



URL: <https://www.ijptrs.com/view-issue/95/Fulltext>

DOI: <https://www.ijptrs.com/public/images/content/185correlation1.pdf>

1-Third year BPT student, SBB College of Physiotherapy, Ahmedabad

2- Post graduate student, SBB College of Physiotherapy, Ahmedabad

3-Lecturer, SBB College of Physiotherapy, Ahmedabad

Author: Dhyani Shah¹ Jinshi Shah² Megha Sheth³

Submission: 17th May 2023

Revised: 21st May 2023

Publish: 6th June 2023

©2023 Association of Physiotherapy Practitioner

Table of content

[Introduction](#)

[Methodology](#)

[Result](#)

[Discussion](#)

[Conclusion](#)

[References](#)

Correlation of sleep quality and concentration among physiotherapy students

Dhyani Shah¹ Jinshi Shah² Megha Sheth³

Abstract

Background: Sleep is an important part of human health and life and is necessary for the maintenance of good health. With so many distractions in their life, college students are known for their variable sleep schedules. Sleep deprivation can affect the concentration and educational status of students. It affects the capacity of individual learning and academic performance. Inadequate sleep may affect cognitive function. The aim of the study was to find correlation between sleep quality and concentration in physiotherapy students.

Methods: An observational-analytical study was conducted on physiotherapy students willing to participate, using convenience sampling technique. Data was collected through Google forms which included demographic data, the Pittsburg sleep quality index (PSQI) to assess sleep quality and concentration questionnaire to assess concentration levels.

Results: 55 physiotherapy students completed the forms; there were 12 males and 43 females with mean age (20.0±0) years. Mean score for PSQI (7.00±7.10) and for concentration questionnaire (9.50±3.50). Spearman's correlation to find correlation between PSQI and concentration questionnaire showed (r=0.352, p=0.008)

Conclusion: Sleep Quality and concentration are found to be affected with a weak positive correlation seen between sleep quality and concentration in physiotherapy students.

Keywords: concentration, physiotherapy students, PSQI, sleep quality

INTRODUCTION:

Sleep is a physiological process which is a crucial part of human life. Sleep and related problems are affected by physical, emotional, mental, and environmental factors such as age, gender, work, lifestyle, stress, and noise. Adults need an average of seven to nine hours of sleep a night.^[9] The situation or condition of suffering from a lack of sleep is called sleep deprivation. Sleep deprivation has many harmful effects on human biology and is associated with fatigue, sleepiness during daytime, impaired motor skills, reduced endurance, stress, depression, anxiety, and decrease neurocognitive performance.^[1]

Everyone's sleep cycle is different depending on what activities they did during the day. So there are different sleep cycles from children to adults. Meanwhile, in the morning teenagers have to get up early to get ready for college or work. In general, adolescents experience sleep deprivation so it is not surprising that many students or students fall asleep when class starts.^[12] Cognitive performance in students, including concentration and predictability of completing tasks, is adversely affected by sleep deprivation. Memory and concentration problems are the first to be affected.^[1] Previous studies have shown that the quantity of sleep reported by individuals as late or inappropriate sleep, especially late waking on weekends, and daytime sleepiness is associated with compromised academic performance in children and adults.^[8]

Physiotherapy students face a lot of stress while completing their education and this stress affects their sleep quality. Students find it difficult to cope with the stress of academic life. Lack of sleep can affect short-term memory, attention power, ability to work, circadian rhythms, and mental

health making it difficult to remember and hard to concentrate, and react quickly.^[4] So the aim of the study was to find the quality of sleep and concentration levels in physiotherapy students and correlation between sleep quality and concentration in physiotherapy students of Ahmedabad.

METHODOLOGY:

An observational- analytical study was conducted on 55 physiotherapy students in Ahmedabad. Physiotherapy students aged 18-25 years, studying in any year, and who were voluntarily ready to participate in the study were included. Data was collected through Google forms using convenience sampling technique.

Sleep quality of students was assessed through the Pittsburg sleep quality index (PSQI) and concentration level was assessed through Concentration Questionnaire. PSQI is a self-administered questionnaire. Students limit their responses to incidents that occurred during the past month. It includes seven domains. In scoring the PSQI each question is scored 0 (no difficulty) to 3 (severe difficulty). The component scores are added up to produce a global score (range 0 to 21). This means that a score of 0 means good sleep quality and a global score of 5 means bad sleep quality for that person, the higher the global score obtained, the worse the sleep quality of a person. Higher scores indicate worse sleep quality for PSQI.^[2] In the Concentration questionnaire, there are 20 questions, 1 point for each YES answer. A low score (approximately 0-6) means good concentration strategies. A high score (approximately 14-20) means one needs to improve concentration skills.^[3]

Data analysis was done using SPSS20. The level of significance was kept at 5%

RESULTS:

Total 55 physiotherapy students completed the Google forms of which there were 12 males and 43 females with mean age (of 20.0 ± 0) years.

Table 1 shows the mean scores for PSQI and Concentration Questionnaire.

Outcome measures	Mean \pm SD
PSQI	7.00 \pm 7.10
Concentration questionnaire	9.50 \pm 3.50

More than 30% of students went to bed between 11:00 pm to 12:00 pm and more than 45% of students got up between 7:30 am to 8:00 am. More than 50% of participants answered that they cannot get to sleep within 30 minutes once or twice or more times a week. 30% of participants gave an answer that they wake up in the middle of the night or early morning once or twice or more times in last week. 30% had bad dreams in last week. 10% answered during last month, they rate their sleep quality as fair or very bad.

While answering the concentration questionnaire more than 50-55% felt they got easily distracted by background noise, daydreaming during lectures, easily distracted by visual stimulation, not able to keep their mind focused on studying, trouble getting back to work after they have any interruptions. 80% felt that they were easily distracted by internal thoughts or feelings. 30% of students find it difficult to concentrate for more than 15 minutes.

Data was not normally distributed so Spearman's correlation was used to find

correlation between sleep (PSQI) and concentration (concentration questionnaire). Spearman's correlation analysis showed a statistically significant weak positive correlation between sleep quality and concentration ($r=0.352$), ($p=0.008$).

DISCUSSION:

In the study, mean score for PSQI was (7.00 ± 7.10) and for concentration questionnaire (9.50 ± 3.50). PSQI score < 5 means favorable sleep quality^[11] Here mean score 7.00 means sleep quality is slightly affected. A middle-range score for concentration questionnaire (approximately 7-13) means concentration is affected and the students are already using some good concentration strategies but they will likely benefit from learning more about how to improve their concentration abilities.

In the present study correlation analysis suggests weak positive correlation between sleep and concentration in physiotherapy students which is statistically significant. According to the results of Feriani's research about the relationship between sleep quality and learning concentration, showed that 14 (78%) students had good study concentration and good sleep quality, 4 (22%) students had good sleep and poor study concentration. On the other hand 7 (33%) students had good study concentration and poor sleep quality and students with poor sleep quality and poor study concentration were 14 (67%). The Chi-square test was significant, which means that there is a relationship between sleep quality and children's learning concentration. An OR of 7,000 indicates that students who sleep poorly are at 7,000 times greater risk of concentrating on learning less^[7] Nariya D et al studied the factors associated with sleep quality in

undergraduate physiotherapy students. The aim of this study was to determine the effect of various factors like obesity; stress, anxiety, physical activity, and electronic gadgets use time duration on quality of sleep among undergraduate physiotherapy students. They found that sleep quality among physiotherapy students is notably associated with a variety of psychological factors including stress and anxiety. Meanwhile, sleep quality has a minimal association with depression, physical activity and use of electronic devices.^[10]

Similar to our study, another study was conducted by Sami Fawzy et al to see the effect of sleep quality on educational performance of paramedic students of Kingdom of Saudi Arabia. They found that sleep quality of paramedic students is affected with high ration by the educational performance. This is because the high stress of work regarding paramedic students leads them to have less amount of sleep^[6] Douris PC et al did a study which aimed to investigate the correlation between academic performance and changes in predictor variables of aerobic fitness, sleep, stress and quality of life (QOL) in students studying in the first year of a physical therapist education program. They concluded that achieving academic success can be affected by changes in sleep and QOL.^[5]

The limitation of our study was that factors affecting sleep and physical activity levels were not checked.

CONCLUSION:

Sleep Quality and concentration are found to be affected with a weak positive correlation seen between sleep quality and concentration in physiotherapy students. Thus, among physiotherapy students, it can be said that sleep may affect

student's academic performance. Studies to improve awareness and knowledge about sleep hygiene for better academic performance and better physical and mental health can be conducted.

Funding Acknowledgement: No funding was provided for this study.

Conflict of interest: None

REFERENCES:

1. Alotaibi AD, Alosaimi FM, Alajlan AA, Abdulrahman KA. The relationship between sleep quality, stress, and academic performance among medical students. *Journal of family & community medicine*. 2020 Jan;27(1):23.
2. Buysse DJ, Reynolds III CF, Monk TH, Berman SR, Kupfer DJ. The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research. *Psychiatry research*. 1989 May 1;28(2):193-213.
3. Dewi TR. hubungan dismenore dengan konsentrasi belajar pada ramaja putri di pesantren mahasiswa unissula (Doctoral dissertation, Universitas Islam Sultan Agung).
4. Dharmita Yogeshwar, & E. N. Vipinnath. (2023). Relationship between stress and sleep quality among undergraduate physiotherapy students of India who are engaged in clinical posting: a cross sectional study. *International Journal of Research in Medical Sciences*, 11(4), 1204–1210. <https://doi.org/10.18203/23206012.ijr.ms20230862>
5. Douris PC, Hall CA, Jung MK. The relationship between academic success

- and sleep, stress and quality of life during the first year of physical therapy school. *Journal of American College Health*. 2021 Mar 24:1-0.
6. Fawzy S, Esmael TM, Hosny H, Jebakumar AZ. Effect of sleep quality on educational performance of paramedic students of Prince Sultan Military College of Health Sciences (PSMCHS) in the Eastern Province of Kingdom of Saudi Arabia (KSA). *International Journal of Pharmaceutical Research and Life Sciences*. 2021 Jul 22;9(2):17-31.
 7. Feriani DA. Hubungan Kualitas Tidur Dengan Konsentrasi Belajar Siswa Kelas X Tkj 2 Dan Xi Tkj 1 Di Smk Negeri 1 Jiwon Kabupaten Madiun (Doctoral dissertation, Stikes Bhakti Husada Mulia Madiun). <http://repository.stikesbhm.ac.id/id/eprint/765>
 8. Jalali R, Khazaei H, Paveh BK, Hayrani Z, Menati L. The effect of sleep quality on students' academic achievement. *Advances in medical education and practice*. 2020 Jul 17:497-502.
 9. Lawson HJ, Wellens-Mensah JT, Attah Nantogma S. Evaluation of sleep patterns and self-reported academic performance among medical students at the University of Ghana School of Medicine and Dentistry. *Sleep disorders*. 2019 Jun 11;2019.
 10. Nariya D, Khatri S, Mangukiya K, Shah M, Diyora K. Factors associated with Sleep Quality in Undergraduate Physiotherapy Students: A Cross-Sectional Study. *Int J Cur Res Rev* Vol. 2021 Jan;13(02):159.
 11. Romadlon DS, Huang HC, Chen YC, Hu SH, Hasan F, Chiang Morales MD, Dwi Marta OF, Al Baqi S, Chiu HY. Fatigue following type 2 diabetes: Psychometric testing of the Indonesian version of the multidimensional fatigue Inventory-20 and unmet fatigue-related needs. *Plos one*. 2022 Nov 28;17(11):e0278165.
 12. Suharti S, Damayanti P. The Relationship of Sleep Quality With Learning Concentration in Baitul Hikmah Nursing Academy Students in Bandar Lampung. In *Proceeding of International Conference Social Technology Education and Health Science 2022 Dec 18 (Vol. 1, No. 1)*.