

## Research Article

# Relationship of Stress, Sleep, and Strength Among Female Teachers Working in Private Higher Secondary Schools



**B. Balakumaran**

*Director of Physical Education, University Sports Board, Anna University, Chennai, Tamil Nadu, India*

### ABSTRACT

The purpose of the study was to find out the relationship between the level of stress, sleep, and strength among female teachers working in private higher secondary schools. To achieve the purpose of the study, 50 female teachers from higher secondary schools in Chennai District were selected. Stress was assessed through the rating scale developed by Holmes and Rahe,<sup>[3]</sup> sleep level was measured with Pittsburgh sleep quality index and grip strength was measured by grip dynamometer. The collected data were analyzed with Pearson product moment correlation. The results of the study proved that there was a significant relationship between stress and sleep, stress and strength, and sleep and strength.

### Address for

#### correspondence:

B. Balakumaran, Director  
of Physical Education,  
University Sports Board-MIT  
Campus, Anna University,  
Chennai – 44, Tamil Nadu,  
India.  
E-mail: [balasportsboard@gmail.com](mailto:balasportsboard@gmail.com)

### Key words:

Stress,  
Sleep,  
Strength

**Received:** 18<sup>th</sup> November 2017

**Accepted:** 27<sup>th</sup> December 2017

**Published:** 30<sup>th</sup> January 2018

## INTRODUCTION

In the modern era, it is common to hear the words “My heartfelt heavy” or “My heartfelt light” or “I missed a few beats of my heart.” It is not merely a verbal expression. Modern medical sciences are discovering that it actually can be so. Heart feels the effect of our different emotional stress and is affected by them.

A person’s attitude toward life/profession and his emotions are linked with state of health of his heart.

Mental stress diminishes sleep and the diminished sleep, in turn, causes mental stress. All of us have had diminished and disturbed sleep when under mental stress.

If it happens only once in a while, it hardly leaves behind any effect. However, if it happens night after for weeks together, it seriously tells upon the health, the initial symptoms, of which are irritability of temper, fatigue, and incapacity to concentrate on any work.

Proper and adequate sleep is essential for health. One can easily do without food for a week, but not without sleep. Sleep replenishes the brain and the body; it relaxes the mind and muscles, it charges the body with energy (Jaggi 1998).<sup>[1]</sup>

Muscular strength is a measure of how much force muscle or group of muscles can exert. Grip strength is the force applied

by the hand to pull on or suspend from objects and is a specific part of hand strength.

The grip strength of your hand can indicate the risk of you have or suffering a heart attack or stroke or even the possibility of death from cardiovascular diseases (Suhmi Day, 2015).<sup>[2]</sup>

Teachers are playing an important role in a school environment, and the roles of teachers working in private higher education schools are very important. Private higher secondary school teachers are working on many short-term and long-term goals under stressful conditions. Female teachers are more stressful than their male counterparts.

## STATEMENT OF THE PROBLEM

The purpose of the study was to find out the relationship between the level of stress, sleep, and strength among female teachers working in private higher secondary schools.

## Hypothesis

1. It was hypothesized that there would be a significant relationship between the level of stress and sleep among the female teachers working in private higher secondary schools.

2. It was hypothesized that there would be a significant relationship between the level of stress and grip strength



among the female teachers working in private higher secondary schools.

3. It was hypothesized that there would be a significant relationship between the level of sleep and grip strength among the female teachers working in private higher secondary schools.

## Delimitations

1. The 50 subjects of the study were female teachers of private higher secondary schools.

2. The age ranged between 35 and 45 years only.

3. The subjects were selected from Chennai city only.

4. The selected dependent variables tested through standardized questionnaires and tools.

5. The variable “strength” in the study was measured and considered through grip strength measurement only by considering the importance of the grip strength and nature of the sample selected.

## Limitation

1. The difference that exists among the subject due to varied body type, weight, and health factor was not considered.

2. The subject taught by the teacher in the school was not considered.

## METHODOLOGY

To achieve the purpose of the study, 50 female teachers from higher secondary schools in Kanchipuram District were selected. Stress was assessed through the rating scale developed by Holmes and Rahe.<sup>[3,4]</sup> The scores were interpreted as 0–149: Low stress, 150–199: Mild stress, 200–299: Moderate stress, and 300 or more: Major stress. Sleep level was measured with Pittsburgh sleep quality index (PSQI).<sup>[5,6]</sup> The score of 5 and below were considered as good sleep and 6 and above were considered as poor sleep. Grip strength was measured by grip dynamometer. The right hand measurement was taken for the present study. The collected data were analyzed with Pearson product moment correlation.

## RESULTS AND DISCUSSIONS

From the above table, it was proved that there was a significant relationship between stress and sleep as the obtained  $r = 0.78$  was greater than the required table value of 0.279. It indicates that there is a direct relationship between the stress and sleep.

It was proved that there was a significant relationship between stress and strength as the obtained  $r = -0.72$  was greater than the required table value of 0.279. It indicates that there is an indirect (negative) relationship between the stress and strength.

It was proved that there was a significant relationship between sleep and strength as the obtained  $r = -0.84$  was greater than the required table value of 0.279. It indicates that there is an indirect (negative) relationship between the sleep and strength.

The three research hypotheses developed were accepted and null hypotheses were rejected.

**Table 1:** The mean, standard deviation, and correlation values among the selected variables

Variables	Mean $\pm$ SD	R
Stress and sleep	148.1 $\pm$ 26.16 5.73 $\pm$ 2.35	0.78*
Stress and strength	148.1 $\pm$ 26.16 27.02 $\pm$ 7.50	-0.72*
Strength and sleep	27.02 $\pm$ 7.50 5.73 $\pm$ 2.35	-0.84*

Table value required 0.279\*Significant. SD: Standard deviation

## CONCLUSION

Within the limitations of the study, it was concluded that:

1. There was a significant relationship between stress and sleep. Low level of stress will promote good sleep, whereas the high-level stress will deprive good sleep.
2. There was a significant relationship between stress and strength. Improvement in strength will reduce the level of stress, whereas the high-level stress leads to decrease in strength.
3. There was a significant relationship between sleep and strength. Poor sleeping habit will reduce strength, whereas sufficient sleep will help to improve strength.

## REFERENCES

1. Jaggi OP. Mental Tension and its Cure. New Delhi: Orient Paperbacks; 1998.
2. Johnson C. The Benefits of Strength Training; 2016. Available from: <http://www.fitdynamics.Com/index.Html>. [Last retrieved on 2016 Mar 26].
3. Chris Woolston MS. Sleep Deprivation and Stress, Stress Management Health Library; 2016. Available from: <http://www.consumer.healthday.com/encyclopedia/stress-management-37/stress-health-news-640/sleep-deprivation-and-stress-646063.html>. [Last retrieved on 2016 Mar 24].
4. Holmes TH, Rahe RH. The sociological readjustment rating scale. J Psychosom Res 1967;11:213-8. Jaggi OP. Mental Tension and its Cure. New Delhi: Orient Paperbacks; 1998.
5. Costandi M. The Link Between Depression, Sleep and Stress; 2014. Available from: [http://www.dana.org/newstheLink\\_between\\_depression\\_sleep\\_and\\_stress/#sthash.rcqcs02z.dpuf](http://www.dana.org/newstheLink_between_depression_sleep_and_stress/#sthash.rcqcs02z.dpuf). [Last retrieved on 2016 Mar 24].
6. PSQI (Pittsburgh Sleep Quality Index). Available from: [https://www.gonzaga.edu/student/psqi\\_sleep\\_questionnaire\\_1\\_pg.pdf](https://www.gonzaga.edu/student/psqi_sleep_questionnaire_1_pg.pdf). Cited by. Nikson Hero R. Effect of Sleep Deprivation on Selected Motor Fitness, Physiological and Performance Variables Among Intercollegiate Men Foot Ball Player, Unpublished Master's Thesis Tamil Nadu Physical Education and Sport University;2010.

**Cite this article:** Balakumaran B. Relationship of Stress, Sleep, and Strength Among Female Teachers Working in Private Higher Secondary Schools. Asian J Appl Res 2018;4(1):1-3.

**Source of Support:** Nil, **Conflict of Interest:** None declared.