

Academic Stress of High School Students in Online Learning During the Covid-19 Pandemic Based on Demographic Factors

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Abstract: This research aims to identify academic stress in high school students based on demographic factors. The general purpose of this research is to get a picture of academic stress experienced by students in Indonesia. While the specific purpose of this research is to (1) describe the academic stress experienced by teenagers, (2) compare the academic stress of students based on demographic factors (Gender and academic level). This research is a quantitative research with a comparative research type. The population in this research is middle school and high school students in East Java with a sample of 354 students. Data analysis was done with descriptive analysis and ANOVA, through the SPSS program. The results of the research show that the number of subjects who have low academic stress is 13.3%, then in the medium category is 73.2% and the high category is 13.6%. The results of the hypothesis test show that 1) there is no difference in academic stress based on Gender, F value 0.212 and significance 0.645, 2) there is a difference in academic stress based on education level, F value 18.176 significance 0.000 3) there is no difference in academic stress based on gender and Education level, F value 0.020 significance 0.888.

1 INTRODUCTION

Since the World Health Organization (World Health Organization) designated the Novel Coronavirus as a Public Health Emergency of International Concern (PHEIC) as Coronavirus Disease (COVID-19) (CDC, 2020), there have been various new changes throughout the world, including Indonesia. The Indonesian government has started implementing various prevention strategies since the first two cases were discovered in early March 2020. These strategies include the implementation of physical distancing which results in the closure of several public facilities, such as schools, universities, and various places that trigger crowds. In this regard, in the field of education, the government applies online distance learning to avoid the transmission of Covid-19.

The implementation of online learning has several impacts on those who run it, such as schools and students. In Indonesia, schooling from home is new and quite complicated, because not all families have the resources needed to conduct online learning. Therefore, not a few students feel pressured by online schools. The results of a survey

conducted by the Association of Clinical Psychology (GPA) showed that the highest psychological problem experienced during the Covid-19 period was stress (23.9%) and in children and adolescents it was caused by learning barriers during PJJ (27.2%). (Halidi & Fikri, 2020).

Based on the results of previous studies, there are several predictors that cause academic stress. According to Rafael, et al (2018, in Garcia-Ross, et al, 2018) transitions between educational stages are usually associated with higher stress levels. Academic stress during this transitional period can have a negative effect on students' academic, personal, and social adjustments, and their levels of self-esteem and achievement. The results of several studies also show that demographic factors also affect academic stress. The inconsistency between the results of previous studies analyzing the possible impact of gender and level of education of adolescents on levels of academic stress makes this question particularly relevant to the objectives of this study. So, although most studies show that girls express greater academic stress than boys, some studies show the same results. In addition, in this pandemic condition, with the online learning model,

researchers want to know whether the differences in stress levels based on demographic actors also support the results of research conducted not in the context of online learning.

Therefore, in this study a simple attempt was made to identify academic stress in high school students and identify differences in academic stress based on demographic factors. The general objective of this study is to obtain an overview of the academic stress experienced by adolescents during online learning in Indonesia. While the specific objectives of this study are (1) to describe the academic stress experienced by students during online learning, (2) to compare students' academic stress during online learning based on demographic factors (gender and academic level). Based on this, three hypotheses were tested : a) There is a difference in academic stress based on gender, b) There is a difference in academic stress based on education level, c) There is a difference in academic stress based on gender and education level.

2 LITERATUR REVIEW

Academic stress is defined as the body's response to academic-related demands that exceed the student's adaptive abilities (Wilks SE, 2008). Bisht (1989) has defined academic stress as the demands associated with academics that exceed the available resources (internal or external) as cognitively perceived by the students involved. According to Bisht (1989), academic stress reflects individual perceptions of academic frustration, academic conflict, academic stress, and academic anxiety (Bisht., A. R., 1989).

Gadzella (1994) defines stress as an event or condition that requires individuals to make adjustments outside of normal daily life. Stress itself can be seen as a positive or negative experience. Stress causes a reaction or response (physiological, emotional, or behavioral) that can make coping difficult for some individuals. In addition, reactions to stressors can also be seen as an assessment (cognitive approach), that is, evaluating whether the stressor is relevant or irrelevant and whether a person has strategies to deal with it.

Focusing on the academic stress, Gadzella describes academic stress as an individual's perception of stressors and how they react to these stressors. The following are nine categories of academic stress, namely five categories of stressors and four categories of reactions to stressors (Gadzella & Masten, 2005).

1. Academic Stressor
 - a. Frustrations (frustration), related to delays or failure to achieve planned goals, daily difficulties, not being accepted socially, unsuccessful relationships, and missed opportunities.
 - b. Conflicts are related to the choice of two or more desirable alternatives, between two or more undesirable alternatives, and between desirable and undesirable alternatives.
 - c. Pressures, related to competition, deadlines, excessive workload, and interpersonal relationships.
 - d. Changes (changes), related to unpleasant experiences, many changes at one time, and disrupted life and goals.
 - e. Self-imposed (self-imposed), related to a person's desire to compete, liked by many people, worries about many things, procrastination, solving a problem, and anxiety facing exams.
2. Reaction to Academic Stressors
 - a. Physiological (physical), individual body reactions such as sweating, shaking, stuttering, fatigue, abdominal pain, breathing problems, back pain, skin problems, headaches, arthritis, and weight loss or gain.
 - b. Emotional (emotions), reactions to individual feelings such as fear, anger, guilt, and sadness.
 - c. Behavioral (behavior), individual reactions because they feel disturbed that their activities are hampered such as crying, hurting themselves or others, smoking excessively, being easily angry with others, attempting suicide, using defense mechanisms, and separating themselves from others.
 - d. Cognitive Appraisal (cognitive assessment), the reaction of how a person analyzes stressful situations and uses appropriate strategies to deal with stressful situations.

There are several factors that influence academic stress on students. According to Lal, K (2014) the factors that cause academic stress include:

1. Academic Pressure

One of the causes of stress on students is academic pressure.
2. Dating

Student life throughout high school and college is filled with thoughts about dating, dating, trying to date, failing to date, and getting dumped". Dating is one of the biggest stressors for students.
3. Environment

The school environment itself can be a cause of stress for students. Students moving into

secondary education find it difficult to constantly adapt.

4. Extra Curricular
Extracurricular activities such as choirs, clubs, sports, bands, or volunteer work. This activity can also be a cause of stress for students.
5. Partners:
Like dating, peer relationships can provide estrus or distress. When peers put pressure on clothes, behavior, choice of friends or students, and many other areas of life, it can be a huge pressure on students.
6. Parental Pressure:
Parents always want their children to do well in school. They want to see good grades, but they also want to see success in other areas of life. In their efforts to guide their children, parents can be one of the main causes of stress in students.
Academic Stress has severall consequesis for students.As summarized in Lumban Gaol (2016) academic stress can result in:
 1. Depression
Some researchers have found that stress can cause students to feel depressed
 2. Decrease in Performance
Stress also causes deteriorating abilities (Talib & Zia-ur-Rehman, 2012), decreased academic achievement (Stallman, 2010),
 3. Health condition worsens
Stress conditions deteriorating health (Marshall, Allison, Nyakap & Lanke, 2008). When students feel stressed, the symptoms that arise are feelings of anxiety, anxiety, cramps in the neck or shoulders, headaches, difficulty in breathing, always thinking, difficulty in concentrating, worrying too much about many things, and consuming excessive drugs (Aggolla & Ongori, 2009).
 4. Less interaction in class
Research conducted by Carton and Goodboy (2015) found that students who experience depression, anxiety, and excessive stress tend to be less involved in interacting in the classroom.

3 METHODS

3.1 Design

This research uses a quantitative approach in the form of a survey. This design used an electronic survey, which was appropriate for the purpose of the study, especially during the COVID-19 pandemic when students are off school.

3.2 The Participants and Data Collection

The population in this study were high school and junior high school students. The sample in this study were high school students from both public and private junior and senior high schools and senior high schools and junior high schools in East Java. From the number of subjects as many as 354 people, as many as 126 people came from the junior high school level and 228 people from the senior high school level. The subjects at the junior high school level consisted of 40 male and 86 female subjects. While the high school level subjects consisted of 58 men and 170 women. Gender characteristics have a mean of 1.68 and a standard deviation of .467 for the junior secondary level and a mean of 1.75 and a standard deviation of .436 for the senior high school level.(see Table 1)

Table 1: Characteristics of Subjects Based on Gender

Gender	Junior High School	Senior High School
Male	40	58
Female	86	170
Total	126	228
Mean	1.68	1.75
Standar Deviation	.467	.436

3.1. Data Analysis

Data analysis was carried out with the help of the SPSS program, with descriptive analysis techniques and analysis of variance.

4 RESULT AND DISCUSSION

4.1 Description of Academic Stress

Table 2. Description of Academic Stress

Level of academic stress	Junior High School		Senior High School		Junior & Senior High School	
	N	%	N	%	N	%
Low	31	24.6%	16	7%	47	13.3%
Middle	84	66.7%	175	76.8%	258	73.2%
High	11	8.7%	37	16.2%	48	13.6%
Total	126	100%	228	100%	354	100%

From the number of subjects as many as 354 people, as many as 126 people came from the junior high school level and 228 people from the senior

high school level. The number of subjects who have a low score is 47 people with a percentage of 13.3%, then in the medium category, the number of subjects is 259 people who have a percentage of 73.2%. In the high category, there were 48 subjects with a percentage of 13.6%. See Table 2

The number of subjects attending junior high school is 126 people. In the low category of academic stress, the number of subjects attending the junior high school level is 31 people with a percentage of 24.6%, then in the moderate category of academic stress, the number of subjects is 84 people who have a percentage of 66.7%. The number of junior high school subjects included in the high category of academic stress amounted to 11 people with a percentage of 8.7%.

The number of subjects attending the high school-equivalent level was 228 people. For the low academic stress category, the number of subjects attending high school level is 16 people with a percentage of 7%. In the moderate academic stress category, the number of subjects is 175 people with a percentage of 76.8%. The number of subjects who attend high school and are included in the category of high academic stress is 37 people with a percentage of 16.2%.

Table 3. Description of Data

Gender	Level Education	Mean	Std. Deviation	N
Male	Junior High School	181.14	42.78	41
	Senior High School	200.92	35.49	57
	Total	192.65	39.73	98
Female	Junior High School	182.68	44.63	85
	Senior High School	203.81	36.793	171
	Total	196.79	40.72	256
Total	Junior High School	182.18	43.87	126
	Senior High School	203.09	36.41	228
	Total	195.64	40.43	354

The results of descriptive data show that the stress level of high school students is mostly at a moderate level, followed by a high level (see Table 3). While the academic stress level of junior high school students was mostly at the moderate level, then followed by the low level. Based on this, it shows that the two levels of education with the dominance of the academic stress level at a moderate level need attention. Adolescents who are still in formal education are more susceptible to psychosocial dysfunction stemming from academic demands. Theoretically, students themselves have a

tendency to learn stress according to students' internal conditions as seen from negative thoughts, self-confidence, and students' personalities (Olejnik & Holschuh, 2007). Especially during this Covid-19 era, a drastic change in the learning system has made many teenagers psychosocially dysfunctional. During this Covid-19 pandemic, adolescents also experience feelings of loneliness (Sagita & Hermawan, 2020) as well as feelings of helplessness, fear, etc. (Singh, et al., 2020).

Based on the existing data, an analysis of the tested hypotheses was carried out. The hypotheses tested are 1) There is a difference in academic stress based on gender, 2) There is a difference in academic stress based on education level, 3) There is a difference in academic stress based on gender and education level.

Table 4: Result from ANOVA

Source	df	F	Sig.	Partial Eta Squared
Corrected Model	3	7.737	.000	.062
Intercept	1	6413.891	.000	.948
Gender	1	.212	.645	.001
Level Education	1	18.176	.000	.049
Gender * Level Education	1	.020	.888	.000
Error	350			
Total	354			
Corrected Total	353			

The results of data analysis show that 1) there is no difference in academic stress based on gender, this is indicated by the F value of 0.212 and a significance of 0.645, 2) there is a difference in academic stress based on the level of education, the F value of 18.176, a significance of 0.000 3) there is no difference in academic stress based on gender and education level, F value 0.020 significance 0.888. (See Table 4). Of the two hypotheses proposed, only one is significant, namely the difference in academic stress based on education level. Students at the high school level have a higher stress level than students at the junior high level.

The results of testing the first hypothesis show that there is no difference in academic stress based on gender. This is in accordance with the results of research conducted by Taufik, Ifdil, & Ardi (2013) which found that there was no significant difference between the levels of academic stress of male students and female students at public high schools in Padang City. This means that the condition of the stress level of both female and male students does not have a significant difference. Likewise, the

research conducted by Hafifah, Widiani, & Rahayu (2017) on students majoring in Nursing, which showed that there were no significant differences between male and female respondents. This is in line with research conducted by Leadbeater et al. (1999) which found that stress reactivity did not differ between girls and boys. The results of this study indicate that both male and female students experience academic stress in online learning during this pandemic.

However, this is contrary to the results of research conducted by Liu (2011 in Taufik, Ifdil, & Ardi, 2013) which revealed that female students had a higher level of achievement orientation in school, causing more frequent stress symptoms. Several studies show that girls respond more to stressors than boys (Ge et al, 1994; Hankin, et al, 2007; MacKinnon, et al, 2002 in Taufik, Ifdil, & Ardi, 2013). In research conducted by Dhull & Kumari (2015), it is explained that academic stress looks different in the male group and female group, where the female gender group shows a higher level of academic stress than the male gender group. This is also related to the factor that women have a sensitive nature and are more sensitive to what is happening around them. Calvarese's research (2015) also states that women experience higher stress reactions than men. Meanwhile, research by Kai-Wen (2009) shows that men in an academic context experience higher stress than women. This is contrary to what was stated by Agolla & Ongori (2009), where men are more likely to use ego-oriented coping mechanisms, so that men are more relaxed in dealing with stressors that come from academic life compared to female students.

Meanwhile, the results of testing the second hypothesis show that there are differences in academic stress in high school and junior high school students. Students with high school education levels experience higher academic stress than junior high school levels.

The tendency of high school students to experience stress is caused by pressures that come from within and outside the individual. According to Olejnik and Holschuh (2007), this pressure can arise due to negative thoughts, self-doubt, and personality of students. The pressure that high school students often face during a pandemic is the pressure from ongoing distance learning. These pressures include (Purba, 2020): a lot of workloads but a short processing time; internet conditions or unsupported facilities and infrastructure; and the lack of teacher-student and student-student interaction. The

workload is a lot at the high school level because it is related to preparation for going to college.

In addition, pressure from outside the school environment is also experienced by high school students. The pressure can come from within oneself, the peer environment, and the family environment. The pressure that comes from within oneself is the existence of self-expectation. Students who have high self-expectation will have strong self-motivation to excel in academics (Hadiwijaya, et al., 2015). This strong desire can be stressful because the student will spend more time pursuing his expectations so that he has less free time (Ang & Huan, 2006).

5 CONCLUSIONS

During this Covid-19 era, a drastic change in the learning system has made many teenagers psychosocially dysfunctional. Descriptive data shows that the two levels of education with the dominance of the academic stress level at a moderate level need attention. This research also founded that there was no significant difference between the levels of academic stress of male students and female students. Both male and female students experience academic stress. This is shown from the average academic stress in junior and senior high school students between male and female students which is almost the same. Research has also found that there are differences in academic stress based on education level. The tendency of high school students to experience stress is caused by pressures that come from within and outside the individual. In senior high school students who are older with a higher burden of responsibility, both from the school burden and the psychological burden that will prepare them to go to college or work, make high school students more stressed than junior high school students.

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