Factors Affecting the Pittsburgh Sleep Quality Index (Psqi) Score in Nursing Students at STIKes Muhammadiyah Ciamis

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ABSTRACT

Poor sleep quality is a factor in many medical ailments and there is a strong relationship between physical and psychological health. Sleep is a state in which the brain does not process information from sensory neurons and does not give commands to motor neurons. A person's sleep quality can be determined using the Pittsburgh Sleep Quality Index (PSQI) method. The purpose of this study was to describe the factors that influence the value of the Pittsburgh Sleep Quality Index (PSQI) for undergraduate nursing students at STIKes Muhammadiyah Ciamis. The research method used is cross-sectional. The total population is 359 students of STIKes Muhammadiyah Ciamis Nursing Study Program with a research sample of 77 people. The sampling method used the Proportional Random Sampling technique. The results showed that 61 respondents had poor sleep quality, 26 respondents experienced severe stress, 58 respondents experienced a high level of gadget dependence, 48 respondents were in the no smoking category, and 48 people were in the no caffeine consumption category. Based on this research, it can be concluded that the description of sleep patterns in STIKes Muhammadiyah Ciamis Nursing study program students is still dominated by poor sleep quality, so they need to pay attention to improve their sleep quality as an effort to prevent various diseases, improve individual health, and maximize focus and attention. concentration.

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Introduction

Good health, immunity, learning, metabolism, and other biological functions depend on the quality of sleep (Mwape & Mulenga, 2019). According to the National Sleep Foundation 2011, involving 1,508 respondents, most of the respondents admitted that they never or rarely slept well on work or school days, with the highest percentage being around 51% at the age of 19-29 years (Sulistiyani, 2012).

The prevalence of sleep disorders in the world is estimated to be between 5-15% experiencing sleep disorders, 31-75% developing into chronic insomnia problems (Levenson, Kay, & Buysse, 2015). Meanwhile, in Indonesia, it is estimated that 28 million people, or about 10% of the total population of Indonesia experience sleep disorders (Zahara, Nurchayati, & Woferst, 2013).

Poor sleep quality has short-term effects such as causing attention and concentration disorders, impaired quality of life, reduced productivity to absenteeism from work and can lead to accidents at work, at home, or on the road, while in the long term it causes increased morbidity and mortality due to increased accidents. cars, coronary artery disease, heart failure, high blood pressure, obesity, type 2 diabetes mellitus, stroke and memory disorders, and depression (Reza, Berawi, Karima, & Budiarto, 2019).

Sleep quality research uses a valid and reliable Pittsburgh Sleep Quality Index (PSQI) questionnaire which can distinguish between good sleep quality and poor sleep quality in a person (Oktaria, 2019). The Pittsburgh Sleep Quality Index (PSQI) was developed by Buysse in 1988 to provide a standardized and easy-to-use index for clinicians and patients to measure sleep quality (Hinz et al., 2017).

Hershner and Chervin (2014) found that sleep deprivation and irregular sleep schedules were very prevalent among college students and reported that students were 50% sleepy during the day and 70% sleep deprived (Hershner & Chervin, 2014). Research by Thomas (2017) found that from 179 nursing students experienced poor sleep quality and 35 people consumed stimulants to stay awake (Thomas et al., 2017).

According to Haryati & Yunaningsih (2019) research, the factors that affect student sleep quality are sleep patterns and emotional stress (Haryati & Yunaningsih, 2019). Other factors that affect sleep quality are gender, age, smoking, caffeine (Susilo & Wulandari, 2011). In addition, lifestyle changes include the use of technology such as gadgets (Keswara, Syuhada, & Wahyudi, 2019).

However, Allah SWT has arranged our time, one of which is sleeping at night and being active during the day. Allah SWT says:

وَهُوَ ٱلَّذِى جَعَلَ لَكُمُ ٱلَّيۡلَ لِبَاسًا وَٱلنَّوۡمَ سُبَاتًا وَجَعَلَ ٱلنَّهَارَ نُشُورًا ﴿٤٧﴾

Meaning: "It is He Who has made for you the night (as) clothing, and sleep for rest, and He has made the day for waking up trying." (Q.S. Al-Furqaan: 47)

From the above verse Allah SWT shows that sleep is intended as a breaker of fatigue. Sleep can break the feeling of tiredness that was felt before, so that humans will return to being

excited to do activities afterwards. Someone who is tired and then he sleeps will feel relieved and excited again in the morning so that there is no dysfunction during the day.

Objective

The purpose of this study was to describe the factors that affect the value of the Pittsburgh Sleep Quality Index (PSQI) for undergraduate nursing students at STIKes Muhammadiyah Ciamis. The benefits of this study are expected to be insightful and add information related to the quality of student sleep and the factors that influence it so that students can manage sleep patterns to meet the needs of rest and sleep.

Method

The research design used in this study is analytic. The design of this research is cross-sectional. The population in this study were students of the STIKes Muhammadiyah Ciamis Nursing Study Program with a population of 359 students. The sample from this study was 71 respondents with the proportional sampling method. The study was conducted in January 2021 at STIKes Muhammadiyah Ciamis.

At the implementation stage of this research, among others: obtaining permission to conduct research, explaining the purpose of the research to the respondent then the respondent filling in the willingness to become a respondent via the google form link, collecting data by sharing the google form link which had previously been entered by the group in the WhatsApp application, after the data was collected. collected and then carried out processing and data analysis using computerized techniques using google form.

This study uses a research instrument in the form of a questionnaire consisting of a Pittsburgh Sleep Quality Index (PSQI) questionnaire which measures sleep quality at 1 monthly intervals and consists of 9 questions that measure 7 assessment components, namely subjective sleep quality, sleep latency (sleep latency), sleep duration (sleep duration), effective sleep duration in bed (habitual sleep efficiency), sleep disturbance (sleep disturbance), use of sleeping medication (sleep medication), and daytime dysfunction (Hinz et al. al., 2017). The seven component scores are added to produce a global PSQI score ranging from 0 to 21, where a global score of more than or equal to 5 indicates poor sleep quality in the person during the past 1 month (Lohitashwa et al., 2015).

The Perceived Stress Scale (PSS) questionnaire consists of 10 questions with a total score in PSS-10 of 0-40 which measures stress classification with a score category of 0-7 (normal), score 8-11 (mild stress), score 12-15 (moderate stress), score 16 (severe stress) (Rachmawati & Mustikasari, 2018).

The Smartphone Addiction Scale-Short Version (SAS-SV) questionnaire consists of 10 questions with assessment results categorized into:
a. Man
    a) Score 31: high addiction rate
    b) Score < 31: low addiction level
b. Woman
    a) Score 33: high addiction rate
    b) Score < 33: low level of addiction (Riana et al., 2019).

The Fagerstrom Test for Nicotine Dependence questionnaire consists of 6 questions with categories of light smokers 0-4, moderate 5-7, severe >7 (Hayati, Kristina, Prabandari, Pharmacy, & Mada, 2019). And Questionnaire of coffee consumption habits with categories:
1. Mild < 200 mg/day
2. Moderate 200-400 mg/day
3. Weight > 400 mg/day

Data analysis in this study used univariate analysis to determine the distribution and percentage of each the variables studied included sleep quality, stress level, level of gadget addiction, smoking and caffeine consumption.

Results and Discussion
a. Sleep Quality Overview
Tabel 1 Distribusi Frekuensi Kualitas Tidur Mahasiswa

Sleep Quality	F	%
Well	16	20,8
Bad	61	79,2
Total	77	100

Based on Table 1 shows that as many as 61 respondents (79.2%) experienced poor sleep quality. In accordance with the contents of the Pittsburgh Sleep Quality Index questionnaire which consists of seven components, namely subjective sleep quality, sleep latency, nighttime sleep duration, sleep efficiency, nighttime sleep disturbances, use of sleeping pills, and disruption of activities during the day, individual assessments here are highly subjective. subjective factors that also affect filling out the questionnaire.

The results of filling out the questionnaire showed that as many as 76.6% of respondents had small to large problems, as many as 64.9% of respondents woke up because they felt too cold, as many as 54.5% of respondents woke up because they felt too hot, as many as 59.7% of respondents woke up because they got a nightmare.

This study is in line with the research of Dilek Yilmas et al., (2017) with the title Research on Sleep Quality And The Factors Affecting The Sleep Quality Of The Nursing Students. It shows that the sleep quality of nursing students is dominated by the category of poor sleep quality.

Another study by Wicaksono that a person's sleep quality is said to be good if he does not show various signs of sleep deprivation and does not experience problems in his sleep. Conditions of sleep deprivation are also common in students. For students, this lack of sleep causes many effects, including reduced concentration, many diseases attack, including colds, flu, and coughs.

b. Stress Level Overview

Table 2 Frequency Distribution of Stress Levels

Stress Level	F	%
Normal	10	13,0
Light	18	23,4
Currently	23	29,9
Heavy	26	33,8
Total	77	100

Based on Table 2 shows that as many as 26 respondents (33.8%) experienced severe stress levels. Stress levels are categorized into 4 categories namely normal, mild, moderate and severe stress. Based on the results of the study, it showed that of the 77 respondents the highest frequency was 33.8% of students of the STIKes Muhammadiyah Ciamis Nursing study program experienced severe stress.

Stress is an individual response, either in the form of a physical or psychological response, to the demands or threats faced throughout his life, which can cause changes in the individual, both physical, psychological, and spiritual changes. According to Lubis (2015) stress is a disorder of the mind and body in responding to demands (Lubis et al., 2015). One that can cause stress is a load that is too heavy. A burden that is too heavy causes feelings of helplessness and hopelessness that makes sufferers feel physically and emotionally exhausted (Sutjiato & Tucunan, 2015).

Based on the results of a questionnaire from 26 respondents who were included in the level of severe stress, during the past month, as many as 3.9% of respondents were sometimes unable to complete things that needed to be done. As many as 3.64% of respondents sometimes feel that difficulties accumulate so that they are unable to overcome them. As many as 3.38% of respondents sometimes feel unable to control important things in life. As many as 3.12% sometimes get angry because of something unexpected.

According to the researcher's assumptions, the tendency of stress in students is due to online learning and piling tasks, which in doing so often students face various kinds of obstacles that will later affect their sleep quality, resulting in these students having poor sleep quality. Students who experience stress will continue to think about the stressors they face so that they cannot sleep peacefully.

Prolonged stress if not handled will have an impact on the respondent, namely anxiety, depression, fear, and irritability. Anxiety that is felt gradually and causes bad effects, the respondent becomes like a confused person and prefers to be alone and cannot focus on daily activities, where students are doing activities but it is difficult to focus

d. Overview of Gadget Addiction Levels

Table 3 Frequency Distribution of Gadget Dependence Levels

Gadget Adiction Rate	F	%
High	58	75,3
Low	19	24,7
Total	77	100

Based on Table 3 shows that as many as 58 respondents (75.3%) experienced a high level of gadget dependence. Based on the results of the questionnaire, 68.9% of respondents feel unable to do not have a gadget, 68.9% of respondents use gadgets longer than the planned time, 66.3% of respondents feel impatient and anxious when not holding a gadget, 61.1% of respondents will never stop using gadgets even though their daily life is greatly affected by gadgets, 54.5% of respondents think about gadgets even when not using them, 57.2% of respondents check their gadgets regularly so they will not miss a conversation other people on social media, and 57.2% of respondents said that the people around them told that respondents used gadgets excessively.

Research by Al Khlaiwi and Meo showed an association between cell phone use and symptoms such as headaches, dizziness and sleep disturbances (Alshobaili & Ayouusefi, 2019). Yogesh has reported that mobile phone use of more than 2 hours is associated with sleep deprivation and decreased sleep time in healthcare students in India (Yogesh, Abha, & Priyanka, 2014). Using gadgets before bed can stimulate physiological and psychological effects that can affect sleep, delaying the human body's internal clock (circadian rhythm), suppressing the release of the sleep-inducing hormone melatonin, and making it harder to fall asleep (Taufikkurrahman, 2019).

e. Overview of Smoking Habits

Table 4 Frequency Distribution of Student Smoking Habits

Smoking habit	F	%
Do Not Smoke	48	62,3
Light Smoker	11	14,3
Medium Smoker	16	20,8
Heavy Smoker	2	2,6
Total	77	100

Based on Table 4 shows that as many as 48 respondents fall into the category of not smoking (62.3%). Based on the results of the questionnaire, 33.8% of respondents smoked <10 cigarettes per day. A total of 15.6% of respondents smoked > 60 minutes after waking up. As many as 5.2% of respondents find it difficult to refrain from smoking in prohibited places, as many

as 10.4% of respondents find it difficult not to smoke in the morning and as many as 27.3% find it difficult not to smoke at all times.

Latency and sleep efficiency can decrease due to smoking, because the main component of cigarettes is nicotine which can stimulate and release neurotransmitters including dopamine and serotonin which play a role in sleep regulation, causing sleep disturbances (Susilo & Wulandari, 2011). The nicotine content in cigarettes can cause sleeplessness, so you should avoid smoking when you are close to bedtime or at least 2 hours before bedtime (Sleep Health Foundation, 2013).

According to the researcher's assumptions, smoking can occur due to several factors, including the environment, trial and error, just wanting to feel / curious, lonely because they don't have friends, to look stylish, a symbol of maturity, as a stress reliever, and the last is imitating parents. This factor is very easy to trigger children/students to try smoking because of their habit of seeing their parents smoking (Prayogi, 2016).

f. Overview of Caffeine Consumption

Table 5 Distribution of Student Caffeine Consumption Frequency

Caffeine Consumption	F	%
Not Consuming	48	62,3
Light	11	14,3
Currently	11	14,3
Heavy	7	9,1
Total	77	100

Based on Table 5 shows that as many as 48 respondents fall into the category of not consuming caffeine (62.3%). Caffeine is a psychoactive substance that has a stimulant effect and is most widely used worldwide. The influence of lifestyle makes the consumption of caffeinated products, especially coffee and energy drinks, increase, including among students.

According to research Liveina (2013), there are various reasons for someone to consume drinks containing caffeine, among others, because they did not sleep the night before (9.5%), habit or to increase energy (7.1%), before an exam or completing an assignment. (55.2%), recreational (25.3%) and others (2.9%). Another reason is to reduce sleepiness while driving or just to improve mood (Liveina & Artini I GA, 2013).

According to the researcher's assumptions, some respondents consume drinks containing caffeine because it is considered a trend, following friends when gathering at cafes, and so that they are not sleepy when doing their duties and the habit of smoking respondents also consuming coffee.
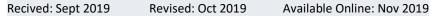
Conclusion

Based on the results of the research and discussion that have been described previously, the following conclusions are drawn:

1. The description of the sleep quality of the Nursing Study Program students of STIKes Muhammadiyah Ciamis is in the poor category.
2. The description of the stress level of the Nursing Study Program students of STIKes Muhammadiyah Ciamis is included in the heavy category.
3. Description of gadget dependence of students of STIKes Muhammadiyah Ciamis Nursing Study Program in the high category.
4. Overview of smoking habits of students of STIKes Muhammadiyah Ciamis Nursing Study Program, including in the non-smoking category.
5. Overview of caffeine consumption by students of STIKes Muhammadiyah Ciamis Nursing Study Program, including in the category of not consuming caffeine.

It is expected that students can improve their sleep quality by rearranging sleep time, sleep duration, and factors that affect sleep quality. Self-management to avoid stress (cooping stress). Use gadgets according to your needs by understanding their functions, benefits and impacts so you can be wiser in their use. For those who smoke and have not felt the impact physically, they can be more aware of the dangers of smoking from an early age by reducing cigarette consumption every day until they stop. For those who consume caffeine, to consume according to the recommended dose.

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