emotion score was lower in the observation group ($P < 0.05$). The scores of anxiety and depression in observation group were lower than those in control group ($P < 0.05$). The compliance score of observation group was higher than that of control group ($P < 0.05$). The level of prostate function index in observation group was lower than that in control group ($P < 0.05$). The postoperative recovery index of the observation group was lower than that of the control group ($P < 0.05$). Conclusion: For patients undergoing endoscopic resection for prostatic hyperplasia, the combination of detailed nursing and psychological nursing based on the principle of accelerated rehabilitation has obvious effects, which can improve patients' emotional state and promote the recovery of prostate function, and the postoperative recovery effect is obvious, which can be used for reference and promotion in clinical practice.

***Keywords*:** prostatic hyperplasia; endoscopic electrotomy; the principle of accelerated rehabilitation; detailed nursing; psychological nursing

1. Introduction

Benign prostatic hyperplasia (BPH) is primarily caused by abnormal secretion of sex hormones, proliferative imbalance, and impaired apoptosis, leading to pathological hyperplasia of prostatic epithelial cells. It is a urinary system disorder, typically manifesting as urgency, increased frequency of nighttime urination, and progressive difficulty in urination. As the condition worsens, it can lead to hemorrhagic shock, hematuria, cancer transformation, and other complications, ultimately shortening the patient's survival time. Therefore, early intervention is crucial[1-2]. Endoscopic resection is the first choice for the treatment of BPH patients due to its advantages of small incisions, minimal damage, low blood loss, and quick recovery. However, a small number of patients, due to their age or poor tolerance to the disease or surgery, may experience psychological stress, which lowers their treatment compliance and worsens urinary incontinence, affecting functional recovery and preventing the desired therapeutic outcomes. Thus, effective nursing interventions are important[3-4]. The principle of accelerated rehabilitation and detailed nursing can provide meticulous rehabilitation nursing, offering targeted psychological guidance based on the patient's actual psychological and physiological needs, ensuring the accuracy of the rehabilitation nursing[5].This article provides a detailed analysis of the effects of detailed nursing combined with psychological nursing based on the principle of accelerated rehabilitation for patients undergoing endoscopic resection of BPH.

2. Materials and Methods

2.1 General Information

A total of 76 BPH patients undergoing endoscopic resection were selected as the study subjects, all of whom were admitted to our hospital from February 2023 to February 2024. Based on the different nursing methods, the patients were

divided into two groups, each consisting of 38 cases. Control group: Age range: 41–73 years (mean ± SD: 57.64±5.28), disease duration: 2–13 years (mean ± SD: 7.46±1.13). There were 20 patients with grade I BPH and 18 patients with grade II–III BPH.Observation group: Age range: 41–74 years (mean ± SD: 57.71±5.32), disease duration: 2–13 years (mean ± SD: 7.37±1.18). There were 21 patients with grade I BPH and 17 patients with grade II–III BPH. The statistical analysis of the general information showed no significant difference between the two groups ($P > 0.05$), indicating comparability. Inclusion criteria: ①Diagnosed with BPH through uroflowmetry, residual urine measurement, cystoscopy, or other methods. ②Indications for endoscopic resection surgery. ③Residual urine volume exceeding 60mL/h. ④Complete data available for review during the study period.

Exclusion criteria: ①Presence of urinary tract infections. ②Presence of uremia. ③Presence of endocrine disorders. ④Intolerance to anesthesia or treatment medications. ⑤Coagulation dysfunction. ⑥Organ dysfunction.

2.2 Methods

2.2.1 Control Group

The control group received routine nursing nursing. Nursing staff led the patients to become familiar with the hospital and department environment, which helped alleviate negative psychological emotions. Nurses provided education to both patients and their families about benign prostatic hyperplasia. After surgery, patients were instructed to strictly follow a healthy diet plan and actively participate in rehabilitation exercises. Nurses patiently communicated with the patients, closely observing their facial expressions and analyzing their psychological states in detail, while providing effective psychological counseling.

2.2.2 Observation Group

The observation group implemented a detailed nursing plan combined with psychological nursing based on the principle of accelerated rehabilitation. The main measures were as follows:

Establishment of a Detailed Nursing Team: The team consisted of one urologist, one head nurse, three responsible nurses, one psychological counselor, and one rehabilitation therapist. Before starting rehabilitation nursing, the team members were required to focus on learning about the occurrence of benign prostatic hyperplasia (BPH), surgical procedures, and nursing precautions. They also underwent professional training. The members were expected to thoroughly understand the concept of accelerated rehabilitation and to discuss the relevant content together. The treatment plan was developed based on the patient's actual condition, with each treatment cycle lasting 3 to 5 days, and 2 to 3 cycles of rehabilitation guidance.

Disease Health Education: After the patient was admitted, the nursing staff accompanied them by the bedside and provided them with relevant educational materials, including images, text explanations, or videos about the disease. The health education sessions typically lasted 25 minutes, helping patients better understand the disease. Nurses also addressed any doubts or concerns the patients had. For content that was too abstract in the video, alternative methods were used to elaborate, helping patients visually understand potential post-surgery issues such as urinary incontinence, postoperative bleeding, and hypotension. The video included preventive methods to help patients focus on self-nursing, increasing their cooperation. After the video was produced, the head nurse reviewed the content and provided feedback. The health education sessions lasted 35 to 40 minutes, with 2 to 3 sessions provided preoperatively. After surgery, when the patient regained consciousness, nurses explained the importance of strictly following medical orders for medication, possible adverse drug reactions, healthy lifestyle habits, and dietary choices. Patients were repeatedly advised to quit smoking and drinking, avoid spicy and cold foods, and consume more high-fiber, light, high-protein, and easily digestible foods. Postoperatively, nurses advised patients to frequently change their underwear to keep the urethral opening clean, avoid holding urine, and urinate promptly to ensure smooth urinary flow. For patients who were able to get out of bed, nurses invited them to attend regular lectures on topics such as "How to Self-Diagnose Benign Prostatic Hyperplasia," "What Are the Causes of Benign Prostatic Hyperplasia?" and "The Importance of Daily Hygiene." The lectures, led by experts, were held 2 to 3 times a week, lasting 45 to 50 minutes each, for 2 to 3 weeks. The nursing staff assisted in answering any questions patients had during these sessions.

(3) Functional Rehabilitation Training: The rehabilitation physician, in collaboration with the nursing staff, guided the patients to complete bedside urination and defecation training preoperatively, and instructed them to avoid coughing to prevent psychological resistance due to changes in bowel movements and positioning. After the patient's physiological condition stabilized postoperatively, they were instructed to follow the rehabilitation physician's guidance for early-stage anal sphincter contraction and relaxation exercises. Nurses assisted patients with position changes, guiding them to focus on the anal muscles and to perform conscious, regular anal muscle contraction and relaxation. Each contraction lasted 8 to 10 seconds, followed by relaxation for 6 to 8 seconds, repeated 15 times per set, with 2 to 3 sets recommended, and performed three times a day (morning, afternoon, and evening), for 6 to 8 days. After training, patients rested for 3 to 5 minutes, and nursing staff assisted with emptying the bladder, then guided them into a position with legs together and hips elevated.

This was done under the physician's instructions, repeating 5 to 8 times. After pelvic floor muscle tightening and relaxing endurance training, patients were led through high-frequency rapid contraction and relaxation exercises, which lasted 8 to 10 minutes, performed 2 to 3 times per day, and continued for 6 to 8 days. To prevent bladder spasms due to improper irrigation post-surgery, the nursing staff used a 30–37°C irrigation solution for bladder irrigation within 48 to 72 hours post-surgery. They closely monitored the color of the drainage fluid: dark fluid required faster irrigation, while lighter fluid required slower irrigation. The nursing staff observed any changes in symptoms, such as lower abdominal discomfort or the urge to hold urine, and guided patients in correct deep breathing to relieve tension.

(4) Psychological Intervention: Nurses and the psychological counselor collaborated to guide patients through psychological relaxation training 40 to 60 minutes before surgery. The room temperature was adjusted to 26°C, with humidity set between 50-60%, ensuring no noise and soft lighting. Nurses helped patients find a comfortable position, typically a semi-reclining or supine position. Soft, slow-paced, stress-relieving music was played at 20–30 decibels during the relaxation training. Nurses assisted patients in adjusting to a comfortable position while the psychologist guided them to slightly separate their legs and let their arms rest naturally by their sides, using progressive muscle relaxation techniques to relax the body. During relaxation, patients were instructed to practice deep breathing: inhaling through the nose to the lower abdomen, holding the breath for 3 to 5 seconds while clenching their fists, and then slowly exhaling through the mouth, while opening their fists. This was repeated 8 to 10 times for 20 to 25 minutes. Postoperatively, when the patient regained consciousness, nurses encouraged them to discuss any negative emotions caused by the disease or surgery. The psychological counselor observed the patient's facial expressions to assess their psychological state, and nurses used empathetic communication techniques to help the patient shift toward positive emotions. Nurses also communicated frequently with the patient's family, emphasizing the importance of their attitude and behavior in the patient's treatment and recovery, helping to build the patient's confidence in overcoming the disease. Families were encouraged to work together in supporting treatment and nursing, and nurses helped patients and families envision a better life after recovery. Nurses assured patients that their privacy would be strictly protected, helping them feel less anxious about their condition.

2.3 Observation Indicators

(1) Negative Emotions: The Positive and Negative Affect Schedule (PANAS) was used to evaluate the patient's psychological state. The Positive Affect (PA) subscale includes 10 adjectives, each scored on a 5-point scale, with a total score of 50. A higher score indicates better positive emotions. The Negative Affect (NA) subscale also includes 10 adjectives, each scored on a 5-point scale, with a total score of 50. A higher score indicates worse negative emotions.

(2)Anxiety and Depression: The Self-Rating Anxiety Scale (SAS) and Self-Rating Depression Scale (SDS) were used to assess the patient's emotional state. Each scale has a total score of 100 points, with 50 points as the cutoff. A score below 50 indicates normal emotional status, while a score above 50 indicates worsening emotional conditions.

(3) Compliance Score: The Treatment Compliance Evaluation Scale was used to assess the patient's compliance, including items on health behaviors, rehabilitation exercises, medication adherence, regular diet, and regular follow-up. The scale has 15 items, each scored on a 3-point scale, with a total score ranging from 15 to 45 points. A higher score indicates better compliance.

(4) Prostate Function Indicators: The International Prostate Symptom Score (IPSS) was used to evaluate the patient's condition, which includes 7 items related to storage phase, voiding phase, prostate stimulation, and obstruction, with each item scored on a 5-point scale. The total score is 35, with a higher score indicating more severe symptoms.

(5) Postoperative Recovery: The time for the first meal, recovery of bowel sounds, time to get out of bed, catheterization time, and length of hospital stay were observed and recorded for both groups of patients.

2.4 Statistical Methods

SPSS 25.0 statistical analysis software was used for analysis. Count data were expressed as n (%), and the Chi-square test (χ^2) was used. Measurement data that conformed to a normal distribution were expressed as mean ± standard deviation (±s). A P value of <0.05 was considered statistically significant.

3. Results

3.1 Comparison of Emotions Between the Two Groups

There was no significant difference in emotions between the two groups before the intervention ($P > 0.05$). After the intervention, the observation group had higher positive emotions and lower negative emotions compared to the control group ($P < 0.05$), as shown in Table 1.

Table 1. Comparison of Emotions Between the Two Groups ($\bar{x}$±s, Points)

Group	Positive Emotions (PA)		Negative Emotions (NA)	
	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention
Observation Group (n=38)	21.32±1.41	36.24±1.72	35.42±1.64	15.21±1.39
Control Group(n=38)	21.16±1.23	32.15±1.67	35.41±1.27	18.34±1.21
t-value	0.527	10.517	0.030	10.470
P-value	0.600	< 0.001	0.976	< 0.001

3.2 Comparison of SAS and SDS Scores Between the Two Groups

There was no significant difference in SAS and SDS scores between the two groups before the intervention (P > 0.05). After the intervention, the observation group showed significantly lower SAS and SDS scores compared to the control group (P < 0.05), as shown in Table 2.

Table 2. Comparison of SAS and SDS Scores Between the Two Groups($\bar{x}$±s, Points)

Group	SAS		SDS	
	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention
Observation Group (n=38)	57.32±4.18	36.24±3.75	58.64±5.37	35.64±3.37
Control Group(n=38)	57.16±4.23	41.26±3.24	58.41±5.23	42.64±3.42
t-value	0.166	6.244	0.189	8.987
P-value	0.869	< 0.001	0.851	< 0.001

3.3 Comparison of Compliance Between the Two Groups

There was no significant difference in compliance scores between the two groups before the intervention (P > 0.05). After the intervention, the observation group showed significantly higher compliance scores compared to the control group (P < 0.05), as shown in Table 3.

Table 3. Comparison of Compliance Between the Two Groups ($\bar{x}$±s, Points)

Group	Health Behaviors		Rehabilitation Exercise		Medication Adherence		Regular Diet		Regular Follow-up	
	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention
Group	3.31±1.22	7.65±1.23	3.31±1.16	7.26±1.37	3.39±1.26	7.31±1.19	3.31±1.17	7.34±1.29	3.46±1.37	7.35±1.49
Observation Group (n=38)	3.29±1.18	6.52±1.32	3.41±1.15	6.34±1.42	3.36±1.21	6.48±1.06	3.27±1.09	6.41±1.03	3.42±1.31	6.27±1.24
Control Group(n=38)	0.073	3.861	0.377	2.874	0.106	3.211	0.154	3.473	0.130	3.434
t-value	0.942	< 0.001	0.707	0.005	0.916	0.002	0.878	< 0.001	0.897	0.001

3.4 Comparison of IPSS Scores Between the Two Groups

There was no significant difference in IPSS scores between the two groups before the intervention (P > 0.05). After the intervention, the observation group showed significantly lower IPSS scores compared to the control group (P < 0.05), as shown in Table 4.

Table 4. Comparison of IPSS Scores Between the Two Groups ($\bar{x}$±s, Points)

Group	Pre-intervention	Post-intervention
Observation Group (n=38)	14.31±1.19	7.32±2.13
Control Group(n=38)	14.34±1.07	9.24±2.08
t-value	0.116	3.976
P-value	0.908	< 0.001

3.5 Comparison of Postoperative Recovery Between the Two Groups

The observation group had better postoperative recovery compared to the control group (P < 0.05), as shown in Table 5.

Table 5. Comparison of Postoperative Recovery Between the Two Groups ($\bar{x}\pm s$)

Group	First Meal Time (h)	Bowel Sound Recovery Time (h)	Time to Get Out of Bed (days)	Catheterization Time (days)	Length of Hospital Stay (days)
Observation Group (n=38)	7.12±0.64	16.62±1.18	2.06±0.31	2.16±0.29	3.52±0.47
Control Group(n=38)	10.52±0.57	19.21±1.24	3.58±0.23	3.76±0.34	4.42±0.42
t-value	24.455	9.327	24.274	22.071	8.802
P-value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001

4. Discussion

Benign prostatic hyperplasia is a common urological disease that often requires long-term treatment. If not effectively controlled in a timely manner, the condition can lead to irreversible renal damage, which has gained significant attention from medical scholars [6-7]. Clinically, transurethral resection of the prostate (TURP) is commonly used to remove the hyperplastic tissue, which helps improve symptoms. However, due to surgical stress, decreased body resistance, and other factors, patients may experience worsened urinary incontinence and negative emotions [8]. Traditional nursing services typically involve educating patients about the disease, but due to the relatively dry nature of the content, it may not engage patients effectively. Therefore, it is essential to focus on rehabilitation guidance and psychological interventions [9-10].

The data from this study show that the observation group had higher positive emotion scores and lower negative emotion scores compared to the control group, with statistically significant differences ($P < 0.05$). Additionally, the observation group had lower anxiety and depression scores compared to the control group ($P < 0.05$), indicating that detailed accelerated recovery nursing combined with psychological nursing can significantly improve both positive and negative emotions in patients. Providing a comfortable nursing environment, reducing pain, and promoting recovery all contribute to positive emotional experiences for patients [11-12]. Psychological nursing helps patients adjust their mindset, reducing the impact of negative emotions. Preoperatively, patients often experience anxiety and depression due to concerns about the surgery's outcome, recovery, and potential complications. Detailed accelerated recovery nursing combined with psychological nursing significantly reduces patients' SAS and SDS scores. Through comprehensive nursing support, psychological comfort, and emotional guidance, patients can alleviate anxiety and depression, improving their psychological adaptability. The application of this combined nursing model not only aids in physiological recovery but also significantly improves patients' psychological state [13-14]. A positive psychological state helps patients better cooperate with treatment, accelerates the recovery process, and improves quality of life.

The observation group had higher compliance scores compared to the control group ($P < 0.05$), indicating that detailed accelerated recovery nursing combined with psychological nursing can significantly improve patient compliance. Through detailed nursing, patients better understand the importance of postoperative recovery and the specific measures needed, leading to more active cooperation with treatment and nursing [15]. Psychological nursing reduces anxiety and fear, enhancing patients' confidence, and further improving treatment compliance. Patients receiving this combined nursing model usually have higher scores on treatment compliance scales [16].

The observation group had lower prostate function indicator levels compared to the control group ($P < 0.05$), indicating that TURP often leads to improvements in the international prostate symptom score (IPSS) and other related indicators. Detailed accelerated recovery nursing, by optimizing perioperative management measures and reducing surgical stress responses, promotes the recovery of prostate function. Psychological nursing helps alleviate the patient's psychological burden, improving their quality of life and indirectly promoting the recovery of prostate function. The improvement in prostate function indicators is typically more significant in patients receiving this combined nursing model [17-18].

The observation group showed better postoperative recovery compared to the control group ($P < 0.05$), indicating that detailed accelerated recovery nursing, through optimized wound nursing measures and maintaining wound cleanliness, helps reduce the risk of infection, thereby shortening wound healing time. Postoperative urinary function gradually recovers, and detailed nursing, such as guiding patients through urinary function training (e.g., pelvic floor muscle exercises), promotes bladder function recovery [19-20].

In conclusion, detailed accelerated recovery nursing combined with psychological intervention for patients undergoing TURP significantly improves positive emotions and compliance, enhances prostate function, and facilitates postoperative recovery. This nursing model should be widely promoted in clinical practice.

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