

# Effect of Head Meridian Massage Combined with Auricular Acupoint Plaster on Patients with Insomnia

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**Abstract:** *Objective:* To study the effect of head meridian massage combined with auricular acupoint plasters on patients with insomnia. *Methods:* The sample consisted of 50 cases, and all of them were admitted to Yixing Hospital of Traditional Chinese Medicine from January 2022 to December 2023. The patients were divided into an observation group and a control group, with 25 cases in each group. The observation group was treated with a combination of head meridian massage and auricular acupoint plaster while the control group underwent conventional nursing care. The improvement of sleep quality and nursing effect were used as evaluation criteria to compare the clinical effects of the nursing programs. *Results:* After nursing intervention, the Pittsburgh sleep quality index (PSQI) score of the observation group, which was  $7.17 \pm 1.41$  points was lower than that of the control group ( $9.04 \pm 1.96$  points), ( $t = 3.8724, P < 0.05$ ). The total efficacy was 96.00% for the observation group and 76.00% for the control group ( $\chi^2 = 4.1528, P < 0.05$ ). *Conclusion:* Head meridian massage combined with auricular acupoint can improve the sleep quality of patients with insomnia.

**Keywords:** Head massage; Auricular acupoint plaster; Insomnia

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## 1. Introduction

Insomnia is a common clinical condition characterized by the inability to sleep due to various factors, with clinical symptoms such as difficulty in falling asleep and waking up easily. In Western medicine, insomnia is caused by neurasthenia or neurosis<sup>[1]</sup>. The primary treatment for insomnia typically revolves around the use of sedative and hypnotic medications. While these drugs can improve sleep to some extent, their overall efficacy may be limited, and they often carry the risk of complications and other issues. However, in recent years, as traditional Chinese medicine has advanced, Chinese medicine nursing concepts and techniques have demonstrated promising results in managing insomnia. Leveraging the inherent advantages of safety and high efficiency, Chinese medicine approaches offer a viable alternative for individuals struggling with sleep disorders<sup>[2]</sup>. In this study, a controlled trial was designed to study the effect of head meridian massage and auricular acupoint plaster on patients with insomnia.

## 2. Materials and methods

### 2.1. General information

The sample consisted of 50 cases, and all of them were admitted to Yixing Hospital of Traditional Chinese Medicine in January 2022–December 2023. The patients were divided into an observation group and a control group, with 25 cases in each group. In the observation group, there were 15 male and 10 female patients, with ages ranging from 24 to 60 years (mean age of  $45.19 \pm 4.38$  years) and disease durations ranging from 6 to 24 months (mean duration of  $12.56 \pm 2.69$  months). In the control group, there were 14 male and 11 female patients, with ages ranging from 22 to 60 years (mean age of  $45.35 \pm 4.41$  years) and disease durations ranging from 6 to 26 months (mean duration of  $12.44 \pm 2.75$  months).

### 2.2. Inclusion and exclusion criteria

Inclusion criteria: (1) complete recording of all clinical data without omission or missing; (2) non-sleeping caused by non-organic lesions; (3) having sleeping conditions, but still having symptoms such as difficulty in falling asleep and early waking up for  $\geq 3$  months; (4) knowing the whole process of the study, participating voluntarily, and having good adherence to the study.

Exclusion criteria: (1) induced insomnia due to pathological factors, such as surgery, fever, pain, etc.; (2) psychiatric disorders that have a serious impact on sleep, such as schizophrenia, bipolar disorder, etc.; (3) serious circulatory disorders, such as digestive and hematopoietic disorders, etc.; (4) cranial and cerebral disorders; (5) unable to cooperate with the study due to other reasons.

### 2.3. Methods

The control group underwent routine care which included psychological support and health education for patients. Patients were advised to maintain regular sleep schedules, ensuring adequate sleep time. They were encouraged to follow a balanced and light diet, maintain a healthy lifestyle, and create a conducive living environment for sleep. Additionally, patients were instructed to adhere to the doctor's recommendations regarding the use of sleep medications.

The observation group received a combination of interventions:

- (1) Head meridian massage: Patients were positioned supine and advised to relax both physically and mentally, maintaining a quiet and focused state while guarding the dantian. Straight pressure was applied on the Yintang point to the forehead (Shenting acupoint) using the radial side of the thumb for approximately 2 minutes to open the Shenmen. Next, the outer eyebrows were massaged using the fingertips for about 2 minutes (pushing the Kangong acupoint, from Zanzhu acupoint to Yuyao acupoint, and then to Sizhukong acupoint). Following this, the operator pressed and kneaded the Baihui, Fengchi, Anmian, and Shenmen points for 2 minutes each. Depending on the patient's condition, additional points were pressed and kneaded, such as Taixi (for cardiac and renal disorders), Taichong (for hyperactivity of liver and yang), and Xinyu and Piyu (for cardiac and splenic deficiencies), with each point being treated for 2 minutes. Finally, the patient assumed a prone position, and the operator used their palms to knead the back from top to bottom repeatedly for 2–3 minutes.
- (2) Auricular acupoint plaster: Specific points such as Baihui, Fengchi, Anmian, and Shenmen were targeted. The operator ensured moderate pressure and sterilized the sensitive points with 75% ethanol. Using a probe, the operator located the sensitive points, and when the patient experienced soreness, numbness, or distension, Wangbuliushi paste was applied to those points. The operator then used the abdomen of their fingers to apply pressure to the points for 1 to 3 minutes, repeating this process 3 to 5 times daily. The Wangbuliushi paste was replaced every 3 days, alternating between both ears. Each ear received pressure

5 times for 2–3 minutes. The pressure was replaced once every 3 days, alternating between the ears, and every 5 sessions constituted 1 course of treatment. After the pressure application, patients were advised to avoid water. If the paste fell off, they were instructed to consult a doctor for replacement.

## 2.4. Observation indicators

- (1) Sleep quality: The sleep quality of the patients was assessed using the PSQI score<sup>[3]</sup>, the assessment included 8 items such as sleep quality, sleep time, etc., with a score of 0–21 points, with a higher score indicating worse sleep quality.
- (2) Nursing effect: The nursing effect was evaluated based on the changes in the PSQI score<sup>[4]</sup>. Very effective: If nighttime sleep time was equal to or greater than 6.5 hours, the PSQI scores decreased by 51% or more compared to pre-nursing care. Effective: If nighttime sleep time increased by 3 hours or more compared to pre-nursing care, but remained overall less than 6.5 hours, and the PSQI scores decreased by 26–50%. Ineffective: If there was no improvement in nighttime sleep time and PSQI score.

## 2.5. Statistical analysis

Statistical analysis was done using SPSS 22.0, the count data were written as percentages and analyzed by a  $\chi^2$  test while the measurement data (in line with the normal distribution) were written as mean  $\pm$  standard deviation (mean  $\pm$  SD) and analyzed by a *t*-test software automatically results.  $P < 0.05$  indicates statistical differences exist.

## 3. Results

### 3.1. Sleep quality

The PSQI score of the observation group after nursing was lower than that of the control group, as shown in **Table 1**.

**Table 1.** Sleep quality measurement

Group	Number of cases	PSQI (points)		<i>t</i>	<i>P</i>
		Before nursing	After nursing		
Observation group	25	16.23 $\pm$ 2.85	7.17 $\pm$ 1.41	14.2465	0.0000
Control group	25	16.35 $\pm$ 2.91	9.04 $\pm$ 1.96	10.4175	0.0000
<i>t</i>	-	0.1473	3.8724	-	-
<i>P</i>	-	0.8835	0.0003	-	-

### 3.2. Nursing effect

The total efficacy of nursing care in the observation group was higher than that in the control group, ( $P < 0.05$ ), as shown in **Table 2**.

**Table 2.** Nursing effect evaluation

Group	Number of cases	Very effective	Effective	Ineffective	Total efficacy (%)
Observation group	25	15	9	1	96.00
Control group	25	9	10	6	76.00
$\chi^2$	-	-	-	-	4.1528
<i>P</i>	-	-	-	-	0.0415

## 4. Discussion

Insomnia is characterized by high incidence and frequent recurrence. It manifests as persistent difficulties in falling asleep, staying asleep, or early waking, often leading to feelings of anxiety, tension, and other psychological issues. These factors exacerbate insomnia's severity and significantly impact patients' physical and mental well-being. Western medicine interventions for insomnia predominantly focus on routine care and the use of sedative medications. While drug interventions can assist patients in falling asleep and improve sleep quality to some extent, they come with a risk of addiction. Additionally, routine care lacks personalized and systematic approaches, making it challenging to help patients achieve long-term, high-quality sleep. As a result, current nursing practices may fall short of meeting the desired outcomes for patients with insomnia [5].

According to Chinese medicine theory, sleep regulation primarily involves the balance of "mind and spirit," which relies on the harmonious functioning of the body's yin, yang, and five elements. To address the pathology and nursing requirements of insomnia patients, this study introduces head meridian massage and auricular acupoint pressure plaster [6]. Therefore, combining the pathology and nursing needs of patients with insomnia, the study introduces head meridian massage and auricular acupoint pressure plaster. Head meridian massage, rooted in the theory of meridians and acupoints, targets specific acupoints on the head through massage to facilitate the smooth flow of meridians and collaterals, regulate qi and blood circulation, balance yin and yang energies, and promote a calm and tranquil state of mind. The ultimate goal is to effectively enhance sleep quality [7]. In traditional Chinese medicine theory, the ear belongs to the "gathering of the ancestral vessels," and all organs and organs of the human body can have a regular corresponding distribution in the auricle. The ear is closely connected to the human organs and meridians and is transmitted through each other's meridians. When the ear acupoints are pressed, corresponding stimulation is applied to the ear acupoints, which can achieve the effect of regulating the qi mechanism of the organs and balancing yin and yang. [8]. In this study, specific auricular points, including the center, endocrine, Shenmen, kidney, and sympathetic regions, were targeted to address the disease mechanism underlying insomnia. By stimulating these points, various therapeutic effects tailored to insomnia treatment were achieved. Stimulation of Shenmen aimed to benefit the Shaoyin heart meridian, promoting the flow of qi, relieving pain, cooling the blood, and inducing mental tranquility. Similarly, stimulation of the heart acupuncture point focused on clearing heart fire, regulating blood circulation, and promoting mental calmness. Additionally, stimulation of endocrine points aimed to unblock meridians and promote emotional balance. Stimulation of kidney acupuncture points aimed to tonify the heart and replenish the spirit. By combining and stimulating these points through auricular acupoint plaster, our approach aimed to harmonize internal organs, dispel disturbances, promote smooth flow of meridians and qi, balance qi and blood, and induce a state of mental calmness, ultimately facilitating better sleep quality and promoting sleep onset [9].

In the study of Wang *et al.* [10], 76 patients diagnosed with a heart-kidney non-interaction type of insomnia were selected as the subjects for observation. Following random grouping, 38 patients received conventional measures in the control group, while the remaining 38 patients in the observation group received a combination of auricular acupoint pressure plaster and Yongquan acupoint massage in addition to conventional measures. Results from the study indicated that following the nursing interventions, the observation group showed a significant improvement in sleep quality, with a post-intervention PSQI score of  $5.43 \pm 2.45$  points, compared to the control group's score of  $7.08 \pm 2.80$  points. This underscores the effectiveness of auricular pressure with Yongquan acupoint massage in enhancing sleep quality among patients, aligning with the findings of the present study.

## 5. Conclusion

The combined use of head meridian massage and auricular acupoint plaster has demonstrated promising outcomes in extending sleep duration and enhancing sleep quality among insomnia patients, offering significant clinical value and serving as a valuable reference for future applications. The straightforward and safe procedures involved in head circulation massage and auricular acupoint plaster are well-received by patients, making them suitable for long-term use to consistently improve sleep quality.

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## Disclosure statement

The authors declare no conflict of interest.

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