The Effect of Stress Level on Learning Achievement of First Year Students of Medical Faculty During the Covid-19 Pandemic

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Abstract

This study aims to anticipate the effect of the stress level of first year students at the Faculty of Medicine, University on their academic achievement during the Covid-19 pandemic. The level of stress in studying during the Covid 19 pandemic is a big challenge that must be passed by first year students at the Faculty of Medicine. Learning adaptations, materials, mechanisms and significant changes in learning practices can be stressors for students. Stressors faced by students not only cause students to be prone to stress but can also have an impact on student achievement. To find out the effect of stress on student achievement in the Faculty of Medicine during the Covid 19 Pandemic, research is needed to anticipate this problem. The method used was an analytic observational method with a cross sectional design, and was carried out from March to May 2021. The study sample consisted of 151 students and was selected using a simple random sampling technique. The questionnaire used is the Kessler Psychological Distress Scale (K10) questionnaire to assess stress levels, learning achievement seen from the value of the Student Achievement Index. Data was taken online and analyzed using the Spearman correlation test. The results showed that stress levels had a significant effect on student learning achievement during the Covid 19 pandemic with a weak correlation level ($p<0.05$; $r=0.21$). During the online learning period

(online) in the era of the Covid 19 pandemic, the stress conditions of the first year students at the Faculty of Medicine were mostly in a state of severe stress. Student stress levels have a significant effect on learning achievement.

Keywords

stress level, academic achievement, the Covid 19 pandemic

Introduction

Learning achievement is an interesting topic in various educational research, because learning achievement is an indicator of one's success in learning. Learning achievement shows a person's learning performance in the form of the average value obtained. In tertiary institutions, especially medicine, one of the student achievement is presented in the form of block scores. The better the academic mastery and student learning effort, the better the learning achievement or learning achievement scores obtained. (1) Student learning achievement is influenced by internal factors and external factors. Internal factors consisting of physical factors in the form of health and disability, psychological factors in the form of intelligence, attention, interest, motivation, physical maturity, mental and personal characteristics. External factors consisting of family, school, and community factors. (1)

Changes in learning methods and practices during the Covid 19 pandemic for medical students became a separate stressor that had to be faced. The absence of opportunities to meet face-to-face with both lecturers and fellow students requires students to be more independent in managing their learning process. If students cannot handle stress well, this will certainly affect their learning achievement. (2) Stress is a phenomenon that often occurs in everyday life that cannot be avoided and will be experienced by everyone. Normal stress is experienced by every individual and becomes an inseparable part of life. Stress makes someone who experiences it think and try hard to solve a problem or challenge in life as a form of adaptation response to survive.(1,2)

In the first year students of the Faculty of Medicine, there are many changes or life transitions due to the move from studying in high school to becoming new students in tertiary institutions. Changes that occur can be in the form of learning styles, lecture assignments, achievement targets and other problems. Previous studies explained that first-year medical students are prone to stress due to academic problems, so that it can have a significant negative impact on their academic achievement.(3,4)

Much research has been carried out on stress levels in medical students, but there are inconsistent results from several previous studies, and research on student stress levels during the Covid 19 pandemic has never been carried out at the Medical Faculty of Swadaya Gunung Jati University. Researchers hope that the results of this study can add new facts related to stress levels and achievements of medical students during the Covid 19 Pandemic. (1,5–11)

Method

This research was conducted at the Faculty of Medicine, Swadaya University Gunung Jati, from March to May 2021. The type of research used was an analytic observational study with a cross sectional design. The population in this study were all students of the Medical Faculty of Swadaya Gunung Jati University. The research sample is level 1 students or class of 2020, Faculty of Medicine, Swadaya Gunung Jati University. The sampling technique was carried out using a total sample of 175 samples. However, after being given informed consent, only 151 students from the Faculty of Medicine, University of Swadaya Gunung Jati level I class of 2020 voluntarily offered their approval to participate in the study. (12) The variables in this study were stress levels and student achievement. Data on the stress level was taken using the Kessler Psychological Distress Scale (K10) questionnaire. Data on student achievement were collected using secondary data taken from the academic field of the Faculty of Medicine, Gunung Jati Swadaya University. The data obtained were then analyzed using the Spearman rank test with an error tolerance limit of 5%.(13)

Results and Discussion

Data collection from respondents was carried out for three months. The respondents of this study consisted of 60 men and 91 women. The characteristics of the respondents in this study are as stated in table 1 below.Hasil dan Pembahasan

Table 1. Characteristics of the Respondents

Variable	Frequency	Percentage
Gender		
Male	60	39,7
Female	91	60,3
Age		
17 years	28	18,5
18 years	71	47,1
19 years	52	34,4
Total	151	100,0

From Table 1, the majority of the respondents were female students (60.3%) along with the dominant respondents were 18 years old (47.1%)

The findings from the field on the stress level of the students in the Faculty of Medicine can be summarized in the following Table 2.

Table 2. Overview of the Stress Level

Stress Level	Frequency	Percentage
No mental disorder	29	19,2
Mild mental disorder	35	23,2
Moderate mental disorder	36	23.8
Severe mental disorder	51	33.8
Total	151	100,0

According to the data presented in the table above, 33.8% of the participants, or a total of 51 students, reported high levels of stress in their academic lives.

On the other hand, a summary of the accessible data regarding the academic performance of students in the Faculty of Medicine at University Swadaya Gunung Jati can be provided as follows:

Table 3. Overview of the Student Achievement

Student Achievement	Frequency	Percentage
Outstanding	17	11,3
Very Good	37	24,5
Good	54	35,7
Poor	31	20,6
Below Minimum	12	7,9
Total	**151**	**100,0**

The following statement is supported by the data presented in Table 3, which reveals that out of 151 students, the majority of students demonstrate good performance on their academic achievement. On the other side, 17 students' overall academic performance is exemplary, which accounts for 11.3% of the class.

The correlation between stress level and student achievement based on Spearman Rank can be seen in the following table.

Table 4. The Relationship between Stress Level and Student Achievement

Stress Level	Student Achievement					p	r
	Outstanding	Very Good	Good	Poor	Below Minimum		
No mental disorder	6	8	10	2	3	0,048	0,21
Mild mental disorder	9	5	6	10	5		
Moderate mental disorder	1	19	13	2	1		
Severe mental disorder	1	5	25	17	3		

Table 4 revealed that the stress level is highly correlated to the academic achievement of those enrolled in the Faculty of Medicine, University Swadaya Gunung Jati. Students who accomplish above average performances are mostly dominated by students who experienced no or mild cases of mental disorder.

Discussion

In 2021, Indonesia enters the second year of the pandemic. Government policy requires that the entire learning process be carried out online. These conditions make students especially at level 1 have to make more effort to adapt to learning methods because they have to face changes in the environment and new learning materials but minimal assistance because they have to do it offline

both with lecturers and other student friends. (5) It is impossible to do that. because of this policy. The results of data analysis show that there is a significant relationship between stress levels and medical student achievement during the Covid 19 Pandemic. These results are in line with similar research conducted by Nandika in 2021 which stated that there was a significant relationship between stress levels and student achievement.(1)

Physiologically, there is a relationship between stress and learning achievement. Stress is a state of disturbed individual balance. This stressful condition is included in the internal factors that affect learning achievement, namely psychological or psychological maturity. In theory that feelings, emotions, and moods really determine. In a stable and normal state, feelings really help individuals carry out learning actions, but if feelings with high emotional intensity so that the individual loses normal control over himself, it will hinder the learning process and the achievements achieved. (11,14,15)

Learning achievement is influenced by several factors both internal and external. internally, cognitive abilities, psychological conditions and individual motivation are the dominant factors that determine learning achievement. while externally, learning achievement is influenced by the learning environment, facilities, curriculum and support from people around. (1,16,17)

Psychological factors play an important role in the learning process and achievement. Moods, feelings, and emotions determine a person's condition. Stress can interfere with a person's development in many ways. Physical and psychological health disorders cause students to tend to get tired easily, dizzy, and have difficulty concentrating in receiving lessons which results in less than optimal learning achievement.(6,7)

A study states that long-term stress will have the greatest impact, one of which is on achievement and work. The research also revealed that students who are most vulnerable to stress are students in the medical field because of the high academic challenges when compared to other disciplines. Online learning can also have an impact on student achievement due to the difficulty of devising a completely fair method of assessing student achievement, considering that the final grades of student achievement are determined more by tests conducted online with a lack of supervision. It is also possible that other predictor variables can correlate with final learning achievement, given the nature of online learning which can be done anywhere, not in the same conventional room as offline learning.(18,19)

The stress factor is the most interesting topic to study, especially during the COVID-19 pandemic. Based on previous studies on online learning, it is possible that other variables, such as course content, administrative and technical support from both students and e-learning systems, may have implications for student achievement. These results provide new insights regarding the description of stress factors and learning achievements of medical students during online learning, especially during the COVID-19 pandemic.(20)

This research still has some limitations. First, due to the pandemic and social distancing policies, the instrument presented was in the form of an independent questionnaire that was distributed online so that it was not free from filling bias due to limitations in supervising filling out the questionnaire for each respondent. Second, although we believe that the questionnaire itself may have covered most of the stressors that contribute to stress levels, there may also be other significant variables that contribute to academic achievement that are not accounted for as stressors. predictor variables in this study, such as the learning environment, the number of non-academic activities involved, or the method of assessment. This may open up the possibility of future research emphasizing this topic on online learning.

Conclusion

Based on the research conducted, it can be seen that in general level 1 students at the Faculty of Medicine experience high levels of stress facing learning that is carried out during the co-19 pandemic. Factors that affect the level of stress, apart from the fact that learning is done online, is also because their learning model has changed from the way they studied in high school by studying in universities, especially

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