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Sleep Behavior Among Student Athletes

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ABSTRACT

This study was conducted to identify the sleep behavior of student athletes. The study involved 116 student athletes in Perak State Sports School as a sample study to identify sleep behavior by making comparisons based on gender, training frequency, level of involvement and age. The researcher used the Athlete Sleep Behavior Questionnaire (ASBQ) which consists of 18 items and is divided into 3 subscales namely routine factors (6 items), behavioral factors (7 items) and sports -related factors (5 items). Inferential analysis t test and One -way ANOVA were used for the purpose of data analysis. The findings of the study showed that there was no significant difference in sleep behavior between male and female student athletes of the Perak State Sports School. In addition, the findings also showed that there were no significant differences in sleep behavior based on the highest level of involvement, training frequency and age among student athletes. In summary, good sleep behavior in sports students is due to an optimal sleep time of at least 7 hours a day.

Contribution/Originality: The study that has been done has contributed to the existing literature review as most of the previous studies were only conducted abroad. This study was conducted to provide awareness to coaches and athletes about the importance of sleep behaviors on their performance.

1. Introduction

Quality sleep contributes to improved athletic performance. Past studies have also shown that there is a positive relationship between sleep and an athlete's optimal performance. An athlete's sleep behavior will affect their performance (Hugh et al., 2015). Positive sleep behaviors will contribute to good achievement performance among student athletes by looking at the level of involvement involved by the student athletes (Henri et al., 2016). This study was conducted to see to what extent athletes sleep behaviors affect their achievement performance.

A study by Ryswyk et al. (2016) to improve well being and performance indicators in the Australian Football League (AFL) players through a six week sleep optimization program showed that optimal sleep can provide a positive mood while motivating athletes on the

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field and lead to improvement better performance. Moreover, there is evidence to suggest that athletes are particularly concerned about the effects of insufficient sleep or lack of sleep can affect their performance (Damien et al., 2005). However, nearly 70% of student athletes experience less than normal sleep (Lastella et al., 2012). Nevertheless, there are shortcomings in the literature examining how sleep behaviors affect training and competition from a performance aspect.

According to researchers, sleep behaviors are activities, actions, deeds, reactions and reactions that occur before and during sleep. Adolescent student athletes are participants in competitive sports organized and sponsored by the educational institution in which the student is enrolled, which consists of a variety of sports in the age range of 13 to 17 years and has a level of involvement at least at the district level. Researchers use Behavioral Health Theory (Health Behavioral Theory) which has been used in the study by Mead and Irish (2019), Application of health behavior theory to sleep health improvement. This theory states that sleep behavior can be changed for the better.

Sleep is very important in optimizing recovery and athletic performance. Data obtained from Bird's (2013) study indicate that adolescent athletes have an increased need for sleep by recommending 7 to 9 hours of sleep time to ensure adequate physical and psychological recovery, especially at night. A study by Kirschen et al. (2018) showed that sleep is very important for professional athletes. Athletes can achieve high performance, but vary according to the cognitive and physical demands of the sport. Increased sleep duration will benefit competitive athletes, as well as require aerobic fitness, tactical and technical skills (Brand et al.,2009).

Nevertheless, a study conducted by Erlacher et al. (2011) on 623 respondents stated that their sleep was less than normal at least once the night before the competition. Reports also show male athletes are more likely to get poor sleep than female athletes. This evidence is supported by the study by Brauer et al. (2019) which showed that many student athletes do not get enough sleep, particularly among male student athletes.

The study report also stated that the frequency of sleep disturbances was higher among individual sports athletes compared to team sports athletes (Lastella et al., 2014). Moreover, the study data of Juliff et al. (2016) reported there were negative effects due to lack of sleep on athletic performance and well being, particularly in relation to fatigue, muscle strength and emotional state of athletes. In conclusion, an athlete's sleep behavior will affect an athlete's performance during competition or during training (Nedelec et al., 2018). Therefore, good behavior can help athletes get optimal sleep so that performance can be improved.

The objective of this study is to identify the sleep behavior of athletes among the students of the Perak State Sports School (SSN). The objective of this study was to compare the sleep behavior of student athletes at the Perak Sports School on the basis of gender, highest level of involvement, training frequency and age. This study can help student athletes in their efforts to improve good sleep behavior while contributing to the improved optimum performance.

2. Research Methodology

2.1. Research design

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This study is a descriptive study. This study is a survey by data collection from google form links distributed and answered by study subjects.

2.2. Study subjects

The study sample involved 116 athletes aged 13 to 17 years old consisting of Perak State Sports School student athletes. The study sample involved team sports and individual sports student athletes. The sampling method used is purposive sampling. Only student athletes at the school answered this questionnaire.

2.3. Research instruments

The researcher has structured the questionnaire into two parts, namely Part A: Demographics and Part B: Athlete Sleep Behavior Questionnaire (ASBQ). The instrument used in part B is the questionnaire Driller et al. (2018) Athlete Sleep Behavior Questionnaire (ASBQ). The ASBQ consists of 18 items divided into 3 subscales namely routine factors (6 items), behavioral factors (7 items) and sports -related factors (5 items). Respondents' evaluation was based on a 5 -point Likert scale as follows: 1 - Never, 2 - Rarely, 3 - Sometimes, 4 - Frequently and 5 - Always. Each item is summed to obtain the global ASBQ score. Higher ASBQ scores are associated with poor sleep behavior.

2.4. Study procedure

In this study, student athlete sleep behavior was measured via the Athlete Sleep Behavior Questionnaire (ASBQ). Respondents are required to answer 18 items divided into 3 subscales namely routine factors (6 items), behavioral factors (7 items) and sports related factors (5 items) based on Likert scale 5 using the google form link provided. The feedback of each respondent will be recorded.

3. Results

Descriptive statistics and inferential statistical methods using Statistical Package of the Social Science (SPSS version 21.0) programming to analyze and interpret data. T test and One -way ANOVA were conducted to compare the sleep behavior of Perak State Sports School students.

Table 1 shows the demographics of respondents by gender. A total of 116 student -athletes responded by answering the ASBQ questionnaire distributed via a google form. Of the 116 student athletes, 61 were male athletes (29.3%) and 55 were female athletes (26.4%).

Table 1: Demographics of Respondents

Gender	Frequency	Percentage
Male	61	29.3
Female	55	26.4

Table 2 shows the distribution of the mean and standard deviation of the overall global ASBQ scores by gender. The mean distribution of the global ABSQ score for male student athletes was (M = 38.36; SD = 9.798) and the mean distribution of the global ASBQ score for female student athletes was (M = 39.76; SD = 8.685).

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Table 2: Distribution of Mean and Overall Standard Deviation by Gender

	Gender	Mean	Standard deviation
Global Score	Male	38.36	9.798
	Female	39.76	8.685

The t-test was used to compare the sleep behaviors of athletes according to gender, highest level of involvement and frequency of training. Based on Table 3, it is found that the t -value for the comparison of sleep behavior of male and female student athletes is t = -0.812 and the significance level is p = 0.418. This level of significance was in excess of 0.05 (p> 0.05). As a result, there was no significant difference in sleep behavior between male and female student athletes. The mean sleep behavior score of male student athletes (mean = 38.36) was smaller than that of female student athletes (mean = 39.76). This means that the sleeping behaviors of male and female student athletes are the same.

Table 3: ASBQ Global Scores by Gender

Scale	Gender	N	Mean	Std. Dev	t value	Sig.
ASBQ Global Score	Male	61	38.36	9.798	-0.812	0.418
	Female	55	39.76	8.686		

Based on Table 4, it is found that the t -value for the comparison of sleep behavior for Perak State Sports School student athletes based on the highest level of involvement is t = -1.623 and significant level p = 0.069. This level of significance was in excess of 0.05 (p> 0.05). So, there is no significant difference in the sleeping behavior of Perak State Sports School student athletes based on the highest level of involvement. The mean sleep behavior score of nationalities representing student athletes (mean = 37.64) was smaller than that of non nationals representing student athletes (mean = 40.91). This means that the sleep behavior of student athletes who represent nationally is better than that of student athletes who do not represent nationally.

Table 4: ASBQ Global Scores Based on Athlete's Highest Level of Involvement

Scale	Highest level of involvement	N	Mean	Std. Dev	t value	Sig.
ASBQ Global Score	National representative	58	37.64	8.102	-1.623	0.069
	Non national representative	58	40.91	10.196		

Based on Table 5, it is found that the t-value for the comparison of sleep behavior for Perak State Sports School student athletes based on training frequency is t = 0.349 and the significance level is p = 0.728. This level of significance was in excess of 0.05 (p> 0.05). Therefore, there is no significant difference in sleep behavior of Perak State Sports School students based on training frequency. The mean sleep behavior score of student athletes who underwent training more than 10 sessions per week (mean = 39.28) was greater than that of student athletes who underwent training less than 10 sessions per week (mean = 38.67). This means that the sleep behaviors of student athletes who underwent training for more than 10 sessions and less than 10 sessions a week were the same

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Table 5: ASBQ Global Scores Based on Training Frequency

Scale	Training Frequency	N	Mean	Std. Dev	t value	Sig.
ASBQ Global Score	> 10 session	68	39.28	8.996	0.349	0.728
	< 10 session	48	38.67	9.740		

Based on Table 6, it was found that global ASBQ score of student athletes under 14 (M = 36.85, SP = 10.015), the global ASBQ score of student -athletes under 16 (M = 39.44, SP = 7.727) and the global ASBQ score of student -athletes under 17 and over (M = 41.09, SP = 10.037). The mean sleep behavior scores of student athletes under 14 years old were smaller (mean = 36.85) compared to student athletes under 16 years old (mean = 39.44) and 17 years old and above (mean = 41.09). This shows that the sleep behavior of student athletes under 14 years old is better than the sleep behavior of student athletes under 16 years old and 17 years old and above.

Table 6: Distribution of Athlete ASBQ Global Scores Based on Age Level

Age Level	(N)	Mean	Standard deviation
Under 14	39	36.85	10.015
Under 16	45	39.44	7.727
> 17	32	41.09	10.037
Total	116	39.03	9.274

One -way ANOVA analysis was used to identify differences in global ASBQ scores based on the age of student athletes. Based on Table 7, it was found that there was no significant difference in the mean score of the global ASBQ score based on age ($F(2, 113) = 1.950$; $p < 0.05$). As a result, there is no significant difference in sleep behavior among students at the Perak State Sports School by age.

Table 7: ASBQ Global Score ANOVA Test Based on Age Level

ASBQ Global scores based on age	Sum of Squares	df	Mean Square	F	Sig.
Between groups	330.016	2	165.008	1.950	.147
Within groups	9560.907	113	84.610		
Total	9890.922	115			

4. Conclusion

This study aims to identify the sleep behavior of Perak State Sports School athletes. Positive sleep behaviors will contribute to good achievement, performance among student athletes looking at the level of involvement that those student athletes participate in. The importance gained from this study is that it can give a great impact, especially to the athletes themselves. Student athletes can improve their sleeping behaviors to be better than before. When good sleep behaviors are practiced, then the student athletes can recover themselves physiologically and psychologically and even athletes are more focused in training and competition. Therefore, optimal performance can be achieved.

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The results of this study revealed that there was no significant difference in sleep behavior between male and female athletes at the Perak State Sports School. In addition, the findings also showed that there were no significant differences in sleep behavior based on the highest level of involvement, training frequency and age among athletes. The results of the researcher's findings differ from the study conducted by Erlacher et al. (2011) in which male athletes are more likely to sleep poorly than female athletes. The study by Brauer et al. (2019) also showed that many student-athletes lack sufficient sleep, especially among male student athletes.

The researcher argues, this may be because all respondents live in dormitories and go through the same routine. The sleep schedule is also consistent where all student athletes have to go to bed at 11.00 pm and wake up as early as 6.00 am. A period of sleep for 7 hours in the dormitory is sufficient to ensure the physical and psychological recovery of the student athlete. Furthermore, other factors that disrupt the sleep of student athletes such as the use of cell phones and video games until late at night also do not occur. This is because the use of mobile phones is not allowed and it is forbidden to bring them to the hostel. Therefore, no significant differences in sleep behavior were shown in this study.

Researchers also face limitations in this study. The study was carried out during the COVID-19 pandemic that affected the world and the country. Therefore, the total number of respondent responses was less than the actual number of student athletes because the data could not be collected in person. Among the reasons for the lack of feedback from respondents is because student athletes do not have devices such as mobile phones and face problems with internet access at home.

Based on the results of the study obtained, further studies need to be implemented and involve more respondents, especially schools that have athletes sports development programs. In addition, future studies can be conducted by comparing sleep behaviors among sports school student athletes and day school student athletes. Thus, significant sleep behavior differences can be identified from various schools and different aspects.

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Conflict of Interests

The authors declare no conflict of interest in this study.

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