



Contribution of Learning Motivation and Stress on Academic Achievement of Medical Faculty Students

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ABSTRAK

Tekanan dan beban kuliah di fakultas kedokteran lebih besar dari jurusan lain karena persyaratan lulus tinggi yang menyebabkan stres. Proses adaptasi bagi mahasiswa sulit dan jurusan kedokteran tidak bergairah, justru tuntutan orang tua membuat motivasi berprestasi rendah yang berdampak pada menurunnya prestasi akademik. Tujuan penelitian ini adalah untuk mengetahui kontribusi motivasi berprestasi dan stres terhadap prestasi akademik. Penelitian ini menggunakan pendekatan kuantitatif dengan menggunakan metode survei dan teknik analisis jalur. Instrumen penelitian adalah angket tertutup pada google form berdasarkan skala likert. Pengujian hipotesis diperoleh dari uji t dan uji F. Pengujian hipotesis penelitian ini menggunakan Path Analysis dengan bantuan aplikasi SPSS Versi 20.0. Metode survei melibatkan pengumpulan data untuk menguji hipotesis atau menjawab pertanyaan orang tentang topik atau masalah tertentu. Jumlah sampel penelitian adalah 64 siswa kelas internasional. Pengambilan sampel dalam penelitian ini menggunakan teknik Proportionate Stratified Random Sampling. Ini karena populasinya tidak homogen. Temuan dari hasil penelitian ini adalah bahwa motivasi berprestasi memiliki kontribusi positif terhadap prestasi akademik. Stres memiliki kontribusi negatif terhadap prestasi akademik. Motivasi berprestasi memiliki kontribusi negatif terhadap stres.

ABSTRACT

The pressure and burden of studying in the medical faculty is greater than other majors because of the high pass mark requirements which cause stress. The adaptation process for students is difficult and the medical department is not a passion, instead the demands of parents make low achievement motivation which has an impact on decreased academic achievement. The purpose of this study was to determine the contribution of achievement motivation and stress to the academic achievement. This study uses a quantitative approach using survey methods and path analysis techniques. The research instrument was a closed questionnaire on google form based on the Likert scale. Hypothesis testing is obtained from the t test and F test. Hypothesis testing of this study uses Path Analysis with the help of the SPSS Version 20.0 application. The survey method involves collecting data to test hypotheses or answer people's questions about certain topics or problems. The number of research samples was 64 international class students. Sampling in this study using the Proportionate Stratified Random Sampling technique. This is because the population is not homogeneous. The finding of the results of this study is that achievement motivation has a positive contribution to academic achievement. Stress has a negative contribution to academic achievement. Achievement motivation has a negative contribution to stress.

1. INTRODUCTION

Motivation is the driving force that exists in humans so that they carry out an activity. Motivation is viewed as located within the individual, though naturally the individual's cognitions and perceptions may be influenced by various social and environmental factors (Dörnyei & Ushioda, 2013). Motivation has an important role in underlying various actions and behaviors of students who become backgrounds in certain conditions and situations and are carried out to achieve goals (Rafiola et al., 2020). Students are motivated to excel by internal and external factors. Internal factors come from within students who are optimistic about continuing to excel, while external factors come from the support of parents, friends, and learning facilities at home and on campus. Learning motivation as student intention or desire to participate in and make efforts on learning, which was performed on student choice of specific learning activity and the efforts on such activity (M. H. Lin et al., 2017). Academic achievement and student achievement motivation have a contribution in the relationship that internal and external motivation can improve student academic achievement in order to keep achieving (Retnowati et al., 2016). Through achievement motivation students will tend to be serious in learning, try their best in completing assignments and not easily complain when facing obstacles during lectures (Sugiyanto, 2009). The

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tendency that encourages someone to maximize all their potential towards achieving high achievements beyond past achievements and exceeding the achievements of others with very tight competition, discipline and hard work. High learning motivation and confident students will usually produce good learning achievement (Adiputra & Mujiyati, 2017).

Every international class student must foster achievement motivation in themselves, because achievement motivation will be the driving force for them to achieve academic success. Achievement motivation can help students again academic success, particularly in medical student. Achievement motivation can help students achieve academic success, especially medical students (Noohi et al., 2012). Likewise with research Riswanto and Aryani said that the motivation to learn is good to have a beneficial relationship to student achievement (Riswanto & Aryani, 2017). Management in the educational process is one of the most important things, given the many obstacles faced by students in the education process, so it is necessary to maintain how their achievement motivation, and the stress that is feared, can have an impact on their academic achievement and learning motivation later (Poniasih & Dewi, 2015). If you want academic achievement and student motivation to learn, it can be improved by managing stress properly because stress can affect learning motivation and vice versa (Demolingo, 2018).

Achievement is the result of an activity that can be created, carried out and pleased, obtained by working hard, both individually and in groups (Rafiola et al., 2020). Increasing academic achievement in international class students is of course not just following lectures, but academic achievement is achieved based on the assessment of several components. Efforts to improve to achieve satisfactory academic achievement do not only fulfill the input and output aspects, but more importantly the process aspect, which means time management, teaching and learning process and monitoring and evaluation process, provided that the teaching and learning process has a level of importance. highest compared to other processes (Nurrahmaniah, 2019). To find out the ability of medical students, it is necessary to demonstrate their academic achievements resulting from the learning process while in college (Oyoo et al., 2020). Around the world, medical education is an important aspect of a healthy society.

International class students come from several regions in Indonesia and some are foreign citizens. Moving to another country is more than studying for international students. Adapting to a new environment and culture is stressful, and can seriously affect a student's motivation to achieve (Karaman & Watson, 2017). This affects the way they learn, their habits, and their perceptions of the educational process, and will have an impact on their academic achievement. Factors that influence student academic achievement include student character, lifestyle, study habits, and socio-economic conditions (Catur et al., 2018). In addition, there are factors that affect learning outcomes, namely internal factors, in the form of physical and social aspects or emotional, intellectual, motivational and the ability to socialize with the environment. Meanwhile, external factors in the form of learning culture, place of study, variety and degree of difficulty of the material being studied.

A number of studies stated that medical students, stress was high enough (Bedewy & Gabriel, 2015). Stress is a natural feeling and an inevitable part of life (Izzati et al., 2020). It emerges from the combination of a triggering event with the lack of ability to cope with it (Oura et al., 2020). Sutjiato, et al, namely the impact of high stress events on medical students has detrimental consequences on academic achievement, competence, professionalism and health, and stress can also result in decreased achievement index scores. (Sutjiato & Tucunan, 2015). The positive effects of stress include increasing creativity and triggering self-development as long as it is within individual capabilities (Rahmawati et al., 2017) Besides, changes in lifestyle, academic achievement, busy lecture schedules, problems with friends, adjusting to being away from home for the first time and with a new environment can trigger stress in students. (Pathmanathan & KJ, 2013). As it is known, in carrying out the educational process, there is a feeling of worry about failure to undergo the education process, worry about getting low academic achievement (Putra & Ahmad, 2020). Though certain levels of stress push students towards optimum performance, when it is not managed efficiently due to inadequate resources to cope with the stress, it can have dismal consequences for the student as well as the institution (Reddy et al., 2018). In fact, according to Findyartin, academic supervisors as a support system can prevent stress in first-year students (Findyartini et al., 2020). However, the academic guidance carried out is still not optimal, some students only have the approval of the study plan filling in each semester. They rarely tell how the lecture process they have gone through for one semester, and what progress will be achieved in the next semester. Summons of students are also often made several times related to other academic and non-academic problems. From this problem, this research was conducted with the aim of knowing the contribution of achievement motivation and stress to the academic achievement of FK UI students.

2. METHODS

This research was conducted at the Faculty of Medicine, University of Indonesia, Depok and as the unit of analysis were students of the Faculty of Medicine, University of Indonesia. The research time started from proposal preparation until the research was carried out from January 2020 to April 2020. This study used a quantitative approach using survey methods and path analysis techniques. The survey method involves collecting data to test hypotheses or answer people's questions about a particular topic or problem. The variables in the path analysis consist of exogenous variables and endogenous variables. The research constellation used as in Figure 1.

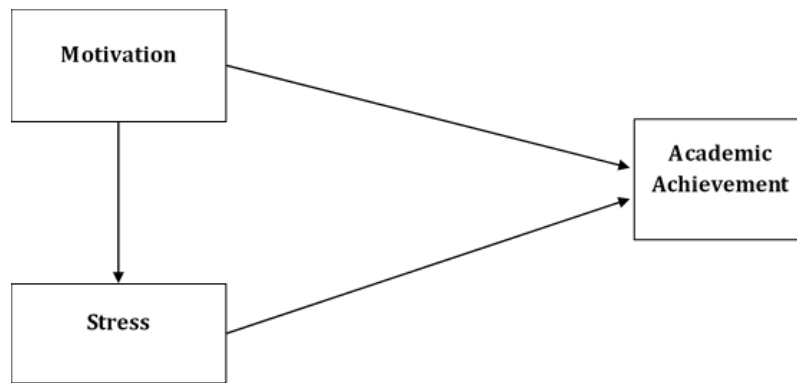


Figure 1. Hypothetical Model of Influence Among Variables

The population in this study were all active international class students 2017-2019 in the 2019/2020 academic year, totaling 176 students. Class 2017 numbering 58 people, batch 2018 numbering 59 people, batch 2019 numbering 59 people. The number of research samples was 64 international class students. Sampling in this study using the Proportionate Stratified Random Sampling technique, this is because the population is not homogeneous. Based on the opinion of Sugiyono Proportionate Stratified Random Sampling, when the population has members or elements that are not homogeneous and proportionally stratified." The strata referred to in this study are class 2017, class 2018, and class 2019. The concept that underlies the preparation of the instrument departs from the research variable indicators. Furthermore, the grid is translated into several statements. The instrument of achievement motivation variable consists of 40 statements accompanied by five alternative answers. The alternatives for each statement are as follows: (a) always; (b) often; (c) sometimes; (d) have; (e) never. Meanwhile, negative statements are given the opposite value, namely 1 (one) to 5 (five). The instrument table can be seen in Table 1.

Table 1. Research Instruments Indicators

Academic Achievement Indicators	Achievement Motivation Indicators	Stress Instrument Indicator
1. Trying to get high scores	1. Trying to get high scores	1. Inability to deal with problems
2. Trying to complete a difficult task	2. Trying to complete a difficult task	2. Desire is not in accordance with the expected conditions
3. Responsible for completing tasks	3. Responsible for completing tasks	3. Physical tension in the form of fatigue and pain
4. The desire to improve self quality	4. The desire to improve self quality	4. Psychological tension in the form of feelings of anxiety, worry and fear

3. RESULT AND DISCUSSION

Results

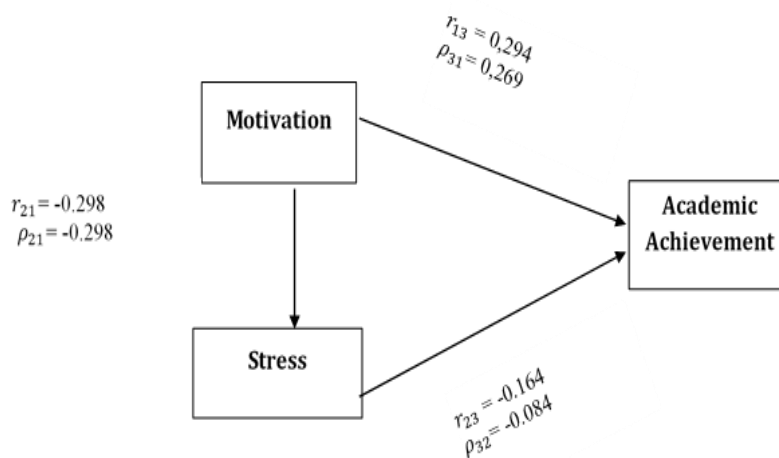
The data description in this section includes data on variable X3 (Academic Achievement) as the final endogenous variable, variable X1 (Achievement Motivation) as exogenous variable and variable X2 (Stress) as the intermediate endogenous variable. The descriptions of each variable are presented respectively starting from the variables X3, X1, and X2. The summary of research data is shown in the Table 2.

Table 2. Summary of Research Descriptive Statistics

Statistics	X ₁	X ₂	X ₃
Number Of Samples	64	64	64
Minimum Score	96	50	2,93
Maximum Score	147	130	3,93
Total Score	7882	4938	220,85
Average	123,16	77,16	3,45
Mode	128	77	3,47
Median	123	76,5	3,48
Standard Deviation	10,07	15,16	0,23
Variance	101,50	229,72	0,05

The correlation between Achievement Motivation (X₁) and Stress (X₂) is -0.298. The correlation between Work Motivation (X₁) and Academic Achievement (X₃) is 0.294. The correlation between stress (X₂) and Academic Achievement (X₃) is -0.164. Achievement motivation has a positive direct effect on academic achievement. H₀: $\beta \leq 0$ H₁: $\beta > 0$ H₀ is rejected, if $t_{count} > t_{table}$. From the calculation result of path analysis, the direct effect of Achievement Motivation on Academic Achievement, the path coefficient value is 0.294 and the tcount value is 2.422. The ttable value for $\alpha = 0.01$ is 2.65 and $\alpha = 0.05$ is 1.99. Therefore the value of t count is greater than the value of t table, thus H₀ is rejected and H₁ is accepted, namely that Achievement Motivation has a positive direct effect on Academic Achievement. The results of the analysis of the first hypothesis provide the findings that Achievement Motivation has a positive direct effect on Academic Achievement. Thus it can be concluded that Academic Achievement is directly influenced positively by Achievement Motivation.

Stress has a negative direct effect on Academic Achievement. H₀: $\beta \leq 0$ H₁: $\beta > 0$ H₀ is rejected, if $t_{count} > t_{table}$. From the results of the path analysis calculation, the direct effect of stress on academic achievement, the path coefficient value is -0.164 and the t-count value is -1.309. The t-table value for $\alpha = 0.01$ is 2.65 and $\alpha = 0.05$ is 1.99. Therefore, the value of t-count is smaller than the value of t-table, thus H₀ is accepted and H₁ is rejected, namely that stress has a negative direct effect on Academic Achievement. The results of the second hypothesis analysis resulted in the finding that stress has a negative direct effect on Academic Achievement. Based on these findings, it can be concluded that Academic Achievement is directly negatively affected by stress. Achievement motivation has a direct effect on stress H₀: $\beta \leq 0$ H₁: $\beta > 0$ H₀ is rejected, if $t_{count} > t_{table}$. From the calculation of path analysis, the direct effect of Achievement Motivation on Stress, the path coefficient value is -0.298. and the tcount value of -2,462. The t-table value for $\alpha = 0.01$ is 2.65 and $\alpha = 0.05$ is 1.99. Because the t-count value is smaller than the t-table value, thus H₀ is accepted and H₁ is rejected, namely that Achievement Motivation has a negative effect on stress. The results of the third hypothesis analysis result in the finding that achievement motivation is achievable negative influence on stress. Based on these findings, it can be concluded that stress is negatively affected by achievement motivation. Thus the summary of the research path analysis is presented in Figure 2.

**Figure 2.** Diagram of the Research Path Analysis

Discussion

Contribution of Achievement Motivation to Academic Achievement

From the results of the above research it can be explained that linear regression which has the formula $Y = \alpha + \beta$. Where the α value is a constant number of Unstandardized Coefficients which means that if there is Achievement Motivation (X_1), the consistent value of Academic Achievement (X_3) is 2,620. While β is the number of regression coefficient. This figure implies that every 1% addition of Achievement Motivation level (X_1), Academic Achievement (X_3) will increase by 0.007. The regression coefficient value is positive (+), so it can be said that Achievement Motivation (X_1) has a positive effect on Academic Achievement (X_3) with the regression equation $X_3 = 2,620 + 0.007 X_1$. In the regression significance test, the value of $F_{\text{count}} = 5.866 > F_{\text{table}} (0.05; 1; 62)$ means that there is a significant influence between achievement motivation (X_1) on Academic achievement (X_3). In the linearity test, it was found that the value of $F_{\text{count}} = 1.623 < F_{\text{table}} (0.05; 1; 62) = 3.15$, it can be concluded that there is a significant linear contribution between Achievement Motivation (X_1) on Academic Achievement (X_3).

In the correlation test obtained a correlation value of 0.294 for each variable Achievement Motivation (X_1) and Academic Achievement (X_3). Based on the Pearson correlation table, it is found that Achievement Motivation (X_1) on Academic Achievement (X_3) has a low level of contribution. According to Narwoto's research, the higher the achievement motivation, the higher the academic achievement (Narwoto & Soeharto, 2013). From the results of testing the first hypothesis it can be concluded that there is a positive direct effect of Achievement Motivation on Academic Achievement with a correlation coefficient value of 0.294 and a path coefficient value of 0.269. This gives the meaning of Achievement Motivation to contribute through a positive and significant direct influence on Academic Achievement. Motivation is directly related to the development of students' attitudes and persistent efforts toward achieving a goal (P.-Y. Lin et al., 2021). Achievement motivation is an important factor in improving student academic achievement. Motivation encourages someone to be successful. Of course for students, achievement motivation is very important because with achievement motivation, each student will be encouraged to have superior achievements in taking their education.

Achievement motivation will be a force that can be a driving force for students to utilize the potential that exists within and outside themselves to achieve high academic achievement. (Gbolli & Keamu, 2017). Likewise, if the motivation for achievement is low, it can cause students to feel lazy to study and have an impact on academic achievement (Sugiyanto, 2009). In the theory, achievement motivation is a learned need in which people want to (1) accomplish reasonably challenging goals, and desire (2) unambiguous feedback and recognition for their success (McShane & Von Glinow, 2010). In addition, Colquitt, Wesson, and LePine suggest that motivation can be seen from (1) how hard employee work, (2) the intensity of effort, (3) for how long the persistence of effort (Colquitt et al., 2012).

Contribution of Stress to Academic Achievement

From the results of the above research it can be explained that linear regression which has the formula $Y = \alpha + \beta$. Where the α value is a constant number of Unstandardized Coefficients which means that if there is no stress (X_2), the consistent value of Academic Achievement (X_3) is 3.644. While β is the number of regression coefficient. This figure means that every 1% addition of the Stress level (X_2), Academic Achievement (X_3) will increase by -0.003. The regression coefficient value is negative (-), so it can be said that stress (X_2) has a negative effect on Academic Achievement (X_3) with the regression equation being $X_3 = 3.644 + (-0.003) X_2$. In the regression significance test, the value of $F_{\text{count}} = 1.715 < F_{\text{table}} (0.05; 1; 62) = 3.15$ means that there is no significant effect between stress (X_2) on academic achievement (X_3). In the linearity test, it was found that the value of $F_{\text{count}} = 1.081 < F_{\text{table}} (0.05; 1; 62) = 3.15$, it can be concluded that there is a significant linear contribution between Stress (X_2) on Academic Achievement (X_3). In the correlation test obtained a correlation value of -0.164 for each variable Stress (X_2) and Academic Achievement (X_3). Based on the Pearson correlation table, it is found that Stress (X_2) on Academic Achievement (X_3) has a very low level of contribution. From the results of testing the second hypothesis it can be concluded that there is a negative effect of stress on academic achievement with a correlation coefficient value of -0.164 and a path coefficient value of -0.084. This means that stress has a negative effect on academic achievement. This means that every time there is an increase in stress, there will be a decrease in academic achievement.

Vice versa, every time there is a decrease in eating stress, there will be an increase in Academic Achievement. Students in stressful conditions will usually find it difficult to concentrate and focus their energies and thoughts on learning. Psychologically, it will have a bad influence on learning concentration which makes academic achievement decrease. According to Greenberg in Mulya and Indrawati, one of the sources of stress experienced by students is the desire to achieve achievement and completion of several academic assignments. (Mulya & Indrawati, 2016). Previous research by Rahmayani R suggested that

there was a significant contribution to the level of stress based on stress in first-year medical students of the Professional Doctor Study Program, Faculty of Medicine, Andalas University (Rahmayani et al., 2019). According to research by Tamara and Chris, there is a significant contribution between stressful conditions and academic achievement (Tamara & Chris, 2018).

Contribution of Achievement Motivation to Stress

From the results of the above research it can be explained that linear regression which has the formula $Y = \alpha + \beta X$. Where the α value is a constant number of Unstandardized Coefficients which means that if there is no Achievement Motivation (X1), the consistent value of stress (X2) is 132.443. While β is the number of regression coefficient. This figure implies that every 1% addition of Achievement Motivation level (X1), then Stress (X2) will increase by -0.449. The regression coefficient value is negative (-), so it can be said that Achievement Motivation (X1) has a negative effect on stress (X2) with the regression equation being $X2 = 132.443 + (-0.449) X1$. In the regression significance test, the value of $F_{count} = 6.060 > F_{table} (0.05; 1; 62) 3.15$ means that there is a significant influence between Achievement Motivation (X1) on Stress (X2). In the linearity test, it was found that the value of $F_{count} = 1.258 < F_{table} (0.05; 1; 62) = 3.15$, it can be concluded that there is a significant linear contribution between Achievement Motivation (X1) and Stress (X2). In the correlation test obtained a correlation value of -0.298 for each Achievement Motivation (X1) and Stress (X2). Based on the Pearson correlation table, it is found that Achievement Motivation (X1) to Stress (X2) has a very low level of contribution. From the results of testing the third hypothesis, it can be concluded that Achievement Motivation has a negative effect on stress with the correlation coefficient and path of -0.298. Achievement motivation is one of the factors that also affects academic stress. This is in accordance with the results of research which shows that the higher the achievement motivation, the lower the academic stress (Mulya & Indrawati, 2016). Conversely, if the achievement motivation is low, the stress will be higher. The results of the above research show that achievement motivation has an important contribution to encourage individuals to overcome challenges or obstacles to achieve achievement in learning (Yusuf & Yusuf, 2020).

Achievement motivation can encourage international class students of FK UI to overcome challenges and obstacles in the educational process being carried out. If the motivation is strong enough, he will decide to do learning activities (Pahrudin et al., 2020). Every process that is passed in education does not always run smoothly, there will always be obstacles and challenges that must be faced. If there is no achievement motivation, the challenges and obstacles can cause stress in students. In addition, learning motivation is also one of the factors that affect student learning outcomes (Meiliati et al., 2018). Achievement motivation is useful for reducing student academic stress (Mulya & Indrawati, 2016). As stated Armstrong a motive is a reason for doing something. Motivation is concerned with the strength and direction of behavior and the factors that influence people to behave in certain ways (Osabiya, 2015). Motivation focuses on the strengths, direction of behavior and the factors that influence people to behave in certain ways. Motives actually arise out of necessity. Because of this need, it generates inner strength that encourages and directs individual behavior to meet these needs. The results of the above research are in accordance with Mulya and Indrawati's research which shows that there is a significant negative contribution between achievement motivation and stress (Mulya & Indrawati, 2016). This negative contribution indicates that the higher the achievement motivation, the lower the stress (Indriyani & Handayani, 2018). Likewise, on the other hand, the lower the achievement motivation, the higher the stress.

4. CONCLUSION

Achievement motivation has a positive influence on academic achievement. If the high achievement motivation will result in an increase in the academic achievement of international class students of the Education study program and the medical profession. Stress has a negative effect on academic achievement. If stress increases, it will result in decreased academic achievement. Achievement motivation has a negative effect on stress. This means that increased achievement motivation will reduce stress. With high achievement motivation, students will complete their assignments as well as possible. There is no delay and neglect in completing assignments that can result in pressure so that it can be stressful for some students. Therefore, generating achievement motivation is not only the responsibility of one party, but international class managers have the responsibility to improve and maintain it. If stress is managed properly, it can increase academic achievement. Managing stress well is one of the most important aspects, because this is what must be done through the right communication approach

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