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Sleep Quality Index of Male and Female Wrestlers of National Level

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Wrestling is a highly demanding sport that exerts significant physical stress on athletes, impacting their health and performance. Sleep quality has become a vital component influencing athletic performance and recovery. The Pittsburgh Sleep Quality Index (PSQI) and the Pittsburgh Insomnia Rating Scale (PIRS) are notable tools for assessing sleep quality and insomnia symptoms. These instruments offer valuable insights into the overall sleep health and specific insomnia issues experienced by individuals. The main aim of this research is to perform a comparative analysis of sleep quality and insomnia in male and female wrestlers, the Pittsburgh Sleep Quality Index (PSQI) and the Pittsburgh Insomnia Rating Scale (PIRS). A strong and well-defined method is essential to examine the sleep quality of male and female wrestlers using the Pittsburgh Sleep Quality Index (PSQI) and the Pittsburgh Insomnia Rating Scale (PIRS); the age range of the subject is 16-25 years of age, and the size of the sample is 10 for each male and female wrestlers who participated at National levels. The findings reveal in the case of (PSQI) that There is an insignificant difference between the global scores of the mean values of male and female participants, as the level of significance is 0.185 level. Whereas in the case of (PIRS), It is evident that there is a significant difference between the total scores of the mean values of male and female participants as the level of significance is .017.

Keywords: Pittsburgh Insomnia Rating Scale (PIRS), the Pittsburgh Sleep Quality Index (PSQI), male and female wrestlers

Sleep is essential for both general health and athletic performance. Insufficient sleep can negatively impact cognitive abilities, mood, and physical performance, which are critical for athletes, especially those involved in demanding sports like wrestling. Wrestling requires exceptional physical conditioning as well as intense mental focus and resilience. Therefore, the quality and amount of sleep wrestlers get can significantly affect their training and competition performance. Research has emphasized the importance of sleep for athletic performance, recovery, and injury prevention. However, limited literature specifically examines sleep quality among wrestlers, and even fewer studies compare sleep patterns between male and female wrestlers. Given the physiological and psychological differences between genders, it is plausible that male and female wrestlers may experience different sleep patterns and quality, which could affect their performance and recovery differently.

The Pittsburgh Sleep Quality Index (PSQI) and the Pittsburgh Insomnia Rating Scale (PIRS) are commonly used tools to evaluate sleep quality and insomnia. The PSQI is a self-report questionnaire that assesses sleep quality and disturbances over the past month, providing a detailed view of various sleep

factors such as Subjective sleep quality, sleep duration, Sleep disturbance, Sleep latency, daytime dysfunction, habitual sleep efficiency, and use of sleep medicine. In contrast, the PIRS focuses on the severity of insomnia and its effects on the distress Score, Sleep Parameters Score, and Quality of Life Score, offering insights into the persistence and intensity of insomnia symptoms. Considering the physiological and psychological demands on wrestlers, it is essential to understand their sleep patterns and disturbances. Research has shown that athletes frequently face unique sleep challenges due to factors like travel, competition schedules, and training stress. However, there is limited research specifically focused on sleep quality and insomnia among wrestlers and even less is known about potential gender differences in these aspects.

This comparative study aims to explore the following key questions:

1. What are the differences in sleep quality between male and female wrestlers?
2. How do sleep patterns vary between these groups?
3. What are the potential implications of these differences for training and performance?

By addressing these questions, this research aims to provide valuable insights into the sleep needs of wrestlers and highlight the importance of incorporating sleep quality assessment and improvement strategies into their training regimens. The findings will contribute to understanding sleep's role in athletic performance and recovery. They may inform tailored interventions to enhance sleep quality in wrestlers, ultimately improving their athletic outcomes.

Method

Selection of the Participants

Male and female wrestlers aged 16-25 who have competed in national-level events in their respective disciplines over the past three years were selected. Participants with diagnosed sleep disorders, those taking sleep medication, or individuals with other health conditions affecting sleep were excluded. To ensure statistical significance, a power analysis was conducted to aim for a minimum of 10 participants per gender.

Administration of the Questionnaires

The researcher conducted in-person visits to gather data from 20 participants aged 16 to 25, comprising male and female wrestlers who had competed nationally. The questionnaires were administered during these visits, and once their completeness was confirmed, they were scored using a standardized method. The scores were then compiled and formatted for subsequent statistical analysis.

Collection of Data

The researcher in-person visits to gather data from 20 individuals aged 16 to 25, including male and female wrestlers who had competed nationally. Data was collected from various sports academies, with a total of 10 participants per gender. Questionnaires were administered and, once completed, were scored using a standardized key. The scores were then organized into a structured format for further statistical analysis.

Data Analysis

Descriptive Statistics & Independent 't' test was used to compare the means of PSQI and PIRS scores between genders.

Table 1 shows the descriptive statistics mean and standard deviation of the global scores of male and female wrestlers. The mean and standard deviation of the female is 5.50±1.84, and the male is 4.50±1.35.

Table 1. Descriptive statistics of (PSQI) mean and standard deviation of the global scores of male and female wrestlers

	Gender	N	Mean	Std. Deviation
PSQI	Female	10	5.500	1.840
	Male	10	4.500	1.354

Table 2 shows the significance test of the mean difference of the global scores of the male and female wrestlers. It is evident from the table that there is an insignificant difference between the global scores of the mean values of male and female participants as the level of significance is .185 level

Table 2. Test of significance of (PSQI) mean difference for the global scores of the factor between male and female wrestlers

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
PSQI Score	Equal variances assumed	.200	.660	1.384	18	.183	1.000
	Equal variances not assumed			1.384	16.533	.185	1.000

Table 3. Descriptive statistics of (PIRS) mean and standard deviation of the total score of male and female wrestlers

	Gender	N	Mean	Std. Deviation	Std. Error Mean
PIRS	Female	10	42.600	24.703	7.811
	Male	10	19.200	13.571	4.291

Table 3 shows the descriptive statistics mean and standard deviation of the total scores of male and female wrestlers. The mean and standard deviation of the male is 19.20±13.57, and of the female is 42.60±24.70.

Table 4. Test of significance of mean difference for the (PIRS) total score factor between male and female wrestlers

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
PIRS	Equal variances assumed	1.923	.182	2.625	18	.017	23.400
	Equal variances not assumed			2.625	13.979	.020	23.400

The table 4 shows the significance test of the mean difference of the total scores of the male and female wrestlers. It is evident from the table that there is a significant difference between the total scores of the mean values of male and female participants, as the level of significance is .017.

A similar kind of study was also conducted by Amy M. Bender, Hans P. A. Van Dongen, and Charles H. Samuels (2018), who explored the differences in subjective sleep quality and chronotype between elite athletes and a control group of non-athlete good sleepers. While previous studies have indicated that elite athletes often experience insufficient sleep, specific sleep disturbances compared to non-athletes are poorly understood. Participants: The study involved 63 winter Canadian National Team athletes (mean age 26.0 ± 0.0 years; 32% female) and 83 healthy non-athlete controls (mean age 27.3 ± 3.7 years; 51% female).Methods: Both groups completed the Pittsburgh Sleep Quality Index (PSQI) and a chronotype assessment. Athletes used the Athlete Morningness, Eveningness Scale, while

controls used the Composite Scale of Morningness. Results: Athletes reported significantly poorer sleep quality (PSQI global score of 5.0 ± 2.6) than controls (PSQI global score of 2.6 ± 1.3). Despite this, the two groups had no significant difference in self-reported sleep duration (athletes: 8.1 ± 1.0 hours; controls: 8.0 ± 0.7 hours). Athletes also showed a greater tendency toward morningness in their chronotype, though there were no differences in self-reported bedtime and wake time between the groups. Conclusions: The study suggests that the misalignment between athletes' sleep schedules and circadian preferences might contribute to poorer sleep quality.

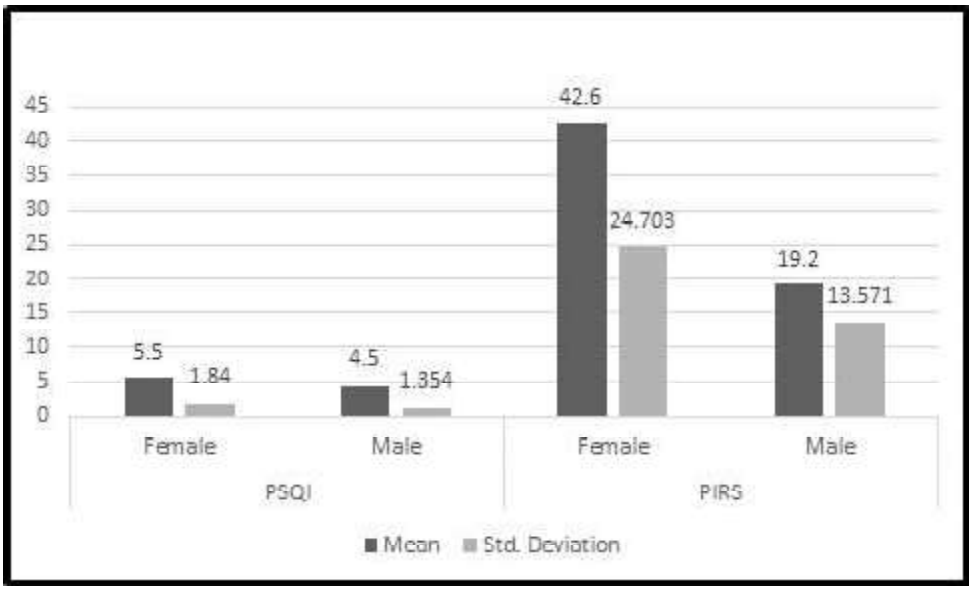

Figure 1. Graphical presentation of the Pittsburgh Sleep Quality Index (PSQI) and the Pittsburgh Insomnia Rating Scale (PIRS) scores as a function of male and female wrestlers.

Conclusion

Based on the Pittsburgh Insomnia Rating Scale (PIRS) scores analysis between male and female wrestlers, the study reveals notable gender differences in sleep quality and insomnia severity. The research aimed to compare these factors using the Pittsburgh Sleep Quality Index (PSQI) and the Pittsburgh Insomnia Rating Scale (PIRS). The findings indicate significant disparities, with female wrestlers experiencing poorer sleep quality and more severe insomnia compared to their male counterparts. These results underscore the importance of implementing gender-specific interventions to address sleep disturbances and insomnia among wrestlers. Female athletes, in particular, may benefit from tailored strategies such as personalized sleep hygiene education, stress management techniques, and, where appropriate, medical interventions. Addressing these disparities is crucial for enhancing female wrestlers' overall well-being and athletic performance, ultimately contributing to their sports success. The significant gender differences in sleep quality and insomnia severity among wrestlers can be attributed to various physiological and psychological factors. For instance, hormonal fluctuations in female athletes may contribute to sleep disturbances and increased insomnia symptoms.

Additionally, the psychological stress and societal pressures unique to female athletes could exacerbate sleep-related issues. Given the importance of sleep for recovery and performance, developing and implementing

effective interventions is imperative. Customized sleep hygiene education can equip female wrestlers with strategies to improve their sleep environment and habits. Stress management techniques, such as mindfulness and cognitive-behavioural therapy (CBT), can help reduce anxiety and promote better sleep quality. Medical interventions, including the use of sleep aids or hormonal treatments, may be necessary for those with severe insomnia.

Furthermore, coaches and sports organizations should prioritize sleep health as part of their training and wellness programs. Regular monitoring of sleep patterns and insomnia symptoms can help in early identification and intervention. Establishing a welcoming atmosphere that recognizes and tackles female wrestlers' unique sleep challenges can foster better health outcomes and enhance athletic performance. In conclusion, the study highlights significant gender differences in sleep quality and insomnia severity among wrestlers, with female athletes being more adversely affected. By adopting targeted, gender-specific approaches to sleep health, the well-being and performance of female wrestlers can be significantly improved. This holistic approach addresses the immediate sleep-related issues and contributes to their athletic careers' long-term success and sustainability.

According to Bird, Stephen P. PhD, CSCS, It has been proposed that in order to allow for proper recuperation and adaptation in between workouts, athletes may need more sleep than people who are not physically active, perhaps closer to 9 or 10 hours of sleep instead of the 7—to 9-h general recommendation for adults. Nevertheless, there aren't any particular recommendations for sportspeople about the amount or calibre of their sleep.

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