# Research on the Application of Psychological Nursing in the Treatment of Trigeminal Neuralgia with Radiofrequency Temperature Controlled Thermocoagulation

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***Abstract:*** **Objective:** To explore the application effect of psychological nursing in the treatment of trigeminal neuralgia using radiofrequency temperature controlled thermocoagulation. **Methods**: 56 patients with trigeminal neuralgia treated with radiofrequency temperature controlled thermocoagulation in our hospital from July 2022 to July 2023 were included in the research. They were randomly divided into an experimental group and a reference group using a random number table method, with 28 patients in each group. The reference group received routine nursing, while the experimental group received psychological nursing, and the nursing effects of the two groups were compared. **Result:** After using psychological nursing, the psychological function score, quality of life score, and nursing satisfaction of the experimental group were better than those of the reference group, with significant differences between the groups ($P<0.05$). **Conclusion**: During the treatment of trigeminal neuralgia patients with radiofrequency temperature controlled thermocoagulation, psychological nursing intervention can effectively improve their psychological state, enhance their quality of life, and increase nursing satisfaction.
***Keywords:*** Psychological Nursing; Radiofrequency Temperature Controlled Thermocoagulation; Trigeminal Neuralgia

## Introduction

Trigeminal neuralgia is a type of recurrent, transient, paroxysmal pain that appears as electric shock, knife cut, and tear like. Each pain usually lasts for several seconds to tens of seconds, and suddenly stops. Sometimes the pain can last for up to 15 minutes, and when it does not occur, it is no different from that of ordinary people (as shown in Figure 1)[1]. Radiofrequency temperature controlled thermocoagulation is one of the commonly used treatment methods for this disease, which can preserve the patient's physiological function to the greatest extent while reducing heel pain. In order to better improve the psychological state of patients during treatment, this article studied the application effect of psychological nursing in the treatment of trigeminal neuralgia using radiofrequency temperature controlled thermocoagulation, as follows:

**Figure 1** Symptoms of Trigeminal Neuralgia

# 1. Research Objects and Methods

## 1.1 Research Objects

56 patients with trigeminal neuralgia treated with radiofrequency temperature controlled thermocoagulation admitted to our hospital from July 2022 to July 2023 were included in this research. They were randomly divided into an experimental group and a reference group using a random number table method, with 28 patients in each group. The reference group includes 16 males and 12 females patients, and they aged 36-72 years old, with an average age of (54.35 ± 4.85) years. The experimental group includes 17 males and 11 females patients, which aged 33-71 years old, with an average age of (53.86 ± 4.24) years. There was no statistically significant difference in general data between the two groups (P>0.05).

## 1.2 Research Methods

The reference group received routine nursing, including disease observation, preoperative examination, and symptomatic nursing. The experimental group received additionally psychological nursing based on the reference group, mainly including: (1) Explaining the disease and surgical knowledge in detail to patients and their families, introducing surgical related complications, enhancing patients' understanding of the disease, correcting their understanding of the surgery, alleviating anxiety and fear caused by the surgery, and improving patients' level of cooperation; (2) After entering the operating room, patients should be given strengthened nursing, communicating with patients based on their personal preferences, diverting attention through conversation, and alleviate preoperative tension and anxiety. Nursing staff can use body language to convey care to patients by holding their hands tightly and enhancing their sense of security, in order to enable the patients to receive surgical treatment in a calm state of mind; (3) Strengthening postoperative observation of patients' vital signs, promptly reporting abnormal situations to doctors, and assist medical staff in nursing interventions. Observing the patients' postoperative symptoms closely, for patients with symptoms such as nausea, headache, dizziness, etc., timely psychological nursing should be given to inform them of the causes of symptoms and relevant preventive measures to avoid panic; (4) Nursing staff should apply recommended therapies to improve the psychological state and emotional health of patients with pain symptoms, in order to increase the effectiveness of analgesic treatment. The nursing staff can also guide and help patients develop good lifestyle habits, enabling them to have a happy and stable mood for rehabilitation treatment, cultivating various interests and hobbies of patients, so that it can reduce the frequency of disease or pain symptoms and alleviate patients' physical pain.

## 1.3 Observation Indicators

Two groups of psychological states were evaluated using the Self Rating Depression Scale (SDS) and the Self Rating Anxiety Scale (SAS). The boundary value of SDS scoring table was 53 points, while the boundary value of SAS scoring table was 50 points, the lower the score is, the better the psychological state is. Using the Quality of Life Assessment Scale to evaluate the quality of life of two groups, mainly including physiological function, psychological function, social function, and environmental function, with a total score of 100 points for each item. The higher the score is, the better the quality of life is. This research used our hospital's self-made survey questionnaire to evaluate two groups of nursing satisfaction, there were four levels of evaluation, including very satisfied, satisfied, generally satisfied, and dissatisfied.

## 1.4 Statistical Analysis

SPSS 20.0 software was used for statistical analysis of the research data, using "$\bar{x} \pm s$" to represent the measurement data, and *t*-test for the comparison results between groups. Using "n,%" to represent counting data, and $x^2$-test for inter group comparison results. P<0.05 indicates that there is a statistically significant difference in data.

# 2. Results

## 2.1 Comparison of Psychological Status Scores between Two Groups

The psychological state score of the experimental group was significantly lower than that of the reference group, and

the comparison between groups was significant (P<0.05). As shown in Table 1:

**Table 1** Comparison of Psychological Status Scores between Two groups（$\bar{x} \pm s$ ,scores）

| Groups | Cases Number | SDS | SAS |
|---|---|---|---|
| Experimental Group | 28 | 27.17±1.84 | 25.37±2.15 |
| Reference Group | 28 | 32.73±1.44 | 33.93±1.14 |
| *t* | - | 12.592 | 18.613 |
| *P* | - | 0.001 | 0.001 |

## 2.2 Comparison of Quality of Life Scores between Two Groups

The quality of life score of the experimental group was significantly higher than that of the reference group, with significant inter group comparison (P<0.05). As shown in Table 2:

**Table 2** Comparison of Quality of Life Scores between Two Groups（$\bar{x} \pm s$ , scores）

| Groups | Cases Number | Physiological Function | Psychological Function | Social Function | Environmental Function |
|---|---|---|---|---|---|
| Experimental Group | 28 | 83.72±3.38 | 82.73±3.56 | 81.35±3.27 | 82.61±3.19 |
| Reference Group | 28 | 72.73±3.55 | 74.16±3.58 | 73.62±3.33 | 73.51±3.54 |
| *t* | - | 11.864 | 8.982 | 8.764 | 10.105 |
| *P* | - | 0.001 | 0.001 | 0.001 | 0.001 |

## 2.3 Comparison of Nursing Satisfaction between Two Groups

The nursing satisfaction of the experimental group was significantly higher than that of the reference group, and the inter group comparison was significant (P<0.05). As shown in Table 3:

**Table 3** Comparison of Nursing Satisfaction between Two Groups (n,%)

| Groups | Cases Number | Very Satisfied | Satisfied | General Satisfied | Dissatisfied | Satisfaction Degree |
|---|---|---|---|---|---|---|
| Experimental Group | 28 | 8（28.57） | 12（42.86） | 6（32.14） | 2（7.14） | 26（92.86） |
| Reference Group | 28 | 6（32.14） | 9（32.14） | 5（17.86） | 8（28.57） | 20（71.43） |
| $x^2$ | - | - | - | - | - | 4.383 |
| *P* | - | - | - | - | - | 0.036 |

# 3. Discussion

The radiofrequency temperature controlled thermocoagulation for trigeminal neuralgia is a simple, painless, and effective procedure that involves the destruction of the trigeminal nerve through radiofrequency thermocoagulation. The specific method is to use radiofrequency electrode needles, minimally invasive percutaneous puncture to accurately locate the treatment target, and use controllable temperature to act on the corresponding ganglion regions, neural trunks, and nerve roots, causing protein coagulation and denaturation. The short circuit of neural membrane potential disappears, and the entire nerve no longer produces depolarization. The impulse of the nerve sensation cannot be generated, thus achieving the purpose of pain relief (as shown in Figure 2) [2] - [3]. However, patients have less confidence in surgical treatment due to repeated pain, so effective nursing methods need to be taken during the treatment period.

**Figure 2** Radiofrequency Temperature Controlled Thermocoagulation for the Treatment of Trigeminal Neuralgia

In this research, psychological nursing was taken for patients with trigeminal neuralgia treated with radiofrequency temperature controlled thermocoagulation. The experimental group had better scores in psychological function, quality of life, and nursing satisfaction than the reference group ($P<0.05$). It indicates that it can effectively improve the patients' psychological state, enhance their quality of life, and increase nursing satisfaction. This is because the psychological nursing method is to take a series of good psychological nursing measures based on the patient's psychological activity patterns and reaction characteristics, to influence their feelings and understanding, change their psychological state and behaviors, help them adapt to new interpersonal relationships and medical environments, and strive to create the best psychological state conducive to treatment and recovery, so that they can recover their health as soon as possible [4]-[5]. Its main purpose is to alleviate patients' emotions such as tension, anxiety, pessimism, and depression, and enhance their confidence in overcoming the disease. Correct and timely health education enables them to adapt to new roles and hospital environments as soon as possible. Helping them establish new interpersonal relationships, especially doctor-patient relationships, to adapt to the new social environment.

To sum up, in the treatment process of radiofrequency temperature controlled thermocoagulation for patients with trigeminal neuralgia, psychological nursing intervention can effectively improve their psychological state, improve their quality of life and increase nursing satisfaction.

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