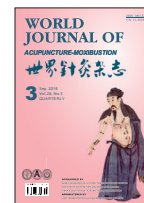




Contents lists available at ScienceDirect

World Journal of Acupuncture – Moxibustion

journal homepage: www.elsevier.com/locate/wjam

Clinical Research

Scalp acupuncture for sleep disorder induced by pre-examination anxiety in undergraduates[☆]

Guo-juan DONG (董国娟), Di CAO (曹迪), Yue DONG (董越), Jing ZHANG (张敬), Fu-chun WANG (王富春)*

Changchun University of Traditional Chinese Medicine, Changchun 130117, Jilin Province, China (长春中医药大学, 吉林长春 130117, 中国)

ARTICLE INFO

Article history:

Available online 11 September 2018

Keywords:

Scalp acupuncture

Pre-examination anxiety in undergraduates

Sleep disorder

ABSTRACT

Objective: To explore the therapeutic effects of scalp acupuncture on sleep disorder induced by pre-examination anxiety in the undergraduates.**Methods:** A total of 60 undergraduates with sleep disorder induced by the final examination anxiety were randomized into three groups, named a control group (20 cases), a traditional acupuncture group (20 cases) and a scalp acupuncture group (20 cases). In the control group, no any treatment was given. In the traditional acupuncture group, acupuncture was given at Sishēncōng (四神聪EX-HN1), bilateral Shénmén (神门HT 7) and bilateral Sānyīnjiāo (三阴交SP 6). The needles were manipulated with the even-needling technique and retained for 30 min. In the scalp acupuncture group, acupuncture was applied to upper-middle line of occiput (枕上正中line MS 12), middle line of vertex (顶中线 MS 5) and middle line of forehead (额中线 MS 1). The needles were manipulated with the even-needling technique and retained for 30 min. The treatment was given once a day and 5 treatments made one course. There were 2 days at interval among the courses. The therapeutic effects were analyzed statistically after 4 courses of treatment. Before and after treatment, the Hamilton anxiety scale (HAMA) and the Pittsburgh sleep quality index (PSQI) were adopted to evaluate the conditions of pre-examination anxiety and sleep in the patients.**Results:** In comparison of PSQI score, compared with those before treatment, the score in the scalp acupuncture group (12.95 ± 1.76 vs 15.95 ± 1.82) and in the traditional acupuncture group (13.75 ± 1.62 vs 15.75 ± 1.86) after 1-week of treatment were reduced (both $P < 0.05$). Compared with control group, the score in the scalp acupuncture group (12.95 ± 1.76 vs 15.78 ± 2.02) and in the traditional acupuncture group (13.75 ± 1.62 vs 15.78 ± 2.02) were better (both $P < 0.05$). The difference was not significant between the scalp acupuncture group and the traditional acupuncture group ($P > 0.05$). In 2 and 4 weeks of treatment, as well as 1 week after treatment termination, compared with the control group at the same time point, the scores in the scalp acupuncture group (in 2-week treatment: 8.95 ± 1.88 vs 15.94 ± 1.89 , in 4-week treatment: 5.95 ± 1.05 vs 16.5 ± 1.95 , 1 week after treatment termination: 4.7 ± 0.77 vs 9.78 ± 2.10) and the traditional acupuncture group (in 2-week treatment: 11.15 ± 1.31 vs 15.94 ± 1.89 , in 4-week treatment: 8.05 ± 0.89 vs 16.5 ± 1.95 , 1 week after treatment termination: 6.25 ± 0.85 vs 9.78 ± 2.10) were all lower (all $P < 0.05$) separately. The scores in the scalp acupuncture group were superior to the traditional acupuncture group (all $P < 0.05$). In comparison of HAMD score, compared with those before treatment, the score in the scalp acupuncture group (22.4 ± 5.31 vs 25.2 ± 6.18) and in the traditional acupuncture group (22.4 ± 5.31 vs 25 ± 5.97) after 1-week of treatment were reduced (both $P < 0.05$). Compared with control group, the score in the scalp acupuncture group (22.4 ± 5.31 vs 23.28 ± 5.53) and in the traditional acupuncture group (22.4 ± 5.31 vs 23.28 ± 5.53) were better (both $P < 0.05$). The difference was not significant between the scalp acupuncture group and the traditional acupuncture group ($P > 0.05$). In 2 and 4 weeks of treatment, as well as 1 week after treatment termination, compared with the control group at the same time point, the scores in the scalp acupuncture group (in 2-week treatment: 18.5 ± 4.56 vs 24.22 ± 5.22 , in 4-week treatment: 5.8 ± 3.52 vs 21.22 ± 6.71 week after[☆] Supported by National Students' Program for Innovation and Entrepreneurship Training: 201410199052.

* Corresponding author.

E-mail address: fuchenwang@126.com (F.-c. WANG).

treatment termination: 4.55 ± 2.72 vs 11.78 ± 9.36) and the traditional acupuncture group (in 2-week treatment: 17.5 ± 4.59 vs 24.22 ± 5.22 , in 4-week treatment: 6.95 ± 3.33 vs 21.22 ± 6.7 , 1 week after treatment termination: 5.8 ± 2.76 vs 11.78 ± 9.36) were all lower (all $P < 0.05$) separately. The scores in the scalp acupuncture group were superior to the traditional acupuncture group (all $P < 0.05$). In 4-week treatment and 1 week after treatment termination, compared with control group, the total effective rates in the traditional acupuncture group (in 4-week treatment: 95% vs 11%, 1 week after treatment termination: 100% vs 83.33%, both $P < 0.05$) and the scalp acupuncture group (in 4-week treatment: 95% vs 11%, 1 week after treatment termination: 100% vs 83.33%, both $P < 0.05$) were better and the difference was not significant between the traditional acupuncture group and the scalp acupuncture group (both $P > 0.05$). **Conclusion:** Both scalp acupuncture and traditional acupuncture therapies are effective on sleep disorder induced by pre-examination anxiety in the undergraduates. The scalp acupuncture therapy achieves the better effects on the instant relief of symptoms.

© 2018 Published by Elsevier B.V. on behalf of World Journal of Acupuncture Moxibustion House.

The pre-examination anxiety refers to a series of anxious state due to overstress in students when the examination approaches. It is manifested as emotional stress, combined with sleep disorder and vegetative nervous disorder. Because of the increase of social stress and competition, as well as the high expectation of parents to their children, the pre-examination anxiety becomes more common in the undergraduates and the symptoms are getting obvious. The investigation showed [1] that the sleep disorder due to anxiety was much more serious in students. In recent over 20 years, some scholars [2] in China have been engaged in the research on pre-examination anxiety in terms of age, personality differences and intelligence and have achieved the valuable results. Lately, it was discovered in the most representative research [3] that the percentage of the moderate and severe examination anxiety in undergraduates was up to 21.02%. In the clinical trial by Yang et al. [4], it was observed that 148 of 679 medicos suffered from severe examination anxiety, accounting for 21.8%.

In China, followed by migraine, the sleep disorder becomes the second common disease in the Department of Neurology. Although sleep disorder has no risk to life, it seriously reduces the quality of life in people. Hence, the prevention and treatment of sleep disorder becomes the key of medical research. The clinical research [5] indicated that acupuncture at the back-shu points, the cluster-needling technique of scalp acupuncture and acupuncture at the extraordinary points had achieved the good effects on sleep disorder. Scalp acupuncture works directly on the head, which is in compliance with the rule of acupuncture, “where is the point, where is the indication”. Additionally, scalp acupuncture has no toxic side effects, is simple in operation and free from the medicine dependence. Hence, the application of scalp acupuncture in this research may provide the theoretic evidence for clinical practice.

General information

A total of 60 undergraduates with pre-examination anxiety and poor sleep were collected in Changchun University of Traditional Chinese Medicine, from May 21 to July 10, 2014, including 21 males and 39 females, at the average age of (21 ± 0.94) years and the sick duration of (2.3 ± 0.5) weeks. According to the random number table method, they were divided into three groups, named a control group, a traditional acupuncture group and a scalp acupuncture group, 20 cases in each one. Before treatment, the difference was not significant in gender, sick duration, HAMA (Hamilton anxiety scale) score and PSQI (Pittsburgh sleep quality index) score in the patients among the three groups. This clinical research was approved by the Medical Ethics Committee of the Affiliated Hospital of Changchun University of Traditional Chinese Medicine. Approval Number: CCZYFYLL2014- Approved 043.

Inclusion and exclusion criteria

(1) Inclusion criteria

Induced by examination stress, HAMA score ≥ 15 , PSQI score ≥ 7 ; No psychotropic drug or anti-anxiety medication in recent 2 weeks; Good compliance, no other therapies used during research; Participated willingly and signed Inform Consent.

(2) Exclusion criteria

Induced by the systemic disease, such as fever, cough, surgery and pain, as well as by the external interference factors except examination stress; Complicated with severe primary diseases in cardiovascular system, lung, liver, kidney and hemopoietic system.

Therapeutic methods

Materials

Acupuncture needles (0.25 mm \times 25 mm, 0.25 mm \times 40 mm, Huatuo brand), 75% alcohol and cottons were used.

Control group

No treatment was given.

Traditional acupuncture group

Point selection: Sishéncōng (四神聰EX-HN1), bilateral Shénmén (神門HT 7) and bilateral Sānyīnjiāo (三陰交SP 6) in reference to *Meridians and acupoints* [6]

Manipulation: The patient was in sitting or supine position. The needles, 0.25 mm \times 25 mm or 0.25 mm \times 40 mm, were inserted at the above acupoints, manipulated with the even-needling technique and retained for 30 min.

Scalp acupuncture group

Point selection: upper-middle line of occiput (枕上正中线MS 12), middle line of vertex (頂中线MS 5) and middle line of forehead (額中线MS 1) in reference to *Standardized manipulations of acupuncture and moxibustion – Part 2: Scalp acupuncture* (GB/T 21709.2-2008) [7]

Manipulation: The patient was in sitting or supine position. The needle was inserted quickly, at 10° – 15° with the scalp surface, beneath the galea, and 1–1.5 cm in depth along the scalp, in reference to *Techniques of acupuncture and moxibustion* [8].

In the traditional acupuncture group and the scalp acupuncture group, the treatment started 4 weeks before examination, once a

Table 1Comparison of PSQI scores in the patients of sleep disorder induced by pre-examination anxiety before and after treatment ($\bar{x} \pm s$, scores).

Group	Patients	Before treatment	1-Week treatment	2-Week treatment	4-Week treatment	1 Week after treatment termination
Control	18	15.78 \pm 2.21	15.78 \pm 2.02	15.94 \pm 1.89	16.5 \pm 1.95	9.78 \pm 2.10
Traditional acupuncture	20	15.75 \pm 1.86	13.75 \pm 1.62 ^{a,b}	11.15 \pm 1.31 ^b	8.05 \pm 0.89 ^b	6.25 \pm 0.85 ^b
Scalp acupuncture	20	15.95 \pm 1.82	12.95 \pm 1.76 ^{a,b}	8.95 \pm 1.88 ^{b,c}	5.95 \pm 1.05 ^{b,c}	4.7 \pm 0.77 ^{b,c}

^a Compared with that before treatment in the same group, $P < 0.05$.^b Compared with the control group after treatment at the same time point, $P < 0.05$.^c Compared with the traditional acupuncture group after treatment at the same time point, $P < 0.05$.**Table 2**Comparison of HAMA scores in the patients of sleep disorder induced by pre-examination anxiety before and after treatment ($\bar{x} \pm s$, scores).

Group	Patients	Before treatment	1-Week treatment	2-Week treatment	4-Week treatment	1 Week after treatment termination
Control	18	25.67 \pm 6.55	23.28 \pm 5.53	24.22 \pm 5.22	21.22 \pm 6.7	11.78 \pm 9.36
Traditional acupuncture	20	25 \pm 5.97	22.4 \pm 5.31 ^{a,b}	17.5 \pm 4.59 ^b	6.95 \pm 3.33 ^b	5.80 \pm 2.76 ^b
Scalp acupuncture	20	25.2 \pm 6.18	22.4 \pm 5.31 ^{a,b}	18.5 \pm 4.56 ^{b,c}	5.8 \pm 3.52 ^{b,c}	4.55 \pm 2.72 ^{b,c}

^a Compared with that before treatment in the same group, $P < 0.05$.^b Compared with the control group after treatment at the same time point, $P < 0.05$.^c Compared with the traditional acupuncture group after treatment at the same time point, $P < 0.05$.

day. The needles were manipulated with the even-needling technique for 5 min and retained for 30 min in each treatment. Five treatments made one course. There were 2 days at interval among treatment courses. Totally, 4 courses of treatment were required. Separately, in the week 1, 2 and 4 of treatment, the indexes were observed and recorded. One follow-up by phone was given 1 week after treatment termination. HAMA and PSQI questionnaires filled by the patients were taken as the evidence for observation.

Statistical analysis

EXCEL and SPSS 17.0 software were provided. The measurement data were expressed with $\bar{x} \pm s$ and the t test was adopted. $P < 0.05$ indicated the significant difference. The Ridit analysis was used for the ranked data.

Results

Observation indexes

The anxiety index and sleep quality were taken as the observation indexes. The sleep quality was determined by PSQI score and anxiety by HAMA score. The deduction rate = [(total score at the baseline – the total score after treatment) / total score at the baseline] \times 100%. HAMA and PSQI scores were calculated in the patients when enrolled, in 1, 2 and 4 weeks of treatment as well as 1 week after treatment termination separately. Two cases in the control group were lost follow up.

Observation of therapeutic effects

The effect evaluation criteria were as follows: Cured: PSQI score was 0–5 points and the HAMA deduction rate was $\geq 75\%$; Remarkably effective: $50\% \leq$ the HAMA deduction rate $< 75\%$ and PSQI score was 6–10 points; Effective: $25\% \leq$ the HAMA deduction rate $< 50\%$ and PSQI score was 11–15 points; Failed: the HAMA deduction rate was $< 25\%$ and PSQI score: 16–20 points.

(1) Comparison of PSQI scores in the patients of the three groups before and after treatment for sleep disorder induced by pre-examination anxiety

In 1-week treatment, the scores were all reduced as compared with those before treatment in the scalp acupuncture group and the traditional acupuncture group (both $P < 0.05$). The

score in the scalp acupuncture group and that in the traditional acupuncture group were lower than the control group (both $P < 0.05$). The difference was not significant between the scalp acupuncture group and the traditional acupuncture group ($P > 0.05$). In 2 and 4 weeks of treatment, as well as 1 week after treatment termination, the scores in the scalp acupuncture group and the traditional acupuncture group were all lower than the control group at the same time point (all $P < 0.05$) separately. The score in the scalp acupuncture group was superior to the traditional acupuncture group ($P < 0.05$). See Table 1 for details.

(2) Comparison of HAMA scores in the patients of the three groups before and after treatment for sleep disorder induced by pre-examination anxiety

In 1-week treatment, the score in the scalp acupuncture group and that in the traditional acupuncture group were reduced as compared with those before treatment (both $P < 0.05$). The score in the scalp acupuncture group and that in the traditional acupuncture group were lower than the control group (both $P < 0.05$). The difference was not significant between the scalp acupuncture group and the traditional acupuncture group ($P > 0.05$). Separately, in 2 and 4 weeks of treatment, as well as 1 week after treatment termination, the scores in the scalp acupuncture group and the traditional acupuncture group were lower than the control group at the same time point (all $P < 0.05$). The score in the scalp acupuncture group was lower than the traditional acupuncture group ($P < 0.05$). See Table 2 for details.

(3) Comparison of the clinical effects on sleep disorder induced by pre-examination anxiety in the patients of the three groups

In 4-week treatment and 1-week after treatment termination, the total effective rates in the traditional acupuncture group were better than the control group (both $P < 0.05$) and the differences were not significant in comparison of the two groups (both $P > 0.05$). See Tables 3 and 4.

Discussion

Traditional Chinese medicine believes that anxiety is in the category of mental disorder with heart dysfunction involved and its clinical manifestations are similar to palpitation, fear and fright. The etiology of anxiety is related to the internal injury of

Table 3

Comparison of the total effective rates in the patients of sleep disorder induced by pre-examination anxiety in 4-week treatment (cases).

Group	Patients	Cured	Remarkably effective	Effective	Failed	Total effective rate (%)
Control	18	0	0	2	16	11.11
Traditional acupuncture	20	14	4	1	1	95 ^a
Scalp acupuncture	20	16	2	1	1	95 ^a

^a Compared with control group, $P < 0.05$.

Table 4

Comparison of the total effective rates in the patients of sleep disorder induced by pre-examination anxiety 1 week after treatment termination (cases).

Group	Patients	Cured	Remarkably effective	Effective	Failed	Total effective rate (%)
Control	18	8	4	3	3	83.33
Traditional acupuncture	20	18	2	0	0	100 ^a
Scalp acupuncture	20	16	2	1	0	100 ^a

^a Compared with control group, $P < 0.05$.

emotional factors, congenital weakness and invasion of external pathogens. The location of sickness is in the heart, spleen and lung. The *yin* deficiency and fire hyperactivity, *qi* stagnation and phlegm heat are commonly considered in pathogenesis. In the study of western medicine, anxiety-induced insomnia is treated with two regimens, the drug treatment and the non-drug treatment. Currently, the common drugs for anxiety and insomnia include antidepressant [9], antipsychotic drugs, benzodiazepines, non-benzodiazepines, antihistamines, hormone replacement therapy, etc. The non-drug treatment includes behavioral therapy, relaxation therapy, cognitive therapy, Morita therapy, etc. At present, the biggest flaw of western medicine is the drug-induced side effects and the long-term medication with some drugs is at the risk of abuse [10].

Sleep disorder refers to the abnormal sleep quantity and the abnormal behavior in sleep, including insomnia, somnolence, teeth grinding, sleepwalking, etc. The sleep disorder induced by pre-examination anxiety is commonly manifested as insomnia. The patients with insomnia have emotional dysfunctions generally. Using the self-rating anxiety scale (SAS), the self-rating depression scale (SDS) and the state-trait anxiety inventory, the evaluation was conducted by Pan et al. [11] in 65 patients with primary insomnia and 67 people with normal sleep. The results showed that anxiety/depression of various degrees occurred in the patients of primary insomnia. PSQI, SAS and Beck anxiety inventory (BAI) were adopted in the study by He et al. [12] in the patients with insomnia and those with normal sleep. The results indicated that the sleep quality was inversely proportional to the scores of anxiety and depression. It is suggested that the sleep quality is closely related to the anxiety/depression in the patients with insomnia. It was discovered in the investigation by Ford and Karaerow [13] that 44.4% of the patients with insomnia presented a series of mental and healthy problems, such as anxiety, depression and drug and alcohol dependence. It was shown in the 1-year follow-up that the incidence of mental disorder in the insomnia group was higher by 2 times as compared with the normal group.

Even though being burgeoning at home and abroad in recent years, the study on sleep disorder has been early recorded since the ancient time. *Huángdīnèijīng* (《黄帝内经》The Yellow Emperor's Inner Classic) says that the stomach discomforts lead to poor sleep. It is indicated in *Jīngyùquánshū* (《景岳全书》The Complete Works of [Zhang] Jing-yue) that sleep is dominated by the spirit. The normal spirit determines good sleep, and the disturbed spirit results in poor sleep. *Língshū* (《灵枢》Miraculous Pivot) mentions that the harmonized spirit results from the free flow of blood. Thus it can be seen that sleep disorder is related to spirit, diet and physical exertion. It has been early recorded in ancient time that acupuncture

is effective in the treatment of insomnia through balancing *yin* and *yang*, promoting meridian circulation, strengthening the anti-pathogenic *qi* and eliminating pathogens to improve sleep quality. Scalp acupuncture is a kind of new acupuncture therapy, in which, the needles are inserted along the specific areas (stimulating areas) transversely beneath the scalp in the treatment of disorders in the body [14]. It is developed by the integration of traditional acupuncture and the cerebral cortical bioholography theory in western medicine. Through a large amount of clinical practice in recent years, it is concluded that scalp acupuncture therapy is simple in operation, satisfactory in efficacy and especially significant in the therapeutic effects on cerebral diseases.

In the research, EX-HN1, HT 7 and SP 6 were selected in combination in the traditional acupuncture group. The combination of these acupoints presents the coordination of the heaven, the human being and the earth. EX-HN1 is located on the head, representing the heaven, HT 7, the acupoint of the hand-*shaoyin* meridian of heart, located on the wrist, representing the human being and SP 6, the acupoint of the foot-*taiyin* meridian of spleen, located on the leg, representing the earth [15]. This acupoint prescription acts on tranquilizing the mind and regulating the essence, *qi* and spirit in human body and achieves the good effects on insomnia. In the scalp acupuncture group, MS 12, MS 5 and MS 1 were selected. MS 12 is located on the occiput, the line from GV 18 to GV 17, 1.5 *cun* in length. MS 5 is located on the vertex, the line from GV 20 to GV 21. MS 1 is located 0.5 *cun* within the anterior hairline, 1 *cun* long from GV 24 straight down along the meridian [16]. All of these scalp points (lines) are overlapped with the running course of the governor vessel on the head. The governor vessel starts from the uterus, runs posteriorly upward along the spine and enters the brain. It pertains to the kidney, communicates with the heart and governs *yang qi* of the whole body [17]. *Sùwèn jìzhù* (《素问集注》Collected Commentaries on the 'Plain Questions') records that the spiritual *qi* of *yang* in the whole body runs upward and gets together on the head, the marrow essence gathers in the brain. Hence, the head is the place of essence, marrow and spirit. Therefore, acupuncture at MS 12, MS 5 and MS 1 acts on nourishing the heart, calming down the mind, motivating the congenital *qi* and filling up brain marrow to achieve tranquilization and improve sleep quality eventually.

In 1-week treatment, PSQI and HAMA scores were all reduced as compared with those before treatment in the scalp acupuncture group and the traditional acupuncture group. The scores in the scalp acupuncture group were superior to the control group, and the differences were not significant between the scalp acupuncture group and the traditional acupuncture group. In 2 and 4 weeks of treatment, as well as 1 week after treatment termination, the

scores in the scalp acupuncture group and the traditional acupuncture group were lower than the control group at the same time point (all $P < 0.05$). The scores in the scalp acupuncture group were lower than the traditional acupuncture group. In 4-week treatment and 1 week after treatment termination, the total effective rates in the scalp acupuncture group and the traditional acupuncture group were higher than the control group, but the difference was not significant between the scalp acupuncture group and the traditional acupuncture group.

In summary, scalp acupuncture achieves the quite satisfactory effects on sleep disorder induced by pre-examination anxiety in the undergraduates and its instant effects for relieving the symptoms are better than the traditional acupuncture therapy. Hence, scalp acupuncture is more applicable in clinical practice. The anxiety and sleep disorder are aggravated in tendency as the examination approaches and they may be self-cured when the examination ends. Both anxiety and insomnia influence the general state of the students during the review time at the end of school term and during examination as well. Consequently, the learning effects are disturbed. In this research, the points of scalp acupuncture are located on the running course of the governor vessel and they are positioned easily. This therapy is safe in operation and apt to be promoted in the primary medical service organization, such as community clinic. It is suggested giving more consideration to scalp acupuncture therapy in clinical treatment of sleep disorder.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:[10.1016/j.wjam.2018.09.003](https://doi.org/10.1016/j.wjam.2018.09.003).

References

- [1] Yang BF, Zhang ZJ, Yue XT, Ji F. Study of sleep quality and anxiety/depression in medical college students. *Chin J Behav Med Brain Sci* 2010;9(5):346–8.
- [2] Ge MG, Pao Q. Relationship of examination anxiety with intelligence and personality. *Chin Mental Health J* 1995;9(3):105–6.
- [3] Hu CJ, Liu LY, Yang Y. An investigation on entrants' anxious status in testing. *China J Health Psychol* 2008;16(11):1207–9.
- [4] Yang RT, Zou ZF, Liang YX, et al. A study of the medico's test anxiety and cognitive factors. *J Guangdong Pharm Univ* 2005;21(4):482–3.
- [5] Zhang X. The clinical and experimental research of the better plan and curative effects appraisal of the treatment of insomnia by acupuncture. *Heilongjiang Univ Tradit Chin Med* 2009.
- [6] Shen XY. Meridians and acupoints. Beijing: China Press of Traditional Chinese Medicine; 2009.
- [7] General administration of quality supervision, inspection and quarantine of the People's Republic of China, standardization administration of the People's Republic of China. Standardized manipulations of acupuncture and moxibustion. Part 2: scalp acupuncture, Beijing: Standards Press of China; 2008. GB/T 21709.2-2008.
- [8] Wang FC. Techniques of acupuncture and moxibustion. Shanghai: Shanghai Scientific & Technical Publishers; 2009.
- [9] Wu G, Huo FL, Wu HB. Progression of medication on insomnia. *Mod J Integr Tradit Chin West Med* 2004;13(6):835–6.
- [10] Ning XH, Yin DL. Research progress of antianxiety drugs. *Fine Spec Chem* 2003;11(2):3.
- [11] Pan JY, Zhao GY. Research of anxiety-depression in the patients of primary insomnia. *Chin J Behav Med Sci* 2000;9(3):178.
- [12] He X, Hong J. Relevant research of sleep quality and depression-anxiety in the patients of insomnia. *Chin J Phys Med Rehabil* 2002;24(8):500–1.
- [13] Ford DE, Kamerow DB. Epidemiologic study of sleep disturbances and psychiatric disorders. An opportunity for prevention. *JAMA* 1989;262:1479–84.
- [14] Wang F, Guo CC, Jia SW. Study on effects of local infiltration anesthesia of the scalp point area on conduction of electroacupuncture signs by means of SPECT. *Chin Acupunct Moxibustion* 2002;08:40–3 +70.
- [15] Han DY, Zhou D, Jiang HL, Wang CH. Professor Wang Fuchun's experience in treating insomnia. *Chin J Acupunct Moxibustion* 2014;3(3):5–7.
- [16] Zeng L. 48 cases of insomnia treated with scalp acupuncture. *J Clin Acupunct Moxibustion* 2005;21(8):17.
- [17] Song Y, Zhao CH, Zhu XH. Insomnia treated with the theory of the Governor Vessel. *J Sichuan Tradit Chin Med* 2005;23(12):11–12.