THE HINDRANCE FACTORS OF SLEEP DEPRIVATION TOWARDS A SUCCESSFUL ACADEMIC PERFORMANCE AMONG UNIVERSITY STUDENTS IN MALACCA

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SUPERVISOR'S AND PANEL APPROVAL

I hereby declare that I have read this thesis. In my opinion, this thesis is sufficient in terms of scope and quality as partial fulfillment of the requirements for the Bachelor of Technology Management (Technology Innovation) with Honors award.



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I hereby declare that this thesis entitled "THE HINDRANCE FACTORS OF SLEEP DEPRIVATION TOWARDS A SUCCESSFUL ACADEMIC PERFORMANCE AMONG UNIVERSITY STUDENTS IN MALACCA" is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in the candidature of any other degree.

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DEDICATION

This research paper is wholeheartedly dedicated to my dear parents, Saiful Bin Abdul Manap and Norhayati Binti Md. Yatim, which is my main source of motivation. They always give me strength when I think of giving up, which continues to provide their moral, spiritual, emotional, and financial support. Next, I would like to express my gratitude to my supervisor, Assoc. Prof. Dr. Norain Binti Ismail and friends who shared words of advice, encouragement, and support to complete this research project.



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ABSTRACT

Sleep deprivation is a condition that occurs due to lack of sleep that can have adverse effects that can be detrimental to a person's mental and physical health, such as dizziness, depression, stress, lethargy, and fatigue during the day. Sleep is essential in life; however, some students often forget the importance of sleep because they are busy studying various subjects, doing assignments, participating in co-curricular activities, and reviewing lessons for semester exams. At the same time, there is a broad consensus that lack of sleep can cause university students to become less innovative because they are doing lousy in academic performance. This study is to search for the cause of sleep deprivation among innovative students in the university, why sleep deprivation affects university students' academic performance, and solutions to sleep deprivation among innovative students in the university by using qualitative research by interviewing those students. The study participants are two students from four different universities in Malacca who underwent face-to-face and online interviews through an online platform called Webex Meetings. The expected result of this study is based on the interviewee's experience with how sleep deprivation has affected their student life and academic performance and data collection from past studies.

Keywords: Sleep Deprivation, University Students, Academic Performance, Qualitative Research, Innovative Students.

ABSTRAK

Kekurangan tidur adalah keadaan yang berlaku akibat kurang tidur yang boleh memberi kesan buruk yang boleh memudaratkan kesihatan mental dan fizikal seseorang, seperti pening, kemurungan, tekanan, kelesuan, dan keletihan pada siang hari. Tidur adalah penting dalam kehidupan; namun, segelintir pelajar sering melupakan kepentingan tidur kerana sibuk mempelajari pelbagai subjek, membuat tugasan, menyertai aktiviti kokurikulum, dan mengulang kaji pelajaran untuk peperiksaan semester. Pada masa yang sama, terdapat kesan luas bahawa kekurangan tidur boleh menyebabkan pelajar universiti menjadi kurang inovatif kerana mereka mempunyai prestasi akademik yang buruk. Kajian ini adalah untuk mencari punca kurang tidur dalam kalangan pelajar inovatif di universiti awam, mengapa kurang tidur menjejaskan prestasi akademik pelajar universiti, dan penyelesaian kurang tidur dalam kalangan pelajar di universiti awam dengan menggunakan penyelidikan kualitatif dengan menemu bual pelajar tersebut. Peserta kajian adalah dua pelajar dari empat universiti berbeza di Melaka yang telah menjalani temu duga secara bersemuka dan dalam talian melalui platform dalam talian iaitu Webex Meetings. Hasil jangkaan kajian ini adalah berdasarkan pengalaman orang yang ditemu bual tentang bagaimana kurang tidur telah menjejaskan kehidupan pelajar dan prestasi akademik dan pengumpulan data daripada kajian lepas.

Kata Kunci: Kekurangan Tidur, Pelajar Universiti, Prestasi Akademik, Penyelidikan Kualitatif, Pelajar Inovatif.

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CHAPTER 1:

1.0 INTRODUCTION

The researcher chooses to investigate the hindrance factors of sleep deprivation toward successful academic performance among university students in Malacca. This chapter explains the introduction of this research, which consists of the background of the study, problem statement, research question and objective, scope of the research, research significance, limitation of the study, and summary.

1.1 BACKGROUND

The term sleep deprivation refers to getting less than the needed amount of sleep, which, for adults, ranges from seven to nine hours of sleep a night. Children and adolescents need more nighttime sleep than adults (Suni, 2022). Sleeping is one of the crucial things in life. However, some factors can lead to sleep deprivation, including poor sleep hygiene, lifestyle choices, work obligations, sleep disorders, and other medical conditions (Suni, 2022). Lack of sleep is often driven by voluntary decisions that have reduced available sleep time. For example, a student who decides to stay up at night to complete school assignments may experience severe sleep deprivation. Work obligations are another prevalent cause of sleep deprivation. People who have numerous jobs or work long hours do not have enough time to sleep. For example, shift workers who must work all night may struggle to get enough sleep.

Also, other sleep problems or medical factors may contribute to sleep deprivation. Such as sleep apnea, a severe sleep disorder that occurs when breathing stops and starts while people are sleeping (Benisek, 2021). Such breathing problems can keep many people awake every night and affect the duration and quality of a person's sleep. Other physical or mental health issues that can affect the quality and quantity of sleep include body aches or general anxiety conditions.

Statistics from the World Sleep Association show that 9 out of 10 Malaysians have a degree of insomnia and have at least one type of sleep problem. According to the World Sleep Association, sleep disorders in Malaysia are rising. Statistics show that 35% of Malaysians have sleep problems, with more than 53% of Malaysian workers having less than seven hours of sleep and 51% having stress problems (Malek, 2020). There is a survey that was done in 2018 which is called Sleep Survey 2018, which Am Life International Sdn has conducted (Amlife) to find out how many Malaysians face sleep problems and their causes. The highest percentage of sleep problems was 46%, saying they felt tired and did not rest during the day. As many as 31% said that it was because they felt sleepy all day. As many as 66% of respondents said they suffer from sleep deprivation at least once a week. The survey has shown that the average Malaysian sleeps only 6.3 hours, although it has been recommended to sleep for seven to nine hours (Syed Jaafar, 2018).

Students are among the high-risk groups established in the literature for being affected by sleep disorders. Lack of quality sleep at night will cause drowsiness during the day, affecting students' health and academic performance. Quality sleep in an optimal period will facilitate memory processing and learning. A night of quality sleep can make a healthy mind that helps maintain concentration, executive cognitive function, sensorimotor integration, and memory processing. As is well known, adequate and efficient sleep plays a vital role in learning and memory. So, students must sleep well to achieve excellent academic performance (Maheshwari & Shaukat, 2019). According to a study by Maheshwari and Shaukat (2019), most low average GPA students report having a very poor Pittsburgh Sleep Quality Index (PSQI), which is less than five to seven hours of sleep duration and daytime dysfunction almost every day.

Innovation in the workplace is an essential aspect of organizational resilience and success. University students are a critical source of future innovation in the corporate context as future employees. Before students reach the world of work, they begin to develop some of their long-term habits, such as innovation behaviors, in a Higher Education environment. Therefore, to produce innovative students, they need to maintain quality sleep at night so that the body and mind become healthy and energetic. Next, be able to generate creative ideas, critical thinking, and problem-solving to improve the lives of the community in the future.

1.2 PROBLEM STATEMENT

Students experience several critical situations when starting university, such as studying various subjects, doing assignments, participating in co-curricular activities, and reviewing lessons for semester exams. According to Schlarb et al. (2017), about 90% of university students have roommates, and 41% wake up at night because of other people's noise. On weekdays and weekends, sleep and wake times often vary by more than 1 to 2 hours. These university students' challenges and special conditions are associated with sleep disorders (Schlarb et al., 2017). They are unaware of the consequences of lack of sleep which will cause mental and physical effects, such as dizziness, depression, stress, lethargy, and fatigue during the day (Hershner & O'Brien, 2018). At the same time, there is a broad consensus that lack of sleep can cause university students to become less innovative because they still lack skills. Sleep deprivation can affect a university student's academic performance through the effects on learning, memory, grades, perception of effort, driving performance, and mood.

Among university students, sleep deprivation is one of the most common causes of daytime sleepiness. Students get insufficient sleep because they sleep late and wake up early to attend class. Sleep deprivation happens for various physiological and behavioral reasons in the students. Usually, student behavior is a source of problems, especially for students living on college campuses. However, lack of sleep is not the only cause of drowsiness; students are not immune to sleep disorders such as insomnia, sleep apnea, and Rapid Eye Movement (REM) Sleep Behavior Disorder, which can also cause drowsiness.

In addition, inefficient time management is also one of the causes of students' lack of sleep (Adams & Blair, 2019). Time management is organizing and planning how to divide time between different activities (BillT & Michele, 2022). Students who do not manage time properly will postpone assigned assignments until late at night and experience sleep deprivation problems the next day. It is evidenced by Razali et al. (2018) that time management is essential and may affect an individual's overall performance and achievements. Students nowadays always comment that they do not have enough time to complete all the tasks.

Furthermore, excessive use of technology such as smartphones and laptops at night also causes students to have sleep deprivation (Pacheco & Truong, 2022). Monroe (2018) found that late-night texting and phone use are associated with feelings of depression, low self-esteem, and diminished coping abilities. Then, lower academic performance is another result of technology and lack of sleep. It has been evidenced by SHFAustralia (2019), who has studied the effects of seeing bright screens on smartphones and laptops up to five hours before nightfall. *Melatonin* is a hormone that provides individuals with sleep. The average rise in melatonin in the evening is not affected by 1 hour of solid screen light but after 1.5 hours. Therefore, when individuals use the technology for 1.5 hours in the evening, they will feel less sleepy. This suggests that individuals will always go to bed and wake up later. Getting up at a particular hour in the morning to go to school may be a significant issue.

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1.3 RESEARCH QUESTION

The research question of this study is as bellow:

- i. What are the factors of sleep deprivation among university students?
- ii. Why does sleep deprivation affect university students' academic performance?
- iii. How to provide the solution on sleep deprivation among university students?

1.4 RESEARCH OBJECTIVE

The research objective of this study is as bellow:

- i. To study the cause of sleep deprivation among university students.
- ii. To uncover why sleep deprivation affects university students' academic performance.
- iii. To recommend the solution on sleep deprivation among university students.

1.5 SCOPE AND LIMITATION OF THE STUDY

This study aims to understand the problem of sleep deprivation and its solution among students in a university in Malacca, which Universiti Teknikal Malaysia Malacca (UTeM), Multimedia University (MMU), Universiti Teknologi Mara (UiTM) and Universiti Melaka (UNIMEL). The subject for these studies is the final year of bachelor's degree students, which is year 3 or 4, who studied in the university area of Malacca, Malaysia, to see their reactions and opinion on sleep deprivation and whether it affects their academic performance. The participants of this study were eight students that were chosen from four different universities, which is two people from each university. The duration of this study is a single moment rather than taking the data over time.

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The limitation of this study is that the researcher only uses a small sample size in some universities and not all universities in Malacca. However, the researcher has selected a specific sample of only four universities which is Universiti Teknikal Malaysia Malacca (UTeM), Multimedia University (MMU), Universiti Teknologi Mara (UiTM), and Universiti Melaka (UNIMEL), to overcome this weakness. The researcher only took the results of the respondents' academic performance broadly and was not specific to a particular subject. The courses taken by each respondent were also different. Last but not least, the researcher used a sample of students in the final year of their bachelor's degree, which is year 3 or 4 only.

1.6 RESEARCH SIGNIFICANCE

This study lets university students know that sleep deprivation cannot be ignored, despite being busy working and studying. Some students already know the causes of sleep deprivation; however, the effect is that sometimes people overlook it. When the students are aware of all the consequences that can cause sleep deprivation, they will be more careful in the future. Next, this study can be a reference for future studies about sleep deprivation in their era. Students with sleep deprivation can also refer to this study to identify the causes, effects, and measures to overcome the lack of sleep.

1.7 SUMMARY

This chapter contains the background of the study, which is related to the definition of sleep deprivation, the factors of sleep deprivation, the percentage of Malaysians with sleep deprivation, and the effects of sleep deprivation on university students. Next, describe the research problem statement, research questions and objectives, scope of the study, significance of the research, and limitations.

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CHAPTER 2:

LITERATURE REVIEW

2.0 INTRODUCTION

This chapter will explain the literature review that the researcher used in the study. The researcher's source in this study is from several journals, articles, and other information sources on the internet. In this chapter, the researcher will refer to the previous study that has the exact keywords of this study which is sleep deprivation.

2.1 SLEEP DEPRIVATION OVERVIEW

Sleep deprivation is a condition in which a person's sleep cycle is messed up. It happens when a person does not get enough sleep to wake up feeling awake during the day. (Raafat et al., 2020). According to Bishir et al. (2020), sleep is essential in maintaining neuronal circuitry and signaling and helps maintain overall health and well-being. Sleep deprivation disturbs circadian physiology and negatively impacts the brain and behavioral functions. This fact is supported by Gaine et al. (2018), which mentioned that sleep deprivation disrupts millions of people's lives every day and profoundly impacts the molecular biology of the brain. These effects begin as changes within a neuron at the DNA (Deoxyribonucleic acid) and RNA (Ribonucleic acid) levels, resulting in alterations in neuronal plasticity and dysregulation of many cognitive functions, including learning and memory.

Furthermore, Naito et al. (2021) defined sleep deprivation as less than 7 hours a day. In simple terms, sleep deprivation occurs when a person cannot get enough sleep. The amount of sleep needed to feel refreshed, and function well depends on the individual and varies across ages (Hanson & Huecker, 2019). After analyzing and understanding the overview of sleep deprivation from previous studies, sleep deprivation is caused by someone who does not have enough sleep and rest. Sleep deprivation will cause the brain and body to become exhausted and incapable of functioning correctly, such as a lack of concentration and body lethargy.

2.2 THE IMPORTANCE OF SLEEP

Good sleep is necessary for good health. Sleep health is increasingly recognized as essential for physical and mental health by both the medical profession and the general public (Cho & Duffy, 2019). This fact is supported by Pacheco & Singh (2022), which is stated that sleep is an essential function that allows the body and mind to recharge, leaving refreshed and alert when they wake up. Healthy sleep also helps the body remain healthy and stave off diseases. Without enough sleep, the brain cannot function properly.

Furthermore, according to Fletcher (2019), getting enough sleep is essential for helping a person maintain optimal health and well-being. Regarding health, sleep is as vital as regular exercise and eating a balanced diet. Therefore, sleep needs to be taken care of regularly following the sleep schedule at night to restore energy after being fatigued from doing various activities during the day. By referring to past studies on the importance of sleep, adequate sleep will cause the body to be fit and the mind to be intelligent. For example, the body will be energized to perform daily activities by having enough sleep. The mind will subsequently become intelligent and think sensibly in a job.

2.3 THE CAUSE OF SLEEP DEPRIVATION AMONG UNIVERSITY STUDENTS

According to Naito et al. (2021), sleep deprivation and related factors among undergraduate students in Malaysia are due to sociodemographic reasons and lifestyle factors. The researcher has made an analysis based on 1017 undergraduate students in Malaysia and found that 58.1% of those who lack sleep among all students are students in Year 3 and Year 4. The researcher also stated that understanding lifestyle factors related to lack of sleep among the younger generation would benefit the development of community health policies and programs to address the issue.

One of the most prevalent causes of daytime drowsiness among college-aged students is sleep loss, which occurs when students go to bed late and get up early. On college campuses, behavioral components may be incredibly challenging. College students are not immune to sleep issues, which may induce tiredness. (Hershner & Chervin, 2014).

Next, Hershner & Chervin (2014) also mentioned that poor sleep habits might lead to sleep deprivation; sleep hygiene advocates routines promoting restorative sleep and avoiding substances. Good sleep hygiene consists of a regular sleep-wake pattern, a peaceful sleeping environment, avoiding drinking coffee after lunch, and stimulating activities before bed.

Another health-risk behavior that may be impacted by temperamental characteristics is voluntary sleep deprivation. Sleep disorders are among the most frequent health issues. Poor sleep quality may rapidly lead to increased stress, poor mood, impaired cognitive capacities, and lower overall quality of life (Andersz & Bargiel-Matusiewicz, 2018).

2.4 WHY SLEEP DEPRIVATION AFFECTS UNIVERSITY STUDENTS' ACADEMIC PERFORMANCE

When examining the link between sleep quality and academic performance, it has been shown that students with poor sleep quality get worse grades than those with high sleep quality (Toscano-Hermoso et al., 2020). It is supported by Hershner & Chervin (2014) statement that says sleep deprivation and daytime drowsiness are particularly troublesome for college students since they may lead to poorer grade point averages, an increased chance of academic failure, reduced learning, impaired mood, and an increased risk of automobile accidents.

Sleep deprivation may lead to an increase in procedural mistakes, putting students in danger. Insufficient sleep impacts the neurological system adversely, resulting in impaired brain function. Due to cognitive loss caused by sleep deprivation, academic performance is often impaired (Guadiana & Taylor L, 2021). Sleep deprivation is a significant concern for many students who want to attain successful academic outcomes. Numerous specialists have linked lousy sleeping habits in students to diminished brain function. The quality of sleep college students get influences their academic success. The students deprive themselves of sleep in order to study without considering the adverse health effects they subject themselves to (IvyPanda, 2019).

Sleep is assumed to serve an important and unique function in memory consolidation. Although the precise mechanisms underlying the relationship between sleep, memory, and neuroplasticity are unknown, the consensus is that during sleep, specific synaptic connections that were active during awake periods are strengthened, allowing for memory consolidation, while inactive synaptic connections are weakened. Thus, sleep serves an important purpose in memory consolidation, which is necessary for effective academic achievement (Okano et al., 2019).

2.5 THE SOLUTION ON SLEEP DEPRIVATION AMONG UNIVERSITY STUDENTS

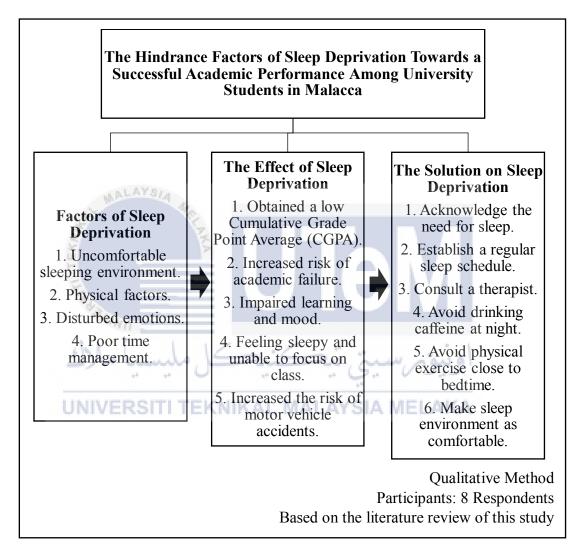
According to American Academy of Sleep Medicine (AASM, 2020), the solution to the lack of sleep among college students is to go to bed early to receive a whole night's rest. Every night, adults need around seven to eight hours of sleep. However, if someone has difficulties falling asleep, get out of bed and engage in a calming activity until they feel sleepy. Next, if sleeping for an extended period, make it short, less than one hour of sleep before 3 p.m. Then, avoid coffee in the afternoon and evening since it might make it harder to fall asleep due to its long half-life.

Additionally, the condition of the bed should be conducive to sleeping. Please turn off the lights in the evening and at night to signal to the body that it is time to sleep. Allow early sunshine in to boost body attentiveness. Take some time to relax before bedtime. Next, refrain from using electronic devices such as computers, televisions, and mobile phones, and rest quietly for 15 to 30 minutes. Avoid eating heavy meals before night and choose nutritious snacks or light treats so as not to fall asleep hungry (AASM, 2020).

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2.6 THEORETICAL FRAMEWORK

According to Kivunja (2018), the theoretical framework is a structure that summarizes concepts and theories that develop from previously tested and published knowledge that has been synthesized to help the researcher have a theoretical background or basis for data analysis and interpretation of the meaning contained in the research data.



Based on the theoretical framework above, three subjects are related to this study, namely the hindrance factors of sleep deprivation toward successful academic performance among university students in Malacca. The three subjects presented in this theoretical framework are based on the literature review of this study. The first subject is the factors of sleep deprivation, which are the uncomfortable sleeping environment, physical factors, disturbed emotions, and poor time management.