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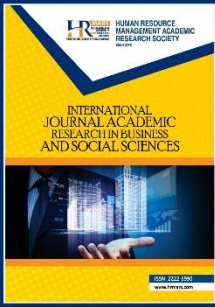
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## Preparatory Study of Anxiety towards Sleep Quality and Physical Fitness of Elite Badminton Players

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### Abstract

The main purpose of this study is to determine the relationship between Junior Purple League Badminton players' anxiety towards sleep quality and their physical health. Several clubs or teams that competed in the Purple League were the subjects of this investigation. Before conducting the real study, researchers need to conduct a pilot study first. For this pilot study, 30 players were chosen as respondents with the same characteristics as a real respondents. Utilizing the questionnaire method, this study is considered quantitative research. Research data was collected using a set of questionnaires that were administered online using the 'Google Forms software. The questionnaire instrument in this study contains four parts where Part A contains information related to demographics, part B relates to the badminton player's level of anxiety, part C relates to the self-report of sleep quality and finally, Part D covers questions related to physical fitness. The result of the pilot study revealed that, Cronbach's alpha value for anxiety variables was  $>0.8$ , Cronbach's alpha value for sleep quality variables was  $>0.8$  and Cronbach's alpha value for physical fitness variables was  $>0.9$ . Thus, the findings of this pilot study show that this existing instrument is appropriate and can be used in the actual study later.

**Keywords:** Anxiety, Sleep Quality, Fitness, Badminton

### Introduction

The origin of the game of badminton lies in India and it became popular in the mid-eighteenth century, mostly played by British military officers when India was under British Colonial rule. The game of badminton is known as "battledore and badminton" and is played for fun instead of badminton. Originating in 19th-century British India, badminton is a racket sport played with two or four players on a rectangular court with a net in the middle (Kwan, 2013).

When the sport of badminton was brought to Asia and dominated by China and other countries such as Malaysia, Indonesia and Thailand. Where in China they have a dedicated shop for badminton in China and satellite TV that broadcasts badminton games. They then have local and international tournaments in Southeast Asia that can make a lot of money. In Malaysia, there is a league for junior athletes commonly called the Junior Purple League. Malaysia Purple League also known as SS Purple League is Malaysia's premier professional badminton league, managed by Purple League (M) Sdn. Bhd. The season usually lasts from

December to January. The league features local and international players consisting of Olympic medalists, World Champions, former stars and even rising talent. This league started in 2014 and is still going.

This study aims to identify the relationship between concerns about sleep quality and physical fitness among junior badminton athletes in the Purple League. Maintaining the health of an athlete is not an easy process. If athletes follow the correct daily routine, they will achieve good results, but if they make mistakes and act carelessly, they will get the opposite results. One of the most important recovery factors is sleep, without a doubt (Halson, 2014). According to the research (Krueger et al., 2016) sleep helps restore the immune, nervous, skeletal and muscular systems. Sleep is an important part of the athlete's recovery process according to (Hrozanova et al., 2018b). according to the research Fobian et al (2016) the National Sleep Foundation 46 recommends 8-10 hours of sleep per night for adolescents (14-17 years). Therefore, according to research Simpson et al (2017); Watson et al (2015) due to the heavy physical and psychological load faced continuously by junior elite athletes, their sleep requirements of junior elite athletes should correspond to the upper limits of general recommendations.

### **Problem Statement**

Maintaining a healthy lifestyle is closely related to a high quality of life (Gochman, 1997, p. 3). Instead, health is defined as "a state of complete physical, mental, and social well-being," which includes more than just the absence of disease and infirmity (WHO, 1991). Consequently, a healthy lifestyle is an activity that contributes to the preservation, restoration, and improvement of a person's health (Gochman, 1997, p. 3). Behaviors that promote health include, but are not limited to, eating well, getting enough sleep, being physically active, not smoking, drinking alcohol in moderation, and consulting a medical professional for guidance when needed (Short & Mollborn, 2015). This study places a major emphasis on the relationship between anxiety to sleep quality and physical fitness.

The amount of sleep an individual needs is directly proportional to their age. In order to perform well, each person needs to meet their unique sleep needs. A person's level of sleep quality can be measured by how easily they fall asleep and how well they stay asleep. The duration of sleep and complaints felt either during sleep or after waking up are two factors that can be used to characterize the quality of a person's sleep. The quantity and quality of a person's sleep are the two main factors that determine a person's need for adequate rest. In addition, the quality of sleep can be affected by various factors, including those related to physiology, psychology, environment and lifestyle. A decrease in daily activities, fatigue, weakness, decreased endurance, and instability of vital signs are all effects that can be attributed to the presence of physiological components (Potter and Perry, 2010).

According to Chen et al (2016), the following categories of factors can affect a person's ability or inability to sleep: (1) Current Health Condition, If a person's body is healthy, they can sleep well, but if their body is unhealthy, it will be difficult for them to sleep well; (2) the environment, including noise and light levels. The environment around a person can affect the quality of their sleep. A person's ability to sleep well can be improved by maintaining a clean environment, a cool temperature, a calm atmosphere, and adequate lighting; on the other hand, maintaining a dirty environment, maintaining a hot temperature, maintaining a crowded atmosphere, and maintaining very bright lighting can lead to worse sleep quality; (3) Psychological stress, anxiety, and depression can cause sleep frequency disturbances.

Today, teenagers sleep less and are less active than in the past. The modern world forces us to live a non-stop lifestyle, which makes it challenging to maintain a healthy lifestyle, also known as healthy behavior (Woods & Scott, 2016). In particular, teenagers' time spent in front of the screen has significantly increased over time, especially at night. The number of hours of sleep that teenagers get each night has decreased as a direct result of the trend among this age group toward late bedtimes (LeBourgeois et al., 2017). Recent research has shown that an insufficient amount of quality sleep is related to an increased likelihood of both anxiety and depression (Woods & Scott, 2016). The widespread use of electronic devices and social media has also contributed to the level of greater sedentary behavior among young people. These behaviors can have a severe influence on health, especially because of the link between low levels of physical activity and obesity (Sheldrick et al., 2018). Conversely, poor sleep quality and low levels of physical activity have a detrimental influence on the quality of life, which in turn negatively impacts well-being (Engström, 2008).

The amount and quality of a person's sleep each night can have a significant influence on their overall health. Sleep is an important part of human physiological processes, and problems with sleep can adversely affect a person's health. Since we spend about a third of our lives sleeping, the question of our general state of "sleep health" continues to be an important one throughout our lives. Therefore, it is important that we get enough sleep. Sleep problems have grown to be an important problem for the health of the general public for decades. There are various sleep disorders, including not getting enough sleep or poor-quality sleep.

Due to the increased emphasis on academic achievement and the widespread use of various forms of electronic media, the lifestyles chosen by young adults pose a significant threat. This can lead to sleep loss as well as poor sleep quality, especially when combined with insufficient physical activity and a poor diet. Physical activity (PA) among athletes has the potential to be a valuable resource, which can improve the quality of sleep they get.

Thus, there were a small number of researches have been conducted to examine the relationship between getting enough exercise and good sleep. The current study is a cross-sectional investigation that uses a self-reported questionnaire to assess the association between the level of concern about physical activity fitness and the quality of sleep experienced by the population.

### **Research Objective**

1. To determine the level of anxiety of junior badminton players.
2. To identify the relationship between anxiety and sleep quality.
3. To examine the relationship between anxiety and physical ability.
4. To investigate the relationship between sleep quality and physical ability.

### **Literature Review**

According to Freud (1963), anxiety should be seen as objective or neurotic. An external danger, such as a funeral, a birth, or going to an interview, might cause objective or general worry. This worry is a sensible, instinctive reaction that serves to safeguard the speaker. This dynamically produced preparedness is a crucial feature since it guards against unexpected attacks. This external worry is not a psychological issue in and of itself.

According to Wiley (1997) cognitive theory of panic, a key component of panic is that the patient interprets the body's tell-tale indications of worry horribly. Experts agree that sleep plays a significant role in well-being and health and that sleep patterns frequently

adhere to regular schedules. The way a person lives has a big impact on how they sleep as an athlete. The quantity of rest and recuperation should match this high demand because a professional athlete's life is demanding and stressful, according to (Nédélec et al., 2015). On the other hand, remaining awake for a number of hours following a night of intense exercise makes athletes desire or require a longer duration of sleep to recover. However, it gets in the way of extra sleep due to work or school commitments. This atmosphere leads to negative behavior.

### **Methodology**

In order to more thoroughly investigate the amount of concern Junior Purple League Badminton players have regarding their physical abilities and sleep quality, a quantitative research approach was adopted in this study. In light of that, the purpose of this study is to investigate the relationship between player sleep issues. This study will also look at how much sleep these badminton players had each night over the course of a week.

### **Instrument**

The instrument employed in this study is a survey form with 4 sections, designated as parts A through D. 50 young players in the Junior Purple League of badminton will get the survey form. The Hamilton Anxiety Rating Scale (HAM-A), Sleep Quality Scale (SQS), and Self-Reported Physical Fitness were organized into three sections of the questionnaire.

### **Participants for real study**

50 junior badminton players from the purple league from all throughout Malaysia made up the study's sample. According to the contingent registration list for the 2020 Purple League competition, the club is represented by 64 players, both men and women, who typically play for 8 different clubs. For the five different categories that were part of the Purple League competition that year, the eight teams each had eight key players. The total number of players on the bench does not include the number of players.

### **Pilot Study**

Prior to performing the real study, the researcher will carry out a pilot test to gauge the viability of the questionnaire that was created in accordance with the predetermined items. The main goal of this pilot study, according to (Supriyanti et al., 2015), is to pinpoint the shortcomings of research tools and research techniques that are used on populations and samples in small groups. To identify the qualities of the questions that need to be adjusted or maintained, a pilot study was undertaken (Najib, 1999). Measures of instrument reliability with values of 0.6 and higher are frequently used to assess the degree of study reliability (Konting, 2005). In addition, it is crucial for researchers to conduct a pilot study since it allows them to identify and to a certain extent, dispel any concerns they may have about the design and content of the questionnaire that will be utilized. In order to use the questionnaire for this study, the researcher methodically constructed a questionnaire instrument. The questionnaire was adjusted based on the shortcomings from the pilot study and the weaknesses were repaired more properly.

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.884	.889	13

Table 1

*Cronbach's alpha value for anxiety variables*

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.840	.833	27

Table 2

*Cronbach's alpha value for sleep quality variables*

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.909	.910	5

Table 3

*Cronbach's alpha value for physical fitness variables*

The parameters of anxiety, sleep quality, and physical fitness were employed in the pilot study. Cronbach's alpha for anxiety, which consists of 13 things as in Table 1, is 0.884, while for sleep quality, which consists of 27 items as in Table 2, it is 0.840. The final component, physical fitness, has a Cronbach's alpha value of 0.909 and up to 5 elements (see Table 3). There are 45 elements in all, each having a 0.850 value.

**Conclusion**

Without a question, sleep is one of the key aspects of recuperation (Halson, 2014). The immunological, neurological, skeletal, and muscular systems are all strengthened by sleep (Krueger et al., 2016). The goal of this study is to determine what factors inspire badminton players to have healthy sleep habits. Previous research demonstrates that mental elements (anxiety) and motivation may both lead an athlete to perform at their utmost during a competition and can also be the reason they falter (Duda, 1998). The majority of Malaysia's badminton players are still learning and are teens. College students' high levels of anxiety are already a public health problem. Because they believe it to be a widespread issue, many people still do not get the idea of getting excellent sleep. The most crucial thing you can do for your health is to get enough sleep.

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