
THE LEVEL OF SLEEP QUALITY AMONG SUKMA PERLIS ATHLETES

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Received: 03 September 2024; **Revised:** 27 May 2025 **Accepted:** 31 May 2025; **Published:** 13 June 2025

To cite this article (APA): Muhammed Muhairiss, N. F. B. ., Mohd Jafri, M. I. ., Mohd Aznan, E. A. ., Ismail, Z. ., Mohd Kassim, A. F. ., & Abu Bakar, A. H. . (2025). The level of sleep quality among Sukma Perlis athletes. *Jurnal Sains Sukan & Pendidikan Jasmani*, 14(1), 9-13. <https://doi.org/10.37134/jsspj.vol14.1.2.2025>

To link to this article: <https://doi.org/10.37134/jsspj.vol14.1.2.2025>

ABSTRACT

Good sleep quality has been associated with improving emotional states, greater cognitive performance, faster healing time in damaged muscle tissues, and improved immune response. Most of the previous studies of athlete's level of sleep quality have been done abroad but are limited locally. Therefore, the purpose of this study is to compare the level of sleep quality between male and female among SUKMA Perlis athletes. A total of 194 athletes of SUKMA Perlis participated in this study. The data were collected using a questionnaire based on the Pittsburgh Sleep Quality Index (PSQI) to identify their level of sleep quality. The findings indicate that there were significant differences in mean of sleep quality between male (3.76 ± 2.168) and female (5.36 ± 3.603) among SUKMA Perlis athletes, with $p = 0.001 < 0.05$. Female athletes had poorer sleep quality compared to male athletes. In conclusion, during hormonal transition, caffeine intake and stress hormones can be the main factors of female athletes experience poor sleep quality. Aside from that, the importance of sports science knowledge including physiology, nutrition and psychology is crucial to having good quality of sleep among athletes.

Keywords: Sleep quality, Sleep pattern, Athletes, Gender

INTRODUCTION

Sleep plays a key role in human functioning, physiology, and cognitive and physical recuperation (Mah, Kezirian, Marcello, & Dement, 2018). Previous research has shown that chronic sleep loss and sleep deprivation can have a detrimental influence on cognitive functioning, learning and memory, response speed, auditory alertness, and mood (Mah et al., 2018). Sleeping is a crucial and essential component of post-exercise recovery and regeneration (PERR). It could directly alter the mental and physical functioning of the human body (Lo et al., 2017). A healthy adults spend almost one-third of their lives sleeping that it is the most fundamental need and a basic human requirement (Lo et al., 2017). Thus, they stated that sleep is characterized as a dynamic behaviour, not merely the absence of waking, but as a unique brain activity governed by intricate and exact systems. It is more than just a state of relaxation it serves, good purposes. However, sleep is a homeostatic regulated activity characterized by a

decreased state of movement and sensory response capability, and it has been linked to cognitive and physiological functions, particularly recovery (Vargas & Jiménez, 2020).

According to Mah et al. (2018) stated that sleep duration and sleep quality play critical roles in athletic training, post-exercise recovery, mood, and sports performance. Better emotional states, higher cognitive function, shorter healing time in injured muscular tissues, and enhanced immunological response have all been linked to good sleep quality or efficiency (Mah et al., 2018). A certain amount of sleep is required for the body to function properly. For instance, new-borns sleep between 16 and 18 hours per day, whereas pre-schoolers sleep between 11 and 12 hours per day, still children and adolescents in school require at least 10 hours of sleep per night (Lo et al., 2017). Moreover, an average of 8 hours of sleep is recommended for healthy individuals (Staunton, Gordon, Custovic, Stanger, & Kingsley, 2017). Thus, sleep is critical for maintaining healthy health, body weight, and energy levels. However, the amount of time it takes to fall asleep, the number of times you wake up from sleep, and the duration of the sleep are all factors that influence the quality and quantity of your sleep.

Elite athletes have a unique set of demands, including training schedules, training hours, match timings, travel needs, and match-related stress that may cause all these demands have the potential to impact an athlete's sleep quality and quantity (Staunton et al., 2017). Moreover, athletes have also reported decreased overall sleep time and bad sleep before to big tournaments. Furthermore, high training volumes have been linked to decreased overall sleep duration and sleep efficiency (the ratio of sleep time to total time in bed). Such as namely, Staunton et al. (2017) stated that previous study recommend that athletes should sleep between 9 and 10 hours each night.

Men and women have different sleep patterns and sleep problems, which has been seen in the general population (Silva et al., 2019). Frankly, athletes must get enough sleep to perform well in psychomotor and cognitive tasks, as well as to reduce their risks of acquiring risk factors for musculoskeletal discomfort (Gomes et al., 2017). It was anticipated that athletes had poor sleep quality, get insufficient hours of sleep on a regular basis, and are sleepy during the day. Understanding sleep habits can help identify possible areas for intervention to promote sleep and recovery in athletes. The current study aims to investigate gender differences in sleep quality among athletes from the SUKMA Perlis contingent who competed in SUKMA 2022.

METHODOLOGY

Respondents

A total of 194 athletes of Majlis Sukan Negeri Perlis participated in SUKMA 2022 from rural area of Perlis participated in this study. Participant selection was based on predefined inclusion criteria specifically, athletes from rural areas of Perlis who represented Majlis Sukan Negeri (MSN) Perlis in SUKMA 2022. Official registration records from MSN Perlis indicate that 278 athletes (148 males and 130 females) from rural areas of Perlis took part in SUKMA 2022. Based on calculations using the Bukhari sample size calculator, a sample size of 161 participants was deemed necessary (Bukhari, 2020). Considering an estimated 20% dropout rate, a total of 194 athletes were selected to participate in this study, consisting of 113 males and 81 females.

Procedures

The questionnaire was created using Google Forms and distributed via a generated link. This link was shared with athletes through the WhatsApp application after they had completed their training sessions. The Google Form clearly outlined the permission form and terms of the questionnaire. Participants were informed that the survey would take approximately 5 to 10 minutes to complete. All responses were submitted anonymously to ensure confidentiality. Athletes were encouraged to answer the questionnaire immediately after training to capture accurate sleep quality data, and the process aimed to minimize disruption to their schedules while ensuring informed and voluntary participation. All research

procedures concerning human subjects were accepted by the UiTM Research Ethics Committee with the reference number REC/189/2022.

Instrumentations

Research instrument for this study was divided into 2 sections, which is section A and section B. Section A was demographic data that collected name, gender, and age. Section B is the Pittsburgh Sleep Quality Index (PSQI) (Buysse, Reynolds III, Monk, Berman, & Kupfer, 1989). It is a self-report questionnaire that examines sleep quality over the course of one month interval. It also has a sensitivity of 89.6% and specificity of 86.5% with the internal consistency of 0.75 to differentiate between good sleepers and poor sleepers (Buysse et al., 1989). The PSQI is made up of 19 separate questions, section A consists of 3 questions of demographic data and section B totalling 7 components that result in a single global score, and it takes 5 to 10 minutes to finish. The seven components that are PSQI includes subjective sleep quality (C1), sleep latency (C2), sleep length (C3), and habitual sleep efficiency (C4), sleep disorders (C5), and usage of 9 sleeping pills medicines (C6), daytime dysfunction, (C7). Most of the components are scored categorically from 0 to 3. Zero is a score of one indicates a good sleep quality, while a score of three indicates a poor sleep quality.

Statistical Analysis

All the data obtain in this study were analysed using the Statistical Package for the Social Sciences (IBM SPSS Statistics) version 26.0. All data are reported in terms of mean standard deviation (mean \pm SD). The test significant was set at $p < 0.05$. The study hypothesis was measured using an independent sample T-test to determine the difference mean of sleep quality between males and females.

RESULTS

This survey was completed by 194 SUKMA Perlis athletes. Global PSQI scores for both male and female athletes ranged from 0 to 21. Mean component scores and the global score for all males and female athletes are shown in Table 1. The mean global score for both males and female athletes was 6.87 ± 2.849 .

Table 1. Mean and Standard Deviation for Global Score of SUKMA Perlis athletes

	Gender	Mean	Std. Deviation
Global PSQI	Male	3.76	2.168
	Female	5.36	3.603

Poor sleep quality, which was indicated by a Global PSQI score > 5 , was reported by 74 (38.1%) athletes. Table 2 shows the rates of good sleeper and poor sleeper based on Global PSQI score. Female athletes had poorer sleep quality compared to male athletes. Based on global PSQI score, there were significances ($p = 0.001 < 0.05$) of sleep quality between gender among SUKMA Perlis athletes.

Table 2. Rates of Good Sleeper and Poor Sleeper of SUKMA Perlis Athletes

	Frequency	Percentage (%)
Good Sleeper	120	61.6
Poor Sleeper	74	38.1
Total	194	99.7

DISCUSSION

The differences in the level of sleep quality were analysed and summarized. The result has been obtained from this finding was significant. It was found that for gender group, there was significant differences in higher mean score reported for the female group than male group. According to Pengo et al. (2018), women are more likely than men to experience sleep disruptions such as poor sleep quality and sleep deprivation, as well as sleep disorders such as obstructive sleep apnea, restless legs syndrome, and insomnia during periods of hormonal transition. For instance, women suffering from severe PMS/PMDD are more prone to experience poor sleep quality and daytime tiredness in addition to other symptoms in the late luteal phase (Baker & Lee, 2022). Other than that, according to Mireku et al. (2019) stated that mobile phone use before bed (after the lights have been turned out) can induce poor sleep quality through a variety of reasons. Moreover, a previous study discovered that utilising a mobile device for at least 30 minutes after the lights have been turned out (without a blue light filter in the mobile) is associated with poor sleep quality, daytime drowsiness, sleep disruptions, and increased sleep latency (Rafique et al., 2020).

Next, Gomez-Bruton et al. (2021) mentioned that acute caffeine consumption was successful in improving some aspects of team-sports performance in female athletes, caffeine should be explored as a supplementation option for female athletes competing in team sports. Caffeine use at low and moderate levels can improve the average peak power score during repeated sprints. These findings suggest the use of low and moderate levels of caffeine supplementation through coffee as a dietary ergogenic aid for trained female team-sport athletes during repeated sprint exercise (Karayigit et al., 2022).

This current study showed poor sleep quality in female athletes of SUKMA Perlis. SUKMA is a huge competition in Malaysia that attracts most national athletes. From this point, stress hormones may be one of the issues that contribute to poor sleep quality in females more than males. This finding was supported by previous research Riederer, (2020) stated that stress hormone cortisol was shown to be higher after competitive matches compared to training, which has been demonstrated to have a deleterious impact on sleep. According to Wilkes et al. (2021) stated that sleep is a restorative mechanism that benefits athletes' physiology and psychology. Moreover, sleep duration, poor sleep quality, and the severity of insomnia were also linked to higher levels of stress, despair, and anxiety, more bad mental health days, and less social support from family, friends, significant others, and teammates (Grandner et al., 2021). With the recent increase in female sport, therapists must be able to provide suitable and support to female athletes in order to ensure their sleep, and hence their health and athletic performance, are optimised (Miles, Clark, Fowler, Miller, & Pumpa, 2022).

Sleep quality is a component of the circadian rhythm and is distinguished by a series of stages with associated autonomous nervous system functions. It is a complex physiological process that is unique to everyone and typically lasts almost one-third of one's life (Reddy, Reddy, & Sharma, 2018). Inadequate sleep negatively impacts cognitive functions essential for athletic performance, such as attention, memory, and motor skills (Tate, Main, Roberts, & Bruce, 2025). Furthermore, in the long run poor sleep quality may pose several health problem and poor work productivity levels (Zuki et al., 2021). High-quality, enough sleep is frequently assumed to be required for a variety of aspects influencing sports performance, such as encouraging physical and mental recovery after intense training regimens, lowering the risk of injury, and preventing in-game weariness and gaps in concentration.

CONCLUSION

Overall, the level of sleep quality among SUKMA Perlis athletes are slightly greater on poor sleep quality. Therefore, males among SUKMA Perlis athletes have good sleep quality than females. The findings of this study can provide some information for the knowledge on the level of sleep quality among SUKMA Perlis athletes or even communities in Malaysia. The lack of effective sleep management may be the cause of the participant's lack of sleep quality (Mohd Hashim, 2023). Moreover, the importance of having good sleep quality that athletes able to learn better when they are well nourished and monitor their sleep has been linked to enhance sport performance, improve cognitive

function, and better memory alertness. Plus, this data also can be used as references for related associations, health industries, education institutions or any related fields.

Acknowledgement

The authors would like to thank the Faculty of Sports Science and Recreation, UiTM Perlis Branch and Majlis Sukan Negeri Perlis (MSN Perlis) for their encouragement and help in completing this fantastic effort on the topic.

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