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The Application of Traditional Chinese Massage Techniques Combined with Core Stability Exercise Training in Patients with Chronic Nonspecific Low Back Pain

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Abstract

Objective: To study and analyze the application value of traditional Chinese massage techniques combined with core stability exercise training in patients with chronic nonspecific low back pain. **Methods:** One hundred patients with chronic nonspecific low back pain admitted to our hospital from January 2021 to December 2024 were selected and randomly divided into the study group and the control group by a double-blind random method, with 50 cases in each group. The control group received core stability exercise training, while the study group received traditional Chinese massage techniques combined with core stability exercise training. After 4 weeks of treatment, the therapeutic effects, pain conditions, improvement of lumbar spine function, and inflammatory conditions of the two groups of patients were evaluated and compared. **Results:** After treatment, the excellent and good rate of the study group was higher than that of the control group, the VAS and ODI scores of the study group were lower than those of the control group, the JOA score of the study group was higher than that of the control group, and the levels of inflammatory factors such as TNF-α and IL-6 were lower than those of the control group. The differences were statistically significant ($P < 0.05$). **Conclusion:** Conducting traditional Chinese massage techniques combined with core stabilization exercise training for patients with chronic nonspecific low back pain can effectively improve the therapeutic effect, promote the improvement of patients' pain conditions and lumbar spine function, and relieve inflammatory conditions.

Keywords

Chronic nonspecific low back pain; Traditional Chinese massage techniques; Core stability movement training; Lumbar spine function; Inflammatory condition

Chronic nonspecific low back pain is a common and frequently occurring disease in clinical practice. The middle-aged and elderly population is the high-risk group for this disease. With the increase of age, health problems such as lumbar intervertebral disc degeneration and bone hyperplasia are highly prevalent, increasing the risk of low back pain [1]. In recent years, the occurrence of chronic nonspecific low back pain has shown a high incidence and a younger age trend, which is closely related to the changes in people's living and behavioral habits. Long-term poor posture, lack of exercise, or imbalance of the exercise chain, etc., will all increase the risk of chronic nonspecific low back pain [2]. Meanwhile, the occurrence of chronic nonspecific low back pain is also related to factors such as psychological stress and obesity. The clinical treatments for chronic nonspecific low back pain mainly include drug therapy, rehabilitation training, physical therapy, etc. [3]. According to traditional Chinese medicine, chronic non-

specific low back pain is fundamentally caused by kidney deficiency, and is closely related to external pathogen invasion and internal blood stasis obstruction, etc. [4]. In the "Suwen: Essentials of Pulse Theory", it is recorded: "The waist is the residence of the kidneys. If it cannot move and sway, the kidneys will be exhausted." This indicates that the functions of the kidneys and the waist are closely related. Congenital insufficiency, old age and physical decline, or sexual overwork that harms the kidneys can all lead to deficiency of kidney essence and lack of nourishment in the lumbar region, thereby causing lower back pain. Core stability exercise training is a commonly used method for treating chronic nonspecific low back pain. Through the training of deep muscle groups, it enhances the stability of the spine and alleviates the symptoms of chronic nonspecific low back pain [5]. Traditional Chinese massage also has a long history in the treatment of this disease. Many studies have confirmed the significant therapeutic effect of traditional Chinese massage applied in chronic nonspecific low back pain [6]. Based on the data of some patients with chronic nonspecific low back pain admitted to our hospital in recent years, this article analyzes the value of traditional Chinese massage techniques combined with core stability exercise training, providing some ideas for the development of related diagnosis and treatment work.

1. Data and Methods

1.1 General information

One hundred patients with chronic nonspecific low back pain admitted to our hospital from January 2021 to December 2024 were selected and randomly divided into a study group and a control group by a double-blind random method, with 50 cases in each group. In the study group, there were 23 males and 27 females, aged 45-73 (58.42±5.41) years, and the disease duration was 2-7 (4.39±0.81) years. In the control group, there were 25 males and 25 females, aged 43-71 (58.81±6.12) years, and the disease duration was 2-8 (4.65±0.89) years. There was no statistically significant comparison of data between groups ($P > 0.05$). Inclusion criteria: (1) Meeting the diagnostic criteria for chronic nonspecific low back pain; (2) It meets the intervention indications such as traditional Chinese massage and exercise therapy; (3) All the materials are complete; (4) High treatment compliance; (5) There has been no history of treatment for chronic non-specific low back pain within the past 6 months. Exclusion criteria: (1) Accompanied by a history of drug abuse such as antibiotics and analgesics; (2) Previous history of spinal surgery; (3) Accompanied by malignant diseases; (4) Mental or cognitive disorders; (5) Insufficient family support.

1.2 Method

Both groups of patients underwent examinations related to chronic nonspecific low back pain. A comprehensive assessment of the condition was conducted. Analgesic drug intervention was given to those with severe pain. On this basis, targeted intervention was carried out as follows.

1.2.1 Control group

Core stability exercise training was carried out. (1) Hip bridge: The patient was asked to lie on their back, bend their knees, spread their feet shoulder-width apart, and place their arms at their sides. On the basis of keeping the abdomen tightened, instruct the patient to slowly lift the buttocks and keep the shoulders, hips, and knees at the same level. During this process, guide the patient to feel the contraction of the muscles in their buttocks and waist. Train continuously 10 to 15 times as one set, and conduct 3 sets of training every day. (2) Plank: With the help of a yoga mat or mattress, guide the patient to keep their elbows and feet on the ground, with the trunk straight and the abdomen tightened. Hold this position for 30 to 60 seconds. Repeat this training three times as one set, and conduct three sets of training each day. (3) Suspension training: Guide patients to conduct training with the help of suspension equipment. During the training process, adjust body posture and center of gravity, and perform training such as single-leg suspension and side plank suspension. The training intensity needs to be adjusted according to the actual situation of the patient. Ten consecutive training sessions constitute one session, and three sets of training should be carried out every day. During the training process, the training items, intensity, etc., need to be adjusted individually in combination with the actual situation of the patients to ensure the training effect. Carry out training continuously for four weeks.

1.2.2 Research group

Traditional Chinese massage techniques combined with core stability movement training were carried out. The core stability movement training was the same as that of the control group. In the traditional Chinese massage treatment, different techniques were used for intervention, such as the rolling method. The practitioner used the small fish thenar

eminence side and the back of the hand as the application points to roll on the patient's lumbar muscles, mainly focusing on the painful areas such as the erector spinae muscles on both sides of the waist and the lumbosacral region. Maintain a uniform and moderate force, such that the patient can tolerate it and there is a warm sensation locally. The kneading method involves the practitioner attaching the thenar eminence of the palm, the base of the palm, or the pads of the fingers to the skin of the waist and performing gentle and soothing circular kneading. The force should be gentle, acting on the painful point and the surrounding muscles to improve local blood circulation and relieve muscle tension. The acupoint pressing method involves the practitioner using the tip of their finger or elbow to press on the acupoints on the waist, including Shenshu (BLSHU), Weizhong (BLSHU), and Mingmen (BLSHU). The force should be applied when the patient feels a sensation of soreness, numbness, or distension. Press each acupoint for 1 to 2 minutes. Once a day for 4 consecutive weeks.

1.3 Observe the indicators

1.3.1 Evaluation of therapeutic effect

If physical symptoms basically disappear and chronic non-specific low back pain has no impact on daily life, work, etc., it is considered effective. If symptoms significantly improve and daily life, work, etc., are slightly affected, it is considered effective; otherwise, it is considered ineffective.

1.3.2 Pain status and lumbar function assessment

Before and after treatment, the pain status was evaluated through the Visual Analogue Scale (VAS), with a total score ranging from 0 to 10. The higher the score, the more severe the pain.

The Oswestry Disability Index (ODI) and the Japanese Orthopaedic Society Score (JOA) are used to assess lumbar function. The total ODI score ranges from 0 to 50 points. The lower the score, the better the recovery of lumbar function. The total score of JOA ranges from 0 to 29 points. The higher the score, the better the recovery of lumbar spine function.

1.3.3 Determination of inflammatory factors

3 mL of peripheral venous blood was collected from each patient before and after treatment and sent to the laboratory for the determination of inflammatory factors such as tumor necrosis factor-α (TNF-α) and interleukin-6 (IL-6).

1.4 Statistical methods

SPSS 26.0 statistical software was used for processing. Count data were expressed as percentages, and the χ^2 test was used for comparison. Measurement data were expressed as ($\bar{x} \pm s$), and the t-test was used for comparison. A P value < 0.05 was considered statistically significant.

2. Result

2.1 Comparison of therapeutic effects

After treatment, the excellent and good rates of the study group were higher than those of the control group, and the difference was statistically significant ($P < 0.05$), as shown in Table 1.

Table 1. Comparison of therapeutic effects between the two groups of patients (case, %)

Group	Show effect	Effective	Invalid	Total effective rate
Research group /50	29(58.00)	20(40.00)	1(2.00)	49(98.00)
Control group /50	20(40.00)	23(46.00)	7(14.00)	43(86.00)
χ^2				4.891
P				0.027

2.2 Comparison of pain status and lumbar function

After treatment, the VAS and ODI scores of the study group were lower than those of the control group, while the JOA score was higher than that of the control group, and the differences were statistically significant ($P < 0.05$), as shown in Table 2.

Table 2. Comparison of pain status and lumbar spine function between the two groups of patients ($\bar{x} \pm s$)

Group	VAS (points)		ODI (points)		JOA (points)	
	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Research group /50	6.31±0.98	1.25±0.25[a]	25.65±3.04	8.12±1.67[a]	15.78±1.94	25.41±2.05[a]
Control group /50	6.38±1.01	1.90±0.51[a]	24.81±2.98	11.24±2.12[a]	16.09±2.03	21.84±1.39[a]
t	0.352	8.092	1.395	8.175	0.781	10.192
P	0.726	< 0.001	0.165	< 0.001	0.437	< 0.001

Note: Compared with before treatment, [a]P < 0.05.

2.3 Comparison of inflammatory factors

After treatment, the levels of inflammatory factors such as TNF-α and IL-6 in the study group were lower than those in the control group, and the difference was statistically significant (P < 0.05), as shown in Table 3.

Table 3. Comparison of inflammatory indicators before and after treatment in the two groups of patients ($\bar{x} \pm s$)

Group	TNF-α (mg/L)		IL-6 (ng/L)	
	Before treatment	After treatment	Before treatment	After treatment
Research group /50	4.12±0.97	1.50±0.31[b]	12.49±4.23	8.32±1.09[b]
Control group /50	3.97±0.93	1.84±0.24[b]	13.01±3.90	12.03±2.01[b]
t	0.789	6.132	0.639	11.473
P	0.432	< 0.001	0.524	< 0.001

Note: Compared with before treatment, [b]P < 0.05

3. Discussion

Patients with chronic nonspecific low back pain are mainly characterized by pain and stiffness in the low back or lumbosacral region, accompanied by varying degrees of limited movement. When lying still, the symptoms of chronic non-specific low back pain will be somewhat alleviated [7, 8]. However, after physical exertion, prolonged standing, or prolonged sitting without movement, the related symptoms of chronic non-specific low back pain will worsen. The low back pain of patients with chronic nonspecific low back pain is characterized by chronic and recurrent attacks, which can have a significant negative impact on normal life [9, 10]. According to traditional Chinese medicine, the occurrence of this disease is related to a deficiency of kidney essence, inadequate nourishment of the lumbar region, long-term accumulation of blood stasis, and unsmooth circulation of the lumbar meridians. The waist is the residence of the kidneys. When kidney essence is deficient, the waist loses its nourishment [11]. If it is not nourished, it will suffer from pain. Long-term illness or trauma can lead to internal obstruction of blood stasis, causing poor circulation of qi and blood in the meridians of the waist. Obstruction results in pain [12]. At the same time, invasion by external pathogenic factors is also a common cause of chronic non-specific low back pain. The "Suwen: Bi Lun" states, "When wind, cold, and dampness are mixed together, they form arthralgia." After cold and dampness invade the body, they will block the circulation of qi and blood in the meridians. Obstruction leads to pain. The high incidence of chronic non-specific low back pain among modern people is also related to excessive work and rest. Poor circulation of qi and blood in the waist and muscle strain aggravate the symptoms of low back pain.

This study analyzed the application effect of traditional Chinese massage techniques combined with core stability movement training in patients with this disease. It showed that after 4 weeks of treatment, the excellent and good rate of the study group was higher than that of the control group, and the therapeutic effect of traditional Chinese massage techniques combined with core stability movement training was definite. The VAS and ODI scores of the study group were lower than those of the control group, while the JOA score was higher than that of the control group. Massage,

by stimulating meridians and acupoints, can effectively harmonize qi and blood, nourish the liver and kidneys, and improve the state of malnutrition of the waist. Modern medicine holds that traditional Chinese massage can adjust the mechanical structure and enhance the dynamic stability of the lumbar vertebrae. Through the "muscle adjustment and restoration" technique, traditional Chinese massage can adjust the mechanical balance between muscles and bones. During the massage process, it can effectively relax the surface layer while activating the deep layers, promoting the repair of deep muscle group functions, thereby effectively alleviating pain symptoms and improving lumbar spine function [13]. After treatment, the levels of inflammatory factors such as TNF-α and IL-6 in the study group were lower than those in the control group, and the difference was statistically significant ($P < 0.05$). During the occurrence and development of chronic nonspecific low back pain, there will be inflammatory responses of varying degrees, which aggravate the pain condition and tissue damage. Traditional Chinese massage can effectively accelerate the metabolism and excretion of inflammatory substances by promoting local blood circulation. When applied to the waist, massage can effectively dilate local blood vessels, increase blood flow velocity, bring more nutrients and immune cells to damaged tissues, and at the same time promote the excretion of metabolic wastes such as inflammatory factors, effectively alleviating inflammatory responses [14]. Core stability training effectively regulates the neuro-immune pathway by activating the stable contraction of deep muscle groups, inhibiting the release of inflammatory factors, regulating the function of the neuroendocrine system, and regulating the secretion of inflammatory factors [15]. The combined application of the two can effectively improve the inflammatory condition of the body.

In conclusion, conducting traditional Chinese massage techniques combined with core stabilization exercise training for patients with chronic non-specific low back pain has significant value in enhancing therapeutic effects, improving pain conditions and lumbar spine function, and alleviating inflammatory conditions. It is well worth carrying out.

References

[1] Xu T, Dai D, Xue Q, et al. The mechanism of brain function remodeling in acupuncture treatment of chronic nonspecific low back pain based on resting-state fMRI. Chin J Rehabil Med. 2025;40(4):542-9.

[2] Gao P, Xiao J, Zhang Y, et al. Analysis of optimizing the movements of the second form of Baduanjin, "Opening the bow left and right like shooting a eagle", for chronic nonspecific low back pain. World J Integr Tradit West Med. 2025;20(3):557-62. doi:10.13935/j.cnki.sjzx.250322.

[3] Kuang Y, Huang X. The influence of stick and needle manipulation therapy on the pain degree and lumbar joint range of motion in patients with chronic nonspecific low back pain. Reflexol Rehabil Med. 2025;6(5):169-72. doi:10.16344/j.cnki.r4.2025.05.032.

[4] Xiao L, Shao L, Wang S. The clinical efficacy of stagnant needle therapy in the treatment of patients with chronic nonspecific low back pain caused by military training and its influence on the degree of pain and lumbar function. World J Integr Tradit West Med. 2024;12(11):2284-90. doi:10.13935/j.cnki.sjzx.241132.

[5] Zhang L, Zhang P, Lu X, et al. The effect of core stability training to strengthen the gluteal muscles on chronic nonspecific low back pain. J Back Musculoskelet Rehabil. 2025:1-5. Available from: http://kns.cnki.net/kcms/detail/34.1117.R.20250410.1712.010.html.

[6] Research progress of massage and plucking techniques combined with S-E-T technology in the treatment of chronic nonspecific low back pain of "anterior pelvic tilt—increased lumbar curvature" type. Chin Pract Med. 2025;20(3):157-9. doi:10.14163/j.cnki.11-5547/r.2025.03.044.

[7] Li H, Li S, Li Y, et al. Observation on the clinical efficacy of tension balance acupuncture combined with core muscle group training in chronic nonspecific low back pain. Tianjin J Tradit Chin Med. 2025;42(2):158-62.

[8] Gholami E, Ghasemi B, Bagherian S. Impact of exercise therapy with/without cognitive functional therapy on pain, function, and biopsychosocial factors in chronic nonspecific low back pain. J Bodyw Mov Ther. 2025;42:92-9.

[9] Jamkar M, Azeem Z, Giri S, et al. Consensus-building on patient education for chronic non-specific low back pain: a qualitative study on patient physiotherapist perspectives. Musculoskelet Care. 2025;23(2):e70107.

[10] Nayak RR, Kumar A, Sannasi R, et al. Immediate effect of muscle energy technique on chronic non-specific low back pain with diaphragm dysfunction - single group pre-post design. J Bodyw Mov Ther. 2025;43:137-42.

[11] Silva PA, Filho DVA, Avila AM. Autonomic nervous system dysfunction may be associated with low self-efficacy in patients with nonspecific chronic low back pain: a cross-sectional inferential analysis. Rehabilitacion. 2025;59(3):100912.

[12] Ma J, Zhou F, Zhang Y. Clinical observation on the treatment of chronic nonspecific low back pain with traditional Chinese medicine hot compress combined with core stability training. Sci Technol Tradit Chin Med China. 2025;32(1):161-3.

[13] Gao S, Xue X, Li Y, et al. Based on the meridian theory, this paper explores the theory and clinical practice of hip massage in the treatment of chronic nonspecific low back pain. Glob J Tradit Chin Med. 2024;17(9):1798-802.

[14] Wang P. Clinical effect of warm acupuncture combined with three-step seven-method massage in the treatment of chronic non-specific low back pain with yang deficiency and cold-dampness obstruction syndrome. Theory Pract Med. 2024;5(16):2773-5. doi:10.19381/j.issn.1001-7585.2024.16.024.

[15] Yu D, Xu Z, Hu Y. Clinical study on core muscle strength training combined with acupuncture and massage in the treatment of chronic nonspecific low back pain. Sichuan J Tradit Chin Med. 2023;41(5):187-91.