

# Application of Group Counseling Based on Positive Psychology Theory in Postoperative Total Hip Arthroplasty

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**Abstract:** *Objective:* This paper aims to explore and analyze the application of group counseling based on positive psychology theory in postoperative total hip arthroplasty. *Methods:* From July 2021 to April 2023, 110 patients with total hip arthroplasty admitted to the Department of Traumatology and Orthopedics in our hospital were selected as subjects of this study. They were divided into study group and control group by simple random sampling, with 55 cases in each group. The study group received group counseling based on positive psychology theory, and the control group received general nursing care. Harris hip function score, activities of daily living score (ADL), Hamilton depression rating scale (HAM-D), Hamilton anxiety rating scale (HAM-A), and postoperative complications were compared between the two groups. *Results:* Before nursing, the Harris and ADL scores of the two groups were compared, and the difference was not statistically significant ( $P > 0.05$ ). After nursing, the Harris and ADL scores of the study group were significantly better than those of the control group, the difference was statistically significant ( $P < 0.05$ ). Before nursing, the HAM-D and HAM-A scores of the two groups were compared, and there was no statistically significant difference ( $P > 0.05$ ). After nursing, the HAM-D and HAM-A scores of the study group were significantly better than those of the control group, and the difference was statistically significant ( $P < 0.05$ ). The incidence of postoperative complications in the study group was significantly lower than that in the control group, and the difference was statistically significant ( $P < 0.05$ ). *Conclusion:* Based on the theory of positive psychology, the effect of group counseling after total hip arthroplasty is more significant, and it is recommended to be applied in clinical practice.

**Keywords:** Group counseling; Positive psychology theory; Postoperative total hip replacement; Nursing

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## 1. Introduction

Total hip replacement is a treatment for hip joint disease, it involves inserting the artificial acetabulum and femoral head to replace the function of the human hip joint<sup>[1]</sup>. At present, this treatment method has been developed and widely used, which is beneficial to many patients with hip joint diseases<sup>[2]</sup>. Total hip replacement

is a relatively traumatic operation, and good postoperative care is essential to the treatment<sup>[3]</sup>. In recent years, there is rapid development of nursing models, and many new nursing models have been applied clinically. The positive psychology theory group counseling is a type of new nursing model, which uses psychology as the main theory of nursing. The application effect after hip replacement is better<sup>[4]</sup>. The purpose of this paper is to study and analyze the application of group counseling based on positive psychology theory after total hip arthroplasty.

## **2. Materials and methods**

### **2.1. General information**

A total of 110 patients with total hip arthroplasty who were admitted to the Department of Traumatology and Orthopedics in our hospital from July 2021 to April 2023 were selected as subjects of this research. They were divided into study group and control group by simple random sampling, with 55 cases in each group.

In the study group, there were 36 males and 19 females, the age ranged from 45 to 74 years, with an average age of  $62.67 \pm 6.54$ . In the control group, there were 37 males and 18 females, the age ranged from 51 to 75 years, with an average age of  $65.2 \pm 6.65$ . There was no statistically significant difference ( $P > 0.05$ ) in general information such as gender and age between the groups.

Inclusion criteria included patients after total hip arthroplasty, patients without bone disease, patients who have given informed consent, and patients with good compliance.

Exclusion criteria were patients with malignant tumors, patients with coagulation disorders, cognitively impaired patients, patients with old fractures, patients with fractures in other parts, patients with severe communication barriers, and patients with incomplete evaluation scales, or blurred and illegible handwriting.

### **2.2. Methods**

The control group received general nursing care. The information about the operation of the patients was handed over, antibiotic skin test and intravenous infusion were given, including fluid infusion and supplement energy. Analgesic drugs were used to relieve pain after the operation, and a step-wise analgesic administration was adopted. The drug related matters were informed and dietary guidance was provided.

The study group was treated with positive psychology theory group counseling as follows.

- (1) A positive psychology theory group assistance team was established, and the members were composed of a nurse who has obtained the qualification of a psychological counselor. The head nurse formulated nursing measures and divided individual responsibilities.
- (2) Psychological lectures were conducted in the department, the principles and prognosis of total hip replacement were explained, and patients were taught the methods and skills of postoperative care.
- (3) For patients with lower limb dysfunction and limb abnormalities, nursing staff should focus on caring for them, pay attention to maintaining the self-esteem of patients, help them to establish a positive and optimistic attitude, and return to life and society.
- (4) The individual differences of patients were considered when implementing psychological counseling. Patients need to have a correct understanding of total hip arthroplasty and the treatment method, eliminate anxiety and be positive about the treatment and rehabilitation. Patients were informed of the methods and importance of postoperative rehabilitation in detail, and allowed to actively cooperate with exercise.
- (5) The family members of the patients were allowed to spend more time with the patients, provide the patients with psychological care and spiritual sympathy, so that the patients have sufficient

psychological security.

- (6) The number of visits to the ward was increased and the patient's state was observed. If the patient is found to be emotionally abnormal, appropriate measures should be taken to resolve the patient's negative emotion. It is necessary to choose an easy-to-accept method for patients to carry out psychological guidance. It is possible to organize patient exchange meetings to share treatment conditions and interesting stories about treatment, create an interesting treatment environment, and eliminate strangeness. Patients were allowed to watch more entertainment movies and read some books to enrich their daily life.

### 2.3. Observation indicators and evaluation tools

The indicators and evaluation tools below were used to compare the two groups.

- (1) The Harris hip joint function score and activities of daily living score (ADL) were compared between the groups. The Harris score includes pain, function, deformity, and joint mobility. The score is 0–100 points, and the higher the score, the better the joint function. The cumulative variance contribution rate was 73.14%, Cronbach's  $\alpha$  coefficient was 0.872, and the split-half reliability was 0.874. ADL score includes position transfer, personal hygiene, communication, housework, social cognition. The total score is 100 points, the cumulative variance contribution rate was 72.44%, the Cronbach's  $\alpha$  coefficient was 0.868, and the split-half reliability was 0.862.
- (2) Hamilton depression rating scale (HAM-D) and Hamilton anxiety rating scale (HAM-A) scores were compared between groups. HAM-D score is a score for assessing depression, with a 5-level scoring method of 0–4 points. It is evaluated with a 24-item version, and more than 35 points are considered serious depression, more than 20 points are considered mild or moderate depression, less than 8 points are no depression, the lower the score, the better the mood. The cumulative variance contribution rate was 73.61%, the Cronbach's  $\alpha$  coefficient was 0.879, and the split-half reliability was 0.883. HAM-A score is used to assess anxiety, with a 5-point scoring method of 0–4 points. The total score is 64 points, more than 29 points are considered severe anxiety, more than 21 points are considered obvious anxiety, more than 14 points are considered anxiety, more than 7 points may be anxiety, and less than 7 points is no anxiety, the lower the score, the lesser the anxiety. The cumulative variance contribution rate was 73.81%, Cronbach's  $\alpha$  coefficient was 0.894, and the split-half reliability was 0.891.
- (3) The incidence of postoperative complications between the groups was compared, including infection, pressure injury, deep vein thrombosis of lower extremities, prosthetic dislocation, and so on.

### 2.4. Statistical analysis

SPSS21.0 statistical software was selected to process and analyze the data, the count data were expressed by the number of cases ( $n$ ) and percentage (%), the  $\chi^2$  test was implemented, the measurement data were expressed by the mean  $\pm$  standard deviation (SD), and the  $t$  test was implemented,  $P < 0.05$  was considered statistically significant.

## 3. Results

### 3.1. Comparison of the Harris and ADL scores

Before nursing, the Harris and ADL scores of the two groups were compared, and there was no statistically significant difference ( $P > 0.05$ ). After nursing, the Harris and ADL scores of the study group were significantly better than those of the control group, and the difference was statistically significant ( $P < 0.05$ ), as shown in **Table 1**.

**Table 1.** Comparison of Harris and ADL scores between groups (mean ± SD)

Group	Harris score		ADL score	
	Before nursing	After nursing	Before nursing	After nursing
Study group ( <i>n</i> = 55)	53.47±4.27	87.44±7.94	54.86±5.61	81.57±8.54
Control group ( <i>n</i> = 55)	53.69±4.38	75.42±6.59	54.96±5.76	72.84±6.22
<i>t</i> value	0.2667	8.6391	0.0922	6.1280
<i>P</i> value	0.7902	0.0000	0.9267	0.0000

### 3.2. Comparison of HAM-D and HAM-A scores

Before nursing, the HAM-D and HAM-A scores of the two groups were compared, and there was no statistically significant difference ( $P > 0.05$ ). After nursing, the HAM-D and HAM-A scores of the study group were significantly better than those of the control group, and the difference was statistically significant ( $P < 0.05$ ), as presented in **Table 2**.

**Table 2.** Comparison of HAM-D and HAM-A scores between groups (mean ± SD)

Group	HAM-D score		HAM-A score	
	Before nursing	After nursing	Before nursing	After nursing
Study group ( <i>n</i> = 55)	37.42±5.49	17.56±3.99	39.57±5.84	21.48±4.85
Control group ( <i>n</i> = 55)	37.85±5.68	25.16±4.27	39.65±5.44	26.52±5.63
<i>t</i> value	0.4036	9.6445	0.0743	5.0299
<i>P</i> value	0.6872	0.0000	0.9409	0.0000

### 3.3. Comparison of the incidence of postoperative complications

Based on **Table 3**, the incidence of postoperative complications in the study group was significantly lower than that in the control group, and the difference was statistically significant ( $P < 0.05$ ).

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

Group	Infection	Pressure injury	Lower extremity deep vein thrombosis	Prosthetic heterotopia	Total incidence
Study group ( <i>n</i> = 55)	1 (1.82)	0 (0.00)	0 (0.00)	0 (0.00)	1 (1.82)
Control group ( <i>n</i> = 55)	2 (3.64)	3 (5.45)	1 (1.82)	1 (1.82)	7 (12.73)
$\chi^2$ value	-	-	-	-	4.8529
<i>P</i> value	-	-	-	-	0.0275

## 4. Discussion

Total hip arthroplasty is the insertion of artificially synthesized hip joints into the human body, which can be used to treat various hip joint diseases<sup>[5,6]</sup>. Total hip arthroplasty does a lot of damage to the body, since the operation will cause damage to the surrounding tissues with a lot of bleeding, thus it takes a long time to recover after the operation<sup>[7,8]</sup>. There will be pain in the wound after total hip replacement, and the patient's psychology will also be affected, which is unfavorable for the disease prognosis<sup>[9,10]</sup>. Therefore, nursing care after total hip replacement is very important. Conventional nursing mode is the most widely used nursing

mode. Based on treatment, the nursing content is simplified, and the nursing effect cannot reach the ideal state<sup>[11,12]</sup>. In recent years, the nursing model has gradually focused on psychological nursing. Based on basic treatment, psychological intervention is the core of nursing. Positive psychology theory group counseling is a nursing mode based on psychological theory, in which a nursing team is established to provide patients with professional psychological intervention. This nursing model is a new type of nursing that has gained a good reputation in current clinical applications. A long rehabilitation period is required after total hip arthroplasty, during which the physiological function of the patient's hip joint will be temporarily limited, and the patient's living status will be affected to a certain extent, which will negatively affect the mental health of the patient<sup>[13,14]</sup>. Positive psychology theory group counseling helps to reflect the individual differences of patients, provides patients with personalized nursing experience, and guides patients to develop a positive and optimistic attitude, thus playing a certain role in promoting the recovery of the disease<sup>[15]</sup>.

Before nursing, the Harris and ADL scores of the groups were compared, and there was no statistically significant difference ( $P > 0.05$ ). After nursing, the Harris and ADL scores of the study group were significantly better than those of the control group, the difference was statistically significant ( $P < 0.05$ ). Before nursing, the HAM-D and HAM-A scores of the two groups were compared, and there was no statistically significant difference ( $P > 0.05$ ). After nursing, the HAM-D and HAM-A scores of the study group were significantly better than those of the control group, and the difference was statistically significant ( $P < 0.05$ ). The incidence of postoperative complications in the study group was significantly lower than that in the control group, and the difference was statistically significant ( $P < 0.05$ ). The implementation of positive psychology theory group counseling can create an optimistic and positive attitude in the patients, which can help the recovery of the disease and the hip joint, with less limitation of physical activities and improved quality of life. After the application of this nursing model, the patient's mood has improved greatly, negative emotions such as anxiety and depression have been greatly reduced, and the postoperative complications have also reduced, which has positive significance for the health of patients.

In summary, group counseling based on positive psychology theory has achieved significant clinical value in patients after total hip arthroplasty. Thus, this nursing program is worthy of wide application in clinical practice.

## Disclosure statement

The authors declare no conflict of interest.

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