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Final Year Project Report ☒

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PhD ☐

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This declaration is made on the 24 day of JUNE year 2015.

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THE EFFECT OF STRESS TOWARDS SLEEP QUALITY AND ACADEMIC ACHIEVEMENT OF UNIVERSITY MALAYSIA SARAWAK STUDENTS

NURFATISHA BINTI MUHAIDIN

This project is submitted
in partial fulfillment of the requirements for a
Bachelor of Science with Honours
(Cognitive Science)

Faculty of Cognitive Sciences and Human Development
UNIVERSITI MALAYSIA SARAWAK
(2015)

The project entitled 'The Effect of Stress Towards Sleep Quality and Academic Achievement of University Malaysia Sarawak Students' was prepared by Nurfatisha Binti Muhaidin and submitted to the Faculty of Cognitive Sciences and Human Development in partial fulfillment of the requirements for a Bachelor of Science with Honours (Cognitive Science)

Received for examination by:

(DR. RIZAL ABU BAKAR)

Date:

Grade

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ABSTRACT

The present study aims to examine the relationship between perceived stress, sleep quality and academic achievement; and in order to find out the best predictor of sleep quality, stress and academic achievement. 150 University Malaysia Sarawak students participated in this study by answering a package of questionnaire that consists of perceived stress levels (Perceived Stress Questionnaire), sleep quality (Pittsburgh Sleep Quality Index) and academic achievement (CGPA) variables using stepwise multiple regression. The results indicated that sleep quality and sleep duration are significant predictors of stress. Nonetheless, stress and sleep quality were unrelated to academic performance. Implications for university students and practitioners are discussed as well as promoting the importance of sufficient, better quality sleep for university students' health and well-being.

Keywords: sleep quality, academic achievement, perceived stress levels, time management, gender.

ABSTRAK

Kajian ini bertujuan untuk mengkaji hubungan antara tekanan, kualiti tidur dan pencapaian akademik; dan untuk mengetahui pemboleh ubah peramal kualiti tidur, tekanan dan pencapaian akademik. 150 pelajar Universiti Malaysia Sarawak telah mengambil bahagian dalam kajian ini dengan menjawab boring soal selidik yang mengandungi tahap tekanan (Soal Selidik Tekanan), kualiti tidur (Indeks Kualiti Tidur Pittsburgh) dan pencapaian akademik (CGPA) dengan menggunakan regresi berganda "stepwise". Keputusan menunjukkan bahawa kualiti tidur dan jangka masa tidur adalah peramal yang signifikan terhadap tekanan. Walau bagaimanapun, tekanan dan tidur yang berkualiti tidak berkaitan dengan prestasi akademik. Implikasi bagi pelajar universiti dan pengkaji juga dibincangkan selain menggalakkan kepentingan tidur yang mencukupi dan kualiti tidur yang lebih baik untuk kesihatan pelajar universiti dan kesejahteraan.

Kata kunci: kualiti tidur, pencapaian akademik, tahap tekanan, pengurusan masa, jantina.

CHAPTER ONE

INTRODUCTION

Background of Study

Stress is often experienced by everyone. Stress can cause many problems towards a person especially on a person thoughts, feelings and daily activities. According to Lessard (1998), stress is not only experienced by adults but even university students will also experience it. Furthermore, stress is something that synonymous with the students as pressure had become a habit among students (Ida Sumowidagdo, 2006). McNamara (2000) also stated that stress refers to the pressure factors within an individual, external events or interactions between individuals and their environment. The study that conducted by Murphy and Archer (1996) stated that stress cannot be seen or judged from the negative point of view or excessively because the student may be assumed to suffer physical and psychological disabilities.

Stress has been found to be associated with sleep quality. Theadom and Cropley (2008) found that people with sleep disturbances and daytime dysfunction are more likely to complain experiencing high level of stress. It was believed that the relationship between stress and sleep plays a significant role in determining sleep quality. Besides that, improper management of stress is correlated to poor sleep quality as well as poor sleep quality is related to several negative consequences. In university lifestyle, most students try hard in order to achieve as many accomplishments as possible that they tend to neglect their sleep quality. Good sleep quality is essential for university students, whose schedule is often packed with activities and lessons.

Additionally, poor sleep quality leads to poor physical and psychological health. Physiologically, poor sleep quality can lead to lower levels of personal health and higher levels

of fatigue (Krenek, 2006) and it is linked to several diseases, for example cardiovascular disease (Jenkins, 2005). Psychologically, poor sleep quality can result in emotional instability, less self-assurance, more impulsiveness and recklessness (Jenkins, 2005) and it is linked to self-esteem problems (Jomeen & Martin, 2007). As mentioned above, stress and sleep quality are correlated and each of them may result in destructive effects. It is important to find out the possible antecedence in order to prevent and tackle with the problem.

Problem Statement

Stress tends to give negative and positive effects towards a person. But, mostly stress is associated with negative impacts especially towards the sleep quality. Since there are only some published study on the relations between stress, sleep quality and academic achievement in Malaysia, it is important to explore whether or not there exists relationships among these factors and how the predictive power of these relationships.

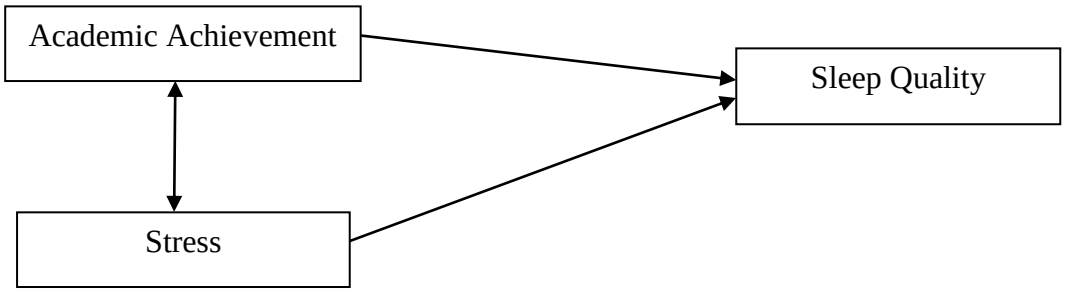
Students that have poor sleep quality may not be able to focus on their academic or during lectures which may cause their academic achievement to drop. Furthermore, it helps practitioners and university students to prevent harmful effects caused by high levels of stress and poor sleep quality. The findings of the present study possibly help practitioners to design and provide appropriate intervention programs such as how to manage one's time for sleeping. Moreover, it is important for university students to be aware of the connection and thus start managing one's time use.

Objectives

The objectives of this project are:

- To examine the relationship between students' stress and their sleep quality
- To examine the relationship between students' stress and their academic achievement
- To examine the relationship between students' sleep quality and academic achievement
- To examine the relationship between students' stress, sleep quality and academic achievement.
- To determine the factors that lead to stress among UNIMAS students

Conceptual Framework



Research Questions

- Is there a relationship between stress and sleep quality?
- Is there a relationship between stress and academic achievement?
- Is there a relationship between sleep quality and academic achievement?
- Is there a relationship between stress, sleep quality and academic achievement?
- What are the factors that lead to stress among UNIMAS students?

Hypotheses

- There is a significant relationship between stress and sleep quality of the students.
- There is a significant relationship between stress and academic achievement.
- There is a significant relationship between sleep quality and academic achievement.
- There is a significant relationship between stress, sleep quality and academic achievement.
- Time management and gender have significant impact on the students' stress.

Definitions of Terms

Conceptual Definition

Stress. Selye (1976) defined stress as "a state manifested by a syndrome which consists of all the nonspecifically induced changes in a biologic system". As in Selye's research (1978), stress was defined as when the human body possesses a mechanism which assists in coping demands placed upon it. Besides that, Selye named this mechanism as the general adaption syndrome before Selye replaced the term with the word stress.

According to Morrow (2014), stress is defined as "the body's reaction to a change that requires a physical, mental or emotional adjustment or response." Besides that, mostly stress comes from any circumstances or thought that make a person feels frustrated, angry, nervous or even anxious. Besides that, Morstt and Frust (1979) stated that stress refers to a situation where a person is affected by mental and emotional disorders that can create tensed and uncomfortable situation that cannot be borne by the body.

Sleep Quality. Sleep quality is determined by how one perceives his or her nighttime sleep patterns such as depth of sleep, ability to stay asleep, and easier to fall asleep without medical aids (Lai, 2001). Moreover, Lai (2001) also stated that good sleep quality is the occasion of "feeling rested in the morning, feeling energetic all over the day, and not complaining of any sleep disturbances". As for sleep quality, it is defined as "one's satisfaction of the sleep experience, integrating aspects of sleep initiation, sleep maintenance, sleep quantity, and refreshment upon awakening" (Kline, 2014).

Academic Achievement. Academic achievement in this study refers to the results obtained by students after studying knowledge from learning activities. Academic achievement can be measured through a stage known as the examination where the mastery of knowledge and skills can be identified through the examination.

Trow (1956) defined academic achievement as "knowledge attaining ability or degree of competence in school tasks usually measured by standardized tests and expressed in a grade or units based on pupils' performance".

Operational Definition

Stress. In this study, perceived stress in terms of how a UNIMAS student copes with pressure and manages time when tasks assigned to them. However, stress is a natural phenomenon that occurs individually among UNIMAS students either intentionally or unknowingly. Besides that, stress that occurs continuously can interfere with daily activities, mental and physical health, as well as their academic achievements. As a result, improper time management may expose UNIMAS student towards pressure.

Sleep Quality. Sleep is very important to a person in order to get through the next day. A UNIMAS student may face sleeping problem in order to complete their assigned tasks for a certain time. Furthermore, student that experiences sleep deprivation or low sleep quality on ongoing basis can give impact with their mental, health, daily activities and academic achievement.

Academic Achievement. Academic achievement in this study refers to the UNIMAS student results in each semester known as Cumulative Grade Point Average (CGPA). A CGPA is a measurement of a UNIMAS student's academic achievement levels throughout the study. CGPA calculation phase will be measured from the first year until the current year of a student's study. Calculation method used is the multiplication of Grade Value and courses unit taken from the first until the current semester and divided by all registered courses.

Significance of the Study

The significance of this study can be through knowledge and community. This research is able to provide knowledge about the effect of stress towards university students. Besides that, it also shows the effect of stress towards their sleep quality and academic achievement. The importance of time management also can be seen through this study in order to avoid high stress level. Besides that, this study also provides the knowledge of whether genders also become one of the factors that contribute stress.

As in community, this research contributes more towards UNIMAS students and UNIMAS counselors. Based on this study, UNIMAS students able to know what are their level of stress, sleep quality as well as the effect of stress towards their sleep quality and academic

achievement. Moreover, UNIMAS students also know the importance of time management so that they are more organized and minimize their stress level.

This research also gives ideas and information to the UNIMAS counselors on the stress level of UNIMAS students and the main variables that get affected which are the students' sleep quality and academic achievement. Besides that, UNIMAS counselors able to give more effective stress management strategies toward the students and be more aware of the number of students that has high level of stress by giving motivational talks or counseling.

Scope of the Study

The proposed study will focus on the effects of stress towards UNIMAS students mentally and physically. Besides that, the proposed study will also focus on the sleep quality of UNIMAS students as they went through daily stress. Furthermore, this research also studies the effect of stress and sleep quality towards student's academic achievement. This research will be done by using questionnaires in which Perceived Stress Scale (PSS) used to measure stress, Pittburgh Sleep Quality Index (PQSI) to measure sleep quality and CGPA to measure academic achievement.

CHAPTER TWO

LITERATURE REVIEW

Stress

National Health Ministries (2006) stated that stress is simply the specific body response to any demand or borne made on it. Stress is not by definition synonymous with nervous tension or anxiety. According to Wong (2008), stress is defined as "pressure or tension exerted on a material object" and "a state of mental or emotional strain or tension resulting from adverse or very demanding circumstances". According to Smith, Segal and Segal (2014), stress is a normal physical response to events that makes human feel threatened or upset the balance in some way. The stress response is the body's way of protecting human where it helps people to stay focused, energetic and alert when working properly. Moreover, stress provides the means to express talents and energies as well as pursue happiness where it can also cause exhaustion and illness on either physical or psychological such as heart attacks and accidents (National Health Ministries, 2006).

Besides that, Smith et al.(2014) also stated that the stress response also helps an individual rise to meet challenges. But beyond a certain point, stress stops being helpful and starts causing major damage to health, mood, productivity, relationships and quality of life. In addition, Aldwin (2007) also stated that stress refers to the quality of experience, produced through a person-environment transaction, in which, through either over arousal or under arousal, results in psychological or physiological distress (p. 24). Stress mostly causes negative impacts towards people whether from the aspects of cognitive, behavioural, emotional or

physical such as memory problems, short temper, sleeping too much or too little, and chest pains (Smith et al.,2014).

Based on National Health Ministries (2006) research, stress is a process that builds where it is more effective to intervene early in the process rather than later. According to National Health Ministries (2006), for many young adults, university is the best time of life. Lyrakos (2012) stated that as the university student acquired greater stress when they need an adjustment to changing situations and life in whole. Besides that, researchers found out that many mental illnesses are traced to trauma, whose damage surfaces in times of stress and change, such as the university years (National Health Ministries, 2006). Furthermore, stress is a combination of factors that affect each individual differently (Lyrakos, 2012).

Based on Lyrakos (2012) study, different reasons influence them which include family relations, friendship, financial state, way of life and many more. According to Wong (2008), students who experienced higher levels of stress are reported to have lower satisfaction with life (Demakis & McAdams, 1994). Furthermore, stress is negatively correlated to perceived problem solving, health (Largo-Wight, Peterson, & Chen, 2005), self-efficacy and academic success (Zajacova, Lynch, & Espenshade, 2005) among university students. But, students who have better health, problem solving, self-efficacy and academic success intend to have lower levels of perceived stress which is a kind of subjective psychological distress. The second hypothesis, perceived stress is negatively correlated with academic success.

Sleep Quality

According to Deok and Tae (2001) research, sleep occupies almost a third of a person's life and thus is an important aspect of human life. Passos, Minotelli, Koeke, Proto, Junior, Araujo and Fragoso (2013) research, sleep is a homeostatic process with clear effects on wellbeing, cognition, attention and behavior. Besides that, sleep is essential to physical and mental growth and stability in which deprivation of sleep could cause mental problems such as depression and weakens physical and mental functions, as well as lowers work productivity which gives enormous effects on society as well as individuals (Deok &Tae, 2001). Moreover, based on National Institutes of Health (2012), sleep helps the brain to work properly in preparing for the next day where it formed new pathways to help in learning and remembering information.

Sleep quality, according to American Psychiatric Association (2000), is defined as a complex phenomenon that involves several dimensions. Sleep quality includes perceived sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbance, use of sleep medication, and daytime dysfunction. Sleep deficiency causes low sleep quality which studies show that "sleep deficiency alters activity in some parts of the brain" that may cause trouble in decisions making, solving problems, controlling emotions and behavior (National Institutes of Health, 2012). Lai (2001) mentioned that sleep quality is determined by how one perceives his or her nighttime sleep patterns such as depth of sleep, ability to stay asleep, and easier to fall asleep without medical aids. Moreover, good sleep quality is the occasion of "feeling rested in the morning, feeling energetic all over the day, and not complaining of any sleep disturbances" (p.4). In other words, possessing good sleep quality is essential and vital for everybody's healthy living (Wong, 2008).

Based on Wong (2008) study, physiologically, poor sleep quality can cause daytime sleepiness (Miller, 2007), lower levels of personal health and higher levels of fatigue (Krenek, 2006). Besides that, it is also causing several diseases such as heart disease, inflammation, diabetes (*Harvard Heart Letter*, 2007) and cardiovascular disease (Jenkins, 2005). While psychologically, poor sleep quality result in decreases in cognitive function (Miller, 2007) and related to higher levels of anxiety (Jomeen & Martin, 2007) which could increase tension, irritability, confusion, negative moods and depression, as well as, decrease psychological well-being and lower life satisfaction (Lam, 2003; Pilcher, Ginter, & Sadowsky, 1997). At the same time, it is also reported to be related with chronic psychomotor slowing and concentration problems (Buboltz Jr, Brown, &Soper, 2001).

Low quality of sleep mostly occur towards university students that make they feel angry and impulsive, have mood swings, feel sad or depressed, or lack motivation (Wong, 2008). Hon, Suen & Tam (2010) research, 1038 (71%) students expressed dissatisfaction with their sleep in a recent survey conducted on 1462 university students. Besides that, inadequate duration as well as poor quality of sleep negatively affects their concentration, leading to tardiness or even absence from classes (Hon, Suen & Tam, 2010).

The Relationship between Stress and Sleep Quality

Some researchers have found out that work-related stress influences sleep quality (Fortunato & Harsh, 2006; Wheatley, 1998). Clemens, Hoover and Kosydor (2005) used subjective tests which are the Pittsburgh Sleep Quality Index and the Perceived Stress Scale reported that there is a negatively correlated relationship between stress and sleep quality in university population. However, Clemens, Hoover & Kosydor (2005) also stated that participants

with high level or low level of stress contributed only a little difference in sleep quality by using objective test which suggests may be due to the small sample size.

Studies also indicated that changes in brain activities due poor sleep. For example, Ahmad Hariri, Bogdan & Prather (2013) found that bilateral amygdala reactivity positively vary in the same time with measures of depressive symptoms and perceived psychological stress in participants reporting poor overall sleep. Furthermore, there was an absence of association between amygdale reactivity and outcome measures among better sleepers which indeed after a night of total sleep deprivation, participants report increased negative mood and have heightened pupillary dilation in response to negative emotional stimuli compared with non-sleep deprived controls (Ahmad Hariri, Bogdan and Prather, 2013).

Theadom and Cropley (2008) found that participant with high perceived stress correlated to higher sleep disturbances and daytime dysfunction. Moreover, they believed that perceived stress and sleep interact and it plays a significant role in sleep quality (Wong, 2008). In addition, these findings also contribute to a growing literature linking sleep disturbance with poor mental and physical health which is stress (Ahmad Hariri, Bogdan & Prather, 2013). Based on Ahmad Hariri, Bogdan & Prather (2013) research also stated that perceived stress promises to advance opportunities for intervention to prevent the progression or incidence of physical and mental health disability associated with poor sleep.

Peterson et.al.(n.d.) stated that stress is assumed as impair sleep and there is also apossibility that some individuals are more vulnerable to stress-disturbed sleepthan others (Drake et.al., 2004). The purpose of this research is to investigate if and how sleep quality is affected by naturally occurring everyday university student stress. Moreover, Theadom and Cropley (2008)

found that participant with so much stress may cause sleep disturbances and daytime dysfunction. Besides that, the amount of sleep of the university student may be cause by stress.

The Relationship between Stress and Academic Achievement

Based on Harlina et.al. (2014) research, academic achievement is one of the most vital considerations among students in higher educational level which it can be measured by cumulative grade point average (CGPA). According to Nadeem Talib and Muhammad Zia-ur-Rehman (2012), university students are at that point of academic career where they are about to enter the professional regions. On the other hand, stress is one of the factors that has negative effect on the mastery of the academic curriculum (Harlina et.al., 2014).

According to Nadeem Talib and Muhammad Zia-ur-Rehman (2012), at this stage they are faced with many problems which can be categorized as stressors such as academic, financial, time or health related, and self-imposed (Goodman, 1993; LeRoy, 1988), which hinders their performance and interpose the achievement of the desired goals. Harlina et.al. (2014) stated that they found the moderate stress experienced by the students is desirable for attaining good academic performance. Sanders and Lushington, 14 explained in his study that stress gave negative impact on academic performance

Based on Rafidah, Azizah, Norzaidi, Chong, Salwani and Noraini (2009) research, learning and memory can be affected by stress in which if the level of perceived stress is higher, the academic performance of the students is lower. Similarly, Aldwin and Greenberger (1987) found that perceived academic stress was related to anxiety and depression in college students. But, positive stress can be helpful to students by motivating them to peak performance while too

much stress can interfere with a student's preparation, concentration, and subsequently performance. Moreover, the level of perceived stress faced by the students at the beginning of semester is less compared to the stress level experienced at the middle of the semester (Rafidah et.al., 2009). However, Rafidah et.al. (2009) stated that the level of perceived stress experienced by the students from the middle towards the end of the semester was slightly higher than the level of stress at the beginning of the semester.

The Relationship between Sleep Quality and Academic Achievement

According to Curcio, Ferrara and Gennaro (2006), sleep is an active, repetitive and reversible behavior serving several different functions such as repair and growth, learning or memory consolidation, as well as restorative processes that occur throughout the brain and body. Besides that, sleep plays an important role in learning processes and memory consolidation where sleep deprivation can impair learning and memory for both motor procedural and declarative memory systems (Curcio, Ferrara & Gennaro, 2006). Based on Baert, Omey, Verhaest, and Vermeir (2014) study, the brain integrates new knowledge and forms new associations while asleep (AlDabal & BaHammam, 2011; Beebe, 2011; Dahl & Lewin, 2002; Gais & Born, 2004; Siegel, 2001; Vandekerckhove & Cluydts, 2010; Walker & Stickgold, 2004).

Furthermore, Baert et.al. (2014) also stated that night's rest is essential in maintain mood, motivation, memory and cognitive performance. Moreover, sleep may play an important role in learning and memory where integrity of learning and memory processes are fundamental in academic achievement (Curcio, Ferrara & Gennaro, 2006). According to Curcio, Ferrara and Gennaro (2006), students with more regular sleep-wake patterns which is shorter sleep latencies,

fewer night awakenings and earlier rise times on weekends reported to have higher CGPA whereas students with increased daytime sleepiness as a consequence of shorter sleeping nights, reported to have lower CGPA. This literature also supported by Baert et.al. (2014) study where both the exam marks and the exam passing chances are somewhat lower among the bad sleepers.

Thus, students who sleep poorly with an elevated sleep fragmentation that reduced sleep quality with later bedtimes and early awakenings, usually in tend to get a decreased academic performance and as well as reduced neurobehavioral functioning (Curcio, Ferrara & Gennaro, 2006).

Factors that Lead to Stress

Time Management Factor. Britton & Glynn (1989) conceptualized time management in terms of three components which are macro, intermediate and micro levels. The macro level refers to choice and goals prioritizing while the intermediate level involves creating tasks from the goals and sub-goals, and lastly the micro level consists of planning and implementing. As for Huang & Zhan (2001) time management concept, they defined the time management as a kind of personality trait that can be reflected from the way individuals utilize and control ones' time.

According to Harlina, Salam, Roslan, Hasan, Jin and Othman (2014) study, students that handle on their time a higher potential for a high GPA because they tend to create a schedule that forced them to organize their time and saw their participation in activities to be of assistance in time management. In addition, there are many domains of stress such as Academic Related Stressor (ARS), Intrapersonal and Interpersonal Related Stressor (IRS), Teaching and Learning Related Stressor (TLRS), Social Related Stressor (SRS), Drive and Desire Related Stressor

(DRS) and Group Activities Related Stressor (GARS) and many more. But, among these domains, the stress level was quite high which is 84% in the academic related stressor (ARS) domain that specified on the educational, college, universities and student events (Harlina et.al., 2014). So, this shows that the connection between time management, academic achievement and stress.

Gender Factor. Based on National Health Ministries (2006) research, there are about thirty-eight percent of college women report feeling frequently overwhelmed. Besides that, Ahmad Hariri, Bogdan and Prather (2013) research stated that normative variability in self-reported sleep quality moderates the link between neural threat processes, negative effect, and perceived stress, particularly among men. But, Nadeem Talib and Muhammad Zia-ur-Rehman (2012) research stated that the perceived stress scores among the two groups which are male versus female (gender-wise) reveals that there is no significant difference in the perceived stress scores between male and female university students.

Furthermore, Campbell and Clewell (1999) stated that the influence of gender plays an important role in influencing an individual's academic achievement. A study conducted by USM found that female students in the United States have attitude and their personality is bolder in facing the challenges of learning (Campbell & Clewell, 1999).

Summary

This chapter explained about the stress and sleep quality. Besides that, the relationship between stress and sleep quality, the relationship between stress and academic achievement, as well as the relationship between sleep quality and academic achievement are discussed in this

chapter. Moreover, the factors that lead to stress are presented in this chapter which is gender and time management factor.

CHAPTER THREE

METHODOLOGY

Research Design

The type of research design that will be used is the survey research method in order to get all the data that were needed for this research. Method that is in this research by distributing the questionnaire and then all the findings obtained are formulated to make a decision. Besides that, this research also used the quantitative approach in order to get better understanding about this research.

Research Location

This research will be done at the West Campus of University Malaysia Sarawak, Kota Samarahan.

Participants

The sample population that involved in this research is all students of University Malaysia Sarawak. The sample consists of 150 randomly selected university students from different races, religions, gender and ages of different courses and faculties which are Faculty of Cognitive Sciences and Human Development, Faculty of Applied and Creative Arts, Faculty of Economics and Business, Faculty of Resource Science and Technology, Faculty of Social Sciences, Faculty of Computer Science and Information Technology and Faculty of Engineering. All the participants were selected when they were available whether during class or break time. The size of the sample is calculated based on formula below:

Sampling:

$S_0 = z^2 \times (p \times q) / e^2$

Formula:

$S = S0 / (1 + S0 / N)$

Instruments

Every participant need to fill a self-administered questionnaire, which included questions about social and demographic background, stress level, academic achievement and sleep quality. The use of questionnaires is more practical and efficient to use because it can improve the accuracy and truthfulness of responses given by the respondent. The questionnaire is divided into four parts, A, B, C and D. Moreover, descriptive statistical method is also used in order to analyze the data that are in form of Likert scale.

Pittsburgh Sleep Quality Index (PQSI). Based on Buysse, Reynolds III, Monk, Berman and Kupfer (1989), poor sleep quality is typically measured in surveys with indicators of delayed, disrupted and/or non- restorative sleep. The Pittsburgh Sleep Quality Index (PSQI) is an effective instrument used to measure the quality and patterns of sleep. This is because it is able to differentiate "poor" from "good" sleep by measuring seven domains: subjective Sleep Quality, Sleep Latency, Sleep Duration, Habitual Sleep Efficiency, Sleep Disturbances, Use of Sleep Medication, and Daytime Dysfunction. Besides that, Smyth (2012) also stated that the client self rates each of these seven areas of sleep. The scoring of the answers is based on a 0 to 3 scale, whereby 3 reflect the negative extreme on the Likert Scale. A global sum of "5"or greater

indicates a "poor" sleeper. Although there are several questions that request the evaluation of the client's roommate, these are not scored, nor reflected in the attached instrument. An update to the scoring: if 5J is not complete or the value is missing, it now counts as a "0" (Smyth, 2012).

Not during the past month (0)	Less than once a week (1)	Once or twice a week (2)	Three or more times a week (3)

Figure 1: Likert Scale scoring for the seven components

The habitual sleep efficiency is calculated as follows:

(Number of hours slept/Number of hours spent in bed)X 100= Habitual sleep efficiency (%)

>85% (0)	75 – 84% (1)	65 – 74% (2)	<65% (3)

Figure 2: Likert Scale for Habitual sleep efficiency (%)

Perceived Stress Questionnaire (PSQ). Based on Cohen (1994), the *Perceived Stress Questionnaire* (PSQ) is the most widely used psychological instrument for measuring the perception of stress in which is a measure of the degree to which situations in one's life are appraised as stressful. Besides that, all the items were designed to tap how unpredictable, uncontrollable, and overloaded respondents find their lives. The Perceived Stress Scale consists of ten questions that also include scale of a number of direct queries about current levels of experienced stress.

Moreover, the PSS was designed for use in community samples with at least a junior high school education. Furthermore, Cohen (1994) also stated that the items are easy to understand

and the response alternatives are simple to grasp. The questions in the PSS ask about feelings and thoughts during the last month. In each case, respondents are asked how often they felt a certain way. The scoring of the answers is based on a 0 to 4 scale, whereby 4 indicates 'Very Often' and 0 indicates 'Never' on the Likert Scale. The PSS scores are obtained by reversing responses (e.g., 0 = 4, 1 = 3, 2 = 2, 3 = 1 & 4 = 0) to the four positively stated items (items 4, 5, 7, & 8) and then summing across all scale items. A short 4 item scale can be made from questions 2, 4, 5 and 10 of the PSS 10 item scale (Cohen, 1994). The ratings are summed, with higher scores indicating more perceived stress.

Never (0)	**Almost Never (1)**	**Sometimes (2)**	**Fairly Often (3)**	**Very Often (4)**

Figure 3: Likert Scale scoring for the 10 items

Academic Achievement (CGPA). In this study, the students' academic achievement is measured by the range of participants' current cumulative grade point average (CGPA) from first to current semester. The cumulative grade point average ranged from 1.64 to 4.00.

	3.68 – 4.00		**2.01 – 2.33**
	3.34 – 3.67		**1.68 – 2.00**
	3.01 – 3.33		**1.34 – 1.67**
	2.68 – 3.00		**Less than 1.34**
	2.34 – 2.67		

Figure 4: CGPA range

Time Management Questionnaire *(*TMQ) - (Bruce, Britton & Tesser, 1991). The time-management questionnaire included 25 items, each answered on a 3-point Likert Scale consisting of the responses always, sometimes, and never. In scoring, 3 points were assigned to the response at the end of the scale that we defined a priori as the "good" practice and 0 point was assigned to the response at the other end of the scale, with intermediate values given for the other responses. Higher values on the scale correspond to better time management practices.

Validity and Reliability

Based on the results, it shows difference between Cronbach's Apha from the past studies and the present study. The validity and reliability of the past studies showed high range value of Cronbach's Alpha. The PSQ, PSQI and TMQ in the past studies are more reliable and validity compared to the present study. Table 1 shows the comparison between past and the present study's findings on the Cronbach's alpha for each measurement. Moreover, the table showed that TMQ possesses the convergent validity of each sub-constructs as when the entire items correlate well with each other and these items are believed to measure the same construct, the convergent validity is obtained. Besides that, some professionals insisted on a reliability score of 0.70 or higher in order to use a psychometric instrument, thus the reliability in the recent study is highly reliable although the value is lower than the previous study.

Table 1

Comparison between the Results of Past and Present Study Results on the Cronbach's Alpha for Each Measurement

	α from the past study	**α in the present study**
For PSQ	0.85 – 0.9	0.75
For PSQI	0.83	0.761
For TMQ	0.87	0.852

Note. α = Cronbach's alpha.

Pittsburgh Sleep Quality Index (PQSI). Based on Smyth (2012) research, the PSQI has internal consistency and a reliability coefficient with Cronbach's alpha of 0.83 for its seven components. Besides that, there are also numerous studies using the PSQI in a variety of older adult populations internationally have supported high validity and reliability. Furthermore, the PQSI also had its own strengths and limitations in which it is a subjective measure of sleep. Besides that, self reporting by clients though empowering, may be able to reflect inaccurate information if the client has difficulty understanding what is written, or cannot see or physically write out responses. Smyth (2012) also stated that the scale has been translated into over 56 languages which for those with visual impairments, the nurse can read the PSQI as written to the client.

Perceived Stress Questionnaire (PSQ). Based on Levenstein et al. (1992) research, a 30-question Perceived Stress Questionnaire (PSQ) was validated in Italian and English among 230 subjects with test-retest reliability of 0.82 for General PSQ (past year or two). As for the

current year, the reliability (Coefficient Alpha) is more than 0.9. Besides that, Recent and General PSQ Indices were compared with alternative measures to stress which proved to correlate highly with scores on Cohen's Perceived Stress Scale (Levenstein et al.,1992).

Academic Achievement (CGPA). Academic performance was measured using cumulative GPA (Chiang, 2013). The content and face validity was checked by experts after constructing the draft questionnaire of CGPA range while the reliability was done in pilot testing test on 60 UNIMAS students.

Time Management Questionnaire *(*TMQ). Based on Alay and Kocak (2002) study, the reliability and validity of Time Management Questionnaire (TMQ) had been conducted for Turkish university students. Validity of the questionnaire was established by face validity and construct-related evidence. Besides that, items were subjected to principal component analysis and results showed that 35-item TMQ revealed 3 components in order to analyze the factors associated with this instrument. Furthermore, consistency statistical method (cronbach alpha) was used to test the reliability of instrument internal in which the Cronbach alpha coefficient for TMQ was 0.87 (Alay & Kocak, 2002).

Data Analysis

After collecting all the data, the data analysis method used is by using the *Statistical Package for Social Science (SPSS)* software in order to analyze the data received. This software was chosen because it is able to manipulate the data for the large number of respondents who and the data calculated are more accurate. In this study, a descriptive analysis is used in order to group the findings in the form of a table that shows the frequency, percentage and mean score for

student stress levels and impact on the achievement of the academic activities of the college. Besides that, Pearson correlation, regression analysis and T-test also are used in this study in order to investigate deeper about the relationship between the effect of stress sleep quality and academic achievement. The purpose of the statistical analysis are shown in the table below.

Type of Analysis	**Purpose**
1. Descriptive Statistical Analysis	To measure : - Part A (Personal and academic information) - Part B (Perceived Stress Questionnaire) - Part C (Time Management) - Part D (Sleep Quality)
2. Pearson Correlation	To measure the relationship between : - Stress and sleep quality - Stress and academic achievement - Academic achievement and sleep quality
3. T-test	To measure the difference between: - Gender factor and stress - Time management and academic achievement
4. Regression Analysis	To examine the relationship among stress, sleep quality and academic achievement.

Descriptive Statistical Analysis. Descriptive statistical method is used to show the distribution of personal information that has been fill out by selected respondents. Besides that, percentages and frequencies are used for analyzing information of respondents in sections A, B, C and D.

Inference Statistical Analysis. Inference Statistical refers to the explanation of the data that has been received and will be analyzed by using descriptive statistics. This analysis was also used to test hypotheses and to see the difference between variables that have been shown in research objectives.

Pearson Coefficient Test. Pearson Coefficient Test was also used to examine the relationship between demographic factors and academic achievement in which "r" will be used to determine the relationship between variables in this study.

Pilot Test. Pilot Test was used to test the reliability and validity of the questionnaires in which the test was done on 60 randomly selected UNIMAS students.

Data Screening. Data screening was used to strange or missing data which may due to transcription error.

CHAPTER 4

RESULTS

Data Screening

In this study, the data is 100% valid and there is no missing data in this study. The results are shown in Table 2.

Table 2

Data Screening of CGPA, PSQ, TMQ, PSQI and Gender.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
CGPA	150	100.0%	0	0.0%	150	100.0%
PSQ Score	150	100.0%	0	0.0%	150	100.0%
TMQ Score	150	100.0%	0	0.0%	150	100.0%
PSQI Score	150	100.0%	0	0.0%	150	100.0%
Gender	150	100.0%	0	0.0%	150	100.0%

Note. CGPA = Academic Achievement, PSQ Score = Perceived Stress, TMQ Score = Time Management, PSQI Score = Sleep Quality.

The Reliability and Validity of Measurements.

Similar to the findings from the previous studies, PSQ, PQSI and TMQ were shown highly reliable and valid. Table 3 presented the Cronbach's alpha, mean standard deviation and total items for each measurement. According to Cohen (1988), the Cronbach's alpha PSQ, PQSI and TMQ were in the range 0.0 to 1.0 in this study, indicating that the data are highly reliable.

Table 3

Reliability and Validity of Measurements

Characteristics	**PSQ**	**PSQI**	**TMQ**
α	0.75	0.761	0.852
M	24.05	21.49	32.39
STD	4.99	7.55	7.04
N	10	18	25

Note. α = Cronbach's Alpha, M = Mean, STD = Standard deviation, N = total items.

Descriptive statistics

Descriptive statistics for PSQ, PSQI, CGPA, gender and TMQ were presented in Table 4 which included means which is the measure of central tendency and standard deviations; the measures of variability for all the variables in this study.

Table 4

The Descriptive Statistics for PSQ, PSQI, CGPA, Gender and TMQ

	M	**STD**
PSQ	2.69	0.52
PSQI	1.77	0.42
CGPA	6.67	1.29
Gender	1.19	0.39
TMQ	2.79	0.98

Note. M = Mean, STD = Standard Deviation.

Demographics sample.

A majority of the participants were female (81.3%) and most were Malay (88%). Most of the participants are from Faculty of Cognitive Sciences and Human Development (32.0%). Besides that, most of the students have cumulative GPA of between the ranges of 3.01 to 3.33 (29.3%). A majority of the participants that involved in this research are Islam (71.3%). A total of 150 responses were collected from the hand in questionnaire with 61 items. The researchers received 110 responses in the first two weeks and an additional 40 responses in the third week. Therefore, there are no missing data as the questionnaires are distributed directly to the students around Kampus Barat, UNIMAS and the questionnaires are given back within 10 to 15 minutes (see Table 5).

Table 5

Demographics of Sample (N = 150)

Characteristic	***n***	**%**
Gender		
Female	122	81.3
Male	28	18.7
Race		
Malay	88	58.7
Chinese	27	18.0
Indian	8	5.3
Others	27	18.0
Religion		
Islam	107	71.3
Christian	22	14.7
Buddhist	18	12.0
Others	3	2.0
Faculty		
Cognitive Sciences and Human Development	48	32.0
Applied and Creative Arts	6	4.0
Economics and Business	21	14.0
Resource Science and Technology	31	20.7
Social Sciences	33	22.0
Computer Science and Information Technology	1	0.7
Engineering	10	6.7
Academic Information		
1.34 – 1.67	1	0.7
1.68 – 2.00	1	0.7
2.01 – 2.33	3	2.0
2.34 – 2.67	20	13.3
2.68 – 3.00	42	28.0
3.01 – 3.33	44	29.3
3.34 – 3.67	27	18.0
3.68 – 4.00	12	8.0

Perceived Stress Scale. Among all the students (*n* = 150), most of them had perceived high stress (72.0%, n = 108) which they perceived stress score of 20 while only a minor of students (n = 4) has very low level of stress (2.7%) that had stress score less than 13. Besides that, some students (25.3%, n = 38) had average level of stress in the range of 13 to 19 which

means that the students are able to control their stress. As for **Global PSQI Score (Sleep Quality)**, majority of the students (n = 116) had obtained poor sleep quality (77.3%). All this data are tabulated in Table 6.

Table 6

Perceived Stress Scale and Global PSQI Score (Sleep Quality)

Characteristic	***n***	**%**
Perceived Stress Scare		
Low stress	4	2.7
Average	38	25.3
High Stress	108	72.0
Global PSQI Score (Sleep Quality)		
Good sleep quality	34	22.7
Poor Sleep Quality	116	77.3

Sleep habits and sleep hours. Table 7 presents the sleep habits and sleep hours of Students with the greatest percentage of participants went to bed at 12am and above 12am (75.3%) and got up between 5am and 7am (64.0%). Besides that, most students (50.7%) took less than 15 minutes to fall asleep and majority of the students (33.3%) have reported sleep hours between 6 to 7 hours. Furthermore, some of the students (24.0%) reported they needed more than 7hours to function best every day.

Table 7

Sleep habits and Sleep hours (N = 150)

Characteristic	*n*	%
Go to bed during past month		
Below 8pm	4	2.7
8pm – 9pm	3	2.0
10pm – 11pm	30	20.0
At or above 12am	113	75.3
Get up during past month		
Below 5am	6	4.0
5am – 7am	96	64.0
8am – 10am	43	28.7
Above 10am	5	3.3
Hours of sleep		
More than 7 hours	36	24.0
6 – 7hours	50	33.3
5-6hours	49	32.7
Less than 5hours	15	10.0
Time to fall asleep		
Less than 15minutes	76	50.7
16-30minutes	42	28.0
31-60minutes	17	11.3
I hour	15	10.0

Time management. Table 8 presents the time management scores (M = 2.79, SD = 0.99) of UNIMAS students. From this result, majority of the students score the highest on range from 30 to 37 (46.7%) in which the students are able to manage their time fairly well, but sometimes feel overwhelmed with their time. Besides that, most of students have score range from 25 to 29 (20.7%) where their work is likely to be stressful and less than satisfying.

Table 8

Time Management Scores (N = 150)

Characteristic	***n***	**%**
Low time management skills (less than 25)	18	12.0
Stressful and less satisfying work (25 - 29)	31	20.7
Time management fairly well but overwhelmed (30 - 37)	70	46.7
Strong time management skills (38 - 44)	26	17.3
Outstanding time management skills (45 - 50)	5	3.3

Hypotheses Testing

The main objective of this study is to examine the relationship between perceived stress, sleep quality and academic performance among UNIMAS students. But, this study also examines the relationship between the relationship between stress and sleep quality, the relationship between stress and academic achievement, and the relationship between sleep quality and academic achievement.

H_{01}: There is a significant relationship between stress and sleep quality of the students

The first hypothesis was examined by using Pearson Correlation test in which the correlation between stress and sleep quality was rejected as there was no significant correlation between stress and sleep quality (Pearson's $r = 0.11$, $p = 0.18$). It shows that the correlation between and sleep quality is not significant as $p > 0.05$. This correlation result between these two variables is shown Table 9.

Table 9

Correlation Relationship between Stress and Sleep Quality

Correlations

		PSQ Score	PSQI Score
PSQ Score	Pearson Correlation	1	.110
	Sig. (2-tailed)		.179
	N	150	150
PSQI Score	Pearson Correlation	.110	1
	Sig. (2-tailed)	.179	
	N	150	150

Note. PSQ Score = Perceived Stress, PSQI = Sleep Quality.

H_{02}: There is a significant relationship between stress and academic achievement

The second hypothesis was also examined by using Pearson Correlation test in which the correlation between stress and academic achievement was rejected as there was no significant correlation between stress and academic achievement (Pearson's r = 0.07, p= 0.4). It shows that the correlation between and sleep quality is not significant as p > 0.05. This correlation result between these two variables is shown Table 10.

Table 10

Correlation Relationship between Stress and Academic Achivement

Correlations

		PSQ Score	CGPA
PSQ Score	Pearson Correlation	1	.070
	Sig. (2-tailed)		.395
	N	150	150
CGPA	Pearson Correlation	.070	1
	Sig. (2-tailed)	.395	
	N	150	150

Note. PSQ Score = Perceived Stress, CGPA = Academic Achievement

H_{03}: There is a significant relationship between sleep quality and academic achievement

Pearson Correlation test is tested on the third hypothesis which shows that the correlation between sleep quality and academic achievement was also rejected as there was no significant correlation between sleep quality and academic achievement (Pearson's r = -0.03, p= 0.75). It shows that the correlation between and sleep quality is not significant as p > 0.05. This correlation result between these two variables is shown Table 11.

Table 11

Correlation Relationship between Sleep Quality and Academic Achievement

Correlations

		CGPA	PSQI Score
CGPA	Pearson Correlation	1	-.026
	Sig. (2-tailed)		.752
	N	150	150
PSQI Score	Pearson Correlation	-.026	1
	Sig. (2-tailed)	.752	
	N	150	150

Note. CGPA = Academic Achievement, PSQI Score = Sleep Quality.

H_{04}: There is a significant relationship between stress, sleep quality and academic achievement

Multiple linear regression analysis was used to determine the effects of stress on sleep quality and academic achievement. However, there was no significant relationships were identified between the two kinds of dependent variables (sleep quality and academic achievement) and stress (R2 = 0). This result was shown in Table 11.

Table 12

Correlation Relationship between Stress, Sleep Quality and Academic Achievement

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.115[a]	.013	.000	.42010

a. Predictors: (Constant), CGPA, PSQ Score

Note. PSQ Score = Perceived Stress, CGPA = Academic achievement

Relationship between sleep duration, sleep quality and stress. Simple linear regression analysis was used to determine which sleep-related variables were the best predictors of the main effect on stress by removing one variable at a time. The most significant sleep-related variables are sleep duration and sleep quality. Results of the simple regression analysis of academic performance are presented which shows the regression model confirmed the effect of sleep quality and sleep duration on stress ($F = 3.086$, $p = .049$). This shows that there was a significant relationship between the sleep quality and amount of sleep duration on stress as $p < 0.05$. Besides that, it shows that over sleep duration taken by the students which was more than 7 hours ($B = -0.098$, $p = 0.40$) cause poor sleep quality ($B = 0.209$, $p = 0.049$). In another words, the higher the stress, the poorer the sleep quality.

H_{05}: Time management and gender have significant impact on the student's stress.

The independent t-test analysis rejected last hypothesis (time management and gender have impact on sleep). Both results show that there were no significant difference between time management and stress ($p > 0.05$) as well as both genders: female (Sig. = 0.147, p = 0.33) and male (Sig. = 0.147, p = 0.369) towards stress level. Furthermore, the PSQ scores of female students do not vary too much more than the scores in male students as well as variables within time management.

CHAPTER 5

DISCUSSION

Findings Result

H_{01}: There is a significant relationship between stress and sleep quality of the students

The r value is 0.11 which shows there is a very weak or no relationship between two variables and significance value p is 0.18 which shows that there was no significant correlation between stress and sleep quality. Thus, H_{01} is rejected. According to Clemens, Hoover and Kosydor (2005) they found out that these two variables shows that there is a negatively correlated relationship between stress and sleep quality in university population in which the high level or low level of stress contributed only a little difference in sleep quality. So, this shows that stress and sleep quality does not have strong relationship that may give big impact on each variables.

H_{02}: There is a significant relationship between stress and academic achievement

The r value is 0.07 which shows there is a very weak or no relationship between two variables and significance value p is 0.4 which shows that there was no significant correlation between stress and academic achievement. Thus, H_{02} is rejected. Nadeem Talib & Muhammad Zia-ur-Rehman (2012) in previous study academic is categorized as one of the stressors which hinders their performance and interpose the achievement of the desired goals. Besides that, Harlina et al. (2014) study also found that the desire for good academic performance cause stress experienced by the students. As for the present study there is no relationship between these two variables. This is because in previous studies show that they used a stress questionnaire that

consists of six domains that specifically on academic such as Academic Related Stressor (ARS), Intrapersonal and Interpersonal Related Stressor (IRS), Teaching and Learning Related Stressor (TLRS), Social Related Stressor (SRS), Drive and Desire Related Stressor (DRS), and Group Activities Related Stressor (GARS).

H_{03}: There is a significant relationship between sleep quality and academic achievement

The r value is -0.03 which shows there is a very weak or no relationship between two variables and significance value p is 0.75 which shows that there was no significant correlation between sleep quality and academic achievement. Thus, H_{03} is rejected. According to Curcio, Ferrara & Gennaro (2006) previous study, students with more regular sleep-wake patterns are reported to have higher CGPA which was supported by Baert et al. (2014) study that the bad sleepers had lower chances in passing and the exam.

There is no significant relationship between sleep quality and academic achievement in the present study due to large size of sample (N = 150) while in previous studies they only have sample of 40 participants from the same group of students which was only taken from one faculty.

H_{04}: There is a significant relationship between stress, sleep quality and academic achievement

There was no significant relationships were identified between the two kinds of dependent variables (sleep quality and academic achievement) and stress (R2 = 0), thus H_{04} is rejected. There is no previous study on the three variables so this may cause that there is no relationship between the three variables. Besides that, among the three variables, they may not affect each other such as stress and sleep quality in which stress only gave a very weak relationship between both variables. But, one of the sleep-related variables which is the sleep

duration is the best predictor for stress. The regression test shows that there is significant relationship between sleep duration, sleep quality and stress where the p value is 0.049. Moreover, it shows that students with over sleep duration cause poor sleep quality that cause stress among them.

H_{05}: Time management and gender have significant impact on the student's stress.

Time management has p value of 0.78 and both genders have p value of approximately around 0.3. Thus, H05 is rejected. According to Harlina et.al. (2014) previous study, students that handle on their time had high GPA as they tend to create a schedule that organize their time and participated in activities to be of assistance in time management in which cause high stress level in the academic related stressor (ARS) domain. The present study shows no impact as the participants answered the questionnaires without reading it properly which affect the correlation relationship between the variables. The gender factor in the past study shows that women are tend to feel more overwhelmed compare to men (National Health Ministries, 2006) while the present study shows that there is not much difference between the genders (female versus male) in showing different level of stress.

Limitations

For this study, the large population size of participants (n=150) may have showed limited generalizability of the findings because this study was conducted in only one university, thus the results may not be generalizable to students at other universities. Moreover, all participants completed the PSQ followed by the PSQI, academic achievement and TMQ are still possible for influencing responses. The Perceived Stress Questionnaire is too general to assess university students' stress which cause it fails to predict academic achievement.

Furthermore, the participants are asked to point out their range of current CGPA, rather than directly ask for their exact CGPA in order to avoid missing data and the range scales of CGPA given in the questionnaire are quite large and not specified. Besides that, the CGPA of the students was self-reported and therefore, there might be superficial or biased. There also could always be some bias influenced by the researcher and also in self-estimations of levels of stress and sleep. The participants also are assumed to choose such score for sleep quality (PSQI) as they may not remember the past month or they just answer for the sake of answering questions.

Implications

Although there were limitations, this study provides a number of implications for encouraging the need for more literature on student sleep and stress for universities' students. Besides that, this may encourage the faculty or even the university to promote better sleep habits, address the health concerns associated with sleep and the effect of high stress level towards the students. Furthermore, this study also highlights the importance of clinicians, physicians or even counselors to assess and screen for managing stress, sleep duration and disturbances of the students to prevent 'poor' sleepers in universities. Moreover, the importance of sufficient, better quality sleep and stress level for especially should be promoted for university students' health and well-being.

Future Research

There are several opportunities for future research in this area. As an initial step, the research topic and the instrument used in this study might be applied to future studies, expanding the understanding of the relationship between stress, sleep and academic achievement. Besides

that, future researcher should study more specific on sleep quality and academic achievement towards university students as sleep quality among students are differ from each other; and at the same time relate it to stress level. Furthermore, time management also should be focused more on how it affect academic achievement of university students and as for sleep quality, the future researchers should give more focus on the components that affect sleep quality such as sleep latency, daytime dysfunction, sleep habits and sleep disturbances. The future should also use smart wearable sensor such as ECG and activity sensor that can tested stress and sleep quality estimation more accurately by measuring the user's heart rate and physical motion. Lastly, the future researchers should focused on the impacts of poor sleep quality towards students aside from high stress level.

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APPENDIX A

QUESTIONNAIRE OF "THE EFFECT OF STRESS TOWARDS SLEEP QUALITY AND ACADEMIC ACHIEVEMENT OF UNIVERSITY MALAYSIA SARAWAK STUDENTS"

CONSENT FORM

Perceived Stress, Time Management, Academic Achievement and Sleep Quality Research

The Effect of Stress towards Sleep Quality and Academic Achievement of University Malaysia Sarawak Students

I, Nurfatisha Binti Muhaidin from Faculty of Cognitive Sciences and Human Development, third-year student, am conducting a study investigation as a final year project. This project is to invite about 150 University Malaysia Sarawak students to voluntarily participate in this study that measures stress, academic achievement, time management, and sleep quality. You are requires to complete these questionnaire which take approximately 10-15 minutes. The results of this survey will only be used for academic research purposes and all the information will be kept strictly confidential.

_____ Date: _____

Participant's Signature

QUESTIONNAIRE

Part A: Personal Information and Academic Information

Fill this box ☐ with a cross (X) for suitable answers.

1. **Gender:**
   - ☐ Female
   - ☐ Male

2. **Race:**
   - ☐ Malay
   - ☐ Chinese
   - ☐ Indian
   - ☐ Others (Please state :_____)

3. **Religion:**
   - ☐ Islam
   - ☐ Christian
   - ☐ Buddhist
   - ☐ Others (Please state :_____)

4. **Faculty:**
   - ☐ Cognitive Sciences and Human Development
   - ☐ Applied and Creative Arts
   - ☐ Economics and Business
   - ☐ Resource Science and Technology
   - ☐ Social Sciences
   - ☐ Computer Science and Information Technology
   - ☐ Engineering

5. **Academic Information (CGPA):**

☐	3.68 – 4.00	☐	2.34 – 2.67
☐	3.34 – 3.67	☐	2.01 – 2.33
☐	3.01 – 3.33	☐	1.68 – 2.00
☐	2.68 – 3.00	☐	1.34 – 1.67
		☐	Less than 1.34

Part B: Perceived Stress Questionnaire (PSQ)

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling how often you felt or thought a certain way.

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

1.	In the last month, how often have you been upset because of something that happened unexpectedly?	0	1	2	3	4
2.	In the last month, how often have you felt that you were unable to control the important things in your life?	0	1	2	3	4
3.	In the last month, how often have you felt nervous and "stressed"?	0	1	2	3	4
4.	In the last month, how often have you felt confident about your ability to handle your personal problems?	0	1	2	3	4
5.	In the last month, how often have you felt that things were going your way?	0	1	2	3	4
6.	In the last month, how often have you found that you could not cope with all the things that you had to do?	0	1	2	3	4
7.	In the last month, how often have you been able to control irritations in your life?	0	1	2	3	4
8.	In the last month, how often have you felt that you were on top of things?	0	1	2	3	4
9.	In the last month, how often have you been angered because of things that were outside of your control?	0	1	2	3	4
10.	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

Part C: Time Management Questionnaire (TMQ)

Scoring: 2 = Always 1 = Sometimes 0 = Never

Circle the most suitable scoring value.

1.	I do things in order of priority	0	1	2
2.	I accomplish what needs to be done during the day	0	1	2
3.	I always get assignments done on time	0	1	2
4.	I feel I use my time effectively	0	1	2
5.	I handle difficult or unpleasant tasks without delaying it	0	1	2
6.	I force myself to make time for planning	0	1	2
7.	I spend enough time planning	0	1	2
8.	I prepare a daily or weekly "to do" list	0	1	2
9.	I prioritize my list in order of importance, not urgency	0	1	2
10.	I am able to meet deadlines without rushing at the last minute	0	1	2
11.	I keep up-to-date on my reading and research assignments	0	1	2
12.	I prevent interruptions from distracting me from high priority tasks	0	1	2
13.	I avoid spending too much time on less important matters	0	1	2
14.	I spend enough time on work-related activities	0	1	2
15.	I plan time to relax and be with friends in my weekly schedule	0	1	2
16.	I have a weekly schedule on which I have fixed commitments such as work/study hours	0	1	2
17.	I try to do the most important tasks during my most energetic periods of the day	0	1	2
18.	I take action to minimize interruptions or intrusions on my time	0	1	2
19.	I periodically re-assess my activities in relation to my goals	0	1	2

20.	I have discontinued any wasteful or unprofitable activities or routines	0	1	2
21.	I consciously avoid making social telephone calls during work/study hours	0	1	2
22.	I judge myself by accomplishments of tasks rather than by amount of activity	0	1	2
23.	My actions are determined primarily by me, not by circumstances or by other people's priorities	0	1	2
24.	I have a clear idea of what I want to accomplish during the upcoming activities	0	1	2
25.	I am satisfied with the way I use my time	0	1	2

Part D: Pittburgh Sleep Quality Index (PSQI)

INSTRUCTIONS:
The following questions relate to your usual sleep habits during the past month only. Your answers should indicate the most accurate reply for the majority of days and nights in the past month. Please answer all questions.

1. During the past month, what time have you usually gone to bed at night?

BED TIME _____

2. During the past month, how long (in minutes) has it usually takes you to fall asleep each night?

NUMBER OF MINUTES _____

3. During the past month, what time have you usually gotten up in the morning?

GETTING UP TIME _____

4. During the past month, how many hours of actual sleep did you get at night? (This may be different than the number of hours you spent in bed.)

HOURS OF SLEEP PER NIGHT _____

For each of the remaining questions, check (√) the one best response. Please answer all questions.

5. During the past month, how often have you had trouble sleeping because you . . .

a) Cannot get to sleep within 30 minutes

Not during the past month_____	Less than once a week_____	Once or twice a week_____	Three or more times a week_____

b) Wake up in the middle of the night or early morning

Not during the past month_____	Less than once a week_____	Once or twice a week_____	Three or more times a week_____

c) Have to get up to use the bathroom

Not during the past month_____	Less than once a week_____	Once or twice a week_____	Three or more times a week_____

d) Cannot breathe comfortably

Not during the past month_____	Less than nce a week_____	Once or twice a week_____	Three or more times a week_____

e) Cough or snore loudly

Not during the past month_____	Less than once a week_____	Once or twice a week_____	Three or more times a week_____

f) Feel too cold

Not during the past month_____	Less than once a week_____	Once or twice a week_____	Three or more times a week_____

g) Feel too hot

Not during the past month_____	Less than once a week_____	Once or twice a week_____	Three or more times a week_____

5. During the past month, how often have you had trouble sleeping because you . . .

h) Had bad dreams

Not during the past month_____	Less than once a week_____	Once or twice a week_____	Three or more times a week_____

i) Have pain

Not during the past month_____	Less than once a week_____	Once or twice a week_____	Three or more times a week_____

j) Other reason(s), please describe_____

_____

How often during the past month have you had trouble sleeping because of this?

Not during the past month_____	Less than once a week_____	Once or twice a week_____	Three or more times a week_____

6. During the past month, how would you rate your sleep quality overall?

Very good	_____
Fairly good	_____
Fairly bad	_____
Very bad	_____

7. During the past month, how often have you taken medicine to help you sleep (prescribed or "over the counter")?

Not during the past month_____	Less than once a week_____	Once or twice a week_____	Three or more times a week_____

8. During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?

Not during the past month_____	Less than once a week_____	Once or twice a week_____	Three or more times a week_____

9. During the past month, how much of a problem has it been for you to keep up enough enthusiasm to get things done?

No problem at all	____
Only a very slight problem	____
Somewhat of a problem	____
A very big problem	____

10. Do you have a roommate or roommates?

No room mate	_____
Roommate in other room	_____
Roommate(s) in same room, but not same double decker bed	_____
Roommate in same double decker bed	_____

If you have a roommate or roommates, ask him/her how often in the past month you have had . . .

a) Loud snoring

Not during the past month_____	Less than once a week_____	Once or twice a week_____	Three or more times a week_____

b) Long pauses between breaths while asleep

Not during the past month_____	Less than once a week_____	Once or twice a week_____	Three or more times a week_____

c) Legs twitching or jerking while you sleep

Not during the past month_____	Less than once a week_____	Once or twice a week_____	Three or more times a week_____

d) Episodes of disorientation or confusion during sleep

Not during the past month_____	Less than once a week_____	Once or twice a week_____	Three or more times a week_____

e) Other restlessness while you sleep; please describe _____
_____

Not during the past month_____	Less than once a week_____	Once or twice a week_____	Three or more times a week_____

END OF QUESTIONNAIRE.

Thank you for answering all the items in this booklet. Before you hand in this booklet, kindly ensure that all items are answered.

THANK YOU.

APPENDIX B

THE RELATIONSHIP OF STRESS, SLEEP QUALITY AND ACADEMIC ACHIEVEMENT

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.350	2	.175	.992	.373[b]
Residual	25.943	147	.176		
Total	26.293	149			

a. Dependent Variable: PSQIScore

b. Predictors: (Constant), CGPA, PSQScore

Note. PSQScore = Stress level, CGPA = Academic achievement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.600	.246		6.498	.000
	PSQScore	.091	.067	.113	1.372	.172
	CGPA	-.011	.027	-.034	-.413	.680

a. Dependent Variable: PSQIScore

Note. PSQScore = Stress level, CGPA = Academic achievement

APPENDIX C

THE RELATIONSHIP BETWEEN SLEEP DURATION, SLEEP QUALITY AND STRESS

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.607	2	.804	3.086	.049[b]
	Residual	38.286	147	.260		
	Total	39.893	149			

a. Dependent Variable: PSQScore

b. Predictors: (Constant), PSQIScore, Q4

Note. PQSIScore = Sleep quality, Q4 = Sleep duration