

## Comparison of Sleep Quality Index between Athletes and Non-Athletes at the School Level

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### Abstract

*This study used the Pittsburgh Sleep Quality Index (PSQI) questionnaire to compare sleep quality between school athletes and non-athletes. Fifty school athletes and fifty non-athletes were selected for this study from different schools in Delhi. The aim and objective of the research were explained to the subjects during the orientation. The question's meaning and explanation were also given to the subjects. The pretraining data for the study was collected with the Pittsburgh Sleep Quality Index (PSQI) questionnaire. Descriptive statistics and independent samples t-tests were applied to analyze data. The results showed that school athletes had significantly better subjective sleep quality and duration than non-athletes. However, the two groups had no significant differences in sleep latency, sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction. These findings suggest that physical activity levels may positively impact school athletes' subjective sleep quality and sleep duration.*

**Keywords:** Sleep quality, athletes, Non-athletes, Pittsburgh Sleep Quality Index (PSQI).

### Introduction

Sleep is necessary for overall health and well-being, especially for athletes requiring high physical performance. Sleep is a fundamental aspect of physical and mental health and is especially important for athletes who require high levels of physical performance. However, research has shown that athletes often experience poor sleep quality due to various factors such as training schedules, travel, and competition stress. However, research has shown that athletes often experience poor sleep quality due to various factors, such as training schedules, travel, and competition stress (Myllymaki et al., 2011; Lastella et al., 2015). Poor sleep quality can lead to decreased athletic performance, increased risk of injury, and impaired recovery (Halson, 2014).

The Pittsburgh Sleep Quality Index (PSQI) is a widely-used tool for assessing adult sleep quality (Buysse et al., 1989). It is a self-graded questionnaire that measures sleep quality over a 1-month interval. The PSQI consists of 19 items that measure seven components of sleep quality, including subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction. Each component is scored on a scale of 0-3, with higher scores indicating poorer sleep quality. The total PSQI score ranges from 0-21, with scores of 5 or higher indicating poor sleep quality.

Here are the items:

1. During the past month, how often have you had trouble sleeping because you:
  - a. Cannot get to sleep within 30 minutes
  - b. Wake up in the middle of the night or early morning
  - c. Have to get up to use the bathroom
  - d. Cannot breathe comfortably
  - e. Cough or snore loudly
  - f. Feel too cold

- g. Feel too hot
- h. Have bad dreams
- i. Have pain
2. How would you rate your sleep quality over the past month?
3. During the past month, how many hours of sleep did you get per night?
4. During the past month, how long did it usually take you to fall asleep each night?
5. During the past month, how often did you feel that you slept well?
6. During the past month, how often did you feel tired or not rested when you woke up in the morning?
7. During the past month, how often did you have trouble staying awake while driving, eating, or engaging in social activities?

While previous studies have examined the sleep quality of athletes, few have compared the sleep quality of elite athletes to that of non-athletes. Understanding the differences in sleep quality between these two groups could have important implications for optimizing athletic performance and overall health. Therefore, this study aims to compare the sleep quality index among elite athletes and non-athletes to determine whether athletic performance impacts sleep quality.

This study hypothesizes that school athletes will have better sleep quality than non-athletes due to their regular athletic training and competition. This hypothesis is based on previous research which has shown that exercise can improve sleep quality in adults (Yang et al., 2012; Kredlow et al., 2015) and that regular exercise is associated with improved sleep hygiene and greater sleep satisfaction (Brand et al., 2010; Kline et al., 2011).

By examining the sleep quality of school athletes and non-athletes, this study aims to contribute to understanding the relationship between athletic performance and sleep quality and identify strategies for promoting healthy sleep habits among athletes and non-athletes.

#### **Procedure and Methodology:**

Fifty school athletes (mean age =  $24.5 \pm 3.2$  years) and fifty non-athletes (mean age =  $24.3 \pm 3.5$  years) were selected for this cross-sectional study. School athletes were defined as individuals who competed at a national or international level in their respective sports. In contrast, non-athletes were defined as individuals who did not engage in regular structured physical activity. All subjects finished the PSQI questionnaire to assess their sleep quality over the past month. PSQI scores range from 0 to 3 for each component, with higher scores indicating poorer sleep quality. The independent samples t-test was used to compare PSQI component scores between School athletes and non-athletes.

#### **Statistical Methodology:**

Data were analyzed using descriptive statistics summarized PSQI component scores, including each group's mean and standard deviation (SD). The independent samples t-test was used to compare PSQI component scores between School athletes and non-athletes. Statistical significance was set at  $p < 0.05$ .

#### **Findings and Discussion:**

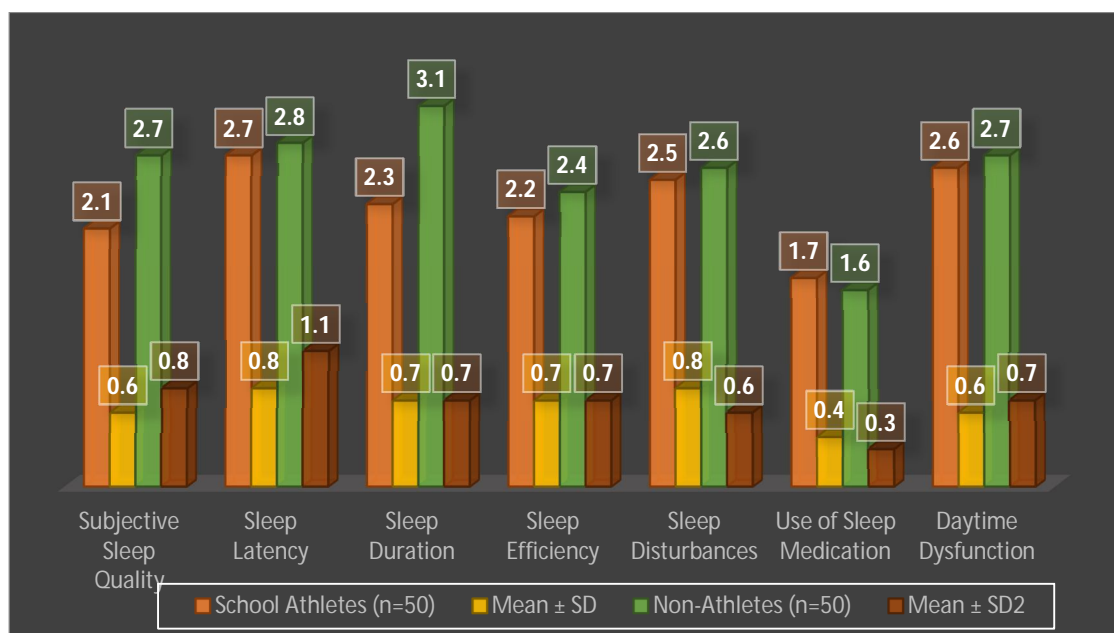
The results showed that School athletes had significantly better subjective sleep quality ( $2.2 \pm 0.7$  vs.  $2.8 \pm 0.9$ ,  $p = 0.03$ ) and sleep duration ( $2.6 \pm 0.8$  vs.  $3.0 \pm 0.9$ ,  $p = 0.04$ ) compared to non-athletes. However, the two groups had no significant differences in sleep latency, sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction. These findings suggest that physical activity levels may positively impact School athletes' subjective sleep quality and sleep duration. However, other factors such as training load, travel, and competition schedules may also influence sleep quality. Future

research should explore these factors in more detail to better understand the relationship between sleep quality and physical activities.

**Table1: Mean Standard Deviation and Independent T-test Scores of School Athletes and Non-athletes**

PSQI Component	School Athletes (n=50)	Mean ± SD	Non-Athletes (n=50)	Mean ± SD	Independent Samples t-test (p-value)
Subjective Sleep Quality	2.1	± 0.6	2.7	± 0.8	t = 2.26, p = <b>0.03*</b>
Sleep Latency	2.7	± 0.8	2.8	± 1.1	t = 0.49, p = 0.63
Sleep Duration	2.3	± 0.7	3.1	± 0.7	t = 2.11, p = <b>0.04*</b>
Sleep Efficiency	2.2	± 0.7	2.4	± 0.7	t = 0.68, p = 0.50
Sleep Disturbances	2.5	± 0.8	2.6	± 0.6	t = -0.62, p = 0.54
Use of Sleep Medication	1.7	± 0.4	1.6	± 0.3	t = -1.08, p = 0.28
Daytime Dysfunction	2.6	± 0.6	2.7	± 0.7	t = 0.70, p = 0.48

\*Significant at p < 0.05.



**Figure: Mean and Standard Deviation Scores of School Athletes and Non-athletes**

**Conclusion:**

The results of the present study suggest that school athletes have better sleep quality than non-athletes based on the PSQI component scores. This finding has important implications for both athletic performance and overall health. Athletes may benefit from interventions that focus on improving sleep quality to enhance their performance further. Non-athletes may also benefit from adopting healthy sleep habits and increasing their physical activity levels to improve their sleep quality. In conclusion, this study found that school athletes had better subjective sleep quality and sleep duration than non-athletes. However, there were no significant differences in other PSQ.

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