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THE EFFECT OF STRESS ON ACADEMIC ACHIEVEMENT

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Abstract

Stress is a common problem for college students that may affect their academic lives. Stress can be defined as an individual's feeling of instability or unrest while facing difficulties or inability to complete tasks. This literature review synthesizes the findings of 20 recent, peer-reviewed empirical studies investigating the relationship between stress and academic achievement, sources of stress among students, and the differences in stress levels based on gender, major, and academic level.

The number of participants varied across the studies from 60 to 775. Participants' age ranged from 12 to 33; male and female participants provided data for analyses. Data on stress levels were collected via surveys; GPA was typically used to measure academic achievement. While most studies' results suggest that stress negatively correlates with academic achievement, some studies indicated stress may positively correlate with GPA. This, some students reported, is because academic stress increased their motivation to succeed. Also, differences were noted between students based on gender (females report higher stress levels than males), year of study (freshmen report higher levels than upperclassmen), major, and a point of the semester (student stress goes up at midterms, then declines at the end of the semester).

Additionally, other factors cause academic stress among students, some of which relate to the students themselves, while others relate to the instructors and the students' families. For example, "good" students reported moderate to high-stress levels, while weaker students reported low to moderate stress levels. Both strong family ties and instructor encouragement may mitigate student stress; however, unclear instructor expectations or low grades with no justification correlate with higher stress levels in students, as do an unstable family structure or lack of parental support.

The findings of this research are vitally important for teachers and parents to help students reduce their high-stress levels. Further research should focus on the effectiveness of university-based interventions in reducing stress and their correlation with student achievement. Additionally, longitudinal studies tracking both student stress and achievement over the students' tenure at an institution would help illuminate this issue more nuancedly. Lastly, student populations typically comprise individuals from many backgrounds and cultures. Low SES or minority status (among others) may compound the effects of stress for certain groups of students. It would be interesting to know what factors outside of majors, gender, and academic levels contribute to stress in the student population.

Keywords: pressure, stress, academic achievement, academic performance

Stress and Academic Achievement

The interest in studying psychological stress has increased because of its impact on the health of the individual and many people. People suffer from crises and pressures due to the requirements of life and changes in society. People's lifestyles have changed due to the evolution of life at the present time, where social relations have expanded, the level of individual ambition has increased, and competition between people has increased. Consequently, many problems have arisen, which have caused pressures of all kinds, such as social, economic, professional, and academic. Stress can be defined as the individual's response to changes and external threats resulting in symptoms such as anxiety, tension, and the inability to focus. Psychological stress occurs when people feel that the requirements of the situation that they are facing exceed their capabilities, which hinders their ability to deal with them. Consequently, they realize that they are unable to balance the requirements of the situation and their ability to respond to it, which leads to a feeling of dominance of stress on them.

Among the most prominent groups that feel stress are students, which may be due to exams or tasks. The psychological pressures of students in the school field are considered one of the most critical problems and challenges they face and have adverse effects if they exceed the level of their ability to endure, which leads to influencing their achievements and successes. Further, it can affect the students' lives psychologically and physically, as they may have problems sleeping, lack concentration, and lack appetite. Accordingly, study burdens can be one of the sources of stress that leads to failure to complete tasks or hate studies. Therefore, the purpose of this paper is to know the effect of stress on academic achievement, the differences in the stress level based on several variables, and the sources of stress.

Review of the Literature

The Effect of Stress on Academic Achievement

Stress may affect student achievement either negatively or positively. First, if the students cannot cope with these stresses and overcome them, they may negatively affect their academic performance, leading to a failure to complete tasks and achieve high grades. High pressure can lead to a decrease in academic performance and then a decline in degrees. A study of 319 students at the University of Nairobi showed that the number of students with a high-stress level is 81, and they have C grades, while only 30 students received A grades. Therefore, there is a significant relationship with academic performance, which means the greater the stress, the less the academic achievement, so the academic performance for students with low stress is better than those with high stress, and this can happen because stress for a long time may weaken the student's ability to perform well. However, the findings indicate that age significantly affects the relationship between stress and academic performance. Through the results, older students are better at facing and dealing with their problems; thus, the negative impact of stress on their academic achievement will decrease. (Oketch-Oboth & Okunya, 2018). Also, in a study of 60 students, in which a stress scale was applied to measure physical, emotional, and mental stress. The results showed that mental stress, such as forgetfulness, poor concentration, and lack of decision-making, and emotional stress, such as mood change, depression, frustration, and anger, are negatively related to a student's academic achievement, so the more these stress factors increase, the lower the performance and academic achievement. Regarding the symptom of stress, students may have several mental symptoms of stress due to the constant pressure to achieve high scores, such as the inability to focus well, forgetfulness, worry, and overthinking about the grades before the test (Gautam et al., 2017). The stress may adversely affect the

academic accomplishments of students through frequent absenteeism. In a study to examine the effect of stress on missed class and work in a sample of college students by Thomas and Borrayo (2016), students who missed class and work had higher stress. Based on this study, university students indicated that their academic performance and their attendance at work are negatively affected by stress. Also, the most important thing is that stress has negative effects, not only on the academic side but also on the emotional and physical side. According to Aafreen et al. (2018), excessive stress among students can reduce the effectiveness of their studies and contribute to long-term negative results, including absenteeism and poor academic performance. The negative effects of stress are not only limited to university students but also may affect high school students. In a study of 273 high school students in Stockholm, the results showed that students who suffered from chronic stress had significantly worse scores than students who did not feel any stress or temporary stress; they had the lowest levels of self-esteem, such as they think they have no value resulting in a lack of pride, and had the most sleeping difficulties (Schraml et al., 2012).

Second, on the other hand, when students try to deal with stress and make it the motivation to achieve their goals, stress can lead to positive outcomes in academic performance. In a cross-sectional study conducted on medical students in the final year, a stress scale was used to measure domains of stress, whether academic, educational, or social stressors, in addition to measuring stress levels. The result showed that there was a moderate to high level of stress among successful students. Also, stress positively impacts students' academic performance, so most students who performed well on the medium to high exam indicated that stress was a positive factor in increasing student achievement in the exam (Kausar et al., 2018). Zhu et al. (2017) carried out a study that focused on two types of stress: challenges and hindrances that

affected the academic achievement of college students. Challenge stress is related to work stress that leads to career development and requires lots of work, time, tasks, and responsibilities. In contrast, hindrance stress is related to work stress that prevents career development, including unclear roles and lack of job security. The participants are undergraduate students from four universities in Canton in southern China. To measure hindrance–challenge stress, the authors used the 10-item, 5-point Likert rating stressor scale. Sample items are “The difficulty of the work required in your classes” (challenge stress) and “The degree to which your learning progression seems stalled” (hindrance stress). The results showed that academic achievement increased when challenge stress was high, yet it decreased when hindrance stress was high. According to a study conducted on 179 students from medical studies in the 4th year. The authors used the medical students’ stress questionnaire (MSSQ), a validated instrument used to identify sources of stress. The academic performance of the medical students was measured by using the grades of all subjects in the first-semester examination of 4th year. The results showed that most of the respondents 84% were under severe stress, and 76% of respondents considered stress positive and agreed that stress motivated them for better academic performance (Siraj et al., 2014).

Despite these different results, some studies indicate no significant effect. In two other studies that were carried out to know the relationship between academic achievement and stress in medical students in Saudi Arabia, the result showed that the association between the academic grades of the students and the rate of stress was not significant (Abdulghani et al., 2011; Alsalhi et al., 2018).

In sum, although stress is a common symptom for students and negatively affects their motivation and academic achievements, it may be a positive motivation for students to achieve

the highest score. This means that stress does not always have adverse effects on academic achievements.

Sources of Stress

Students face many situations and difficult problems that cause them different pressures, so the pressure sources differ from one student to another. There are many sources of stress, including First, Internal sources, which are from the student himself, such as aspirations and goals. Second, external sources come from the external environment surrounding the student, such as family, peers, and community.

Primarily, academic stressors are external resources, including the requirements of education, decisions related to study, future work, time management, and a teacher. According to Azila-Gbettor et al. (2015), studying for tests, grades, and the amount of information students had to learn was among the most stressful. Also, fear of failure is an internal source and one of the most critical factors that increase student stress, and this may be because success is the primary goal of each student; therefore, some students may feel that they need more skills to study and reach their achievement. In addition, the teacher has a significant role in the occurrence of stress for students. Saqib and Rehman (2018) conducted a study on 360 students in 12 secondary schools and used a survey method for collecting data through questionnaires to determine the stress factors. The results indicate that the teacher has a significant role in stress for students by punishing weak students and failing to explain the lesson's purpose during school education. Additionally, many teachers need to understand the teaching materials correctly during their lectures and give many exercises and tests for students. Also, exams are essential to the educational process and cause stress for many students. Based on research conducted by Haider et al. (2017) to know the sources of stress among medical students at university, the tests

were a primary reason for many students due to their weak scores and a large amount of information to study for the exam. In another study on nursing students in Taiwan, the results showed that the number of study materials that must be learned, exams, and grades are the highest sources of stress; therefore, many students are trying to reduce this stress by sleeping or listening to music (Perng et al., 2020). Finances are additional stressors. The inability to pay school fees and unemployment after school can affect academic performance (Oduwaiye et al., 2017).

In addition to academic stressors, the family could be a source of stress. Students face a set of family problems that affect their academic achievements, such as the divorce of their parents, the death of a family member, and a lack of trust and respect. According to a study that questioned 656 students from pure and applied sciences, the Applied Stressful Life Events Inventory was used, which is open questions related to stress areas. The result indicated that "family member leaving the house" and "mother started working" were higher sources of stress related to the family factor (Nagaraj & Shastri, 2016). When a member of the student's family leaves home, it may have a negative impact on the student and be a source of stress as this person may be a supportive and important person for the student. Also, the mother's work may affect the children's academic achievement due to some mothers' inability to balance work and home or spend enough time with the children and monitor their academic progress.

Furthermore, friends and society are considered a source of stress. According to Azila-Gbettor et al. (2015), competition with other students, and the lack of adequate support from others, are likely substantial causes for students in terms of social stress. Several studies noted that social support, whether from colleagues or teachers, is crucial to reducing stress among students and helping them solve their problems because the lack of adequate support causes

stress among students. One of the most basic forms of support is teachers' feedback, which helps students learn about their strengths and weaknesses and improve their academic level. Moreover, social relationships and social media contribute significantly to stress as students spend much time on these applications instead of studying. Also, dissatisfaction with social support may be causing stress. According to Thomas and Borrayo (2016), students with less satisfaction with social support experience high pressure and missed class. There is a relationship between perceived stress and class absenteeism because of social support dissatisfaction. Social support from friends and family is an effective way to adjust to university life and is a protective factor against high stress. Dissatisfaction with social support also increases the negative impact of stress and affects attendance in class due to absences.

Briefly, many sources cause stress among students, some of which relate to the students themselves, such as their aspirations and fears towards reaching their achievements. In contrast, others come from the students' external environment, such as the teacher, family, and friends. Although these are sources of pressure and may cause negative results, they may be a way to treat stress if done correctly, such as with the support of the teacher or the family.

Differences in Stress Level

Stress levels and intensity may vary depending on several variables, such as gender, academic classification, and study major. First, there is a difference between males and females in stress levels. Gautam et al. (2017) investigate if there are gender differences in stress among adolescent students. This study was conducted on 60 students (30 males and 30 females) who were given a Stress scale to measure their stress levels. This scale consists of 27 items for physical, 14 for emotional, and 12 for mental stress. The results show that the stress level is higher in males, and they have more emotional stress than females. The possible cause of high

pressure, specifically emotional stress among male teenagers, can be explained by parents' expectations for their male children being higher than their expectations toward their daughters, which means that male sons feel more stress from their parents than females. In another study by Azila-Gbettor et al. (2015), the result is like the previous study, which indicates that male students rated their stress levels higher than females. Otherwise, many studies have shown that females have more stress than males, and this is a common finding among studies. Results of a survey of 200 undergraduate medical students, among them 90 (45%) male and 110 (55%) female, showed that female students have higher anxiety and establish a greater emotional reaction to stress than male students. Changes in a female's social life may have a more significant role in their feeling more stress than males. Al-Sowygh et al. (2013) stated in their study on 425 dentistry students that females have more pressure than males, which means that the stresses of females result from changing social life, such as marriage and childbearing, which causes more responsibility and stress. Even though many studies have shown a difference between males and females, some studies indicate no difference in the stress level. Reddy et al. (2018) found that there is no significant difference in the sum of academic stress experienced by males and females. However, the result showed that sources of academic stress differed between males and females (eg, 'fear of failure' differed significantly with females reported having higher grades than males). This could be explained by the fact that female students feel more humiliated and uncomfortable when others witness their failures. According to Saqib and Rehman (2018), there is a noticeable effect among male and female students of stress. When comparing male and female stresses, it was found that there is no difference between them and that the same factors affect the student's academic performance. Overall, many studies indicate that students

experience intense stress before exams, and female students experience more than their male peers.

Second, the level of stress may vary between successful and unsuccessful students. Kausar et al. (2018) conducted a sectional study on medical students in the final year to determine stress levels among medical students in the last year and their impact on their academic performance. Academic performance was identified using the percentage of scores obtained on the exam. Then, the students were divided into two groups, one for success and one for failure, and the stress scale was used; it shows four levels of stress: mild, moderate, high, and severe. The result showed a moderate to high-stress level among the successful students, while the failed students showed a mild to moderate stress level.

Furthermore, different years of study at the university have a major effect on stress levels. According to Abdulghani et al. (2011), the prevalence of stress was the highest among first-year students. In this study, all medical students in the five years of medical school, male or female, and from different student classifications, were invited to answer the K10 questionnaire (the total was 775 students). The researchers use the Kessler 10 Psychological Distress instrument (K10): This instrument has been used to measure the level and severity of stress and its relationship with psychological symptoms. It has 10 questions related to "how often you have felt in the past month" and presents specific symptoms, such as "tired without good reason", "nervous", and "sad or depressed". Each question is answered through five choices from (none of the time) to (all the time). This can be explained by the fact that students in the first year of the university have moved to a completely different society from their studies in high school, so they feel responsible for themselves, have a great deal of freedom, and, that in their first year of school, they meet new students and make friends with them as well as focusing on their goal, which is

achieving academic excellence. Although most studies' results show that first-year students have more stress than other students, some studies showed the opposite. One of these studies was conducted on first to third-year students of Accountancy, Finance, Purchasing and Supply, and Management Studies. The result showed a difference in the stress intensity based on the year of study, and students in the 3rd year have more stress than any other students in different years. This may be due to their attempt to improve their academic performance and thus increase their GPA (Azila-Gbettor et al., 2015). However, final-year students may have a higher level of stress. Elias et al. (2011) carried out a study on 376 students from different colleges and majors from about 18,000 university students at Putra University Malaysia (UPM). The findings indicate that final-year students are more stressed than undergraduate students compared to the average degree of stress. Hence, the school year significantly impacts undergraduate students' stress levels. This may be due to the high level of education that causes more academic stress or their thinking about career opportunities upon graduation.

Besides the academic years, the majors play a prominent role in the different levels of stress among students. Compared to the stress level of undergraduates according to degree programs, many studies show that students studying medicine and health sciences have a high-stress level. According to Elias et al. (2011), the authors note that medical students are more prone to stress, which means the risk of depression and anxiety compared to other students, while forestry students have a low degree of stress. One of the possible reasons that could explain the low-stress level among forestry students is a learning environment that is close to nature and less stressful for them. Similarly, Haider and Mahfuzel (2017) indicate that medical education is stressful, which means that a high level of stress can have a negative impact on the learning and cognitive processes of medical students. In fact, the psychological pressure of

medical students can be caused by the difficulty in the curriculum, which requires a high level of understanding. Some courses require high concentration and good memorization of medical terminology, such as Pharmacology. In addition to medical students, business students may experience more stress than other students in other majors. According to a study conducted on undergraduate students in the final year, 336 students were selected by a random sampling technique. The Data was collected from four academic majors: Science, Business, Management, and Humanities. The authors used the Academic Stress Scale developed by Rajendran and Kaliappan (1991) to know the sources of stress. It measures the sources of stress on five factors: "personal inadequacy, fear of failure, teacher-pupil relationship, interpersonal difficulties, and inadequate study facilities." The result showed a significant difference in academic stress across the four academic majors; Commerce students have the highest stress, followed by Management and then Science. There was a significant difference in academic stress across the four-academic majors; commerce students have the highest level of stress, and this may be due to teacher-related stress sources, such as lack of clarity of lesson objectives, the difficulty of tests, and teacher inefficiency (Reddy et al., 2018). Business students have more stress, and applied science and engineering students may experience more stress than their counterparts. In a study conducted on 656 students from pure science and applied sciences to know the sources of stress among students who study those two different majors, the form "stressful life events inventory" was used, which is open questions related to stress areas "educational, heterosexual, family, financial, health, bereavement, and miscellaneous stress." It was found that there is a difference in the stress level between students of pure sciences and students of applied sciences, as the latter has higher stress. This is due to health factors such as nutrition and sleep (Nagaraj & Shastri, 2016). Finally, the stress level can differ during the semester, which means at the beginning,

middle, and end of the semester. Kamarudin et al. (2009) investigate whether students' stress levels differ based on the semester period (at the beginning, middle, and end). The authors used the Perceived Stress Scale (PSS) to measure an individual's perception of stress, using a five-point Likert-type scale ranging from 1 (Never) to 5 (Very Often). The questionnaire was answered at different times in the semester (beginning - middle - end). The study's primary results were that the students have average stress levels throughout the semester, and it seems that the stress level increases when the students move from the beginning to the middle of the semester but drops slightly toward the end. The authors say the results indicated that the pressure rises among students in the middle of the semester, and this may be because of the tests and then decreases at the end of it despite the presence of the tests. Still, perhaps the student has become accustomed to the tests and the type of questions presented.

In short, a group of factors plays a prominent role in students' stress levels. The first of these is gender, where studies have shown that the stress level in males differs from that in females. Also, studies have confirmed that successful students' stress level is different from unsuccessful students. Moreover, different years of study are considered factors affecting the stress level, as first-year students differ from third-year students in their stress level. Likewise, majors at the university are major factors affecting stress levels, such as medical, science, and business students who differ among themselves in stress levels. Finally, a study demonstrated that the stress level varies during the semester, whether in its beginning, middle, or end.

Discussion

Many studies indicate that stress is considerably related to academic achievement, and the relationship between stress and academic achievement is negative (Elias et al., 2011; Haider et al., 2017; Nagaraj & Shastri, 2016; Oduwaiye et al., 2017; Oketch-Oboto & Okunya, 2018;

Saqib & Rehman, 2018; Thomas & Borrayo, 2016). Moreover, high school students who had chronic stress had lower scores at the end of the semester than students who did not feel stress or temporary stress (Schraml et al., 2012). In contrast, other findings have shown a positive relationship between stress levels and academic achievement (Kausar et al., 2018; Siraj et al., 2014). That means that stress is sometimes good and has positive effects.

There is a difference between males and females in stress levels. The result showed that females have more stress than males due to social stressors and life changes such as marriage (Abdulghani et al., 2011; Alsalhi et al., 2018; Al-Sowygh et al., 2013; Haider et al., 2017; Thomas & Borrayo, 2016). However, the stress level can sometimes be higher in males (Azila-Gbettor et al., 2015; Gautam et al., 2017). The question is, "do females always have more stress than males?" Men do not talk much about their anxiety, which means they may experience more stress than females.

In addition, the stress levels differ based on the studying levels or the students' classification (freshman, sophomore, junior and senior). One of the interesting findings is that the stress level decreased when the students progressed academically and moved to a new level or classification (Abdulghani et al., 2011). This contrasts with another study's results that indicate that the stress level gradually increased until the last year of the study. This study's result showed that first-year students have a low degree of stress, while final-year students experience more stress than others (Elias et al., 2011). However, what about the high-stress level most first-year students experience due to transitioning to a new educational environment completely different from school? This may cause frustration, fear, and anxiety in terms of raising the GPA. There is another finding, on the other hand, which indicates that students in the 3rd year have more stress

than any other students in different years (Azila-Gbettor et al., 2015). Also, undergraduate medical students face great pressure in their third year (Haider et al., 2017).

Students in different majors have different stress levels. Through the results, students studying medicine and health sciences have a high level of stress degree which means that medical education is stressful. (Elias et al., 2011; Haider et al., 2017). Based on these studies, do dental students have more stress than other students in different majors? If so, this could be because of the dental student's tendency toward perfectionism in academic achievement, or the academic requirements in medical majors and clinical levels are very difficult, which causes stress among students. In contrast, another study points out that commerce students have the highest stress level, which may be due to teacher-related stress sources, such as lack of clarity of lesson objectives, the difficulty of tests, and teacher inefficiency (Reddy et al., 2018). The questions are, can this result be generalized? Do students of commerce always have high-stress levels? Or can these results not be generalized because of the difference in schools, regions, teaching methods, and stress sources?

In conclusion, it is evident from the review of research that stress negatively affects students' academic achievements. However, some studies have proven that stress may produce positive results, including higher academic performance. In general, all research has emphasized that it is essential for students to focus on ways to deal with stress and learn strategies to cope with it. Moreover, educators are highly recommended to use counseling programs to help students overcome stress. Future research will allow educators to identify and know the sources of stress that negatively affect academic achievement and how to deal with it effectively.

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