

The Relationship between Sleep Patterns and Stress Levels during the COVID-19 Pandemic in Students of the Faculty of Public Health, Sam Ratulangi University

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Abstract

Original Research Article

The Coronavirus disease 2019 or COVID-19 pandemic is one of the main health threats to every individual of all nations, continents, races, and age groups. The high number of confirmed positive cases and the high death rate in Indonesia, as well as the outbreak of COVID-19 in Indonesia, has caused a lot of anxiety, not only from the health sector but also a major impact on the education sector, which has negative psychological effects in the form of post-traumatic stress symptoms, confusion, and anger which can be a factor causing students to experience sleep patterns and stress problems. The type of research used is observational analytical research with a cross-sectional design. The research instruments used were the *Pittsburgh Sleep Quality Index* (PSQI) Scale questionnaire and the *depression anxiety stress* questionnaire (DASS21). To test for the existence of a relationship between sleep patterns and stress levels, Spearman's rho test was used. The respondents in this study were 215 students of the Faculty of Public Health. The majority of students experienced impaired sleep patterns (60.9%), and most experienced normal stress levels (32.6%). Students who experienced disturbed sleep patterns, most experienced very severe stress levels (18.6%). From Spearman's rho correlation test, significant results were found with a *p-value* of < 0.05 , which is 0.000, which means that there is a significant relationship between sleep patterns and stress levels. The conclusion obtained from this study is that there is a significant relationship between sleep patterns and stress levels during the covid 19 pandemic in students of the Faculty of Public Health, Sam Ratulangi University.

Keywords: Sleep patterns, Stress level, Covid 19 pandemic, Students.

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INTRODUCTION

The Coronavirus disease 2019 or COVID-19 pandemic is one of the health threats to every individual of all nations, continents, races, and age groups, which is rapidly spreading throughout the world due to its high virulence level [1, 2]. COVID-19, which attacks the human respiratory system, can be transmitted through droplets that come out of the mouth or nose and is most infectious when the person suffering from it has symptoms, although the spread may occur before the presence of symptoms [3]. The high number of positive confirmed cases and the high death rate in Indonesia have caused the government to implement strict health protocols [4, 5].

The outbreak of COVID-19 in Indonesia has caused a lot of anxiety that not only comes from the health sector but also has a big impact on other sectors,

one of which is the education sector [6]. Universities and colleges must be closed to practice social distancing and reduce the spread of COVID-19. This has a major impact on the learning process and educational curriculum so the Indonesian government implements distance learning. The implementation of this new learning requires students to adapt to new methods in terms of the process of receiving materials, collecting assignments, implementing practicums, and even final exams. In some cases, this causes problems such as difficult or unstable internet signals, a less conducive learning environment, and various kinds of assignments that are physically and psychologically exhausting [6]. The impact of its negative psychological effects can be in the form of symptoms of post-traumatic stress, confusion, and anger due to a longer duration of stress, causing fear of infection, frustration, inadequate supplies, information stigma, and financial loss. This

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can be a factor that causes students to experience sleep pattern problems and stress [6-9].

MATERIALS AND METHODS

This study is an observational analytical study with a *cross-sectional* study using the *Depression Anxiety Stress Scale* (DASS21) questionnaire for stress and the *Pittsburgh Sleep Quality Index* (PSQI) Scale questionnaire for sleep patterns as a tool in data collection [9]. The research sample was a student of the

Faculty of Public Health Unsrat, who met the Inclusion Criteria, namely being registered as an active student of the Faculty of Public Health, Sam Ratulangi University, and was willing to be a respondent by signing informed consent. Exclusion Criteria are students who take hypnotic sedative drugs or take certain substances or drugs that have an effect of insomnia, have a history of mental disorders diagnosed by a doctor, and have a history of sleep disorders (Insomnia).

Table 1: Research Variables, Operational Definitions, and measuring instruments

Variable	Definition	Measuring Instruments	Parameters	Measuring Scale
Sleep Patterns	A subjective measure of sleep quality, against the latent duration of sleep, the duration of sleep <i>time</i> , <i>habitual sleep efficiency</i> , <i>sleep</i> disturbances, the use of sleeping pills, and disturbances during the day spanning one month ago (32).	Questionnaire	<i>Pittsburgh Sleep Quality Index</i> (PSQI) questionnaire with assessment criteria: 1. Normal sleep patterns <5 2. Disturbance of >5 sleep patterns	Ordinal
Stress Levels	It is the high or low of stress (a situation caused by the influence between the individual and the environment that causes an impact on the resources of the biological, psychological, and social systems.	Questionnaire	<i>Depression anxiety stress</i> questionnaire (DASS21) with the following criteria: 0-9 Normal 10-13 Lightweight 14-20 Moderate 21-27 Weight ≥28 Very heavy	Ordinal

RESULTS AND DISCUSSION

The respondents in this study were 215 Faculty of Public Health students. Data collection using questionnaires were the *Depression Anxiety Stress Scale*

(DASS21) questionnaire for stress and the *Pittsburgh Sleep Quality Index* (PSQI) Scale questionnaire for sleep patterns.

Table 2: Distribution of Respondents' Characteristics by Sex and Age

Characteristics of Respondents	Frequency	Percent
Gender		
Man	33	15.3
Woman	182	84.7
Total	215	100.0
Age (Years)		
18	53	24.7
19	63	29.3
20	58	27.0
21	36	16.7
22	5	2.3
Total	215	100.0

The female sex was the most respondent, namely 182 people (84.7%), while the male sex, had as many as 33 people (15.3%). The age range obtained is

18-22 years. The highest number of students is at the age of 19 years, which is 63 people (29.3%), and the least is at the age of 22 years, which is 5 people (2.3%).

Table 3: Distribution of Sleep Patterns in respondents

Sleep patterns	Frequency	Percent
Sleep Pattern Disorders	131	60.9
Normal	84	39.1
Total	215	100.0

Table 3 shows that the distribution of respondents based on sleep patterns is divided into two, namely normal and disturbed sleep patterns. Normal sleep patterns were found in 84 respondents (39.1%), and disturbed sleep patterns were found in 131 respondents (60.9%). The results of the study on

respondents' sleep patterns showed that the majority of students experienced disturbed sleep patterns. This disruption of sleep patterns can be caused by academic demands, especially as a student, which causes changes in sleep patterns. Most students also think that sleep is not a priority.

Table 4: Distribution of Stress Levels in Respondents

Stress levels	Frequency	Percent
Normal	70	32.6
Mild	22	10.2
Moderate	42	19.5
Severe	40	18.6
Very Severe	41	19.1
Total	215	100.0

Table 4 shows the distribution of respondents based on stress levels which are divided into 5 categories, namely normal, mild, moderate, severe, and very severe. In this study, it was found that the distribution of the highest stress levels was in the normal category of 70 students (32.6%), which was followed consecutively, by students with moderate stress levels as many as 42 students (19.5%), very heavy 41 students (19.1%), heavy as many as 40 students (18.6%), light as many as 22 students (10.2%). Based on the results of the analysis of respondents' stress levels, it was found that the majority

of students experienced normal stress levels. The factors that can affect the level of stress as a student are quite diverse, such as academic stressor *academic* stress or derived from the learning process in achieving a good result in academics, stress due to changes in socialization life, coupled with the COVID-19 pandemic situation which acts as stress *or* which is quite severe where anxiety is a response that occurs during uncomfortable situations derived from a general unpalatable state or fear. Each individual has varying levels of stress depending on their respective *coping* stress.

Table 5: The Relationship between Sleep Patterns and Stress Levels in Respondents

Sleep Patterns	Stress Levels						<i>p</i>
	Normal	Mild	Moderate	Severe	Very Severe	Total	
Sleep Pattern Disorders	27	9	29	26	40	131	0.000
Normal	43	13	13	14	1	84	
Total	70	22	42	40	41	215	

A total of 215 respondents were found as many as 40 respondents with sleep pattern disorders having very severe stress levels, which were followed successively, namely 29 respondents with sleep pattern disorders having moderate stress levels, 27 respondents with sleep pattern disorders having normal stress levels of, 26 respondents with sleep pattern disorders having severe stress levels and 9 respondents with sleep pattern disorders having mild stress levels. Of respondents with normal sleep patterns, 43 respondents were in normal stress levels, 14 respondents were at severe stress levels, 13 respondents were at mild and moderate stress levels and only 1 respondent was at very severe stress levels.

The results of the analysis of the relationship between sleep patterns and stress levels using Spearman's rho test found a *p-value result of < 0.05, namely 0.000* which showed that there was a meaningful relationship between sleep patterns and stress levels in the Faculty of Public Health students of Sam Ratulangi University.

CONCLUSION

Based on the results of research that has been carried out, it can be concluded that there is a relationship between sleep patterns and stress levels during the Covid-19 pandemic in students of the Faculty of Public Health, Sam Ratulangi University.

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