

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

MUHAMMAD NURHAFIZ IKRAM BIN SAIFUL

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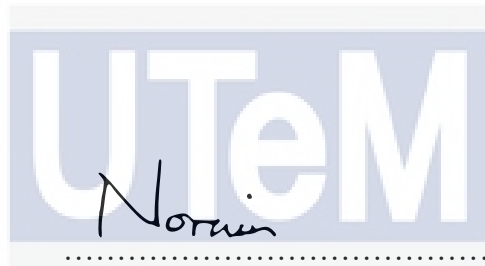
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JANUARY 2023

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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STUDENTS DECLARATION

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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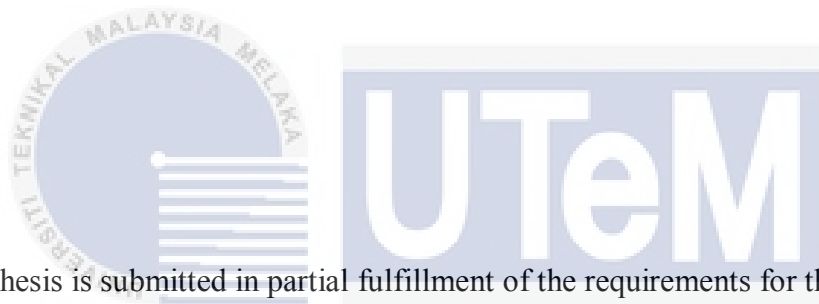
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Faculty Technology Management & Technopreneurship

Universiti Teknikal Malaysia Melaka (UTeM)

JANUARY 2023

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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Finally, I would like to thank my parents and colleagues for their support and encouragement in completing this study. Hopefully, this report can be a source of research for other students later and be able to help students cope with the problem of sleep deprivation.

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 tugas, 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.

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).

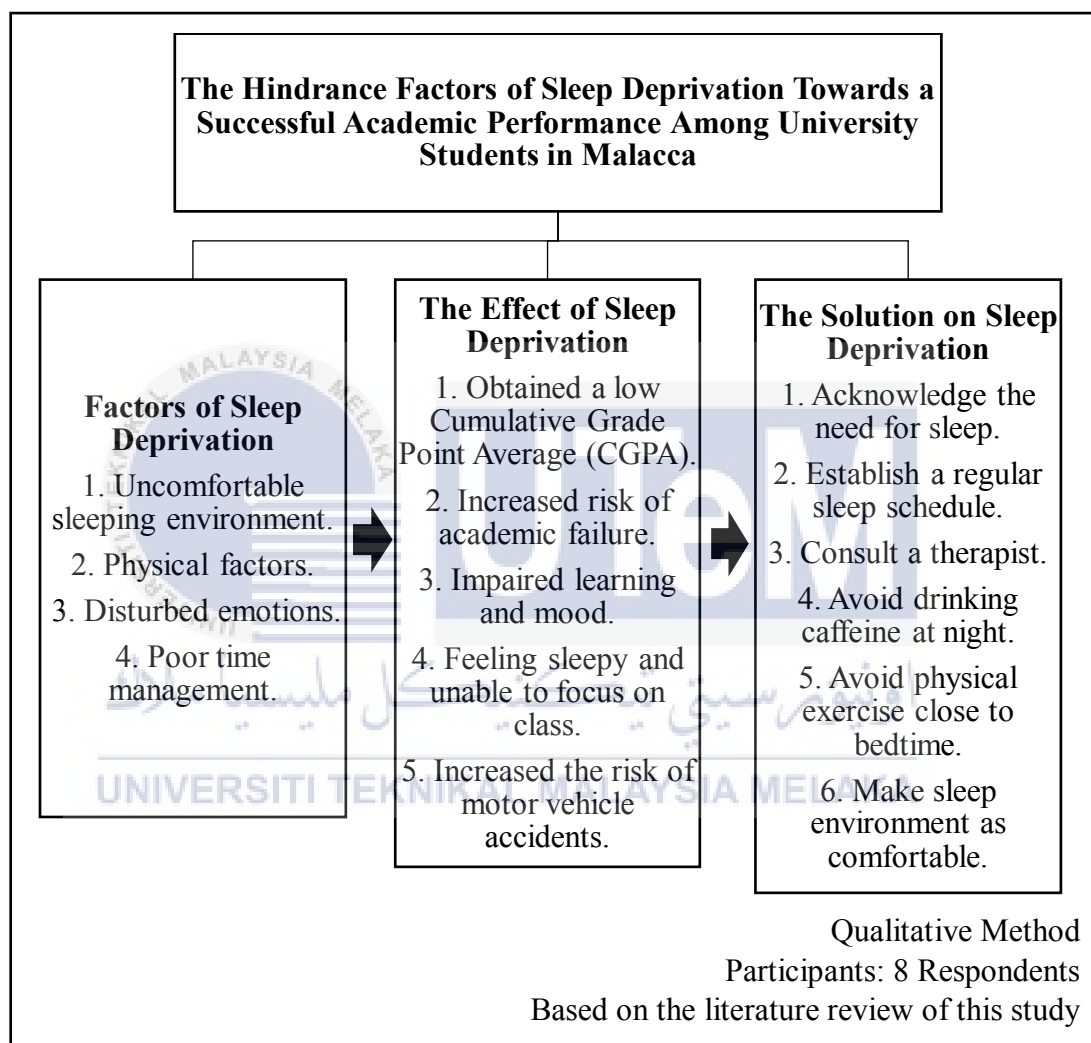
2.5 THE SOLUTION ON SLEEP DEPRIVATION AMONG UNIVERSITY STUDENTS

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).

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.

The first subject, which is the factors of sleep deprivation, has led to the second subject, which is the effect of sleep deprivation on university students' academic performance. For example, by having sleep deprivation, university students have a risk of obtaining a low Cumulative Grade Point Average (CGPA) and have a considerable risk of academic failure. Furthermore, impaired learning and mood, feeling sleepy, and unable to focus on class have a substantial risk of vehicle accidents due to sleep while driving.

Lastly, the third subject is the solution for the second subject which is the solution to sleep deprivation. The first solution is acknowledging the need to sleep, which students are sometimes unaware of the importance of sleep. Next, establish a regular sleep schedule for students to follow. Then, consult a therapist if the students have sleep problems such as disturbed mental health. The final solution is for students to avoid drinking caffeine at night, do physical exercise close to bedtime, and ensure the sleep environment is comfortable such as dim light and no noisy noises.

2.7 SUMMARY

This chapter explains the study's title and the literature review from the past study. This chapter consists of an explanation of the overview of sleep deprivation, the importance of sleep, the cause of sleep deprivation among university students, why sleep deprivation affects university students' academic performance, the solution to sleep deprivation among university students, and the theoretical framework of this study.

CHAPTER 3:

RESEARCH METHODOLOGY

3.0 INTRODUCTION

This chapter will describe the research methodology used in this study to identify the study of sleep deprivation among innovative students in universities in Malacca. This chapter will cover the study design, strategies, methods, data collection methods, and data analysis methods. The research methodology used in this chapter is to justify the research questions and objectives as stated in chapter 1.

3.1 RESEARCH DESIGN

There are several definitions of study design, but many writers believe it pertains to selecting specific data-gathering techniques. In addition, there are other categories of study designs, including explanatory, conclusive, theoretical, and empirical. In research design, for instance, exploratory research examines a given study field without delivering definitive solutions to research issues. The research design must identify the research issue to determine the research topic, hypothesis, and objectives, as well as qualitative or quantitative research methodologies. Different study design objectives, such as description, explanation, and prediction, correspond to varying levels of scientific knowledge (Arezina, Vera, 2018). The research design of this research is Case study. A case study is a systematic research methodology that provides comprehensive knowledge of a current topic or occurrence in a confined system.

3.1.1 CASE STUDY METHOD

Case study research is a qualitative method in which the researcher looks at a real-life, contemporary bounded system called a case or multiple fixed systems called cases over time. The case study collects in-depth data from multiple sources and writes a case description and case themes (Creswell & Creswell, 2017). In this study, the researcher has used the case study method to examine a person. The researcher used data sources, such as interviews and online documents, to implement the case study method. Selected respondents will share a unifying factor, which means they must all be directly or indirectly related to the study question. Next, after collecting the data, the researcher will analyze it to identify common or salient themes.

3.2 RESEARCH STRATEGY

The research strategy shows the overall direction of the research and how the researcher will do the research (Wedawatta et al., 2011). In this study, the researcher used the qualitative research strategy method to understand people's opinions and reasons for more profound knowledge about the problem. This method provides an overview of the research problem and helps achieve research objectives through methods such as interviews and text materials.

3.2.1 INTERVIEW

Interviews are done to allow people to learn from each other. This is called an interactive method. In this way, interviewing is an active research method in which the interviewer and the interviewee work together to make an interview or a "contextually bound and mutually created story" (Young et al., 2018). In this study, the researcher conducted a **semi-structured** interview to interview the respondents. According to Silverman & Patterson (2015), semi-structured interviewing is inauthentic since investigators and informants take on roles in the interviewing process that remove data collection from the real world. Semi-structured interviews can be used to understand how key stakeholders perceive and understand an issue.

The questions asked were related to lack of sleep, such as whether the respondent had ever experienced sleep deprivation during class and whether the lack of sleep affected the respondent's academic performance. The interviews were conducted online using platforms such as Webex Meetings. Researchers interviewed respondents according to groups, such as the first group from Universiti Teknikal Malaysia Malacca (UTeM), the second group from Multimedia University (MMU), the third group from Universiti Teknologi Mara (UiTM), and the last group from Universiti Melaka (UNIMEL).

3.3 RESEARCH METHOD

Research methods are the ways that data are gathered. Researchers can use the data to look at how things are done now and learn more about a subject. Professionals use research methods to learn about medicine, human behavior, and other academic subjects. Qualitative research methods and quantitative research methods are the two main types of research methods (Editorial Team, 2021).

3.3.1 QUALITATIVE RESEARCH METHOD

Qualitative research uses more than one method and takes a naturalistic, interpretive approach to its subject. Qualitative researchers look at things in their natural settings and try to figure out what is going on based on what people think it means. Qualitative research involves using and collecting empirical materials such as case studies, personal experiences, introspective, life stories, interviews, observational, historical, interactional, and visual texts that describe routine and problematic moments and meanings in individuals' lives, according to Aspers & Corte (2019). In this study, the researcher used a qualitative method to collect sleep deprivation data by interviewing respondents and analyzing documents. Researchers interviewed respondents in-depth and face-to-face to get their views on sleep deprivation experiences during their university studies. Next, the researcher collected data from printed documents and electronic records from the internet to analyze the data and then draw conclusions from the related documents.

3.4 DATA COLLECTION METHOD

Data collection is the process of gathering, estimating, and investigating specific experiences for research purposes using standard, accepted methods. The researcher then can use informational data collected to test their hypothesis (Salman Qadri, 2021). In this study, researchers have collected data by using sources from primary and secondary data.

3.4.1 PRIMARY DATA

A primary source is collected directly from the original source. It is not clouded by someone else's views or judgments (Stephanie Glen, 2021). In this study, the researcher used primary data sources to gather information by interviewing respondents. The interview is a semi-structured interview that has given questions before the interview so that the respondents interviewed can organize their answers neatly. The interview is conducted through an online platform such as Webex meetings. The equipment used for the interview is a personal computer and a recorder camera that can record video and audio from the interview.

3.4.2 SECONDARY DATA

Secondary data comes from surveys, experiments, or studies done by other people or another research. Most of the time, a researcher will start a project using data already collected. This gives people time to think of questions and figure out what is happening before the more expensive and time-consuming step of collecting primary data (Stephanie Glen, 2021). In this study, researchers have used the available data to collect information related to sleep deprivation. Among the findings that are already available is a report on current issues. Researchers have referred to articles and news to obtain information about events. Next, the researcher referred to a sleep deprivation journal written by other researchers, experts, and professors for academic readers.

3.5 DATA ANALYSIS METHOD

The information collected through qualitative methods on sleep deprivation among students was then analyzed using the **thematic analysis method** by following the pattern of meaning in the data set, such as the interview set. The thematic analysis method takes data based on themes. The theme helps the researcher understand the content and derive meaning from it. Researchers have used the thematic analysis method to determine the respondents' opinions on the causes and effects of sleep deprivation on university students. Then have identified recurring themes such as sleeping late at night because of playing on cell phones and the body becoming lifeless during the day. Therefore, the researcher can find out the respondents' experiences, views, and opinions by conducting a thematic analysis to answer the research questions.

3.6 SAMPLING DESIGN

A sample design is a definite plan for obtaining a sample from a given population. It refers to the technique or procedure the researcher would adopt in selecting items for the sample. Sample design also leads to a procedure to tell the number of items to be included in the sample, which is the sample size (Sample design, 2018). The sampling design allows the researcher to identify the target population, sampling location, sampling technique and sampling size of the study.

3.6.1 TARGET POPULATION

The target population is the precise, conceptually bounded set of prospective participants to whom the researcher has access and represents the population of interest. The target group must also be sufficiently limited to exclude participants who do not meet the study's requirements and misrepresent the population of interest (Casteel & Bridier, 2021). In this study, the target population is the final-year students at a university in Malacca. The representative's age is between 23 years old to 25 years old. The expected age is chosen because the final-year students in a university are usually around that age.

3.6.2 SAMPLING LOCATION

Sample location means the actual place where the researcher obtained an environmental sample, including the designation of the room, the surface, and the direction and distance from a specified fixed point (Law Insider, 2022). The sampling location is located in Malacca, Malaysia. The researcher chose Malacca as a base area to be studied because multiple universities are near each other. Furthermore, the researcher chose Malacca because it does not want a large population sample.

3.6.3 SAMPLING TECHNIQUE

Sampling is a procedure to select a sample from an individual or a large group population for a certain kind of research purpose (Bhardwaj, 2019). The researcher uses the technique called purposive sampling in the non-probability technique category. Sampling is a procedure to select a sample from an individual or a large group population for a certain kind of research purpose (Bhardwaj, 2019). According to the MasterClass (2022) article, the purposive sampling method is a non-probability sampling technique where researchers make deliberate choices in their sampling design to select a particular type of respondents.

3.6.4 SAMPLING SIZE

According to Institute for Work & Health (2008), sample size refers to the number of participants or observations included in a study. For this study, the researcher has chosen eight students to participate in the interview about their perspectives on sleep deprivation throughout their university studies in their final year. The eight students are chosen from four different universities, which is two people from each university.

3.7 SUMMARY

In this study, the researcher explained the research methodology used to answer the research questions to obtain the objectives of this study. Among the methods used and explained by researchers in this chapter are research design, research strategy, research methods, data collection methods, and data analysis methods. The method used to collect data is a qualitative research method that only uses words, images, audio, and video without using numbers and digits.



CHAPTER 4:

DATA ANALYSIS AND DISCUSSIONS

4.0 INTRODUCTION

In this chapter, the findings of the hindrance factors of sleep deprivation towards a successful academic performance among university students in Malacca are analyzed. Firstly, the researcher had targeted to conduct the interview session with eight respondents. The researcher successfully conducted the interview with all the respondents. The objective of this chapter is to outline, examine and interpret data and patterns obtained from the interviews. The implications of the result are then discussed in chapter 5. This study sought to achieve the research objective which is, **to study the cause of sleep deprivation among university students, to uncover why sleep deprivation affects university students' academic performance, and to recommend the solution on sleep deprivation among university students.**

4.1 BACKGROUND OF RESPONDENT

There are 8 respondents that have been selected to be interviewed for this research. The respondents were selected from 4 universities in Malacca, with two respondents representing one university. The respondents who have been selected are from the category of final-year students, such as 3rd or 4th year students who are studying for a bachelor's degree. The first respondent is from Multimedia University (MMU) is respondent A, 23 years old and taking a bachelor's degree in Information Technology (IT).

The second respondent also from MMU is respondent B, 24 years old and taking a bachelor's degree in Multimedia. The third respondent is from Universiti Teknikal Malaysia Melaka (UTeM) is respondent C, 22 years old and taking a bachelor's degree in Technology Management (Technology Innovation), (BTMI). The fourth respondent is also from UTeM, is respondent D, aged 23 and taking a bachelor's degree course in Technology Management (Innovation Technology), (BTMI). The fifth respondent is from Universiti Teknologi Mara (UiTM) is respondent E, 23 years old, is and is taking a bachelor's degree in Business Administration. The sixth respondent is also from UiTM is respondent F, age 24 and is taking a bachelor's course in Accounting. Next, the seventh respondent is from University of Melaka (UNIMEL) is respondent G, 24 years old and is taking a bachelor's degree in Sharia Law. Finally, the eighth respondent who is also from UNIMEL is respondent H, aged 24 and is taking a bachelor's degree in Psychology.

Numb.	Respondent	Age	University	Program
1.	A	23	MMU	IT
2.	B	24	MMU	Multimedia
3.	C	22	UTeM	BTMI
4.	D	23	UTeM	BTMI
5.	E	23	UiTM	Business Administration
6.	F	24	UiTM	Accounting
7.	G	24	UNIMEL	Sharia Law
8.	H	24	UNIMEL	Psychology

Table 1: Background of respondent

4.2 THE CAUSE OF SLEEP DEPRIVATION AMONG UNIVERSITY STUDENTS

The researcher interviewed eight respondents and asked the research questions about the factors of sleep deprivation among university students. Based on the answers from the respondents, the cause of sleep deprivation among university students is:

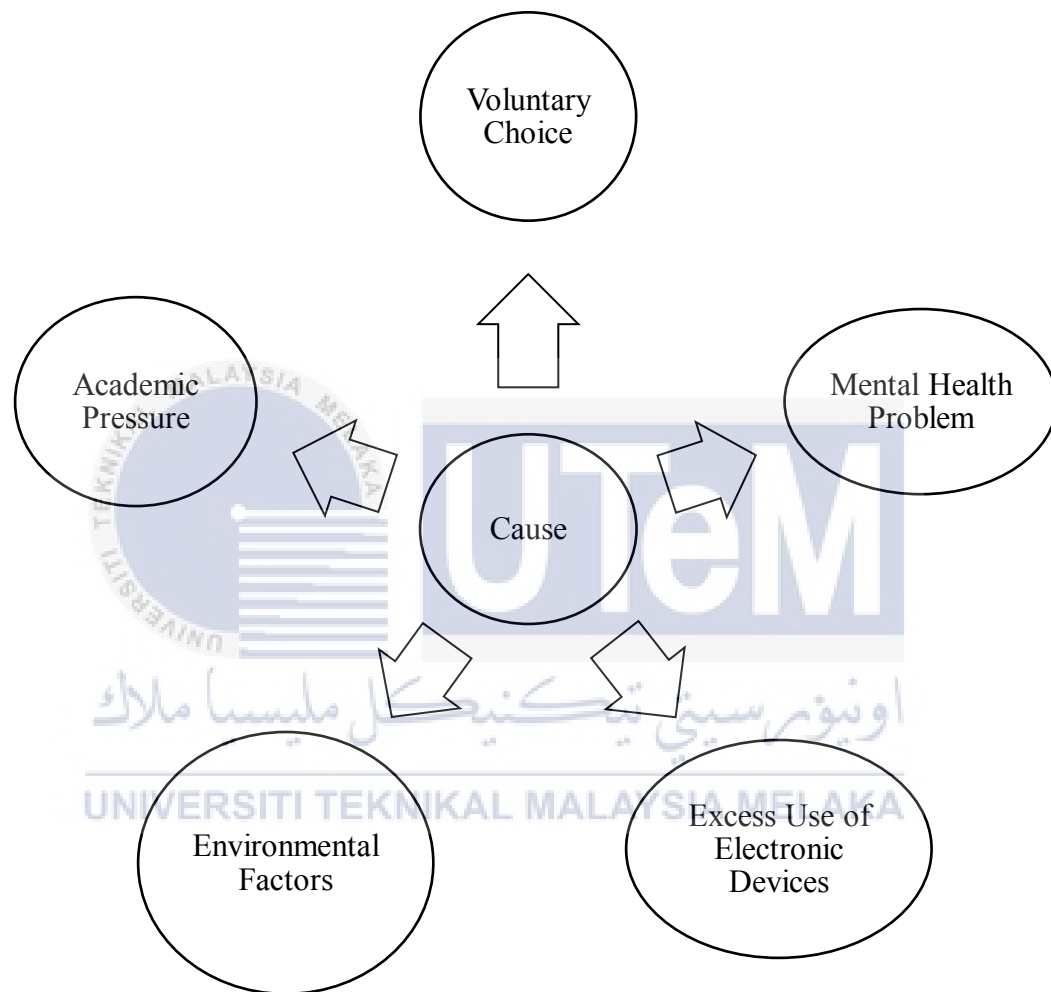


Figure 1: The cause of sleep deprivation among university students

The cause of sleep deprivation among university students

Numb.	Cause Respondent	A	B	C	D	E	F	G	H
1.	Voluntary Choice	✓	✓		✓		✓	✓	✓
2.	Mental Health Problem	✓		✓					
3.	Excess Use of Electronic Devices		✓		✓		✓		
4.	Environmental Factors					✓		✓	
5.	Academic Pressure	✓		✓			✓		✓

Table 2: The cause of sleep deprivation among university students

4.2.1 Voluntary Choice

Voluntary choice is the highest cause, with six out of eight respondents answering that it caused them to suffer from sleep deprivation. The reason is because voluntary choice is one of the main reasons why students at university suffer from lack of sleep. For example, students intentionally sleep late at night by watching TV or hanging out outside. Usually, university students suffer from sleep deprivation due to their own voluntary choice because they have been freed from their parents' supervision and are free to do their own thing. This can be proven by respondents A and B with the quotation:

“It was quite difficult to manage time because it was not like the time of life during high school when I had parents to advise me to go to bed early.” Said respondent A.

“During the night, my friend invited me to play badminton from ten o'clock to twelve midnight, and it caused me to have difficulty sleeping that night”. Said respondent B.

This can be further proven by Andersz & Bargiel-Matusiewicz, 2018 with the quotation:

“Another health-risk behavior that may be impacted by temperamental characteristics is voluntary sleep deprivation.”

Therefore, it has been proven that the voluntary choice to sleep late is the cause of late sleep which is often experienced by university students.

4.2.2 Mental Health Problem

Mental health problems such as stress and anxiety can cause students to have difficulty sleeping. This is because stress or anxiety are causing students to have repetitive thoughts and worries that keep students awake. This can be proven by respondent A with the quotation:

“Trust issues often happen during group assignments and group projects where some members of my group are less productive, so I have to check and make corrections until late at night”.

This shows that respondent A is worried that his teammates are doing the task carelessly and are willing to stay up all night to check and make corrections. Therefore, it can be expected that if respondent A does not check the assignment of his group mates, he will not be able to sleep well because he often thinks about whether the group assignment has been done well or not. This can be further proven by respondent C with the quotation:

“The assignment gives stress to the students, and this stress will bring a feeling of anxiety that makes it difficult for the students to sleep at night”.

Therefore, it can be proven that mental health problems are one of the causes of lack of sleep among university students.

4.2.3 Excess Use of Electronic Devices

In this era of modernization, people including university students have used a lot of electronic devices such as mobile phones, laptops, smartwatches, and televisions in daily activities, such as entertainment, work and learning. However, the excessive use of electronic devices at night, which is close to bedtime such as ten o'clock at night can delay the time students fall asleep. This can be proven by respondent D with the quotation:

“I always watch movies and play video games with my friends at night, like at ten to twelve midnight, because that's usually my free time. Therefore, doing such activities has caused me to sleep late at night and has caused me to be sleepy the next day”.

Next, the use of electronic devices can also affect the brain such as stimulating the mind of students and making it more difficult for them to sleep. This can be proven by respondent F with quotation:

“University students have sleep deprivation problems if they do things like playing video games at night. By playing video games, it can cause students to be so negligent that it will interfere with proper sleep time”.

Therefore, with this finding, it has been proven that the excessive use of electronic devices at night has caused university students to have problems sleeping and will experience sleep deprivation.

4.2.4 Environmental Factors

Environmental factors, such as loud neighbors, or snoring roommates, light, bed comfort, and technological distractions, can cause students to be unable to sleep. In addition, other factors such as the room's temperature, and even the smells in the room are also the cause of a person's difficulty sleeping. This can be proven by respondent E with a quotation:

“The uncomfortable environment at night may be caused by the noisy sounds the next-door neighbors produce or housemates who play songs or movies very loudly at night. Therefore, students will be disturbed to sleep at night”.

In addition, the temperature such as too hot or cold bedrooms also contributes to a person's ability to sleep well. This statement can also be proven by respondent G, who quoted:

“The temperature of the room plays an important role in the quality of sleep among students, especially for individuals who cannot stand the condition of a hot room, which causes the body to sweat and feel uncomfortable when going to sleep, causing the individual's sleep to be disturbed”.

With the results of this finding, it can be proven that there is a link between the state of the sleeping environment and the quality of sleep that can cause university students to suffer from sleep deprivation.

4.2.5 Academic Pressure

Academic pressure is something that is often experienced by every student because students want to pursue excellence in academics, so some sacrifice their sleep time in order to review lessons or complete assignments that have been given by lecturers. This can be proven by respondent C with the quote:

“I have an assignment that needs to be submitted in the nearest period, I then do the assignment given at the last moment, which causes me stress, and that night I can't sleep because I am busy completing the assignment that needs to be submitted on the day the next day”.

It shows that respondent C has felt pressure from the academic, which made him willing to stay up late to complete his assignment because he was worried about being failed by the lecturer. This can be further proven by respondent F with the quotation:

“By completing assignments at night, has disturbed my sleep time, like sleeping from eight hours to five hours in one day, then I will be sleepy the next day because I have to get up early in the morning to go to class”.

Therefore, the academic pressures and obligations that university students must handle while attending classes lead to sleep deprivation. Regardless of ambition and aptitude, strict scheduling causes individuals to place sleeping less of a priority.

4.3 THE REASON SLEEP DEPRIVATION AFFECTS UNIVERSITY STUDENTS' ACADEMIC PERFORMANCE

The researcher interviewed eight respondents and asked the research questions about why sleep deprivation affects university students' academic performance. Based on the answers from the respondents, the reason sleep deprivation affects university students' academic performance:

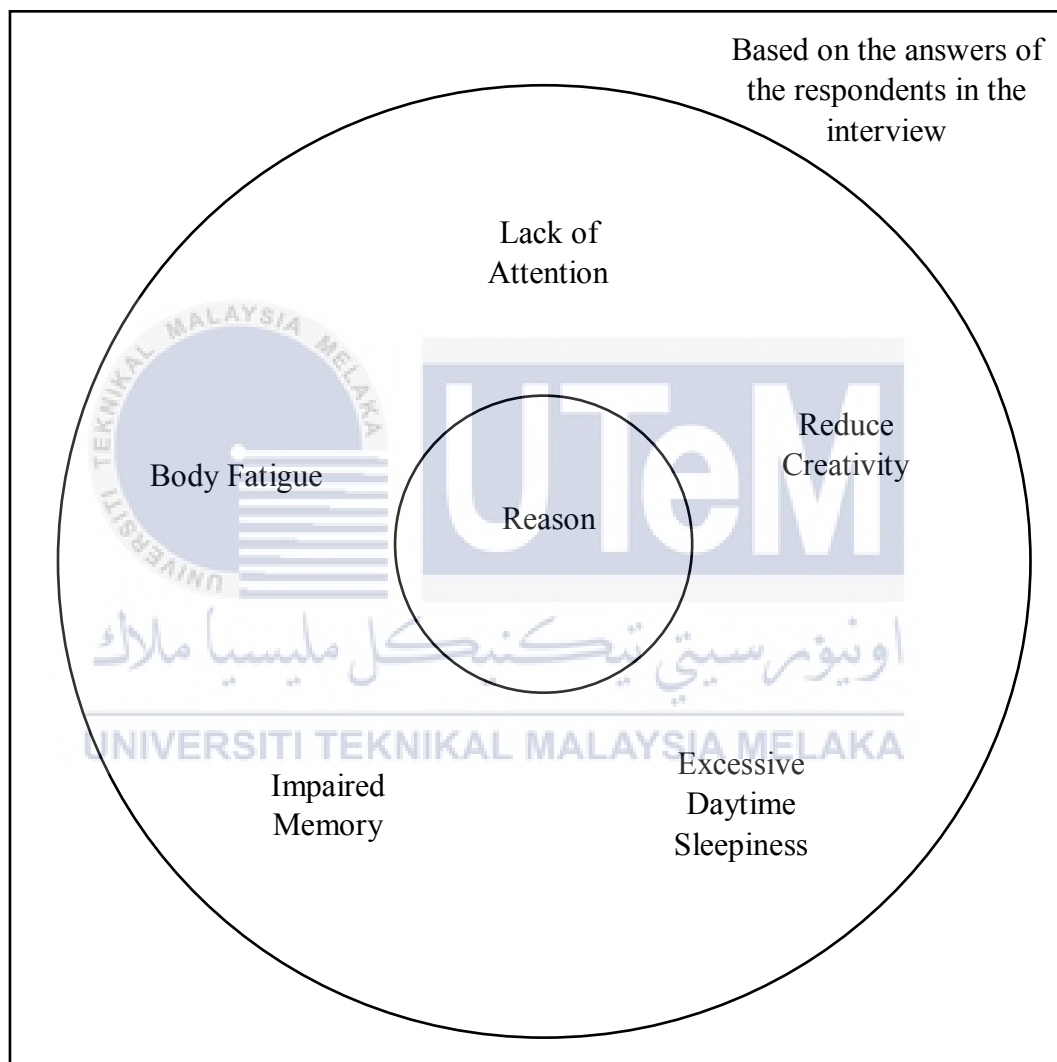


Figure 2: The reason sleep deprivation affects university students' academic performance

The reason sleep deprivation affects university students' academic performance.

Numb.	Reason	A	B	C	D	E	F	G	H
	Respondent								
1.	Lack of Attention	✓	✓		✓	✓	✓		✓
2.	Reduced Creativity	✓		✓	✓			✓	
3.	Excessive Daytime Sleepiness	✓	✓	✓	✓		✓		✓
4.	Impaired Memory				✓	✓	✓		✓
5.	Body Fatigue	✓				✓	✓	✓	

Table 3: The reason sleep deprivation affects university students' academic performance

4.3.1 Lack of Attention

Lack of attention is one of the effects of sleep deprivation answered by respondents during the interview, which can affect students' academic performance. Sleep deprivation will cause university students to pay less attention in class and make it difficult to understand what the lecturer is teaching, thus having difficulty answering exam papers. This can be proven by respondent D with the quotation:

“When students are sleepy, they will lose focus while the lecturer is teaching, which will cause the knowledge taught by the lecturer to be difficult to understand. Next, when the lecturer gives the quiz question on the spot, the student will definitely not be able to answer well”.

In addition to losing focus in class, students can also lose focus during exams when they lack sleep. This can be proven by respondent B with the quotation:

“On the night before the exam day, which is suitable for reviewing the lesson, I studied till late at night, and the next day, when I entered the exam hall, I felt sleepy and unable to focus on answering the questions asked”.

With that, it has been proven again that lack of sleep will cause students to pay less attention while the lecturer is teaching in the class which causes them to be unable to understand what the lecturer is teaching. Therefore, the academic performance of university students will be affected.

4.3.2 Reduce Creativity

A lack of sleep will cause university students to experience a reduction in creativity, which will have an impact on students' academic performance. The reduction of creativity that occurs in a sleepy state will cause the student's brain to struggle to think creatively. This can be proven by respondent C with the quotation:

“If a student lacks sleep, it will reduce the intelligence of the mind and it will also cause a negative effect on the student's academic performance. For example, students' academics will get worse because they have an unhealthy mind, such as sleepiness”.

This can further be proven by according to Guadiana & Taylor L, 2021 with the quotation:

“Insufficient sleep impacts the neurological system adversely, resulting in impaired brain function. Due to the cognitive loss caused by sleep deprivation, academic performance is often impaired”.

Therefore, a lack of sleep will cause the brain to be unproductive and work well, causing students to be unable to think creatively, such as having no idea how to explain the content during the exam.

4.3.3 Excessive Daytime Sleepiness

The effect that is often experienced by all students who lack sleep is excessive daytime sleepiness. Excessive sleepiness during the day will cause students' academic performance to decline because students will be sleepy while studying and fall behind in academics. This can be proven by respondent A with the quotation:

“The effect of sleep deprivation is that it will cause our brain to be less productive and will cause our body to become lethargic, and then we will feel sleepy while in class”.

Respondent F also had the same opinion about excessive sleepiness throughout the day, with the quotation:

“This lack of sleep will affect academic performance because when we lack sleep, our bodies will become lethargic and tired, so when class time goes on, we will be sleepy. For example, students sleep late and must go to class the following day, and surely, they will be sleepy while the lecturer is teaching in front”.

Therefore, if students are excessively sleepy during the day, it will cause students to become lazy to study because they only want to sleep during the day, further causing them to become energized at night and find it difficult to sleep.

4.3.4 Impaired Memory

Impaired memory is the fourth reason sleep deprivation affects the academic performance of university students answered by respondents during the interview. Lack of sleep will cause the brain's ability to retain information and short-term memory to be weakened, which hinders the learning of academic subjects. This can be proven by respondent F with the quotation:

“When I sat for the exam in a sleepy state, I forgot what the lecturer taught me and the lessons I had reviewed last night, thus causing me to fail to answer the given questions properly”.

This can be proven again by respondent H who has the same opinion with respondent F with the quotation:

“I studied until late at night and easily forget what the lecturer taught and making it difficult for me to answer the exam questions”.

Therefore, it can be said that if university students have problems with sleep deprivation, can cause their academic performance to be affected. This shows the past studies from Okano et al. (2019) are valid, with the quotation:

“Sleep serves an important purpose in memory consolidation, which is necessary for effective academic achievement”.

4.3.5 Body Fatigue

Body fatigue was the last answer given by respondents regarding the reason lack of sleep will cause the academic performance of university students to be affected. Body fatigue caused by lack of sleep can affect the academic performance of university students because students will be lazy to go to class or review lessons and like to take a nap during the day. This can be proven by respondent E with the quotation:

“If students lack sleep, it will cause their bodies to be weak and lack the energy to stay awake during the next learning session and fall behind in learning”.

This can be further proven by respondent F, who has the same opinion as respondent E with the quotation:

“Our bodies will become lazy and tired, so that we will be sleepy during class. For example, students sleep late and must go to class the following day; surely, they will be exhausted while the lecturer is teaching in front. Next, if students have class in the morning, such as at eight o'clock in the morning, students who sleep late at night have the probability of skipping class either accidentally or on purpose, with the excuse of being too tired to go to class”.

Therefore, body fatigue caused by sleep deprivation has been proven to be able to cause students' academic performance at university to be affected.

4.4 THE SOLUTION ON SLEEP DEPRIVATION AMONG UNIVERSITY STUDENTS

The researcher interviewed eight respondents and asked the research questions about how to provide the solution on sleep deprivation among university students. Based on the answers from the respondents, the solution on sleep deprivation among university students:

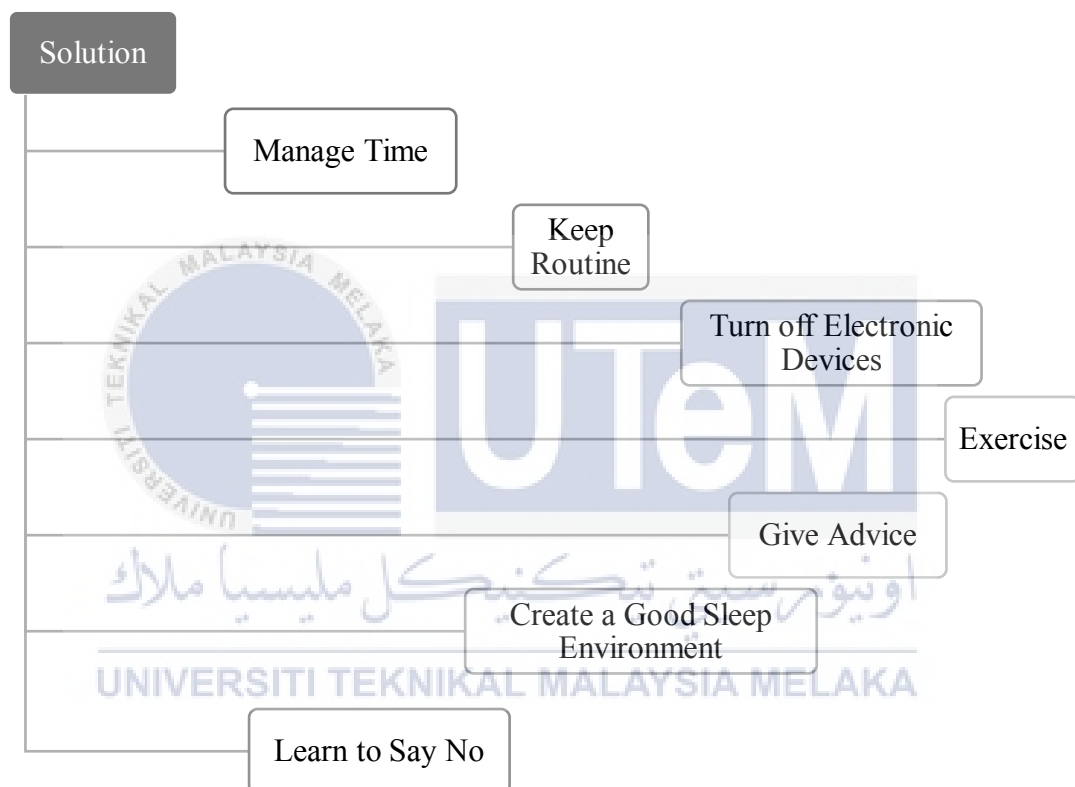


Figure 3: The solution on sleep deprivation among university students

The solution on sleep deprivation among university students.

Numb.	Solution Respondent	A	B	C	D	E	F	G	H
1.	Manage Time	✓	✓	✓	✓		✓		
2.	Keep Routine	✓			✓	✓		✓	✓
3.	Turn off Electronic Devices		✓				✓		✓
4.	Exercise				✓				
5.	Give Advice			✓		✓			
6.	Create a Good Sleep Environment					✓		✓	
7.	Learn to Say No								✓

Table 4: The solution on sleep deprivation among university students

4.4.1 Manage Time

Manage time is one of the solutions answered by respondents when interviewing about solutions on overcoming the problem of sleep deprivation among university students. Managing time can help students deal with the problem of lack of sleep to be disciplined by filling the daily hours doing important things and being able to sleep early at night. This can be proven by respondent A with the quotation:

“By dividing the time, students can sleep earlier at night and have quality sleep so that they can focus on their studies”.

This can be further proven by respondent D with the same opinion with respondent A but has describe in more detail, with the quotation:

“By making a timetable, students can divide their time to ensure that their daily activities are filled by doing beneficial things such as reviewing lessons in the morning or attending class if there is a class, doing exercise in the evening to keep the body healthy and reviewing on at night but not until ten o'clock at night because they need to go to bed early”.

Therefore, time management has been proven to be a measure that can help university students from experiencing sleep deprivation.

4.4.2 Keep Routine

Maintaining a daily sleep routine for students is also a suggestion respondents gave during the interview. This is because doing the same daily routine, which is sleeping early at night, will make it a good habit. This can be proven by respondent E with the quotation:

“Students should not take important things such as sleep for granted and get used to sleeping at the right time, such as at ten o'clock at night, because it can affect their health and mental health if they sleep at the wrong time”.

This can be further proven by respondent G that give the same explanation with the quotation:

“Students need to make a routine to sleep earlier at night because it is very important. Sleeping early in the night gives us quality sleep that causes us to be fit the next day to study in class so that we can receive knowledge and then get excellent academic results”.

Therefore, doing a daily routine of consistently going to bed early at night will help university students get used to bed early and train their bodies to be ready for sleep.

4.4.3 Turn off Electronic Devices

Turning off electronic devices at night before bedtime can help university students to sleep because they will be calm and won't think about things that could distract them. For example, turning off the mobile phone to avoid receiving notifications from friends who invite them to chat or notifications from video games that will make students want to play the video game. This can be proven by respondent B with the quotation:

“If students turn off their smartphones and don't play video games until late at night, they won't be easily sleepy the next day and can focus one hundred percent on the class taught the next day”.

Therefore, turning off electronic devices can ensure students to sleep early at night and will give the mind and body more energy to study. This has also been mentioned by respondent H with the quotation:

“My advice to all students who lack sleep and who like to sleep late at night is that if you want to be more focused on learning and sharpen your memory, you need to turn off the phone”.

4.4.4 Exercise

Exercising at the right time can cause the body to become tired at night and make it easier for students to sleep. The best time to exercise is in the evening between 5 pm and 7 pm, and it is not recommended to exercise close to bedtime, such as 9 pm to 10 pm, because the body needs time to cool down in order to sleep. This can be proven by respondent D with the quotation:

“If students want to succeed and get excellent academic results, they must take care of themselves and their health. For example, they are taking care of nutrition, exercising regularly in the evening for at least three hours before bed, studying, and going to bed early to have energy and a smart mind”.

Therefore, exercising at a suitable time, such as in the evening, can make it easier for students to sleep at night and, at the same time, provide health to the body and mind.

4.4.5 Give Advice

Giving advice is the answer given by the respondents during the interview about measures to overcome the problem of sleep deprivation among university students in two different situations. The first situation is advising students who have issues with lack of sleep. By advising students who often sleep late, they can make them aware that sleeping late has adverse effects, such as poor academic performance. This can be proven by respondent C with the quotation:

“Making programs or seminars can give students awareness of the importance of sleep so that they can learn how to divide time properly and prevent students from sleeping late at night”.

The second situation is to advise someone who disturbs the student's sleep time. For example, advising next-door neighbors to turn down the television or loud music. This can be proven by respondent E with the quotation:

“If you have neighbors or friends who open songs or make loud noises late at night, you can talk or give advice to your neighbors or friends, so that they can realize that they have disturbed your sleep and will reduce the noise at night, so you can sleep soundly and be energetic while learning in class”.

Therefore, by giving advice, it can be proven that it can help university students overcome the lack of sleep.

4.4.6 Create a Good Sleep Environment

Creating a good sleeping environment is also one of the steps to deal with sleep deprivation among university students. This is because a comfortable environment can calm the mind and make it easy to sleep. For example, if the environment of the bed smells bad, too hot, too cold, or too noisy, it will cause a person to be uncomfortable and have difficulty sleeping. This can be proven by respondent E with the quotation:

“In my opinion, to solve the problem of an uncomfortable environment, such as hearing a loud noise from their neighbor or friend, is to advise neighbors or friends to lower their voices at night”.

This can be further proven by respondent G, which has the same problem from an uncomfortable sleep environment but in a different situation, such as with the quotation:

“Based on my previous answer about sleeping in a hot room, being the cause of sleep deprivation is to ensure the room's ventilation is in good condition by maintaining a cool temperature. For example, students can open windows while sleeping or buy a fan. This is because, of course, when the room temperature is cold, our body is in a comfortable state which causes us to get good and quality sleep”.

Therefore, if the sleep environment is comfortable and tidy, it can help the body and mind be calm and ready to sleep. This is proven by previous research done by AASM (2020) with the quotes:

“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”.

4.4.7 Learn to Say No

Learning to say no is a step given by respondents during interviews when there are friends who invite students to stay up late at night doing things like hanging out, playing video games, or watching movies at night. This is because when a student says no to his friend, it means that the student has done the right thing by not following his friend to stay up late at night and decide to go to bed early. This can be proven by respondent H with the quotation:

“Ok, for my suggestion, when a friend invites us to do activities at night, we must be brave to say no. This is because when we say no, it means that we can make our own decisions, which is we can go to sleep earlier than we follow what the friend tells us”.

Therefore, saying no to friends' invitations to do things at night can help students fall asleep earlier and avoid sleep problems.

CHAPTER 5:

CONCLUSION AND RECOMMENDATION

5.0 INTRODUCTION

In this chapter, the findings of the hindrance factors of sleep deprivation towards a successful academic performance among university students in Malacca are concluded. This chapter sought to conclude the finding in Chapter 4 and state the recommendation for future studies. This chapter explains the conclusion of the research objective, which is the cause of sleep deprivation among university students, the reason why sleep deprivation affects university students' academic performance, the solution on sleep deprivation among university students, and recommendations for future research.

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

5.1 THE CAUSE OF SLEEP DEPRIVATION AMONG UNIVERSITY STUDENTS

According to eight respondents during the interview, the causes of sleep deprivation among university students are due to voluntary choice, mental health problems, excessive use of electronic devices, environmental factors, and academic pressure. Based on the results of Chapter 4, the researcher explained how the cause sleep deprivation mentioned by the respondent occurred and what caused the sleep deprivation to occur. By interviewing each respondent, the researcher could draw conclusions about the frequency of sleep deprivation experienced by many respondents.

The cause of lack of sleep that many respondents answered was a voluntary choice. Therefore, it can be said that most university students suffer from sleep deprivation voluntarily. This is because they are used to sleeping late at night, and it has become their habit to sleep late at night.

For the recommendation on this topic, students who want to study the causes of sleep deprivation by university students can refer to this study to learn more. Next, students who lack sleep and cannot find the cause can refer to this study. Furthermore, students can take lessons from this study and avoid doing things that can cause them to suffer from sleep deprivation.

5.2 THE REASON WHY SLEEP DEPRIVATION AFFECTS UNIVERSITY STUDENTS' ACADEMIC PERFORMANCE

According to eight respondents during the interview, the reason sleep deprivation affects university students' academic performance is due to lack of attention, reduced creativity, excessive daytime sleepiness, impaired memory, and body fatigue. According to the findings from chapter 4, the researcher explains why lack of sleep affects the academic performance of university students and how the effect can happen to university students. With the collection of answers or opinions given by eight respondents, the researcher was able to conclude that the main reason sleep deprivation affects the academic performance of university students is that students lack attention in class and are excessively sleepy during the day. This is because the majority of respondents, six out of eight respondents, have given their views on why their academic performance is affected due to lack of sleep. This is because lack of sleep will cause students to pay less attention during learning sessions in class, such as easily daydreaming or falling asleep. In addition, lack of sleep also causes students to feel excessively sleepy during the day, which results in them feeling lazy to attend class and review lessons.

For suggestions on this topic, students who want to maintain excellent academic results can learn from this study to gain awareness that lack of sleep can affect their academic performance. In addition, students can also get information from this topic to research related topics.

5.3 THE SOLUTION ON SLEEP DEPRIVATION AMONG UNIVERSITY STUDENTS

According to eight respondents during the interview, the solution on sleep deprivation among university students is due to manage time, keep a routine, turn off electronic devices, exercise, give advice, create a good sleep environment, and learn to say no. According to the findings from chapter 4, the researcher explains the solution on sleep deprivation among university students and how the solution can help university students to avoid from having sleep deprivation.

The most common solution that the respondent gives on sleep deprivation among university students is to manage time and keep a sleep routine. This is because by managing the time, the students can do all the activities they want to do in an orderly manner. For example, students are still doing things like studying, exercising, and playing video games with friends but with a schedule and being able to go to bed early at night. Next, university students who are used to sleeping late at night need to change their routine by doing things that show they want to sleep, like brushing their teeth and preparing their bed. Doing so will train the student's mind that it is time to sleep. However, other solutions can be essential to solving problems that do not involve time, such as a bad sleep environment.

For suggestions on this topic, students who lack sleep can refer to this study to get solutions and advise their friends who have the same problem. In addition, students can also refer to this study to do research related to this topic.

5.4 RECOMMENDATION FOR FUTURE RESEARCH

This study mostly to find the hindrance factors of sleep deprivation towards a successful academic performance among university students in Malacca. Therefore, much more can be improved and get more detailed and more extensive information. Among the recommendations that can be made by future studies are:

1. The future researcher can refer to this study for those who want to conduct research based on sleep deprivation.
2. Future research can increase the scope for the whole country or world to find a better result.
3. The research can be done using different target respondents, such as adults or teenagers.
4. The researcher can use a method other than a qualitative method, such as a quantitative or mixed method, to find a different result.
5. Future researchers can conduct research based on monitored experiments using modern technology to obtain more detailed results.

5.5 OVERALL CONCLUSION

In conclusion, sleep deprivation is a problem that everyone, including students, often experiences. However, some people underestimate the problem of lack of sleep. They mostly assume that lack of sleep is just a regular thing. Therefore, this study can help provide awareness and warning to the public, especially to students in their final year of university, because by taking it lightly, the problem of sleep deprivation will be causing them to fail in academic learning. Next, have difficulty venturing into the field of employment in the future.

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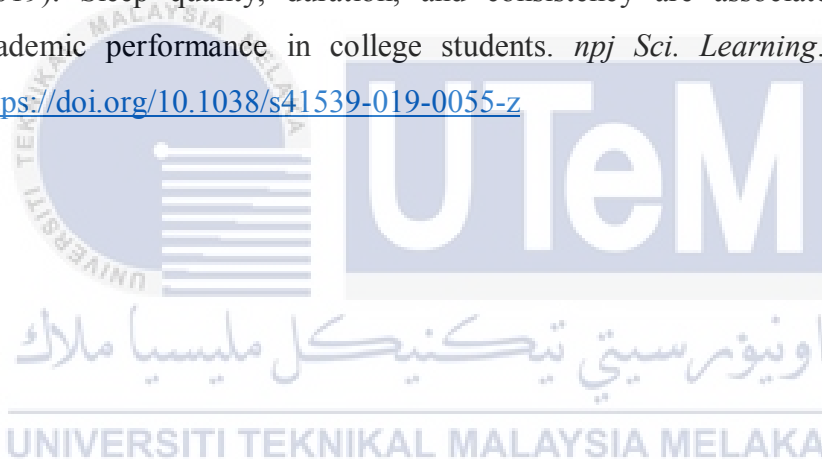
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APPENDIX 1

Interview Question

INTERVIEW QUESTIONS

Title: The Hindrance Factors of Sleep Deprivation Towards a Successful Academic Performance Among University Students in Malacca.

Tajuk: Faktor Penghalang Kurang Tidur Ke Arah Prestasi Akademik yang Berjaya dalam Kalangan Pelajar Universiti di Melaka.

Research Objective:

Objektif Kajian:

- i. To study the cause of sleep deprivation among university students.
Mengkaji punca kurang tidur dalam kalangan pelajar universiti.
- ii. To uncover why sleep deprivation affects university students' academic performance.
Untuk mengetahui sebab kekurangan tidur menjejaskan prestasi akademik pelajar universiti.
- iii. To recommend the solution on sleep deprivation among university students.
Untuk mengesyorkan penyelesaian kurang tidur di kalangan pelajar universiti.

Semi-Structured Interview

Temuduga Separa Berstruktur

- a) Respondent Demography such as Name/ Age/ University.

Please introduce yourself by stating your:

Name:

Age:

University:

- b) To study the cause of sleep deprivation among university students.

Mengkaji punca kurang tidur dalam kalangan pelajar universiti

- What do you think are the causes of sleep deprivation among university students?

Pada pendapat anda, apakah punca kurang tidur dalam kalangan pelajar universiti?

- Why do you think the causes occur mentioned earlier will make have sleep deprivation among university students?

Pada pendapat anda, mengapakah punca-punca yang disebut tadi akan menyebabkan kurang tidur dalam kalangan pelajar universiti?

- How do you know the causes you mentioned earlier will make you sleep-deprived?

Bagaimana anda tahu punca-punca yang anda sebutkan tadi akan menyebabkan anda mengalami kurang tidur?

- c) To uncover why sleep deprivation affects university students' academic performance. (Objective 2)

Untuk mengetahui sebab kekurangan tidur menjejaskan prestasi akademik pelajar universiti.

- What do you think about the affect of sleep deprivation toward academic performance?

Apakah pendapat anda tentang kesan kurang tidur terhadap prestasi akademik?

- Why do you think sleep deprivation can affect students' academic performance in university?

Pada pendapat anda, mengapakah kurang tidur boleh menjejaskan prestasi akademik pelajar di universiti?

- How do you think sleep deprivation can affect students' academic performance in university?

Pada pendapat anda, bagaimanakah kurang tidur boleh menjejaskan prestasi akademik pelajar di universiti?

- d) To recommend the solution on sleep deprivation among university students. (Objective 3)

Untuk mengesyorkan penyelesaian masalah kurang tidur di kalangan pelajar universiti.

- What is your recommendation for solving sleep deprivation among university students?

Apakah cadangan anda untuk menyelesaikan masalah kurang tidur dalam kalangan pelajar universiti?

- Why do you think your recommendation can solve sleep deprivation among university students?

Mengapakah anda fikir cadangan anda boleh menyelesaikan masalah kurang tidur dalam kalangan pelajar universiti?

e) Concluding Remarks: Do you have anything to add on

Penutup: Adakah anda mempunyai apa-apa untuk ditambah

Do you have anything to add about the sleep deprivation problem among university students that you miss?

Adakah anda mempunyai apa-apa untuk menambah tentang masalah kurang tidur dalam kalangan pelajar universiti yang anda terlupa?

APPENDIX 2

Consent Letter

CONSENT FOR PARTICIPATION IN A RESEARCH INTERVIEW

The Hindrance Factors of Sleep Deprivation Towards a Successful Academic Performance Among University Students in Malacca

I agree to participate in a research project led by Muhammad Nurhafiz Ikram Bin Saiful from University Teknikal Malaysia Melaka (UTeM), in Malacca, Malaysia. The purpose of this document is to specify the terms of my participation in the research through being interviewed.

1. I have been given sufficient information about this research project. The purpose of my participation as an interviewee in this research has been explained to me and is clear.
2. My participation as an interviewee in this research is voluntary. There is no explicit or implicit coercion whatsoever to participate.
3. Participation involves being interviewed by a researcher from the University Teknikal Malaysia Melaka (UTeM). I allow the researcher to take written notes during the interview. I also may allow the recording (audio/video tape) of the interview. It is clear to me that in case I do not want the interview to be taped, I am at any point in time fully entitled to withdraw from participation.

4. I understand that I will not benefit directly from participating in this research. I understand that all information I provide for this study will be treated confidentially. I understand that transcript from my interview may be quoted in the research report.

Research by Muhammad Nurhafiz Ikram Bin Saiful , degrees in Bachelor of Technology Management (Technology Innovation) from University Teknikal Malaysia Melaka (UTeM). Academic supervised by Assoc. Prof. Dr. Norain Binti Ismail.

Signature of research participant

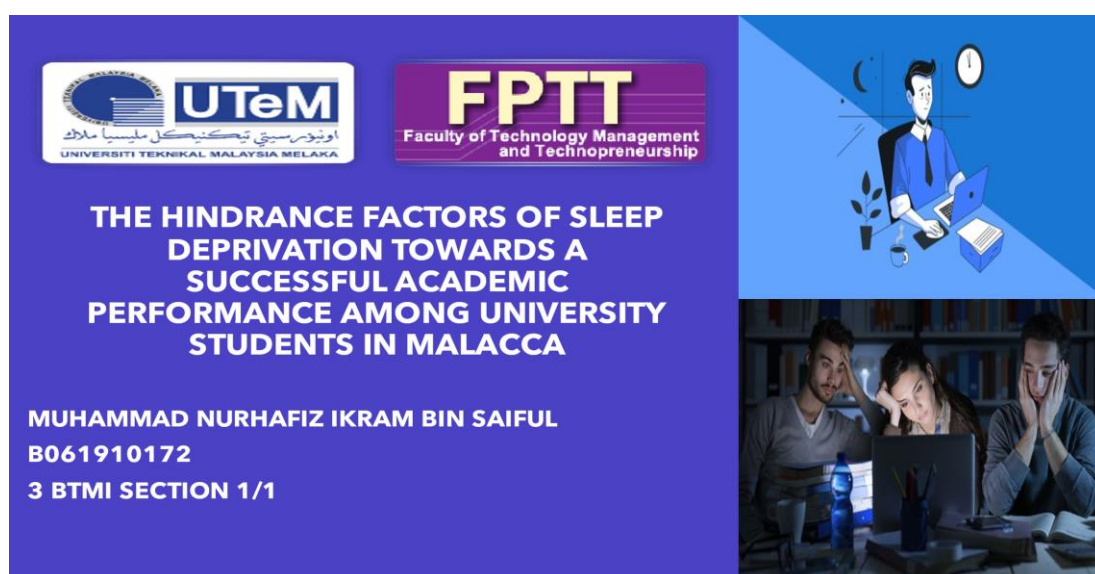
Date

Signature of researcher

Date

APPENDIX 3

Presentation Slide 1 (VIVA 1)



UTeM
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

FPTT
Faculty of Technology Management and Technopreneurship

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

MUHAMMAD NURHAFIZ IKRAM BIN SAIFUL
B061910172
3 BTMI SECTION 1/1

INTRODUCTION



- The term sleep deprivation refers to getting less than the needed amount of sleep (Sun, 2022).
- Some factors can lead to sleep deprivation, including poor sleep hygiene, lifestyle choices, work obligations, sleep disorders and other medical conditions (Sun, 2022).
- Sleep Survey 2018 from (Amlife) the average Malaysian sleeps only 6.3 hours, although it has been recommended to sleep for seven to nine hours (Syed Jaafar, 2018).
- Lack of quality sleep at night will cause drowsiness during the day, affecting students' health and academic performance.
- To produce innovative students, they need to maintain quality sleep at night so that the body and mind become healthy and energetic.

SLEEP DEPRIVATION 2022

2

PROBLEM STATEMENT



- Students are unaware of the consequences of lack of sleep that will cause mental and physical effects (Hershner & O'Brien, 2018).
- Inefficient time management is also one of the causes of students' lack of sleep (Adams & Blair, 2019).
- Excessive use of technology such as smartphones and laptops at night is also a cause of students to have sleep deprivation (Pacheco & Truong, 2022).

SLEEP DEPRIVATION 2022

3

RQ & RO

RESEARCH QUESTION	RESEARCH OBJECTIVE
1. What are the factors of sleep deprivation among university students?	1. To study the cause of sleep deprivation among university students.
2. Why does sleep deprivation affect university student's academic performance?	2. To uncover why sleep deprivation affects university students' academic performance.
3. How to provide the solution on sleep deprivation among university students?	3. To recommend the solution on sleep deprivation among university students.

SLEEP DEPRIVATION 2022

4

SCOPE & LIMITATION OF THE RESEARCH

SCOPE

- To understand the problem of sleep deprivation and its solution among students in a university in Malacca.
- In Malacca, Malaysia.



LIMITATION

- Uses a small sample size in some universities and not all universities in Malacca.
- The researcher only took the results of the respondents' academic performance broadly.
- The researchers could not identify the difficulty level of the exam questions, which may have been one of the factors in students' declining academic performance.
- The researcher used a sample of students from the last year, which is year 3 or 4 only.

SLEEP DEPRIVATION 2022

5

RESEARCH SIGNIFICANCE

- Let's university students know that sleep deprivation cannot be ignored, despite being busy working and studying.
- This study can be a reference for future studies about sleep deprivation in their era.
- People with sleep deprivation especially students can also refer to this study to identify the causes, effects, and measures to overcome the lack of sleep.

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SLEEP DEPRIVATION 2022

6

LITERATURE REVIEW

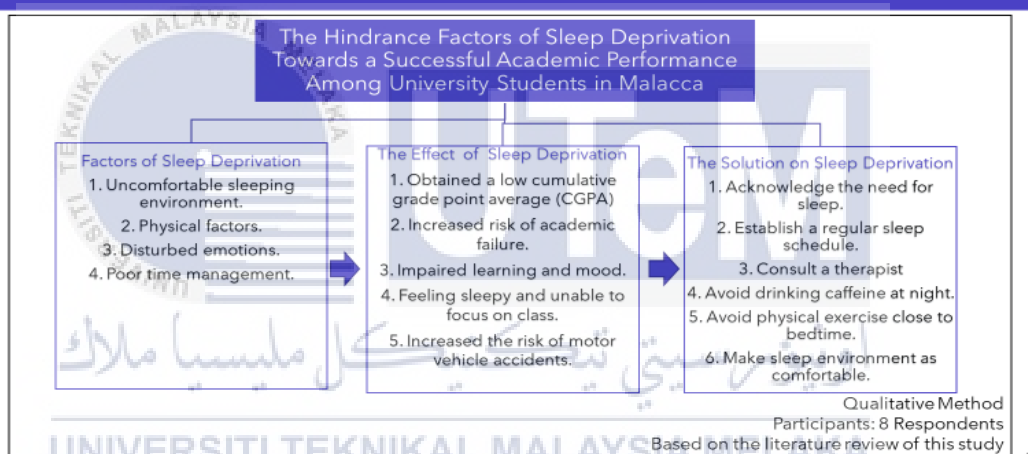
KEY WORDS	DESCRIPTION	AUTHORS
Sleep Deprivation Overview	<ul style="list-style-type: none"> • Sleep deprivation is a condition in which a person's sleep cycle is messed up. It happens when a person does not get enough sleep to wake up feeling awake during the day. • Sleep deprivation disturbs circadian physiology and negatively impacts the brain and behavioral functions. 	Raafat et al. (2020); Bishir et al, (2020).
The Important Of Sleep	<ul style="list-style-type: none"> • 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. • Sleep is an essential function that allows your body and mind to recharge, leaving you refreshed and alert when you wake up. 	Cho & Duffy (2019); Pacheco & Singh (2022).
The Cause Of Sleep Deprivation Among University Students	<ul style="list-style-type: none"> • Sleep deprivation and related factors among undergraduate students in Malaysia are due to their sociodemographic reasons and lifestyle factors. 	Naito et al. (2021).

7

KEY WORDS	DESCRIPTION	AUTHORS
Why Sleep Deprivation Affects University Students' Academic Performance	<ul style="list-style-type: none"> 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. Due to the cognitive loss caused by sleep deprivation, academic performance is often impaired. 	Toscano-Hermoso et al. (2020); Guadiana & Taylor L (2021).
The Solution On Sleep Deprivation Among University Students	<ul style="list-style-type: none"> 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. 	AASM (2020).

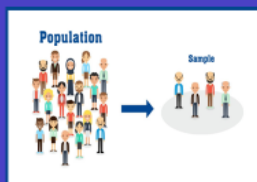
8

THEORETICAL FRAMEWORK



9

SAMPLING DESIGN



Target Population

- Final Year students in University.
- Age between 23-25

Sampling Technique

- Non-Probability Sampling (Purposive Sampling)

Sampling Location

- Malacca, Malaysia

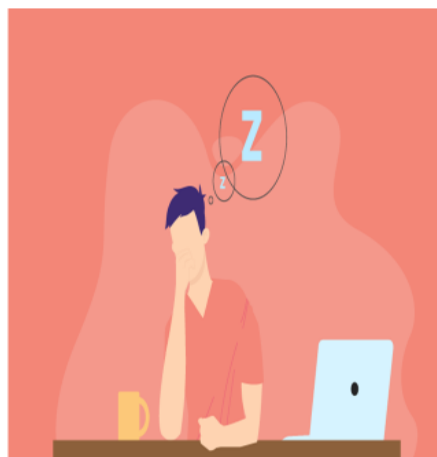


Sampling Size

- 8 Respondents

Summary

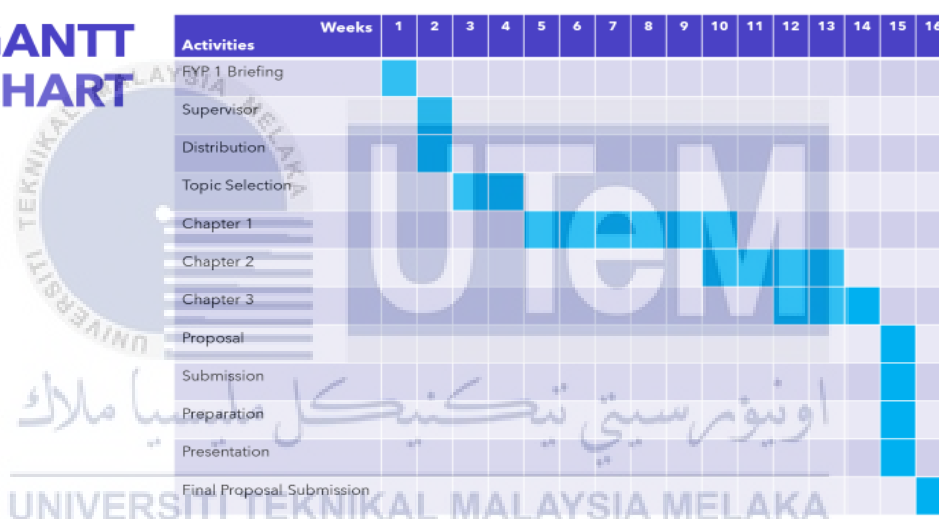
In conclusion, sleep deprivation is a problem that everyone, including students, often experiences. However, some people underestimate the problem of lack of sleep. They mostly assume that lack of sleep is just a regular thing. Therefore, this study can help provide awareness and warning to the public, especially to students in the final year of university, because by taking lightly the problem of sleep deprivation will be able to fail in academic learning. Next, have difficulty venturing into the field of employment in the future.



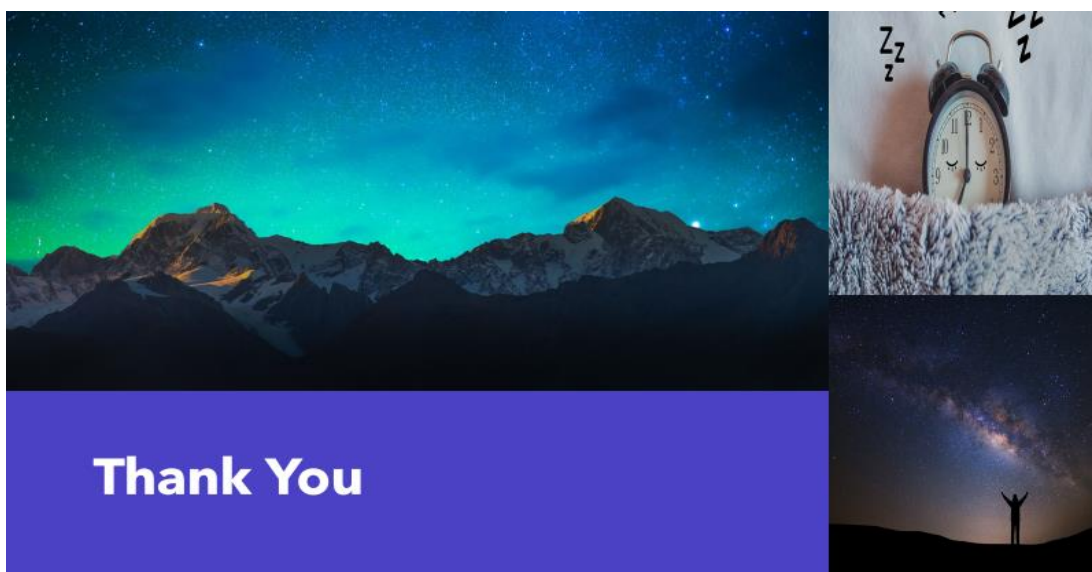
SLEEP DEPRIVATION 2022

12

GANTT CHART





13



Thank You


APPENDIX 4


Presentation Slide 2 (VIVA 2)

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

MUHAMMAD NURHAFIZ IKRAM BIN SAIFUL
B061910172
4 BTMI SECTION





INTRODUCTION





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- Lack of quality sleep at night will cause drowsiness during the day, affecting students' health and academic performance.
- To produce innovative students, they need to maintain quality sleep at night so that the body and mind become healthy and energetic.

SLEEP DEPRIVATION 2023

2

PROBLEM STATEMENT

- Students are unaware of the consequences of lack of sleep that will cause mental and physical effects (Hershner & O'Brien, 2018).
- Inefficient time management is also one of the causes of students' lack of sleep (Adams & Blair, 2019).
- Excessive use of technology such as smartphones and laptops at night is also a cause of students to have sleep deprivation (Pacheco & Truong, 2022).

SLEEP DEPRIVATION 2023

3

RQ & RO

RESEARCH QUESTION	RESEARCH OBJECTIVE
1. What are the factors of sleep deprivation among university students?	1. To study the cause of sleep deprivation among university students.
2. Why does sleep deprivation affect university student's academic performance?	2. To uncover why sleep deprivation affects university students' academic performance.
3. How to provide the solution on sleep deprivation among university students?	3. To recommend the solution on sleep deprivation among university students.

SLEEP DEPRIVATION 2023

4

SCOPE & LIMITATION OF THE RESEARCH

SCOPE

- To understand the problem of sleep deprivation and its solution among students in a university in Malacca.
- The duration of this study: Single Moment.
- In Malacca, Malaysia.



LIMITATION

- Uses a small sample size in some universities and not all universities in Malacca.
- The researcher only took the results of the respondents' academic performance broadly.
- The courses taken by each respondent were also different
- The researcher used a sample of students in the final year of their bachelor's degree, which is year 3 or 4 only.

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

SLEEP DEPRIVATION 2023

5

RESEARCH SIGNIFICANCE



- Let's university students know that sleep deprivation cannot be ignored, despite being busy working and studying.
- This study can be a reference for future studies about sleep deprivation in their era.
- People with sleep deprivation especially students can also refer to this study to identify the causes, effects, and measures to overcome the lack of sleep.

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LITERATURE REVIEW

KEY WORDS	DESCRIPTION	AUTHORS
Sleep Deprivation Overview	<ul style="list-style-type: none"> 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. Sleep deprivation disturbs circadian physiology and negatively impacts the brain and behavioral functions. 	Raafat et al. (2020); Bishir et al, (2020).
The Important Of Sleep	<ul style="list-style-type: none"> 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. Sleep is an essential function that allows your body and mind to recharge, leaving you refreshed and alert when you wake up. 	Cho & Duffy (2019); Pacheco & Singh (2022).
The Cause Of Sleep Deprivation Among University Students	<ul style="list-style-type: none"> Sleep deprivation and related factors among undergraduate students in Malaysia are due to their sociodemographic reasons and lifestyle factors. 	Naito et al. (2021).

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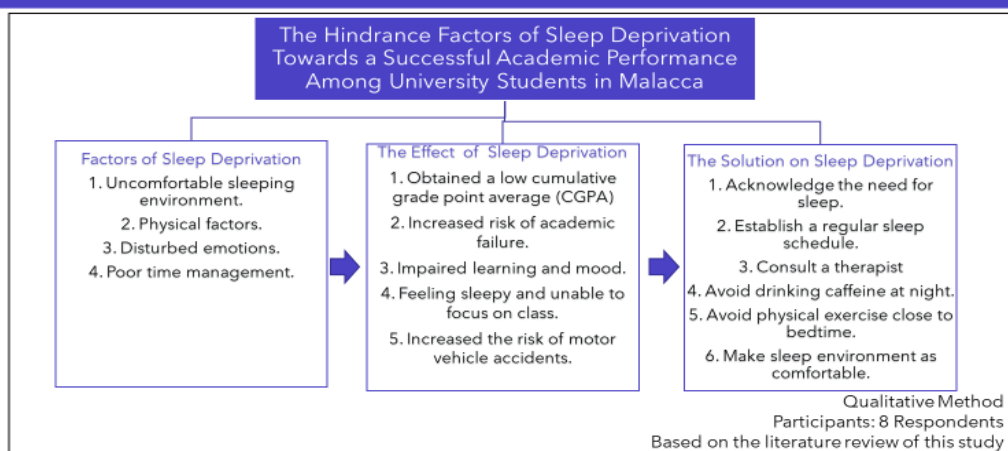
KEY WORDS	DESCRIPTION	AUTHORS
Why Sleep Deprivation Affects University Students' Academic Performance	<ul style="list-style-type: none"> When examining the link between sleep quality and academic performance, it has been shown that students with poor sleep quality get worse grades than those with high sleep quality. Due to the cognitive loss caused by sleep deprivation, academic performance is often impaired. 	Toscano-Hermoso et al. (2020); Guadiana & Taylor L (2021).
The Solution On Sleep Deprivation Among University Students	<ul style="list-style-type: none"> 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. 	AASM (2020).

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THEORETICAL FRAMEWORK



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RESEARCH METHODOLOGY

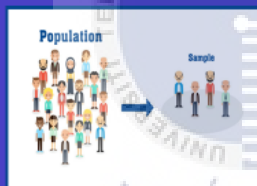
RESEARCH DESIGN	RESEARCH STRATEGY	RESEARCH METHOD	DATA COLLECTION METHOD	DATA ANALYSIS METHOD
Case Study	Interview (semi-structured interview)	Qualitative Research Method	1. Primary Data 2. Secondary Data	Thematic Analysis Method



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SAMPLING DESIGN



Target Population

- Final Year of Bachelor's Degree Students in University.
- Age between 23-25

Sampling Location

- Malacca, Malaysia



Sampling Technique

- Non-Probability Sampling (Purposive Sampling)

Sampling Size

- 8 Respondents

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DATA ANALYSIS AND DISCUSSIONS

- The cause of sleep deprivation among university students

Numb.	Cause	Respondent	A	B	C	D	E	F	G	H
1.	Voluntary Choice		✓	✓		✓		✓	✓	✓
2.	Mental Health Problem		✓		✓					
3.	Excess Use of Electronic Devices			✓		✓				
4.	Environmental Factors						✓		✓	
5.	Academic Pressure		✓		✓					✓

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- The reason sleep deprivation affects university students' academic performance.

Numb.	Reason	Respondent	A	B	C	D	E	F	G	H
1.	Lack of Attention		✓	✓		✓	✓	✓		✓
2.	Reduced Creativity		✓		✓	✓			✓	
3.	Excessive Daytime Sleepiness		✓	✓	✓	✓		✓		✓
4.	Impaired Memory					✓	✓	✓		✓
5.	Body Fatigue		✓				✓	✓	✓	

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- The solution on sleep deprivation among university students..

Numb.	Solution	Respondent	A	B	C	D	E	F	G	H
1.	Manage Time		✓	✓	✓	✓		✓		
2.	Keep Routine		✓			✓	✓		✓	✓
3.	Turn off Electronic Devices			✓				✓		✓
4.	Exercise					✓				
5.	Give Advice				✓		✓			
6.	Create a Good Sleep Environment						✓	✓	✓	
7.	Learn to Say No									✓

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CONCLUSION AND RECOMMENDATION

Objective	Conclusion	Recommendation
The cause of sleep deprivation among university students.	Based on the respondent's answers, it can be concluded that the main cause of sleep deprivation in university students is a voluntary choice.	Students who want to study the causes of sleep deprivation by university students can refer to this study to find out more.
The reason why sleep deprivation affects university students' academic performance.	Sleep deprivation affects university students' academic performance mostly because students lack attention in class and excessive daytime sleepiness.	Students who want to maintain excellent academic results can take lessons from this study to gain awareness that lack of sleep can affect their academic performance.
The solution on sleep deprivation among university students.	The highest respondent answers on the solution on sleep deprivation among university students are to manage time and to keep a sleep routine. However, other solutions can be important to solve problems that do not involve time, such as a bad sleep environment.	To students who have problems with lack of sleep they can refer to this study to get solutions and advise their friends who have the same problem.

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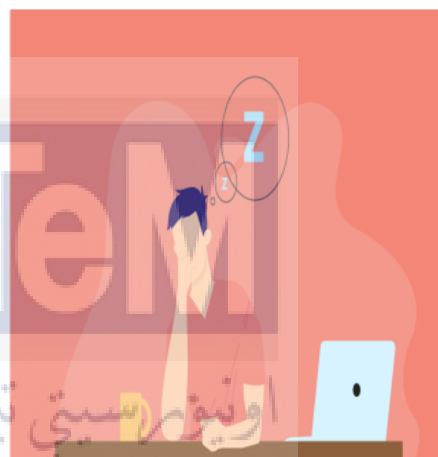
RECOMMENDATION FOR FUTURE RESEARCH

- For those who want to conduct research based on sleep deprivation, refer to this study.
- To find a better result, future research can increase the scope to the whole country or the whole world.
- The research can be done using different target respondents, such as adults or teenagers.
- The researcher can make a method other than qualitative method such as quantitative or mix method.

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Summary

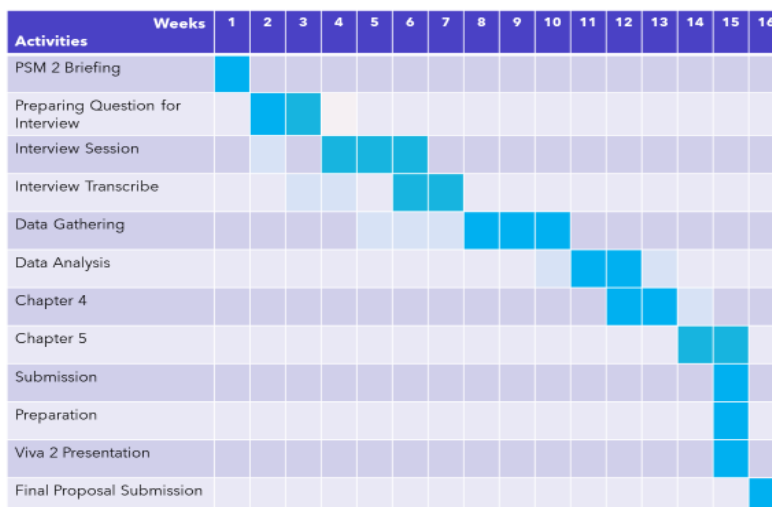
In conclusion, sleep deprivation is a problem that everyone, including students, often experiences. However, some people underestimate the problem of lack of sleep. They mostly assume that lack of sleep is just a regular thing. Therefore, this study can help provide awareness and warning to the public, especially to students in their final year of university, because by taking it lightly, the problem of sleep deprivation will be causing them to fail in academic learning. Next, have difficulty venturing into the field of employment in the future.



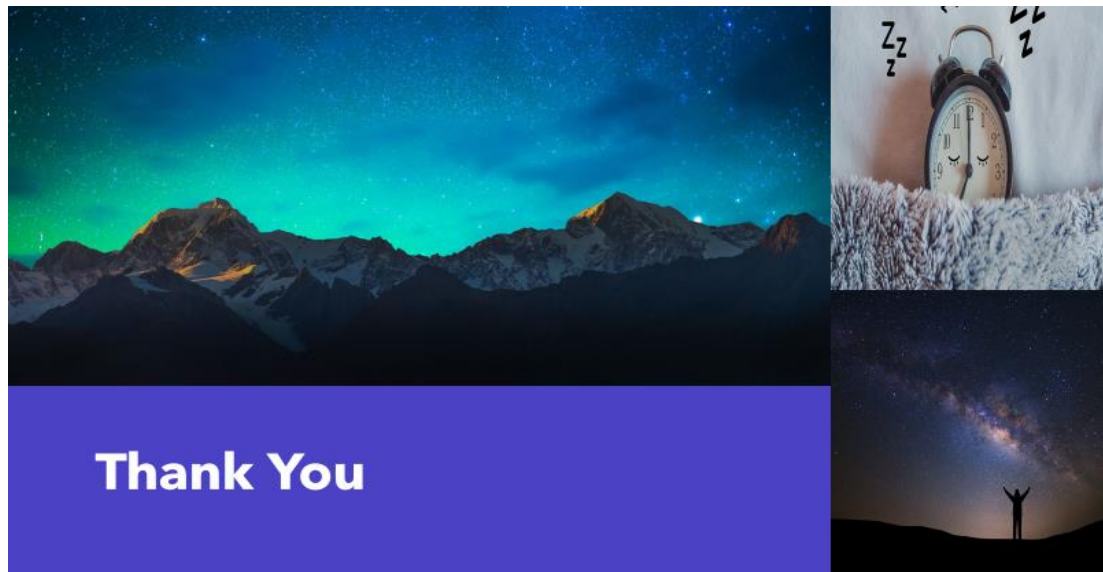
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