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Research on Wrist and Ankle Acupuncture Combined with Five-tone Therapy in Pain Management of Patients in the Department of Traditional Chinese Medicine

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Abstract: *Objective*: To explore the effect of wrist-ankle needle combined with five-tone therapy in pain management for inpatients in the Department of Traditional Chinese Medicine, and to summarize the nursing experience. *Methods*: A total of 86 inpatients with moderate to severe pain who were treated in the Department of Traditional Chinese Medicine of our hospital from January 2023 to December 2023 were selected. The patients were randomly divided into the observation group and the control group using the random number table method, with 43 cases in each group. The control group received routine pain care, while the observation group received wrist and ankle needle combined with five-tone therapy in addition to routine care for 7 consecutive days. The VAS scores, onset time of analgesia, clinical efficacy, and PSQI scores were compared between the two groups before the intervention and on the 3rd and 7th days after the intervention. *Results*: On the 3rd and 7th days after the intervention, the VAS scores of the observation group were lower than those of the control group, the onset time of analgesia was shorter than that of the control group, the total clinical effective rate was higher than that of the control group, and the PSQI score on the 7th day after the intervention was also lower than that of the control group. The differences were statistically significant ($p < 0.05$). *Conclusion*: Wrist-ankle needle combined with five-tone therapy has a good effect on pain in inpatients of the Traditional Chinese Medicine Department, shortening the onset time of analgesia, improving clinical efficacy, and enhancing sleep quality. This method is simple and safe. Combined with targeted nursing intervention, it can improve the medical experience of patients and has clinical promotion significance.

Keywords: Wrist and ankle needle; Pentatonic therapy; Pain management; Traditional Chinese Medicine nursing; Sleep quality

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1. Introduction

Pain is one of the common symptoms among inpatients in the traditional Chinese medicine department, often

caused by bone and joint diseases, neuralgia, postoperative recovery, chronic diseases, etc. It not only brings physical pain to patients, but also easily induces psychological problems such as anxiety, depression, and insomnia, thereby affecting the recovery process of patients [1]. Most of the current clinical pain treatment uses analgesics, which, although effective quickly, have problems such as gastrointestinal reactions, drug resistance, and addiction risks. Therefore, it is of great significance to find safe and effective non-pharmaceutical intervention measures [2]. Traditional Chinese medicine has extensive experience in treating pain. The wrist and ankle needle, based on the theory of meridians and skin, uses shallow pricks through the wrist and ankle to unblock meridians, harmonize Qi and blood, and relieve pain. The five tones therapy, based on the theory of five elements and five viscera, uses music to regulate emotions and calm liver Yang to achieve the effect of treating both body and mind [3]. This paper mainly studies the effect of wrist and ankle acupuncture combined with five-sound therapy in pain management for inpatients in the department of Traditional Chinese Medicine, analyzes the nursing experience, and provides a better non-pharmaceutical intervention method for clinical practice.

2. Data and methods

2.1. General information

A total of 86 patients with moderate to severe pain who were hospitalized in the Department of Traditional Chinese Medicine of our hospital from January 2023 to December 2023 were selected as the study subjects. The inclusion criteria were patients aged 18 to 75 years, with a Visual Analogue Scale (VAS) score of ≥ 4 for pain duration > 24 hours, conscious, communicating without barriers, and able to cooperate with treatment and evaluation. Exclusion criteria were those with severe heart, liver, kidney, or other organ dysfunction, those with a bleeding tendency or undergoing anticoagulant therapy, those with infection, damage, or skin disease at the acupuncture site, those who were resistant to music therapy or had hearing impairment, and pregnant or lactating women. A total of 86 patients were randomly divided into an observation group and a control group, with 43 cases in each group using a random number table. There was no statistically significant difference ($p > 0.05$) between the two groups of patients in terms of gender, age, pain type, disease duration, and other general information, and they were comparable.

2.2. Methods

2.2.1. Control group

Routine pain care in the Traditional Chinese medicine department was implemented.

2.2.2. Observation group

On the basis of the control group, wrist-ankle needle therapy combined with five-tone therapy was implemented.

(1) Wrist-ankle acupuncture treatment

① Principle of point selection: Select the corresponding acupuncture points based on the pain location of the patient, referring to the principle of wrist-ankle acupuncture zoning and positioning. When the head, face, neck, chest, and upper abdomen are the pain points, select the corresponding area of the wrist (upper 1, upper 2, upper 3, etc.); Take the corresponding area of the ankle (lower 1, lower 2, lower 3, etc.) when the waist, abdomen, and lower limbs are the pain points. For each treatment, select 1 to 3 acupuncture points

based on the main complaint of pain. ② Explain the operation method to the patient: Inform the patient of the purpose and method of the treatment and relieve the patient's tension. The patient takes a comfortable lying position to fully expose the acupuncture site. The operator routinely disinfected the skin with 75% alcohol cotton balls and then used disposable sterile acupuncture needles of 0.25 mm × 25 mm. Select a good needle point, with the needle tip facing the proximal end and at an Angle of 15° to 30° to the skin, quickly insert the needle into the subcutaneous tissue, and slowly push the needle body along the superficial tissue of the subcutaneous tissue until the needle body is in the loose connective tissue of the subcutaneous tissue, with the needle tip reaching approximately two-thirds of the length of the needle body. During the needling process, there should be no pain or only a slight tingling sensation, and after the needle is inserted, there should be no traditional gas sensation such as soreness, numbness, distension, or heaviness. The needles should be left in place for 30 minutes, and no needling is required. Once a day, 7 days as one course. ③ Precautions: Strict aseptic operation, one needle per point, to prevent infection. Observe the patient's reaction during treatment. If dizziness, palpitations, cold sweats, or other fainting symptoms occur, remove the needle immediately, assist the patient to lie flat, give warm water, and inform the doctor if necessary. After the needle is lifted, press the needle hole with a sterile dry cotton swab for 1-2 minutes to prevent bleeding.

(2) Five-tone therapy

① Selecting Music based on Syndrome differentiation: Specialized nurses in traditional Chinese medicine (TCM) select the appropriate mode of music according to the patient's TCM syndrome differentiation and the theory of the Five Elements' generation and restraint. ② Implementation method: Set up a separate quiet space for the patient and play music with high-fidelity headphones or small audio equipment. Instruct the patient to take a comfortable position, close their eyes and relax their body, and focus intently on the melody and rhythm of the music. Listen for 30 minutes each time, once in the morning between 9 and 11 a.m. (when the spleen meridian is dominant and earth is strong) and once in the afternoon between 3 and 5 p.m. (when the bladder meridian is dominant and helps to expel impurities) for 7 consecutive days. ③ Key points of care: Inform the patient of the principles and effects of the five-tone therapy before the first auscultation to obtain the patient's cooperation. Pay attention to the patient's mood changes during listening and do not disturb them. After the session, you can have a brief conversation with the patient to understand how they feel [4].

2.3. Observation indicators

(1) Degree of pain using Visual Analogue Scale (VAS)

On a 10 cm straight line, the 0 end represents no pain, and the 10 end represents the most severe pain. Patients mark the corresponding scale according to their own pain perception. The assessment was conducted before the intervention, on the third day after the intervention, and on the seventh day after the intervention.

(2) Time of onset of analgesia

That is, from the start of the intervention, in the observation group at the end of the first wrist-ankle needle and five-tone therapy, in the control group at the start of the first pain care measure, the time required for the patient to feel pain relief, a reduction of ≥ 2 points in VAS score, or a change from severe or moderate to mild pain.

(3) Clinical efficacy

Evaluated 7 days after the intervention. The criteria for evaluation were cure, marked effect, effective,

and ineffective. Cure means complete disappearance of pain symptoms, with a VAS score of 0; Marked effect refers to a significant reduction in pain symptoms, with a reduction in VAS score of ≥ two-thirds; Effective means there is a reduction in pain symptoms, and the VAS score is reduced by ≥ 1/3 but < 2/3; Ineffective means no improvement or exacerbation of pain symptoms, and a reduction of less than one-third in VAS score. Total effective rate = (number of cured patients + number of marked patients + number of effective patients)/total number of cases ×100% [5].

(4) Sleep quality is evaluated using the Pittsburgh Sleep Quality Index (PSQI) scale

This scale is divided into seven aspects including subjective sleep quality, time to fall asleep, sleep duration, sleep efficiency, sleep disorder, use of hypnotic drugs, and daytime dysfunction, with a total score of 0 to 21 points, and a higher score indicates poorer sleep quality. The evaluation was conducted before the intervention and on the 7th day after the intervention.

2.4. Statistical processing

Data analysis was performed using SPSS 26.0 statistical software. Measurement data were expressed as mean ± standard deviation ($\overline{x} \pm s$), independent sample *t*-test was used for comparison between the two groups, and repeated measures analysis of variance was used for comparison at different time points within the group; Count data were expressed as percentages, and the χ^2 test was used for comparison between groups. A difference was considered statistically significant when $p < 0.05$.

3. Fruiting

3.1. Comparison of VAS scores before and after intervention between the two groups of patients

There was no statistically significant difference in VAS scores between the two groups before the intervention ($p > 0.05$). On the 3rd and 7th days after the intervention, the VAS scores of both groups decreased significantly compared with those before the intervention ($p < 0.05$), while the VAS score of the observation group was significantly lower than that of the control group, and the difference was statistically significant ($p < 0.05$). See **Table 1**.

Table 1. Comparison of VAS scores before and after intervention between the two groups of patients (points, $\overline{x} \pm s$)

Group	Number of cases	Before intervention	Day 3 after the intervention	Day 7 after the intervention
Observation group	43	6.81 ± 1.32	3.65 ± 1.18*#	1.88 ± 0.94*#
Control group	43	6.75 ± 1.29	4.91 × 1.35 mm	3.12 × 1.21 mm
t value		0.214	4.635	5.318
p value		0.831	< 0.001	< 0.001

Note: Compared with the group before intervention, $p < 0.05$; # Compared with the control group at the same period, $p < 0.05$.

3.2. Comparison of the onset time of analgesia and clinical efficacy between the two groups

The onset time of analgesia in the observation group was (1.85 ± 0.62) days, significantly shorter than that in the control group [(3.42 ± 0.91) days], and the difference was statistically significant ($t = 9.462$, $p < 0.001$).

In terms of clinical efficacy, the total effective rate was 95.35% in the observation group and 79.07% in the control group, and the difference between the two groups was statistically significant ($\chi^2 = 5.108$, $p = 0.024$). See **Table 2** for details.

Table 2. Comparison of clinical efficacy between the two groups [cases (%)]

Groups	Number of cases	Cure	Show effect	Effective	Invalid	Total effective rate
Observation group	43	15 (34.88)	18 (41.86)	8 (18.60)	2 (4.65)	41 (95.35)*
Control group	43	8 (18.60)	14 (32.56)	12 (27.91)	9 (20.93)	34 (79.07)

Note: $p < 0.05$ compared with the control group.

3.3. Comparison of PSQI scores before and after intervention between the two groups of patients

Before the intervention, there was no statistically significant difference in PSQI scores between the two groups ($p > 0.05$). On the 7th day after the intervention, the PSQI scores of both groups were significantly lower than before the intervention ($p < 0.05$), and the PSQI score of the observation group was significantly lower than that of the control group, and the difference was statistically significant ($p < 0.05$). See **Table 3** for details.

Table 3. Comparison of PSQI scores before and after intervention between the two groups of patients (points, $\overline{x} \pm s$)

Group	Number of cases	Before intervention	Day 7 after the intervention
Observation group	43	15.34 ± 2.56	7.82 ± 1.93*#
Control group	43	15.21 ± 2.61	10.65 × 2.24 mm
t value		0.235	6.332
p value		0.815	< 0.001

Note: Compared with the group before intervention, $p < 0.05$; #$p < 0.05$ compared with the control group.

4. Discussion

The results show that adding wrist-ankle needle combined with five-tone therapy to routine care can more effectively relieve pain in inpatients of the Traditional Chinese medicine department, shorten the onset time of analgesia, increase the total clinical effective rate, and improve sleep quality, indicating that the combination of the two methods has a better synergistic effect. Wrist-ankle acupuncture is a needling technique developed on the basis of traditional meridian theory, and its analgesic effect is related to neuro-humoral regulation. By shallowly thrusting the corresponding areas of the wrist and ankle, the nerve endings in the subcutaneous superficial layer are stimulated to activate the analgesic system within the body, releasing substances such as endorphins and enkephalins, and at the same time playing the role of unblocking meridians and collaterals, harmonizing Ying and Wei, and unblocking Qi and blood to achieve the purpose of "unobstructed, no pain" [6]. In this study, the shallow prick method was used with light stimulation and less pain, without emphasizing soreness, numbness, heaviness, and distension, which could effectively reduce patients' fear of acupuncture, improve treatment compliance, and was consistent with the results of the observation group that analgesia took effect quickly.

The five-tone therapy embodies the idea of treating both form and spirit in traditional Chinese medicine. Pain is not just a physical symptom, but is accompanied by an imbalance of emotions such as anxiety, restlessness, and insomnia. Over time, a vicious cycle is formed: depression is caused by pain, and the pain is exacerbated by depression. Choosing the appropriate mode of music based on the results of TCM syndrome differentiation is essentially using different musical scales to regulate the Qi movement of the internal organs and the activity of emotions to achieve the effect of calming the mind and relieving pain. The Jiao tune soothes the liver, the Zheng tune nourishes the heart, the Gong tune strengthens the spleen, the Shang tune spreads the lungs, and the Yu tune tonifies the kidneys, using the continuous effect of music to achieve the purpose of stabilizing emotions, increasing pain tolerance, and improving self-regulation ability. In this study, the five-tone therapy combined with the wrist-ankle needle was used. On the one hand, the wrist-ankle needle was used to quickly relieve the physical pain of the patients. On the other hand, the five-tone therapy was used to improve the mood and sleep conditions of the patients. The physical and psychological aspects of the two worked together, so the VAS score and PSQI score of the observation group improved more significantly after the intervention.

5. Conclusion

In nursing practice, this study has also gained some practical experience. First of all, precise evaluation is required. Nurses should be familiar with pain evaluation tools and have a certain ability of TCM syndrome differentiation to provide a basis for the selection of wrist and ankle needle zones and the selection of five-tone music. Secondly, it is necessary to communicate fully. Before the intervention, inform the patient that the wrist-ankle needle operation is gentle and safe, and the regulating effect of the five-tone therapy can eliminate the patient's concerns and improve cooperation. Again, the details of the operation are the guarantee. The wrist-ankle needle should be accurately positioned and the movements should be gentle to reduce subcutaneous bleeding and other discomforts; Pentatonic therapy should pay attention to volume and the comfort of the environment to avoid affecting the experience. Finally, human care should not be overlooked. Throughout the intervention, nursing staff should always pay attention to the patient's feelings, give positive responses and psychological support, which in itself is a factor that relieves pain and stabilizes emotions. To sum up, the wrist-ankle needle combined with the five tones therapy is safe, simple, and effective. When combined with targeted nursing intervention, it can provide a better non-pharmaceutical pain management approach for patients in the traditional Chinese medicine department and has high clinical promotion value.

Disclosure statement

The authors declare no conflict of interest.

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