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Analysis of the Causes of Insomnia in Young and Middle-aged People and Nursing Intervention Strategies of Traditional Chinese and Western Medicine

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Abstract: *Objective:* To examine insomnia in the modern young and middle-aged population and explore nursing intervention strategies using traditional Chinese and Western medicine. *Methods:* A total of 255 inpatients and outpatients were sampled from Shenzhen Hospital of Traditional Chinese Medicine. The Sleep Questionnaire for Young and Middle-aged People was used to assess insomnia, and a linear regression model was applied for data analysis. *Results:* A total of 251 valid questionnaires were collected. Correlation analysis revealed a high incidence of insomnia among respondents. Linear correlation analysis indicated that mental illness or other underlying diseases leading to pain had a significantly positive effect on symptom improvement through Chinese and Western medicine treatments ($B = 0.763$, $P < 0.01$). Conversely, work or life pressures (emotional or financial issues) had a significantly negative impact on treatment effectiveness ($B = -0.503$, $P < 0.01$). Cross-analysis identified high life or work pressure as the primary cause of insomnia (70.1%). *Conclusion:* Insomnia is prevalent among the young and middle-aged in modern times, with high work or life pressure being the leading factor.

Keywords: Young and middle-aged; Insomnia; Traditional Chinese and Western medicine nursing; Intervention strategy

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1. Introduction

Insomnia is a condition characterized by difficulty in falling asleep naturally. It refers to the subjective experience of patients who are dissatisfied with the duration and quality of their sleep, impacting their daytime

work and life. Common symptoms include difficulty falling asleep, poor sleep quality, memory issues, and lack of concentration. Based on the cause, insomnia can be classified into two categories: primary and secondary [1].

Insomnia is one of the most common sleep problems. Epidemiological studies indicate that up to half of the population reported experiencing varying levels of sleep problems in a sleep quality survey conducted in the past month. Long-term insomnia not only significantly affects normal work and life but also increases the risk of further health complications. To standardize insomnia diagnosis and treatment in China, the "Chinese Expert Consensus on Definition, Diagnosis, and Drug Treatment of Insomnia" was published by a group of field professionals in 2006. This was followed by the "Chinese Adult Insomnia Diagnosis and Treatment Guidelines" launched in 2012 [1]. This guideline provides a more comprehensive and standardized approach to the diagnosis and treatment of insomnia in clinical practice. Standards for insomnia diagnosis and treatment, as well as international classifications, have also evolved over the years, adapting to new drugs, and domestic practices are continually refined based on clinical experience.

Sleep is essential to maintaining the body's basic physiological functions, and sleep quality directly affects people's health and quality of life. Standard sleep duration is about seven to eight hours per day, meaning that people spend about one-third of their lives sleeping, which is crucial for organ repair. Quality sleep promotes brain cell recovery and function, keeping individuals energetic, and improving learning and work efficiency. Modern scientific research has shown that quality sleep positively affects memory and can even enhance memory function during the day. It can be said that sleep is closely related to people's health.

Jing Yue Quanshu states: "Worry, fatigue, panic, and worry lead to sleeplessness, which often relates to a deficiency of true Yin and blood; Yin and Yang become imbalanced, causing restlessness" [2]. Thus, long-term insomnia can significantly impact physical and mental health. Insomnia can lead to daytime drowsiness, reduced physical function, and symptoms like nervousness, depression, and low mood. Prolonged insomnia may result in multi-system dysfunction, such as changes in immune function, emotional control disorders, and gastrointestinal dysfunction. In severe cases, it can lead to memory disorders, cognitive impairment, and difficulties in thinking. Common complications include obesity, diabetes, and high blood pressure. The effects of long-term insomnia on physical and mental health are substantial, making timely control and treatment essential.

The rapid increase in insomnia cases not only affects individual health but also contributes to social issues. According to global research by medical experts, modern economic development and the faster pace of work and life have led conditions like dementia, schizophrenia, and depression to become prevalent diseases with significant social and economic impacts, profoundly affecting personal and family life. The increased prevalence of these conditions is closely linked with insomnia, highlighting the importance of addressing it positively and proactively.

Insomnia remains a widespread concern. Generally, combined intervention research using both Chinese and Western medicine is limited. Therefore, studying the causes of insomnia in contemporary young and middle-aged people and exploring combined traditional Chinese and Western medicine intervention strategies is essential. This study mainly analyzes the primary factors influencing insomnia in young and middle-aged adults and proposes appropriate nursing intervention strategies using both traditional Chinese and Western medicine to alleviate insomnia and promote mental and physical health.

2. Methods

2.1. Survey subjects and content

2.1.1. Respondents

In this study, a random sampling method was used to conduct an online questionnaire survey at Shenzhen Traditional Chinese Medicine Hospital. This study was examined and approved by the ethics committee of Shenzhen Hospital of Traditional Chinese Medicine, China.

2.1.2. Survey content

A total of 255 questionnaires were distributed in this survey, and 251 questionnaires were returned, with a response rate of 98.4%. A total of 251 valid questionnaires were collected, achieving an effective rate of 100%. The main content of the survey included:

(1) Respondents' ages (under 29, 30-39, 40-49, 50 years or older).
(2) Factors contributing to insomnia (sleep duration, sleep onset time, pre-sleep activities, insomnia frequency).
(3) Main reasons for insomnia (high work pressure, sleep environment, irregular work and rest schedules, diet, illness, and other factors).
(4) Improvement status after TCM treatment at our hospital (significant improvement, slight improvement, or no improvement).

2.2. Data entry and analysis

2.2.1. Data entry

After completing the questionnaire collection, the three team members checked the data for completeness and accuracy, exported and organized the validated data, and entered it independently by two individuals. The data were statistically analyzed; after a final data check, they were imported into Excel and analyzed using SPSS26.0. Excel and Word were used to generate the required data visualizations.

2.2.2. Statistical analysis method

All data were double-entered into the computer by two individuals, and statistical analysis was performed using SPSS26.0 software. Chi-squared tests were used for categorical data, with $P < 0.05$ considered statistically significant.

2.3. Traditional Chinese and Western medicine treatment methods

For hospitalized patients, various therapies were administered, and their effects were observed, including drug therapy, transcranial magnetic therapy, cupping, gua sha, ear bean therapy, Chinese medicine acupuncture point patches, traditional Chinese medicine pillows, Chinese medicine foot baths, and Chinese medicine fumigation therapy.

3. Results

3.1. Analysis of the age proportion of subjects

A total of 251 patients were surveyed, all of whom were young and middle-aged. Among them, 166 patients were aged 29 years or below, accounting for 66.1%; 31 were aged 30 to 39, accounting for 12.4%; 28 were aged 40 to 49, accounting for 11.2%; and 26 were aged 50 or older, accounting for 10.4%. (See **Table 1**).

Table 1. Age proportion of patients

Age	Number of people	Proportion
Under 29	166	66.1%
Age 30–39	31	12.4 %
Age 40–49	28	11.2 %
Over 50	26	10.4%

3.2. Linear regression models

Table 2. Linear regression models

Model	Unstandardized coefficients		Significance	Collinearity statistics
	B	S.E.		VIF
(Constant)	2.312	0.545	0.000	
High stress at work or life (emotional or financial problems)	-0.503	0.168	0.003	1.017
Irregular schedules	-0.205	0.163	0.211	1.047
Eating problems (e.g., coffee drinking, late-night snacks)	-0.063	0.154	0.685	1.003
Sleep environment	0.086	0.154	0.579	1.021
Pain and difficulty sleeping due to mental or other diseases	0.763	0.163	.000	1.053
R^2			0.141	
F			8.036	
P			< 0.001	

Dependent variable: whether the symptoms were improved by traditional Chinese and Western medicine treatment (for inpatients)

Table 2 shows the linear regression model of this study and the following results were found:

(1) The fit of the linear regression model was low ($R^2 = 0.141 < 0.6$), meaning the results did not fully reflect the effects of variables such as work or life pressure (emotional or financial issues), irregular schedules, dietary habits (e.g., coffee consumption or late-night eating), sleep environment, and mental or other underlying diseases on the improvement in insomnia symptoms through Chinese and Western medicine treatment.

(2) VIF values were all below 5, indicating no multicollinearity among the five independent variables.

(3) The regression equation was significant ($F = 8.036$, $P < 0.001$), indicating that at least one of the five independent variables significantly affects the treatment effect of traditional Chinese and Western medicine.

(4) Pain and insomnia caused by mental or other underlying diseases had a significant positive impact on the improvement effect of TCM and Western medicine on insomnia symptoms ($B = 0.763 > 0$, $P < 0.01$). High work or life stress (emotional or financial problems) had a significant negative impact on the improvement effect of TCM and Western medicine on insomnia symptoms ($B = -0.503 < 0$, $P < 0.01$).

3.3. Analysis of results

3.3.1. Cross-analysis of insomnia frequency and age

Results showed that of 166 individuals under the age of 29, 9 (3%) had insomnia almost every day. In the 30–39 age group, 5 (16.1%) had insomnia almost every day; among the 28 individuals aged 40–49, 3 (10.7%) had insomnia almost every day. Among the 26 individuals over 50, 6 (23%) had insomnia almost every day. Analysis revealed that 46 individuals under 29 almost never had insomnia, a large proportion (27%), while the highest proportion of daily insomnia was among those over 50 (23%) (see **Table 3**). Chi-squared analysis showed a significant association between age and insomnia frequency ($\chi^2 = 43.391$, $P < 0.01$), indicating a significant correlation between age and frequency of insomnia.

Table 3. Insomnia frequency cross-analysis by age

Age	Frequency of insomnia					Total
	Almost every day	3–4 times a week	Once or twice a week	Once or twice a month	None/almost none	
Under 29	9	11	46	54	46	166
Age 30–39	5	7	11	4	4	31
Age 40–49	3	4	12	4	5	28
Over 50	6	8	8	4	0	26
Total	23	30	77	66	55	251

3.3.2. Analysis of main causes of insomnia

According to the results, the primary causes of insomnia were: high work or life stress (emotional or financial issues) in 176 cases (70.1%); irregular schedules in 162 cases (64.5%); dietary habits (e.g., coffee drinking, late-night eating) in 108 cases (43.0%); sleep environment issues in 121 cases (48.2%); and pain or difficulty sleeping due to mental or other underlying diseases in 90 cases (35.9%). Other causes accounted for 5 cases (2.0%). Thus, work or life stress was the most common cause (see **Table 4**).

Table 4. Analysis of influencing factors of insomnia

Causes of insomnia	Number of people	Proportion
Work or life stress (emotional or financial problems)	176	70.1%
Irregular schedules	162	64.5%
Eating problems (e.g., coffee drinking, late-night snacks)	108	43.0%
Sleep environment	121	48.2%
Pain and difficulty sleeping due to mental or other diseases	90	35.9%
Others	5	2.0%

3.3.3. Analysis of improvement in patients treated with traditional Chinese and Western medicine

The integrated treatment methods in this study included drug therapy, transcranial magnetic therapy, cupping, scraping, ear acupoint pressure with beans, acupuncture point patches, traditional medicine pillows, foot baths, and fumigation. After treatment, 140 patients were surveyed regarding improvement. Among hospitalized patients, 69 (49.2%) showed great improvement, 57 (40.7%) showed slight improvement, and 14 (10%)

showed no improvement. The majority of hospitalized patients (49.2%) reported significant improvement after treatment with traditional Chinese and Western medicine (see **Table 5**).

Table 5. Improvement in treatment with traditional Chinese and Western medicine

Symptom improvement	Number of people	Proportion
Great improvement	69	27.5%
Slight improvement	57	22.7%
No improvement	14	5.6%
Non-hospitalized patients	111	44.2%

4. Discussion

From the perspective of Western medicine, neurosis is a temporary disorder of brain function, with sleep disorder being one of its main symptoms, and there is no proven organic disease as the basis. The etiology is primarily related to psychosocial stress and personality traits, and the course of the disease is prolonged, often recurring due to life events [3]. From the perspective of traditional Chinese medicine (TCM), insomnia is referred to as "insomnia" (失眠). Modern factors, irregular diets, and overwork can lead to dysfunction of the viscera, causing blood stasis, an imbalance of Yin and Yang, and disease. Mild insomnia often resolves on its own without the need for medication or interventions, but those with chronic insomnia may seek hospital treatment. Thus, for insomnia treatment, a combined approach of traditional Chinese and Western medicine nursing can be used to address the underlying pathogenesis.

Clinically, to improve patients' sleep quality and reduce sleep onset time, medications such as anti-anxiety drugs, antidepressants, and sedative-hypnotics are prescribed based on the patient's main symptoms. Additionally, transcranial magnetic therapy is a method to improve sleep quality. Through electromagnetic induction, transcranial magnetic therapy can stimulate and regulate nerves, creating an electric field response in brain tissue and thereby modulating cortical excitability. For patients with depression and insomnia, who often have heightened cortical arousal, transcranial magnetic therapy can effectively reduce cortical excitability and improve sleep quality [4].

According to TCM's Tibetan image theory, the heart governs the blood vessels and the mind. When the mind is disturbed, symptoms such as restlessness, insomnia, and vivid dreaming may occur. The spleen governs thought; excessive thinking can impair spleen function, leading to blood deficiency and symptoms such as vertigo. The liver plays a crucial role in regulating emotions and aiding spleen and stomach digestion. Emotional disturbances are related to the liver's dispersing function, where insufficient dispersion leads to depression and sadness, while excessive dispersion can cause headaches. Therefore, regulating the heart, liver, and spleen is key to treating insomnia.

For insomnia, TCM suggests that cupping therapy can warm the meridians, promote blood circulation, dispel wind and cold, and remove toxins. Scraping therapy mobilizes the body's meridian system, relaxes tendons, clears the meridians, promotes blood circulation, and removes stasis. Regulating blood can balance Yin and Yang, thereby calming the viscera and promoting sleep. Through stimulation of meridians and acupoints, it helps regulate the body's organs and systems, activating collaterals and promoting restful sleep [5]. Key acupoints include Xinshu and Pishu on both sides, Sanyinjiao, Shenmen, and Taibai, with cupping applied on

the Governor Vessel, bladder meridian, and Sanyinjiao on both sides.

The *Huangdi Neijing* (*Yellow Emperor's Inner Classic*) mentions that "the ear is the sea of meridians," indicating a physiological relationship between the auricle and various body parts. Auricular bean pressing uses the seeds of King's leaves and Cassia seeds to stimulate auricular points, open meridians, regulate blood, and harmonize organs for treatment purposes. For insomnia, acupoints like Shenmen, subcortical, endocrine, kidney, liver, and heart are targeted. Patients press each acupoint 30 times, three times daily, for no more than one minute. Effective pressing induces a sensation of soreness, numbness, or mild pain. The opposite ear is treated the next day, with a seven-day course of treatment. According to meridian flow theory, the body's blood circulates through organs and veins in a daily cycle, linking body functions to specific times. Adhering to this cycle enhances treatment efficacy. For heart-spleen deficiency insomnia, auricular pressing at 10 a.m., noon, and 8 p.m. is particularly effective [6].

Clinically, insomnia is often accompanied by vertigo. Alleviating insomnia can reduce vertigo, and better sleep quality can decrease vertigo frequency. One insomnia treatment involves applying a small amount of Wuzhuyu and rice vinegar to the Yongquan points on both feet, promoting blood flow and relieving cold. TCM pillows, filled with ingredients like semen, bamboo leaves, chrysanthemum, and silk, support sleep. A pillow height of 5–10 cm is recommended, as a high pillow can restrict blood flow to the brain, worsening insomnia symptoms and affecting sleep quality [7].

From the perspective of TCM meridians, the Zusan Yang and Zusan Yin meridians converge on the foot, connecting with other body meridians. A foot bath can stimulate foot acupoints, improve blood circulation, and indirectly regulate viscera function, promoting sleep. For a TCM foot bath, the formula includes 20 g of corydalis tuber, 10 g each of *Ziziphus jujuba*, *Os Draconis*, *Cyperus rotundus*, and *Albizia julibrissin*, 5 g each of safflower and cinnamon, and 2 g of licorice. The ingredients are soaked for 30 minutes, then decocted in water twice. The resulting 3,000 mL of herbal solution is poured into a foot bath to cover the ankles, with the water temperature maintained at 42–45°C. Patients use the foot bath nightly, rubbing their feet continuously for 20–30 minutes, with a treatment course of two weeks [8].

The *Huangdi Neijing* also states that "evil factors" are expelled through sweat, and these factors can be resolved through sweating. TCM fumigation, using hot medicinal steam, opens pores and induces sweating, thereby expelling toxins and regulating blood to alleviate insomnia. The Sleeping decoction for fumigation includes 10 g of *Ziziphus jujuba*, 10 g of *Platycadus orientalis*, 30 g of *Albizia julibrissin*, 30 g of *Polygoni Multiflori Caulis*, 30 g of *Poria* with *Hostwood*, and 10 g of *Polygala tenuifolia*. Additions such as rose and mint address liver stasis, gentian and cape jasmine tackle liver fire, while *Atractylodes Rhizoma*, *Poria cocos*, and *Aucklandia lappa Decne* benefit spleen deficiency. If the heart and kidney are unbalanced, *Coptidis Rhizoma* and cinnamon are included [9].

5. Conclusion

The purpose of this paper is to explore the causes of insomnia in young and middle-aged people and the effects of integrated traditional Chinese and Western medicine nursing interventions for insomnia patients. The specific conclusions are as follows:

(1) Based on the investigation results, it was concluded that insomnia caused by work or life pressure (emotional or economic problems) accounted for the largest proportion of cases. Among the patients,

those whose insomnia improved after integrated traditional Chinese and Western medicine interventions also accounted for the largest proportion.

(2) Transcranial magnetic stimulation is a safe and non-invasive physiotherapy method that can effectively relieve sleep disorders and improve sleep quality [10].

(3) Sedatives, hypnotics, antidepressants, and other drugs are commonly used in the treatment of insomnia in Western medicine. Although these medications can temporarily relieve symptoms, they cannot provide a permanent cure, and long-term use often leads to adverse reactions. Patients may develop drug dependence and may even refuse to take the medication due to psychological concerns, making the effect of a radical cure less ideal. During treatment, the dosage of Western medicine can be gradually reduced to avoid side effects, while also compensating for the slow onset of traditional Chinese medicine [11,12].

(4) From the perspective of traditional Chinese medicine, excessive worry, accumulation, and depression can deplete the organs of blood, Yin, and Yang, leading to a loss of inner peace and disturbance by external factors, which ultimately results in insomnia [13]. Therefore, it is necessary to strengthen psychological nursing, effectively soothe patients, and guide them to release negative emotions in appropriate ways. This approach helps restore psychological balance, regulates blood flow, protects the spirit internally, and improves sleep quality.

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Disclosure statement

The authors declare no conflict of interest.

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