

# Prevalence of Academic Stress High School Students in Yogyakarta During the Covid-19 Pandemic

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## ABSTRACT

The presence of stressors in education cannot be separated from the role of students in school. The online-based learning process has been implemented since the beginning of the COVID-19 pandemic. The remote learning system presents new stressors for students such as network constraints, irregular learning time, a lot of workloads, and adjustment of the learning system. This study aims to determine the prevalence of academic stress experienced by high school students during the covid-19 pandemic. This research is a descriptive analysis research. The number of samples in the study was 217 students. Data collection was carried out using the adoption scale belonging to Sun et.al (2011) Educational Stress Scale Adolescents (ESSA) which had been tested for validity and reliability. Based on the results of data analysis, it shows that students who experience academic stress ranged between the ages of 14-16 years. Age has 13.4% contribution to students' academic stress levels. Furthermore, based on gender, female students experienced academic stress 54.8% higher than male students 45.2%. Gender contributed 8.4% to students' academic stress levels. In addition, with regard to the results of the percentage of student stress levels during the covid-19 pandemic, the average number of students who experienced stress in the moderate category is 66.8%.

**Keywords:** Prevalence, Academic Stress, Pandemic Covid-19

## 1. INTRODUCTION

In March 2020, more than 800 million students worldwide were studying at home due to the covid-19 pandemic [1]. The study at home policy was implemented to break the chain of the spread of COVID-19. This turned out to have an impact on various activities including the activities of the learning system in schools

The learning system in schools during the COVID-19 pandemic makes students have to carry out distance learning (PJJ) with the help of digital media. This adjustment of the learning system requires teachers to provide the right learning methods so that the material presented can be well received by students. Changes in the online learning system require students to be able to learn independently because teachers cannot facilitate distance learning the same as face-to-face learning. The Minister of Education and Culture hopes that with the implementation of online or distance learning, students will also get new experiences in the learning process [2].

But in reality, the distance learning system in its implementation has many obstacles that are felt by students, such as difficulties in solving problems, learning materials, finding information about the lessons discussed personally, and difficulties with the tasks given

[3] as well as, assignments with short deadline. [4]. The application of the distance learning system makes students stressed and unable to follow the learning process properly [5]. The learning system, learning tasks, and learning activities are part of the academic demands called academic stress.

Academic stress is explained as pressure felt by students at school due to the demands of various kinds of tasks that must be completed but are not in line with their abilities [6]. In line with that, academic stress is defined as a stressful condition on the individual based on the perception of the emergence of academic stressors related to education [7].

A student experiences academic stress due to a stimulus that interferes with the mind and body as a result of learning activities. Stimulus forming symptoms of stress in learning is known as an academic stressor. An academic stressor is a stimulus that forms stress symptoms related to learning activities and problems in the learning process, and the demands of the surrounding environment [8].

Someone who experiences stress is more prone to emotional changes and tends to be easily frustrated. Behaviorally, someone who experiences stress tends to be passive, nervous, avoids responsibility, and behaves

aggressively [9]. Furthermore, the physical symptoms include changes in diet, muscle pain, and sleep disturbances [10].

Stress conditions that are not handled properly will disrupt the learning ‘process which affects students’ achievement and motivation [11]. In addition, unresolved stress conditions will result in distortion of the mind and affect the students physically and emotionally, so that it will affect their behavior [12]. The negative impact that stress produces is called distress. Distress tends to make a person experience a change in a negative direction.

Students who experience academic stress show several behavioral symptoms such as being easily moody, being apathetic, unhappy, tending to shut down, being aloof, experiencing decreased achievement at school, engaging in aggressive and destructive behavior, anxiety, restlessness, sleep disturbances, and changes in eating patterns. [13]. The state of stress in learning if allowed to occur continuously will affect motivation and learning achievement [14].

School students are at risk of experiencing academic stress, this is because there are many stressors from various learning environments that make students vulnerable to stress. The importance of knowing the state of student academic stress helps teachers to be more sensitive in providing learning innovations. In addition, assisting guidance and counseling teachers in overcoming students' academic stress problems as a result of the COVID-19 pandemic learning system.

Based on this, researchers are interested in examining the prevalence of academic stress of students at Yogyakarta High School during the COVID-19 pandemic.

**2. METHOD**

This study aims to determine the description of students' academic stress levels of high school students during the covid-19 pandemic. The method in this research is a form of descriptive research. The researcher aims to find out and provide an overview of students' academic stress levels. This research was conducted to determine the value of the independent variable, either one or more variables [15].

The population of this research is the students of class X SMA in Yogyakarta which consists of SMA N 10 Yogyakarta, SMA N 5 Yogyakarta, and SMA N 1 Depok. The research sample was 217 high school students in Yogyakarta. The sample in this study was taken using a random sampling technique, where the sampling of members from the population was carried out randomly without regard to the existing strata in the population [16]. The instrument used in this study is the adopted Educational Stress Scale for Adolescents (ESSA) [17] consisted of 16 statement items, with a reliability value of 0.81.

Educational Stress Scale for Adolescents (ESSA) is a measurement scale used to see the extent to which students experience a stressful state in learning (academic stress). This scale consists of five indicators, including the pressure of learning activities, workload/tasks, concerns about grades, self-expectations, and hopelessness.

**3. RESEARCH RESULT**

**3.1. Effect of Age and Gender on Academic Stress**

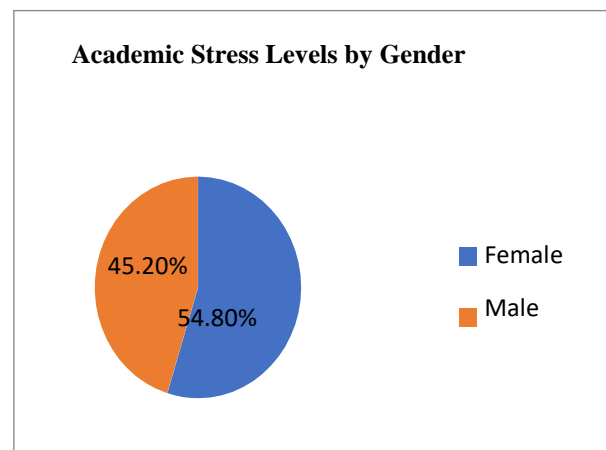
**3.1.1. Academic Stress by Age**

Based on the results of the analysis of research data, it is known that students who experience academic stress ranged from the age of 14-16 years. with a percentage of age 14 years 7.4%, students aged 15 years 47%, and age 16 years 45.6%.

The contribution contributed by age to students' academic stress levels is 13.4% with a sig. 0.000< 0.005. Based on this, it can be concluded that there is a significant effect between age and the level of academic stress experienced by students.

**3.1.2. Academic Stress Levels by Gender**

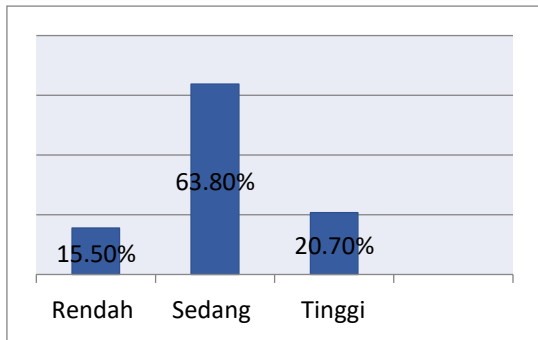
The results of data analysis show that of the 217 students, female students were more likely to experience academic stress than male students. With the results the percentage of women (54.8%) and men (45.2%). The results of this study are in line with previous findings[18] women (96%) had higher stress levels than men (93%).



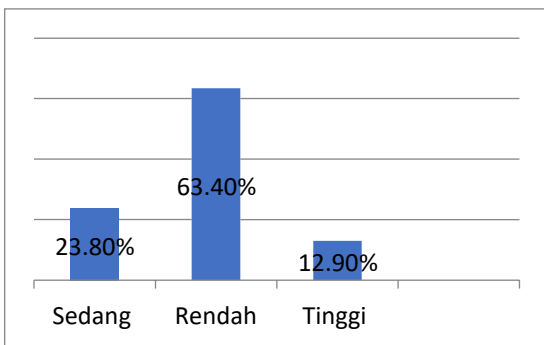
**Figure 1.** Academic Stress Levels by Gender

The difference in stress levels based on the gender of male and female students is known that most of the female students experience stress in the high category with a percentage of 20.7%, students experience moderate stress 63.8%, and 20.7% experience low stress. While the stress level experienced by male students

showed the results of 12.9% high stress, 63.4% moderate stress, and 23.8% low stress.



**Figure 2.** Frequency and percentage of academic stress levels for female students



**Figure 3.** Frequency and percentage of male students' academic stress levels

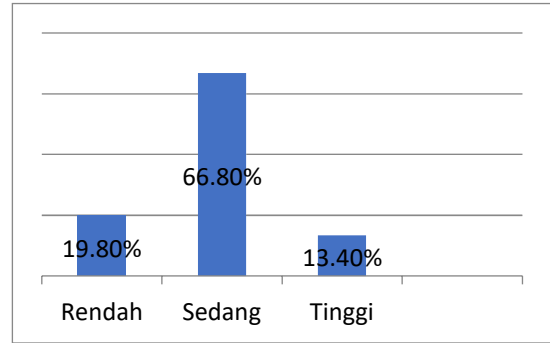
Based on the results of table 1 below, the contribution of gender to students' academic stress is 8.4% with a sig.  $0.000 < 0.005$ . Therefore  $H_0$  is rejected, which means that there is a significant effect between gender and student academic stress.

**Table 1.** Coefficient of Determination Results

R	R square	Adjusted R Square	Std. Error of the Estimate	Sig.
,290 a	0,84	,080	5,26582	,000

**3.2. Academic Stress Levels in High School Teenagers**

Based on data got from 217 high school students, the academic stress level of high school students consists of three categories, namely high stress, moderate stress, and mild stress. A total of 29 out of 217 high school adolescent students experienced high academic stress with a percentage of 13.4%, then 145 of 217 students experienced moderate academic stress with a percentage of 66.8%, and 43 of 217 students experienced low academic stress with a percentage of 19, 8%.



**Figure 4.** Academic stress levels in high school teenagers

The state of academic stress is never separated from students. Based on the results of Safira & Hartati's research, it shows that students feel enough symptoms of academic stress, with the findings of 49% of students experiencing moderate stress levels, and 10% high [19]. Another study,[20] explained that most students experienced moderate academic stress, as many as 31 students experienced low academic stress, 173 experienced moderate stress, and 46 students experienced high stress.

Furthermore, research conducted in Saudi Arabia [21] showed that the stress level experienced by students was 61 students (23.2%) with mild stress, 35 students (13.3%) with moderate stress, and 44 students (16.7%) severe stress. With the total stress level experienced by students is 53.2%.

**4. DISCUSSION**

The state of stress in the learning process is known as academic stress. It is a state of stress experienced by students during learning activities and the feeling when a situation is unstable and beyond their capabilities. Psychologically, stress refers to the relationship between the individual and the environment, where the individual considers it important for his or her well-being but beyond his ability [22]. The relationship between the individual and the environment is assessed as demand and the inability to face-threatening situations [23].

Stress can occur in a person due to the process of self-evaluation of the response to the emergence of stressors. The process of evaluating or assessing stress is the main factor determining the state of stress experienced by a person. In other words, stress is the result of an individual's transaction process with a source of stress that involves an evaluation process [24]. Stressors can arise from everywhere, both from inside and outside students, even from an event that has occurred for a long time. The body's physiological response to a stressor is to release a reaction called the General Adaptation Syndrome (GAS). General Adaptation Syndrome is a body response to adapt to the emergence of stressors forming stress symptoms [25].

The GAS process consists of three stages, namely the alarm reaction stage where there is preparation to fight the stressor, the stage of resistance, the stage where there is resistance to the stressor, and the stage of exhaustion, the stage of weakening resistance due to a prolonged stressor [26].

Pressure originating from environmental situations can play a role as a cause of physical stress disorder if it occurs in a frequent period, such as the family environment, social environment, and school environment. In addition, sources of stress that come from within have the potential to be the cause of stress, such as desires that come from oneself, expectations, self-demands, a sense of wanting to be recognized, past stories, and dominance. Sources of stress are known as stressors, stressors are stimuli that form stress symptoms in individuals that can be found in various circumstances, such as daily events and even past events.

The presence of a stressor provides a stimulus that triggers stress. Therefore, there is no doubt that the stressor is a strong stimulus to cause a person to experience stress. Furthermore, each individual must be more sensitive to the presence of stressors in life, by recognizing and understanding stressors the body will be easier to adapt and react.

Referring to section 1, students who experience academic stress ranged from 15-16 years old. This is because, at this age phase, students enter early adolescence, where there are lots of demands for adjustment to various changes that occur. In this age range, adolescents experience a phase of maturity, this phase is characterized by the increase of physical, psychological, and cognitive functions.

This is reinforced by the results of a study in the United States about the number of adolescents who experience stress in the 12-18 year age range. At this age vulnerable students are faced with various pressures that come from inside and outside themselves, such as demands from the family environment, school environment, responsibility as students, demands for grades, competitiveness of achievement with peers, and a sense of wanting to be recognized in their social environment. This causes a lot of burdens that must be borne by students with abilities that are lower than the load capacity they have, resulting in many teenagers experience a state of stress.

Furthermore, based on section 2, it shows that female students experience higher levels of stress than male students, this is because the HPA system (Hypothalamic Pituitary Adrenal axis) secretes ACTH (Adrenocorticotropic Hormone) is more often found in women than in men, which causes the hormone cortisol in the body to be more easily produced and makes oneself becomes more sensitive so that it has an impact on the emergence of psychological stress [27].

High cortisol hormone will make a person more prone to stress. In addition, there are differences in how to

respond between women and men in dealing with conflict, women's brains have a vigilance that tends to be negative towards the emergence of conflict, thus making women easily stressed, easily afraid, and anxious due to the emergence of pressure within themselves [28].

In line with that, in 2013 a study was conducted in Belgium, showing the findings of the data findings that the stress level of female adolescents was 1.7% greater than that of male adolescents, namely 1.13% [29]. Research from [30] of 315 adolescents showed that women's stress levels were higher than men's, so gender was a significant predictor of a person's emotional reactivity. The higher stress condition in women is due to the influence of the hormone oxytocin, estrogen, and sex hormones as supporting factors [31].

The stress experienced by students at school will cause psychological pressure and affect cognition, emotion, and behavior. Previous studies [32] provided evidence of a high percentage (53%) psychological stress picture having a 76% impact on sleep quality. Poor sleep quality is the impact of the stressful state experienced by students. Poor sleep quality has a physiological impact on health.

Furthermore, the level of academic stress of high school students during the COVID-19 pandemic is known that. of the three levels of stress, 66.8% of the research subjects experienced moderate stress. Academic stress occurs because of academic stressors resulting from interactions with learning activities, such as the increased burden of learning assignments received by students, messy study time, unfavorable learning environment, difficult learning materials, monotonous learning methods, internet networks, and deadlines rapid assignment collection, and anxiety about grades. In line with this, the stress conditions experienced by students are the result of interactions with the learning process, such as learning duration, cheating, pressure to go to class, lots of assignments, getting good grades, and decisions to determine career paths [33].

Academic stress is also caused by lack of achievement, delays in assignments, school climate, exams, homework, and interest in learning [34]. Stressors such as the learning system during the COVID-19 pandemic put a lot of pressure on students, where students are required to be able to take online distance learning through various platforms, irregular learning times, and the number of assignments from various subjects that must be completed. Learning assignments during the pandemic have a significant effect on stress levels when compared to before the COVID-19 pandemic [35].

In line with this, the online learning system is less effective to implement, due to the lack of satisfaction in understanding the subject matter and the assignment system, the high cost of buying internet quota, learning hours outside of hours, and network disturbances [36]. Therefore, adjustments to the learning system during the COVID-19 pandemic contribute significantly to the

academic stress experienced by students, it is important for guidance and counseling teachers to provide preventive actions to prevent and introduce academic stressors to students. This is intended so that students are better in recognizing and being sensitive to the emergence of stressors in the academic field.

Student academic stress during the new normal period of the COVID-19 pandemic showed that as many as 13.4% of students experienced high academic stress, 66.8%, students experienced moderate academic stress, and 19.8% of students experienced low academic stress. Constraints in the learning process, facilities, and infrastructure, as well as the learning climate, are also important things that must be considered. Learning methods and systems are benchmarks for the level of stress experienced by school students during the COVID-19 pandemic.

### AUTHORS' CONTRIBUTIONS

The author's contribution in writing this scientific work are:

Author 1: Vetriona Kusuma Ramadani (Writing idea, data retrieval, data processor, scientific writer)

Author 2: Diana Septi Purnama (Text editor, and data retrieval)

Author 3: Mirza Yuda Pratama (Data retrieval, text editor, and check for writing errors).

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### REFERENCES

- [1] BARSELI, Mufadhal; IFDIL, Ifdil; FITRIA, Linda. Stress akademik akibat Covid-19. *JPGI (Jurnal Penelitian Guru Indonesia)*, 2020, 5.2: 95-99.
- [2] OKTAWIRAWAN, Dwi Hardani. Faktor pemicu kecemasan siswa dalam melakukan pembelajaran daring di masa pandemi covid-19. *Jurnal Ilmiah Universitas Batanghari Jambi*, 2020, 20.2: 541- 544.
- [3] YUANGGA, Kharisma Danang; SUNARSI, Denok, Pengembangan media dan strategi pembelajaran untuk mengatasi permasalahan pembelajaran jarak jauh di pandemi covid-19. *JGK (Jurnal Guru Kita)*, 2020, 4.3: 51-58.
- [4] Kompas, *Hambatan dan Solusi Belajar dari Rumah*. <https://muda.kompas.id/baca/2020/04/10/hambatan-dan-solusisaat-belajar-daring-dari-rumah/>
- [5] Watnaya, A. kusnayat, Muiz, M. hifzul, Nani Sumarni, Mansyur, A. salim, & Zaqiah, Q. yulianti. Pengaruh Teknologi Pembelajaran Kuliah Online di Era Covid-19 dan Dampak terhadap Mental Mahasiswa. *EduTeach : Jurnal Edukasi Dan Teknologi Pembelajaran*, 1(2), 2020, 153– 165. <https://doi.org/10.37859/eduteach.v1i2.1987>
- [6] Sun, J., Dunne, M. P., Hou, X. Y., & Xu, A. Q, Educational stress scale for adolescents: development, validity, and reliability with Chinese students. *Journal of Psychoeducational Assessment*, 29(6), 2011, 534-546.
- [7] Govarest, S & Gregoire, J, Stressfull academic situations : study on appraisil variables in adolescence. *British Journal of Clinical Psychology*, 2004, 54, 261 ± 271.
- [8] WINARSO, Widodo. Mengatasi Stres Akademik dalam Pembelajaran Matematika Melalui Penguatan Self Esteem Peserta Didik. *Al Ibtida: Jurnal Pendidikan Guru MI*, 2014, 1.1.
- [9] ARYANI, Farida. Stres Belajar" Suatu Pendekatan dan Intervensi Konseling". 2016.
- [10] RAHMADANI, Cut Salsa Mutia. *Hubungan antara Sense of Humor dengan Stress Akademik pada Siswa Kelas Akselerasi SMA Negeri 1 Bireun*. 2014. PhD Thesis. Universitas Medan Area.
- [11] SAGITA, Dony Darma; DAHARNIS, Daharnis; SYAHNIAR, Syahniar. Hubungan Self Efficacy, Motivasi Berprestasi, Prokrastinasi Akademik Dan Stres Akademik Mahasiswa. *Biketetik (Bimbingan Dan Konseling: Teori Dan Praktik)*, 2017, 1.2: 43-52.
- [12] ARYANI, Farida. Stres Belajar" Suatu Pendekatan dan Intervensi Konseling", 2016.
- [13] Ng Lai On, A, Teaching children handling study stress. Malaysia: TC Publishing SDN BHD, 2004
- [14] MURTANA, Agus. *Hubungan Antara Harga Diri Dan Interaksi Teman Sebaya Dengan Stres Belajar*. 2014. PhD Thesis. Universitas Muhammadiyah Surakarta.
- [15] Sugiyono, Metode Penelitian Kuantitatif, Kualitatif, dan R&D. Bandung : Alfabeta, CV, 2017
- [16] Sugiyono, Metode Penelitian Kuantitatif, Kualitatif, dan R&D. Bandung : Alfabeta, CV, 2017
- [17] SUN, Jiandong, et al. Educational stress scale for adolescents: development, validity, and reliability with Chinese students. *Journal of Psychoeducational Assessment*, 2011, 29.6: 534-546.
- [18] Andiarna, F., & Kusumawati, E, Pengaruh pembelajaran daring terhadap stres akademik mahasiswa selama pandemi Covid-19. *Jurnal Psikologi*, vol.16(2), 2020, 139-149. DOI: <http://dx.doi.org/10.24014/jp.v14i2.9221>
- [19] Safira, L., & Hartati, M. T, Gambaran stres akademik siswa SMA negeri selama pembelajaran jarak jauh (PJJ). *Jurnal Bimbingan dan Konseling*, , 8(1), 2021, 125-136.
- [20] Pramesta, D. K., & Dewi, D. K, Hubungan Antara Efikasi Diri dengan Stres Akademik pada Siswa di

- SMA X. *Jurnal Penelitian Psikologi*, 8(7), 2021, 23-33.
- [21] Almojali, A. I., Almalki, S. A., Allothman, A. S., Masuadi, E. M., & Alaqeel, M. K, The prevalence and association of stress with sleep quality among medical students. *Journal of epidemiology and global health*, 7(3), 2017, 169-174. DOI <https://doi.org/10.1016/j.jegh.2017.04.00>
- [22] Folkman, S., Lazarus, R. S., Gruen, R. J., & DeLongis, A, Appraisal, coping, health status, and psychological symptoms. *Journal of personality and social psychology*, 1986, 50(3), 571.
- [23] Lazarus, R. S., & Folkman, S, *Stress, appraisal, and coping*. Springer publishing company, 1984
- [24] Dewe, P. J., O'Driscoll, M. P., & Cooper, C. L., Theories of psychological stress at work. *Handbook of occupational health and wellness*, 2012, 23-38.
- [25] SELYE, Hans. Stress and the general adaptation syndrome. *British medical journal*, 1950, 1.4667: 1383.
- [26] Selye, H. (1950). Stress and the general adaptation syndrome. *British medical journal*, 1(4667), 1383
- [27] Verma R, Balhara YP, Gupta CS. Gender differences in stress response: Role of developmental and biological determinants. *Ind Psychiatry J*. 2011 Jan-Jun;20(1):410. doi: [10.4103/0972-6748.98407](https://doi.org/10.4103/0972-6748.98407). PubMed PMID: 22969173; PubMed Central PMCID: PMC3425245.
- [28] Brizendine, L, *The Female Brain*. Penerjemah: Meda Satrio, 2007
- [29] Van Droogenbroeck, F., Spruyt, B., & Keppens, G, Gender differences in mental health problems among adolescents and the role of social support: results from the Belgian health interview surveys 2008 and 2013. *BMC Psychiatry*, 2018, 18(1). doi: [10.1186/s12888-018-1591-4](https://doi.org/10.1186/s12888-018-1591-4)
- [30] Charbonneau A, Amy H, Janet S. Stres and Emotional Reactivity as Explanations for Gender Differences in Adolescents' Depressive Symptoms. *J Youth Adolescence*. 2009; 38:1050– 58
- [31] Potter & Perry, *Fundamental of nursing : concept, process & practice*. (Asih, Y. et all, Penerjemah). Jakarta : EGC, 2005
- [32] Almojali, A. I., Almalki, S. A., Allothman, A. S., Masuadi, E. M., & Alaqeel, M. K, The prevalence and association of stress with sleep quality among medical students. *Journal of epidemiology and global health*, 7(3), 2017, 169- 174. DOI <https://doi.org/10.1016/j.jegh.2017.04.005>
- [33] Barseli, M., Ifdil, I., & Nikmarijal, N, Konsep stres akademik siswa. *Jurnal konseling dan pendidikan*, 5(3), 2017, 143-148. DOI: <https://doi.org/10.29210/119800>
- [34] Liu, Y., & Lu, Z, The Chinese high school student's stress in the school and academic achievement. *Educational Psychology: An International Journal of Experimental Educational Psychology*, 31(1), 2011, 27– 35. <https://doi.org/10.1080/01443410.2010.513959>
- [35] Livana, Mubin, M. F., & Basthomi, Y, “Tugas Pembelajaran” Penyebab Stres Mahasiswa Selama Pandemi COVID-19. *Jurnal Ilmu Keperawatan Jiwa*, 3(2), 2020, 203–208.
- [36] Andiarna, F., & Kusumawati, E, Pengaruh pembelajaran daring terhadap stres akademik mahasiswa selama pandemi Covid-19. *Jurnal Psikologi*, 16(2), 2020, 139-149.