

Analysis of the Degree of Psychological Distress of Elderly Patients with Recurrent Trigeminal Neuralgia and Its Influencing Factors

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Abstract: *Objective:* To analyze the degree of psychological distress among elderly patients with recurrent trigeminal neuralgia and its influencing factors. *Methods:* A single-center cross-sectional study was conducted on 126 elderly patients with recurrent trigeminal neuralgia who visited the Pain Department of our hospital from March 2022 to April 2024. Logistic regression analysis was employed to evaluate the factors influencing psychological distress, based on general patient data, the Distress Thermometer (DT), the Perceived Social Support from Family Scale (PSS-Fa), and the Pittsburgh Sleep Quality Index (PSQI). *Results:* Among the 126 elderly patients with recurrent trigeminal neuralgia, those with a DT score ≥ 4 (72 patients, 57.14%) were more prevalent than those with a DT score < 4 (54 patients, 42.86%). The average DT score for all patients was 4.35 ± 1.72 . Patients in the DT score ≥ 4 group were older than those in the DT score < 4 group ($t = 4.207$, $P = 0.000$), had lower PSS-Fa scores ($t = 5.925$, $P = 0.000$), and had higher PSQI scores ($t = 17.858$, $P = 0.000$). There were no statistically significant differences in gender, marital status, residence area, education level, disease type, or pain location (all $P > 0.05$). Older age and poor sleep quality were identified as independent risk factors for psychological distress in elderly patients with recurrent trigeminal neuralgia ($OR = 1.258$, $OR = 1.713$, both $P < 0.05$), while higher levels of family support were identified as a protective factor ($OR = 0.581$, $P = 0.025$). *Conclusion:* Elderly patients with recurrent trigeminal neuralgia experience psychological distress, and the degree of severity depends on age, quality of sleep, and level of family support.

Keywords: Elderly patients; Recurrent trigeminal neuralgia; Psychological distress; Influencing factors; Family support

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1. Introduction

Trigeminal neuralgia is a common cerebral neurological disease, characterized by the compression of the trigeminal nerve by blood vessels in the brain. It is especially common in middle-aged and elderly people. Elderly patients often experience a higher degree of psychological distress due to the gradual decline of physical function and psychological tolerance^[1]. The recurrence of trigeminal neuralgia not only brings back the pain but may also be accompanied by anxiety, tension, fear, and other negative emotions. This psychological distress not only impacts the quality of daily life but can also result in a loss of confidence in treatment, potentially

worsening the condition ^[2]. Therefore, an in-depth exploration of the psychological distress of elderly patients with recurrent trigeminal neuralgia and its influencing factors is of great significance in improving the treatment effect and quality of life of patients. This study aimed to comprehensively analyze the degree of psychological distress in elderly patients with recurrent trigeminal neuralgia and its influencing factors. The goal was to provide a more scientific and effective basis for clinical treatment and psychological intervention, helping patients relieve pain, reduce psychological pressure, and improve their quality of life.

2. Data and methods

2.1. General information

126 elderly recurrent trigeminal neuralgia patients who visited the Pain Management Department of our hospital from March 2022 to April 2024 were selected as study subjects for a single-center cross-sectional survey.

Inclusion criteria: (1) diagnosed with recurrent trigeminal neuralgia by a neurologist and had experienced at least one trigeminal neuralgia recurrence with an interval of no more than two years between recurrences; (2) aged 60 years and above; and (3) agreed to participate in the study and completed the relevant psychological assessment and health questionnaires as required.

Exclusion criteria: (1) serious heart, lung, liver, kidney, and other organ deficiencies; (2) psychiatric diseases or cognitive disorders or unable to cooperate in completing the psychological assessment; (3) complicated with other serious neurological diseases or malignant tumors; (4) recently undergone major surgeries or traumatic treatments; (5) cognitively dysfunctional, did not provide informed consent, or unable to comply with the study's regulations.

2.2. Methods

All patients underwent routine examination, and their clinical data such as age, gender, marital status, area of residence, education level, disease type, and location of pain were collected. Patients were grouped based on Distress Thermometer (DT) scores to compare the degree of psychological distress of elderly patients with recurrent trigeminal neuralgia and analyze the factors leading to psychological distress among this demographic.

2.3. Observation indicators

- (1) DT score: The DT was used to assess the degree of psychological distress of the patients. A 10 cm line was drawn on A4 paper and divided into 10 equal parts, labeled 0–10 from left to right, with higher scores indicating a higher degree of distress. a DT of ≥ 4 was classified as severe psychological distress.
- (2) General information: Age, gender, marital status, area of residence, education level, type of disease, and location of pain
- (3) Family support: Assessed using the Family Support Self-Assessment Scale (PSS-Fa) ^[3], with a total of 15 entries and a full score of 15, with a higher score indicating a higher degree of family support received by the patient.
- (4) Sleep quality: Assessed by the Pittsburgh Sleep Quality Index (PSQI) ^[4], with a total of 7 entries and a total score of 21, with a higher score indicating poorer sleep quality.

2.4. Statistical methods

Statistical processing was performed with SPSS 20.0, and count data were expressed as rates (%) and compared using the χ^2 test. The influencing factors of adverse pregnancy outcomes in pregnant women with complicated heart disease were analyzed by univariate and multivariate logistic regression. $P < 0.05$ indicated a statistically significant difference.

3. Results

3.1. DT scores

As shown in **Table 1**, among 126 elderly patients with recurrent trigeminal neuralgia, more had a DT score of ≥ 4 points (72/57.14%) compared to < 4 points (54/42.86%), and the mean DT score for all patients was 4.35 ± 1.72 .

Table 1. DT scores in elderly patients with recurrent trigeminal neuralgia

DT score	DT score ≥ 4	DT score < 4	Average score
Number of cases	72 (57.14%)	54 (42.86%)	4.35 ± 1.72

3.2. Univariate analysis of the psychological status of the patients

As shown in **Table 2**, patients with a DT score ≥ 4 were older than those with a DT score < 4 ($t = 4.207$, $P < 0.001$). The PSS-Fa was lower in patients with a DT score ≥ 4 compared to those with a DT score < 4 ($t = 5.925$, $P < 0.001$). The PSQI was higher in patients with a DT score ≥ 4 than in those with a DT score < 4 ($t = 17.858$, $P < 0.001$). There were no statistically significant differences in patients' gender, marital status, area of residence, level of education, type of disease, and location of pain (all $P > 0.05$).

Table 2. Unifactorial analysis of the psychological status of elderly patients with recurrent trigeminal neuralgia

Influencing factors	DT score ≥ 4 ($n = 72$)	DT score < 4 ($n = 54$)	χ^2/t	P
Age	65.68 ± 1.98	64.31 ± 1.55	4.207	0.000
Sex				
Male	30 (41.67%)	24 (44.44%)	0.097	0.755
Female	42 (58.33%)	30 (55.56%)		
Marital status				
Married	65 (90.28%)	46 (85.19%)	0.763	0.382
Unmarried/Divorced/Widowed	7 (9.72%)	8 (14.81%)		
Area of residence				
Urban	40 (55.56%)	29 (53.70%)	0.043	0.836
Rural	32 (44.44%)	25 (46.30%)		
Educational attainment				
High school and above	22 (30.56%)	14 (25.93%)	0.324	0.569
Junior high school and below	50 (69.44%)	40 (74.07%)		
Types of recurrent trigeminal neuralgia				
Primary	62 (86.11%)	43 (79.63%)	0.933	0.334
Secondary	10 (13.89%)	11 (20.37%)		
Location of pain				
Left side	37 (51.39%)	31 (57.41%)	0.0567	0.753
Right side	26 (36.11%)	18 (33.33%)		
Bilateral	9 (12.50%)	5 (9.26%)		
PSS-Fa	8.12 ± 1.51	9.91 ± 1.88	5.925	0.000
PSQI	13.56 ± 1.48	9.14 ± 1.22	17.858	0.000

3.3. Multifactorial analysis of the psychological status of the patients

As shown in **Table 3**, older age and poor sleep quality were independent risk factors for psychological distress in elderly patients with recurrent trigeminal neuralgia ($OR = 1.258$, $OR = 1.713$, both $P < 0.05$). Conversely, a high level of family support was a protective factor against psychological distress in these patients ($OR = 0.581$, $P = 0.025$).

Table 3. Multifactorial analysis of the psychological status of the patients

Influencing factors	B	SE	Wald χ^2	P	OR	Ratio (95% CI)
Age	0.258	0.126	4.324	0.042	1.258	1.016–1.642
PSS-Fa	0.563	0.165	11.862	0.025	0.581	0.435–0.812
PSQI	0.531	0.232	0.230	0.011	1.713	1.118–2.581

4. Discussion

Recurrent trigeminal neuralgia in the elderly refers to recurrent trigeminal neuralgia in patients aged 60 years and above. Trigeminal neuralgia is a neurological disorder in which the pain is mainly located in the distribution area of the trigeminal nerve in the face, and manifests as sudden, severe, and intolerable slashing, burning, flashing, or tearing pain^[5]. Its characteristics include frequent pain episodes, variable duration, and severe and intolerable pain, which seriously affects the patient's daily life and psychological health. Its typical symptoms include pain in the trigeminal nerves in the face, such as the orbital, maxillary, mandibular, and other parts of the face. The onset of pain may be accompanied by symptoms such as facial muscle twitching, tearing, and running, and non-specific symptoms such as headache and dizziness may also occur in some patients^[6]. Due to severe and recurrent pain, patients often experience psychological problems such as anxiety and depression. According to the results of a foreign study, the risk of anxiety and depression in elderly patients with recurrent trigeminal neuralgia is 2.8–3.6 times higher than that of normal people^[7]. This is consistent with the present study, according to which among 126 elderly patients with recurrent trigeminal neuralgia, patients with DT scores of ≥ 4 points (72/57.14%) were higher than those with < 4 points (54/42.86%), and the mean DT score of all patients was 4.35 ± 1.72 . This confirms the prevalence of psychological distress in elderly patients with recurrent trigeminal neuralgia. Therefore, it is necessary to investigate the influencing factors affecting the degree of psychological distress in elderly patients with this condition.

This study found that older age and poor sleep quality are independent risk factors for psychological distress in elderly patients with recurrent trigeminal neuralgia ($OR = 1.258$, $OR = 1.713$, both $P < 0.05$), while a high level of family support is a protective factor ($OR = 0.581$, $P = 0.025$). Several reasons contribute to these findings: As people age, their physical functions gradually decline, and their nervous systems undergo degenerative changes, resulting in slower nerve conduction, diminished response to stimuli, and decreased pain tolerance. Consequently, elderly patients are more likely to feel distressed and helpless when experiencing the intense pain associated with trigeminal neuralgia. Additionally, sleep is crucial for restoring physical functions and mental state; poor sleep quality directly affects mental state and overall health. Chronic insomnia or poor sleep quality can lower immunity, making patients more susceptible to external factors that can trigger or exacerbate trigeminal neuralgia, while also increasing anxiety, depression, and psychological distress^[8]. Conversely, strong family support provides emotional and practical assistance, helping to alleviate negative emotions like anxiety and depression, and enhancing patients' ability to cope with pain^[9]. In addition, family support can also promote patients' active participation in treatment, improve treatment effects, and further reduce psychological

pain. Family support also promotes active participation in treatment, improving outcomes and reducing psychological distress. This aligns with Kong *et al.*'s study, which found that elderly patients with trigeminal neuralgia often experience severe sleep problems linked to negative emotions like anxiety and depression.

5. Conclusion

Elderly patients with recurrent trigeminal neuralgia often experience psychological distress, and the severity of it depends on age, quality of sleep, and level of family support.

Disclosure statement

The author declares no conflict of interest.

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