Students Workload and Stress Level during COVID-19 Pandemic

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Abstract. The COVID-19 pandemic requires the change from learning activities in the classroom to online classes. While it is safer during the pandemic, it could result in a variety of issues, including the increase of students' stress levels. This study aimed to evaluate the effect of assignment workload on the stress level of college students. A total of 144 college students participated in the study. This study used quantitative research method with regression analysis as an approach to see the correlation between workload and stress levels in college students. The results showed that there is indeed a positive correlation between assignment workload and stress level. Additionally, we also found that gender significantly affected the stress level.

Keywords: COVID-19, online classes, stress, assignment, workload.

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INTRODUCTION

Due to the COVID-19 pandemic, Indonesia's Ministry of Education and Culture mandated that all teaching and learning activities be converted to online classes (Ministry of Education and Culture of Indonesia, 2020). This strategy was devised in order to prevent and mitigate the transmission of the Corona Virus in Indonesia as a result of large gatherings in school classrooms. Online classes are conducted by the use of the internet to distribute content to students through different platforms such as instant messaging and video conferencing (Chen et al., 2020).

Despite its benefit in minimizing the spread of the COVID-19, online classes may cause some negative impacts such as a decrease in students' performance due to the increased stress and depression in students (Nurwulan & Selamaj, 2020). During the pandemic, students are forced to do something new such as online staying at home most of the time to attend online classes. Thus, they are restricted from normal interaction with their friends. This situation can cause fatigue, anxiety, and burnout in students (Mheidly et al., 2020).

Although the teaching and learning activities are changed to online classes, most university students still get the same workload as offline classes. They still need to do the same amount of homework, exams, and other assignments compared to the offline classes. Moreover, the explanations of the course materials from teachers might not be as clear as the explanations during the normal classroom sessions. The online classes during the COVID-19 pandemic may induce stress and anxiety in students. In addition, the lack of interaction with friends may add more stress on students. The students can only interact with friends through online platforms that might cause miscommunication.

A past study revealed that students are prone to have a conflict with each other when doing group tasks with their peers (Nurwulan et al., 2021). The conflict between students might add even more stress and, in the end, reduce the performance of the students. The sudden change from offline learning in the classroom to online learning caused anxiety and depression among students due to the stressful workload (Fawaz & Samaha, 2020). Motivated by the above-mentioned situation, the aim of this study was to evaluate the effect of students' workload on stress levels during the COVID-19 pandemic.

LITERATURE REVIEW

Stress

Stress is a response to a person's adjustment to a situation he/she perceives as challenging or threatening the welfare of the person concerned. Stress is a physiological or behavioral response to stressors (things that are seen as causing stress, homeostatic balance disorders), both internal and external. A stressor is an experience that induces stress that comes from the environment in the form of psychological demands such as job loss and bad relationships. Meanwhile, physical stressors can be in the form of fatigue and noise. In this sense, we can make it clear that stress is subjective according to the perspective of the person who views it. In other words, what is threatening to someone is not necessarily perceived as

threatening to others. Stress has a different meaning for different people under different conditions.

Hans Selye defined stress as a nonspecific human response to any demands that exist within the human (Robinson, 2018). The stress itself can be positive, negative, or neutral. Positive stress or eustress creates joy, happiness, challenge, and excitement. Negative stress or better known as distress is an unpleasant stress response since it creates fear, anxiety, and restlessness. Whereas, neutral stress is in between the eustress and distress that makes a person feels stressed but not negatively impact the person.

Generally, under stressful conditions, the body will respond, such as a faster heart rate and breath. This occurs because stress activates the "fight or flight" response in the body. If this happens too often, the condition can be classified as chronic stress that can affect parts of the body and our overall health such as weakened bones, immune system, and muscle strength. Not only stress can impact people physiologically, but it can also impact people psychologically and behaviorally (Yaribeygi et al., 2017). In students, when they are in distress, learning achievement is most likely will decrease. Students will have difficulty remembering information, making a decision, or taking appropriate steps. Over-stressed students often skip classes or do not actively participate in learning activities.

Students Workload

Homework is defined as students' tasks outside of school hours (Minke, 2017). There are three types of homework purposes: practice, preparation, and extension (Rosário et al., 2015). For instance, a review question is assigned to practice the previous topic learned in the class hour. Preparation homework is designed to encourage students' thinking about the previous topic and prepare for the next topic (Minke, 2017). Extension homework encourages students to show their problem-solving skills and usually assigned with peers. However, homework is often linked to students' workload. Allocating the right time to do the homework is a challenging task. In a week, students have many classes to do, and the worst scenario is that there is not enough time for an in-depth approach to do homework.

Homework increase students' workload when they have limited time to finish the homework (Ren et al., 2016). Assigning a high amount of homework may cause low-scoring students on some tests (Li et al., 2018). Limited time, unclear information, and a high amount of homework adds to the actual workload. Stress typically emerges in students because of the workload of homework, academic pressure, failure, and poor relationships with friends and lecturers. The function of homework is to serve various teaching, learning, and developmental purposes; however, it could be a waste of time or a source of stress to children and families (Tam & Chan, 2016).

Homework can make students feel depressed, stressed, and desperate. Students who believe that the homework was too hard to complete will probably be stressed and depressed, reducing their future efforts (Li et al., 2018). During the COVID-19 pandemic, students' stress level is increased. A research study stated that one of the causes of student stress is homework (PH et al., 2020). Additionally, the online class is boring and the course material is more difficult to understand.

RESEARCH METHOD

This study focuses on how homework given in online classes impacts the students' mental health conditions. In this study, the stress level is specifically being observed. We used a quantitative descriptive study and a total of 144 college students participated in filling out the questionnaire. The questionnaire contained five sections with a total of 31 questions. Students were asked about how much, on average, homework they received each week and their physical also emotional condition over this period. They were also asked questions related to stress symptoms they might experience. The collected data were then analyzed statistically to confirm the normality, validity, and reliability of the data. Then, we used simple regression analysis to analyze the relationship between workload and stress level on students.

RESULT AND DISCUSSION

From the statistical analyses using SPSS, we found that our collected data are normal, valid, and reliable. The Shapiro-Wilk test showed that the p-value for both stress and workload is greater than 0.05, meaning that our collected data are normal. The validity testing was done using the Pearson Product Moment-Correlation test and the p-value of all questions is lower than 0.05, which refers that our questions are valid. Moreover, the Cronbach's Alpha values of our data are 0.870 for stress level and 0.704 for workload, meaning that our data are reliable since the values are higher than 0.6.

As for the evaluation of the impact of homework on stress level using regression analysis, we found that the assignment workload will increase the stress level. The regression equation is shown below.

$$Y = 1.678 + 0.028X \quad (1)$$

where X is the assignment workload and Y is the stress level.

Based on the regression equation above, it can be seen that the higher workload in the assignment, the higher the stress level of the students. Additionally, we also used Pearson's correlation to evaluate the correlation between workload and stress level. From our calculation, we found that the assignment workload moderately correlates with the stress level ($r=0.503$). This finding is in agreement with the previous study by Fawaz & Samaha (2020) that found online learning indeed increases the depression and anxiety level of undergraduate students. One of the causes of depression and anxiety is students feel dissatisfied with the online learning arrangement. Student satisfaction negatively correlates with the prevalence of depression, anxiety, and stress (Fawaz & Samaha, 2020). The amount of workload during online learning reduces student satisfaction levels.

Moreover, we evaluated the impact of gender, age, cohort, number of assignments per week, and sleep duration on stress level. Table 1 shows the summary of the evaluation. It can be seen that only gender significantly affects the stress level ($p = 0.001$). In our study, female students reported having higher stress levels than

male students. Females are prone to have higher rates of depression, stress disorders, and anxiety problems than males due to the presence of the hormone corticotropin-releasing factor (CRF). The CRF is a hormone that helps control the body's reaction to stress. The CRF hormone is more tightly bound to the protein in female brain cells, making it more sensitive to the effects of hormonal changes and prone to emotional instability in women (Kuehner, 2016).

Table 1. Impact of Other Factors on Stress Level

Factor	p-value
Age	0.077
Gender	0.001
Cohort	0.142
Assignment per week	0.258
Sleep duration	0.082

It is interesting that the age, cohort, number of assignments per week, and sleep duration have no significant influence on stress level. The subjects in this study were categorized into freshmen (11.1%), sophomores (28.5%), juniors (20.8%), and seniors (39.6%). Age has no significant impact on stress level because our subjects are about the same age range. As for cohort level, the senior students intuitively have more stress levels than the lower cohorts. However, this is not the case in this study. This finding is in agreement with past studies evaluating depression in college students. Students in the first and second year of college were found to have higher depression levels than students in other cohorts (Larcombe et al., 2016; Ryan et al., 2017; Uchida & Uchida, 2018; Nurwulan & Selamaj, 2020).

Logically, a large amount of homework will make students have more academics loads, so they need to sacrifice their time to finish them. As result, students will have poor sleeping patterns. Most of our subjects slept for 4-6 hours a day, which is below the suggested average sleeping. However, the number of assignments per week has no significant impact on stress levels. This means that the quantity of the assignments is not a problem for our subjects if the level of difficulty of the assignment is not high and the instructions given by the lecturers are clear (Ren et al., 2016). Similarly, the sleep duration has nothing to do with the stress level in our subjects. Although lack of sleep might cause students to have poor health, there is no significant effect of sleep duration on stress level in our study. Our finding is contradictory with a past study evaluating the effect of sleeping on anxiety and stress (Simon et al., 2019). This could be because a good quality sleep and sleep timing are more important than the amount of sleep itself (Chaput et al., 2018).

Although sleep duration in our study does not affect the stress level, sleep deprivation is dangerous if it happens continuously. The lack of sleep in students due to enormous assignments could be minimized by creating a to-do list every day and setting a consistent time to sleep each night. Turning off all electronic devices would

also help students to have a good quality of sleep.

During the COVID-19 pandemic, where all students are going through the online learning process, most students see homework as an essential key to increasing their score, so that they always want to finish homework and get good grades. However, if the homework level is too difficult because it cannot be found in the material that has been taught or the instructions are unclear from the lecturer, it will make students prone to experiencing stress and anxiety. Besides the quality, the quantity of homework given may also cause stress. The problem is that most students experiencing overload do not have efficient learning and cannot reach positive learning experiences. The time given to complete some homework is considered a source of stress.

Stress due to a lot of homework can be felt by body organs, such as stomach aches, lung pain, difficulty controlling breathing, a decreased immune system, and neck and back muscle pain. The longer our muscles feel tense, the more difficult it is for our muscles to stretch and result in low sleep quality. In the brain, stress makes many of the neurons responsible for sending information to disappear. So that makes our brains degenerate, which results in decreased brain memory abilities. Besides the significant effect on several organs, students exposed to stress will interfere with the learning process and student attendance at school, and vice versa. Pressure can also increase a person's adrenaline, which, to some extent, can help a person deal with a problem. However, in excess portions, it can make a person find the difficult to focus on the test because their symptoms are similar to anxiety symptoms.

The negative effects of stress do not stop there. Stress also reduces our brains' cognitive ability to perceive cognitive distortions or our brains' ability to see problem-solving options when stressed. So, when we have a problem, we are unable to see other solution options. This is bad when the solution we can think of is an instant and negative choice because stress also results in a loss of mental flexibility and self-control. Given the effects of academic stress on various aspects of life, every student must be sensitive to anxiety symptoms and not push themself when they feel tired while studying. Maintaining physical and mental balance is very influential in inhibiting the development of stress.

CONCLUSION

Our study evaluated the effect of assignment workload on students' stress levels. Based on the questionnaires we administered to college students from freshmen to senior students, we found that assignment workload positively adds stress levels on students. In addition, we also evaluated the effect of age, gender, cohort, number of assignments per week, and sleep duration on students' stress levels. Interestingly, only gender has a significant impact on stress levels in our study. Female students tend to have higher stress levels compared to male students. Although the number of assignments per week and sleep duration did not affect the stress level in our study, it is still important for students to arrange and maintain their schedule so that they could get enough rest and sleep regardless of the number of assignments they need to do during the online classes.

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