

## Pre-Post study on Efficacy of Backshu Massage in Improving Quality of Sleep among Medical College Students

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### Abstract

### Original Research Article

The aim of the study is to determine the Efficacy of backshu massage in improving the quality of sleep. It is found that the quality of sleep is greatly affected among many students that results in stress and other lifestyle disorders. Many studies have stated that acupuncture points in backshu has positive impact. The present study was conducted to determine whether the backshu massage alone will improve sleep quality. Pre and post Experimental study. 30 subjects between the ages of 18 to 30 years who were found with deprived sleep quality participated in the study. They were given backshu massage 10 days once for a month and Pittsburgh sleep quality index questionnarie was given and recorded. There was significant improvement ( $P < 0.00001$ ) in quality of sleep during the subsequent visit. Giving backshu massage separately improves quality of sleep among medical college students.

**Keywords:** Quality of sleep, medical college students, Backshu massage.

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## INTRODUCTION

Insomnia which is known as sleeplessness, is a sleep disorder where people have trouble in sleeping. They usually have difficulty in falling asleep, or staying asleep to the desired amount of time. Insomnia generally results in daytime sleepiness, low energy, irritability, and depression with problems in focusing, cognition and learning. People in India is not aware of the fact that many have sleeplessness complaints. A study was conducted among south Indian population to identify sleep related disorders in a tertiary care. There was an alarming message in the study that many are not even aware of their poor quality of sleep. Further high stress has been described in many studies among medical college students. Poor quality of sleep among their population has become very common. Acupuncture and backshu massage is found to treat many patients suffering from insomnia and poor quality of sleep. Back-shu and Front-mu points are not only important in the treatment of the diseases of the internal organs, but are also of clinical significance in the diagnosis of zangfu disorders. When any of the zangfu organs malfunctions, positive reactions such as

sensitivity or tenderness will be manifested at the corresponding Back-shu or Front-mu points. Many research suggest the effectiveness of backshu massage for various ailments. Specifically when we look into insomnia and quality of sleep backshu massage has great effects. Medical college students whose life is occupied with stressful work and timings suffer a lot with poor quality of sleep. Several research studies explain the same.

Even though there are pharmacological and behavioral treatments for insomnia, most of the patients are treated with medications. However, the long-term use of medications to treat insomnia is questioned and has potential side effects. More and more Americans are seeking complementary/alternative treatments for many conditions including insomnia and there are anecdotal reports/case series of use of acupuncture in treating insomnia. To examine critically the role of acupuncture in treatment of insomnia, we performed a systematic review of published literature. Among the selected studies for review many were clinical case series and few open or randomized clinical trails. Even

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though several of these studies did not clarify the nature of insomnia (primary vs. secondary), it seemed that many of the subjects enrolled in these studies had comorbid other psychiatric (depression or anxiety disorders) and/or medical conditions (Hemodialysis, Stroke, Pregnancy). Except for few, several of these studies had methodological limitations. Despite the limitations of the reviewed studies, all of them consistently indicate significant improvement in insomnia with acupuncture. Further methodologically strong, randomized controlled studies with large sample size are needed to assess the usefulness of acupuncture in treatment of insomnia and explore the possible mechanisms underlying the effects of acupuncture on

sleep and sleep disorders<sup>9</sup>. So easy, simple and side – effect free treatments will be the merits of backshu massage.

## MATERIALS & METHODS

### Study Design

Experimental study method. The total study duration of each patient is 3 months. Initial screening will be done to involve the patients meeting the requirements of inclusion criteria and selected patients will be allotted for intervention. Patients enrolled at baseline assessment were asked to record sleep diaries throughout the study period.

**Table 1**

Subjective tools for study	Pittsburgh sleep quality index as pre and post assessment
Sample size:	30
Duration of study:	1 year
Duration of intervention	3 months
Source of data	Medical college students in Chennai (Government Yoga and Naturopathy Medical College, Arumbakkam and Kilpauk Medical college)

### Ethical clearance

Ethical clearance was sought from the Institutional Ethical Committee prior to the start of the study and the approval for the same was granted.

### Written Informed consent

Subjects who fulfilled inclusion criteria were appraised about the purpose of the study and rights as research subjects. Informed consent form was administered in English. Adequate time was given to each patient to go through the information sheet and their queries were answered. Their right to withdraw from the study and the need for willingness to participate voluntarily in the study was explained. All the subjects expressed their willingness to participate in the study by giving a signed informed consent (A sample information sheet and consent form is enclosed in Annexure).

### Inclusion criteria

- Age group : between 18 and 30 years
- Both male and female sex samples
- Provided written informed consent
- PSQI score more than 5.

### Exclusion criteria

- Secondary insomnia with pathologic conditions
- immunodeficiency and bleeding disorders
- any allergies
- intake of antipsychotic or antidepressant drug
- participation in another clinical trial
- unwilling for written consent
- PSQI score less than or equal to 5.

### Method of collection of data

- Screening with PSQI and selection of samples scoring more than 5 during the first visit
- Patients are given backshu massage 10 days once for 3 months.
- Sleep diary will be monitored during every visit.
- After the period of 3 months same questionnaires are given to assess the effectiveness of the interventions

### Intervention

A Gentle massage using fingers is given to the below mentioned acupuncture points. For male students the principal investigator has given the massage and for females, female therapeutic assistants have given massage under his guidance.

**Table 2: Back Shu Points Chart**

Lung	UB 13	Urinary Bladder	UB 28
Large Intestine	UB 25	Kidney	UB 23
Stomach	UB 21	Pericardium	UB 14
Spleen	UB 20	Triple Heater	UB 22
Heart	UB 15	Gall Bladder	UB 19
Small Intestine	UB 27	Liver	UB 18
Governing Vessel	UB 16	Diaphragm	UB 17
Qihai (Sea of Qi)	UB 24	Guanyuan (Gate of Source)	UB 26
Zhonglu (Center Back Muscles)	UB 29	Baihuang (White Ring)	UB 30
Gaohuang (Vital Region)	UB 43		

## RESULTS

### Statistical Analysis

Data expressed Mean  $\pm$  SD. Comparison of score in the pre & post data was analyzed by paired t test. R statistical software version 3.3.1 was used for the analysis.

**Table 3: Anthropometric parameters of the study participants (n=30)**

Variable	Mean $\pm$ SD
Age (yr)	19.8 $\pm$ 1.6
Height (cm)	155.3 $\pm$ 6.26
Weight (kg)	52.06 $\pm$ 9.08
BMI (kg/m <sup>2</sup> )	20.19 $\pm$ 3.29
Respiratory Rate	16.26 $\pm$ 0.90

A total of 30 students participated and completed the intervention in the present study. Students were in a mean age of 19.8 years, had weight (52.06 kg) and BMI (20.19kg/m<sup>2</sup>). They had a normal range of respiratory rate (16.26 cycle/min).

### Difference Scores Calculations

Mean: -5.8

$\mu = 0$

$S^2 = SS/df = 182.80/(30-1) = 6.30$

$S^2_M = S^2/N = 6.30/30 = 0.21$

$S_M = \sqrt{S^2_M} = \sqrt{0.21} = 0.46$

### T-value Calculation

$t = (M - \mu)/S_M = (-5.8 - 0)/0.46 = -12.65$

The value of  $t$  is -12.653175. The value of  $p$  is  $< 0.00001$ . The result is significant at  $p \leq 0.05$ . After the Backshu massage intervention, the overall score was significantly ( $P=0.00001$ ) with T value -12.65 and this shows the effect of backshu massage in improving the quality of sleep

## DISCUSSION

This present study shows that backshu massage for the period of 3 months has a positive impact on improving quality of sleep. Pittsburgh sleep quality index questionarrie was used in this as it is considered one of the best method to evaluate sleep quality. All the participants who scored PSQI more than 5 was given with backshu massage treatment. Then same questionnaire was given for post data collection. A mean score of -5.8 was obtained for the difference of the pre and post study with T value -12.65. This gave the significant P value 0.00001. In a similar study Clinical research on insomnia treated by acupuncture at back-shu points Xi-yan GAO. Author links open the author workspace. Pei-yu WANG backshu massage was found to be very effective in treating insomnia. The Back-Shu points are mentioned in various chapters of the Nei Jing. Chapter 51 of the "Ling Shu" lists the Back-Shu points of the five Zang 1. Chapter 59 of the "Su Wen" discusses the Back-Shu points of the Fu; in all, the Nei Jing lists 10 Back-Shu points, leaving out BL-22 Sanjiaoshu, first mentioned in the "ABC of

Acupuncture" (Jia Yi Jing, AD 282), and BL-14 Jueyinshu, first mentioned in the "1000 Golden Ducats Prescriptions" (Qian Jin Yao Fang, AD 652) 2. The Chinese character (Shu) denoting these points means — to transport indicating that they transport Qi to the inner organs. Each point takes its name from the corresponding organ, e.g. BL-15 Xinshu is —Heart-Shu. The importance of the Back-Shu points intreatment cannot be over- emphasized. They are particularly important for the treatment of insomnia and, indeed, one may go so far as saying that a chronic disease cannot be treated without using these points at some time during the course of treatment. This is essentially how it is used, i.e. to tonify the organs (Yin or Yang) in chronic conditions. The Back-Shu points affect the organs directly and are therefore used in Interior diseases of the Yin or Yang organs. This is a very important aspect of the clinical effect of these points. The way in which they act is quite a different from that of other points.

When treating the Internal Organs, other points work by stimulating the Qi of the channel which then flows along the channel like a wave, eventually reaching the Internal Organs. For example, if we needle LIV-3 Taichong we initiate a small wave around the point that flows along the channel, eventually reaching the Liver. If we needle BL-18 Ganshu (Back-Shu point of the Liver) we reach the organ directly without having to go through the channel. when we massage the Back-Shu points, Qi goes directly to the relevant organ, not through the intermediary of its channel. That is because we do not have to wait for —wave in the channel to reach the organ. Chapter 67 of the —Nan Jing| says: —Yin diseases move to the Yang [area]; Yang diseases move to the Yin [area]. The Front-Mu points are situated on the Yin surface[and therefore treat Yang diseases]; the Back-Shu points are situated on the Yang surface [and therefore treat Yin diseases]. According to this statement, the Back-Shu points would be used to treat —Yin diseases| and the Front-Mu points —Yang diseases. —Yin diseases and —Yang diseases can be interpreted in different ways. One interpretation of —Yin or —Yang diseases is that of chronic and acute diseases respectively: in this interpretation, the Back-Shu points would be used for —Yin diseases, i.e.

chronic diseases, and the Front-Mu points for —Yang diseases, i.e. acute. Although the Back-Shu points are mostly used to tonify the organs, they can also be used in Full patterns. In particular, they can be used to subdue rebellious Qi and clear Heat. For example, The point BL-18 Ganshu can be used to move stagnant Liver. Qi. BL-15 Xinshu can be used to clear Heart-Fire and BL-13 Feishu to stimulate the diffusing and descending of Lung-Qi and release the Exterior. These are the mechanism involved in backshu massage to improve sleep quality. In conclusion, using the Back-Shu points is essential to treat insomnia.

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