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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
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(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)

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Grade

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

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.

<center>**CHAPTER ONE**</center>

<center>**INTRODUCTION**</center>

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

<center>1</center>

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 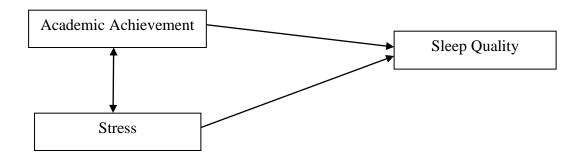how to manage one's time for sleeping. Moreover, it is important for university students to be aware of the connection and thus start managing one's time use.

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)

12

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,