



THE RELATIONSHIP OF ACADEMIC PROCRASTINATION WITH STRESS, ANXIETY, AND DEPRESSION DURING THE COVID-19 PANDEMIC IN STUDENTS OF THE MEDICAL STUDY PROGRAM, FACULTY OF MEDICINE, UNDIP

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ABSTRACT

Background: Academic procrastination is defined as a learner's tendency to delay learning-related activities, which in many cases eventually causes anxiety and stress. Studying at home tends to cause a feeling of having a lot of free time, eventually postponing work. Students who often procrastinate tend to experience anxiety and depression more often than students who do not procrastinate. **Aim:** To prove the relationship between academic procrastination and stress, anxiety, and depression due to the COVID-19 pandemic. **Methods:** This research was a cross-sectional study with 184 respondents. The research was conducted in November 2021. The respondents were UNDIP medical students batch 2020. The questionnaires used were the Procrastination Academic Scale for Student (PASS) and Depression, Anxiety, Stress Scale-21 (DASS-21). Data were taken from the questionnaire after the respondents agreed to the informed consent and were analyzed using the Spearman correlation test. **Results:** As many as 70,1% of respondents were female. Almost 50% of students have a high level of procrastination. A total of 21.7% of students experienced severe to very severe stress, 55.4% experienced severe to very severe anxiety, and as many as 50.4% experienced severe to very severe depression. The level of academic procrastination was positively correlated with stress levels ($r=0.468$, $p<0.001$), anxiety levels ($r=0.468$, $p<0.001$), and depression levels ($r=0.401$, $p<0.001$). **Conclusion:** Academic procrastination with stress, anxiety, and depression during the COVID-19 pandemic has a significant relationship with a moderate positive correlation.

Keywords: Procrastination ; Stress ; Anxiety ; Depression ; COVID-19 Pandemic.

INTRODUCTION

Corona Virus Disease 2019 (COVID-19) caused by SARS-CoV-2 was first detected in Wuhan, China in December 2020. Until early 2021, more than 100 million people have been reported to have contracted COVID-19, resulting in the deaths of more than 2 million people around the world. Indonesia is one of the top 20 countries with the most cases to date.¹ Medical students are also affected by these regulations. Direct learning activities, basic clinical skills, and PBL (Problem Based Learning) had to be carried out via the internet (long-distance learning).²

Academic procrastination is a learner's tendency to delay learning-related activities, which in many cases eventually causes anxiety and stress. Studying at home tends to cause a feeling of having plenty of free time, resulting in postponed work. Students who often procrastinate tend to experience anxiety and depression more often than students who do not procrastinate.^{3, 4, 5}

In Indonesia, there has not been any study that discusses the relationship between academic procrastination and levels of stress, anxiety, and

depression in the medical study program during the COVID-19 pandemic. Thus, examining the relationship between procrastination and stress, anxiety, and depression would be an interesting topic.

METHOD

This research was an analytic observational study with a cross-sectional design, conducted at the location of each subject using an online questionnaire in November 2021.

The samples were UNDIP medical students in 2020 with active status and willing to be research subjects, willing to sign an informed consent letter, 100% participating in online learning, not diagnosed with anxiety and depression, and not taking an anxiolytic, antidepressant, and/or other psychotropic drugs. The sampling method used was consecutive sampling and 184 samples were obtained.

Procrastination Academic Scale for Student (PASS) was the questionnaire used to measure procrastination and the Depression, Anxiety, Stress Scale-21 (DASS-21) was used to measure the level of depression, anxiety, and stress in medical



students. Questionnaires were distributed via google form, then descriptive analysis and correlation tests were carried out. The Spearman's test was used for the correlation test.

RESULTS

Table 1. Characteristics of Respondents (n=184)

Variable	Median (min-max)	Sum(n) (percentage)	P
Age	19,0 (17 – 21)		
Gender			
- Male		55 (29,9%)	
- Female		129 (70,1%)	
Family history of mental disorders			
- Yes		6 (3,3%)	
- No		178 (96,7%)	
Academic procrastination level	14,0 (0 – 32)		0,017
- Low		94 (51,1%)	
- High		90 (48,9%)	
Stress level			
- Normal		77 (41,8%)	
- Mild		34 (18,5%)	
- Moderate		33 (17,9%)	
- Severe		19 (10,3%)	
- Very Severe		21 (11,4%)	
Anxiety level			
- Normal		36 (19,6%)	
- Mild		11 (6%)	
- Moderate		35 (19%)	
- Severe		25 (13,6%)	
- Very Severe		77 (41,8%)	
Depression level			
- Normal		33 (17,9%)	
- Mild		22 (12,0%)	
- Moderate		36 (19,6%)	
- Severe		37 (20,1%)	
- Very Severe		56 (30,4%)	

Based on the data obtained, the respondents consisted of 184 UNDIP medical students, class of 2020, ranging from 17-21. The majority of respondents were female (70.1%). Only 3.3% of respondents had a family history of mental disorders (see table 1).

The range of respondents' procrastination level had a score of 0-32, with a median of 14.0 so 48.9% of respondents had a high level of procrastination. The majority of respondents had normal stress levels (41.8%), while the majority of respondents had very severe anxiety levels (41.8%) and very severe depression levels (30.4%) (see table 1).

Table 2. The relationship between academic procrastination scores and stress, anxiety, and depression

Variable	Academic Procrastination Score	
	Correlation coefficient (r)#	Significance (p)
Stress score	r=0,468	p<0,001*
Anxiety score	r=0,472	p<0,001*
Depression score	r=0,401	p<0,001*

Description = *Significant #Spearman Correlation Test

The level of academic procrastination was correlated positively with stress levels (r=0.468), anxiety levels (r=0.468), and depression levels (r=0.401). (See table 4).

Table 3. The relationship between academic procrastination scores and levels of stress, anxiety, and depression

Variable	Academic Procrastination Level	
	Correlation coefficient (r)#	Significance (p)
Stress level	r=0,449	p<0,001*
Anxiety level	r=0,403	p<0,001*
Depression level	r=0,369	p<0,001*

Description= *Significant, #Spearman Correlation Test



Table 4. Levels of academic procrastination, stress, anxiety, and depression by gender

Variable	Gender	
	Male (n) (percentage)	Female (n) (percentage)
Procrastination		
- Low	32 (58,1%)	62 (48,0%)
- High	23 (41,8%)	67 (51,9%)
Stress		
- Normal	23 (41,8%)	54 (41,8%)
- Mild	12 (21,8%)	22 (17,0%)
- Moderate	12 (21,8%)	21 (16,2%)
- Severe	4 (7,2%)	15 (11,62%)
- Very severe	4 (7,2%)	17 (13,1%)
Anxiety		
- Normal	14 (25,4%)	22 (17,0%)
- Mild	4 (7,2%)	7 (5,4%)
- Moderate	7 (12,7%)	28 (21,7%)
- Severe	8 (14,5%)	17 (13,1%)
- Very severe	22 (40,0%)	55 (42,6%)
Depression		
- Normal		
- Mild	16 (29,0%)	17 (13,1%)
- Moderate	4 (7,2%)	18 (13,9%)
- Severe	8 (14,5%)	28 (21,7%)
- Very severe	14 (25,4%)	23 (17,8%)
	13 (23,6%)	43 (33,3%)

Based on the data, high levels of procrastination were experienced by 41.8% of male students and 51.9% of female students. There were more female students with very severe stress (13.1%) than male students (7.2%). The majority of female experienced very severe anxiety (42.6%) and very severe depression (33.3%). (See table 4).

DISCUSSION

This study found that 48.9% of respondents had a high level of academic procrastination and female respondents had a higher level of procrastination than males. This may be caused by a larger number of female respondents than males. This result is different from a study conducted in Iran using the PASS questionnaire conducted by Solomon and Rothblum that out of 233 respondents who were medical students, it was known that 28.85% of medical students experienced high levels of academic procrastination. This study also found that male students often experience more procrastination than female students.⁶

Based on the results of this study, out of 184 students, 21.7% of students experienced severe to

very severe stress during the COVID-19 pandemic, and the percentage of severe to very severe stress in female students (24.72%) was higher than that of male students (14.4%). In a study conducted on first-year students in India using DASS-21, similar results were obtained, that 15.6% of students experienced stress during the COVID-19 pandemic, the stress level among male students (5.20%) was lower than female (5.60%) though, the difference was not too significant.⁷

In this study, from 184 UNDIP medical students, 32.6% of students experienced moderate to severe anxiety, while 41.8% experienced very severe anxiety during the pandemic. Anxiety in females was found to be higher (40%) than males (42.6%). This is related to the meta-analysis journal written by Quek before the COVID-19 pandemic which found that 42.4% of medical students in the Middle East and 35.2% of medical students in Asia experienced anxiety. In the same study, there was not much difference in anxiety between clinical (26.4%) and pre-clinical students (26.2%). It was also found that more female students (38%) experienced more anxiety than male students (27.6%).⁸

The results of this study indicated that during the COVID-19 pandemic, 50.5% of UNDIP medical students experienced severe to very severe depression. Severe depression in females (23.6%) was significantly higher than in males (33.3%). The results of this study are similar to research conducted in Egypt during the COVID-19 pandemic using the DASS-21 questionnaire. It was found that 49.3% of the 282 medical students experienced severe to very severe depression.⁹

This study found that academic procrastination could affect the incidence of stress ($p < 0.001$) and had a moderately positive correlation ($r = 0.468$). The results of this study are similar to a study conducted in Romania on workers and high school students using the Pearson correlation test, which found a moderately positive correlation between procrastination and stress levels ($r = 0.50$; $p < 0.001$).¹⁰

If not handled properly, stress will affect humans psychologically and physically. Psychological stress can reduce one's ability to remember, causes sadness, and procrastination events.¹¹ Procrastination and stress can affect each other. This cycle is difficult to break and can reduce the ability to do things effectively. From previous



researches, students usually pile up their work at the beginning of the semester and do not experience stress at the beginning of the semester, but over time they eventually will. Tasks that pile up at the end can lead to stressful events.^{10,12}

This study found a significant relationship between academic procrastination and anxiety ($p < 0.001$) with a moderately positive correlation ($r = 0.472$). The results of this study are similar to research conducted on psychology students at the University of Surabaya, using the Spearman non-parametric correlation test with a weak positive correlation ($r=0.311$) between the level of procrastination and the level of anxiety.¹³

Previous research stated that students tend to experience anxiety. People who experience academic procrastination often procrastinate on tasks and experience anxiety relating to this procrastination.¹⁴

The results of this study showed a significant relationship between academic procrastination and depression ($p<0.001$) and had a moderately positive correlation ($r=0.401$). This is similar to a previous study conducted in Iran using the Procrastination Assessment Scale and the Beck Depression Inventory-II, which found a significant relationship between procrastination and depression ($p<0.001$) with a weak positive correlation ($r=0.325$).¹⁵

Based on previous studies, procrastinators tend to delay things they need to do. This can lead to low achievement levels or fear of facing exams and even failure to face exams and eventually, will not be able to achieve their expected academic goals. This can lead to depression, anxiety, and stress. In addition, failure to complete tasks that occur in procrastinators will result in psychological stress that leads to depression.

This study did not consider the factors that influence procrastination, stress, anxiety, and depression, such as socioeconomic factors, family background, history of being exposed to COVID-19, family history of being affected by COVID-19, and academic ability, which were the limitations. Additionally, this study could not compare the data before the pandemic on the same student.

CONCLUSION

There was a significant relationship between academic procrastination and stress, anxiety, and depression due to the COVID-19 pandemic.

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