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Relationship between Stress and Academic Performance among Students in Muthithi Secondary School, Murang'a County, Kenya

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ABSTRACT

The experience of stress among students in secondary school environments may increase the risk of students developing health and wellbeing issues which could end up negatively affecting their general academic performance. This study examined the relationship between stress and academic performance among students in Muthithi Secondary School in Muranga County, Kenya. The aim of the study was to examine the relationship between stress and academic performance of students in Muthithi Secondary School, Muranga County, Kenya. The study employed correlational research design. The target population was 500 secondary school students. The study used simple random sampling technique. The sample size of the study was 217 participants. The data was collected using structured questionnaires which were the Perceived Stress Scale and the Academic Performance Scale. Descriptive and inferential statistical analysis was employed such as frequency, percentage, and Pearson correlation analysis respectively. The study established that there was a negative but significant relationship ($r = -0.92$, $P = .003 \leq 0.05$) between stress and academic performance among the participants. The study recommends that the school administration should develop a healthy coping strategy in fostering resilience, and ensure access to support systems for all students in Muthithi Secondary School, Muranga County, Kenya.

Key Words: Stress, Academic performance, Secondary students, Murang'a County, Kenya

INTRODUCTION

Stress among students across many countries at different levels of learning is considered a common phenomenon, where their academic performance is often affected. Iqbal et al. (2021) in their research among students from Pakistan, the authors established that although stress is inevitable among learners, the level of stress varied from individual student to the other depending on the stressing factors. Findings indicated that academic workload, separation from school were all positively correlated with stress ($r = .152$, $p < .01$; $r = .207$, $p < .01$; $r = .133$, $p < 0.01$, respectively). Similarly, Chang et al. (2021) in China revealed that there was a relationship between anxiety and depressive symptoms among secondary school students. Studies have further indicated that stress affected students in different ways, which include physical, psychological, and in their behavior as they socialize with others. It was also noted that irrespective of the manner in which the stress and anxiety impacted individual students, this challenge interfered with their learning.

In another research by Gallardo et al. (2020) on time management and stress among students in Peru, showed that in the recent past there was increase in levels of stress among students has caused serious concerns among all key stakeholders in the education sector. This situation has partly been associated with poor time management by the students, which at worse led to poor academic performance of the students. The cross-sectional research noted inverse relationship between time management and stress among students (Spearman's Rho = $-.413$). The research concluded that effective stress mitigating measures were imperative for allowing the students to study in a favorable environment in order to perform well in their academic work.

Research by Karki et al. (2022) which looked at effect of depression, anxiety and stress on educational performance of high school students in Nepal noted that a number of students experiencing anxiety and stress in school failed to attend classes regularly, with most of those affected unable to post good results in their final term exams. Depression and anxiety were also noted as the most common mental health issues affecting high school students, where the risks got even higher whenever students were faced with unexpected unpleasant events. In this cross-sectional study involving schools in an urban municipality where 453 students from 5 randomly selected schools were interviewed, multivariate logistic regression showed that there was statistically significant correlation ($p = 0.03$) between stress and performance of students in their academic work. Inasmuch as the study by Gallardo et al. (2020) and Karki et al. (2022) presented interesting results, they may not necessarily present similar dynamics as the intended research population for the current studies in Kenya, hence the justification for the study.

In Nigeria, a research was conducted by Saqib and Rehman (2018), which was impact of stress on students' academic performance at secondary school level at Vehari Nigeria. The authors argue that stress has been discovered to be one of the sources of problem being faced by many students during their academic engagements. The impression of danger triggers an innate reaction system known as the fight or flight response, which causes stress, a response of the mind and body through hormone signaling. In most cases, the term "stress" refers to both the psychological experience of pressure and

the body's physiological response to that strain, which affects a number of body systems. The study by Saqib and Rehman (2018) found that stress had significant impact on student's academic performance ($F=773.75$, $p=.000$). Further findings showed that among students, academic result t-value was 0.928 and p-value was 0.353. The home strictness t-value was -0.116 and p-value was 0.907. The family pressure t-value was 0.502 and p-value was 0.615. The teachers were also interviewed and it was found that teacher stress t-value was -0.267 and p-value was 0.789, indicating no relationship. This study did not only focus on the students, but also the teachers. Whereas, this present study focused primarily on the students.

In Kenya, Muema et al. (2020) carried out research on the influence of academic self-efficacy on academic performance among students in central Kenya. It was found that there was a correlation ($p = .004$) between content understanding and academic performance. Proper grasp of what was being taught in class reduced levels of stress among the secondary school students while giving them the chance to put in their learning more positive energy for better outputs. Involving second year students in public teacher training colleges who were identified through purposive sampling technique, the study further revealed that academic efficacy significantly influenced academic performance since the students tended to be more self-driven as opposed to being pushed by the teachers to be more focused on their work. Muema et al. (2020) further noted that high level of self-drive in students was directly related ($p = .002$) to less stress levels among them. However, the research did not explicitly address relationship between stress and academic performance among students, which the current research aims to tackle.

The experience of high stress among students in public secondary school environments increases the risk of students developing health and wellbeing issues which could end up negatively affecting their academic performance in school. Betonio (2015) in Philippine observed that students who were stressed, like at home and during times of exams, were more likely to be inactive or disinterested in their school work; as evidenced by the overall rating mean of 1.79. The end result was underperformance in their exams and other academic related activities. Stress has also been associated with non-communicable health conditions, such as obesity, increased appetite, metabolic syndrome, and disturbed sleep among others. Anbu (2015) in India noted that stress caused chronic health issues that had effect ($p \leq 0.00$) on the overall learning outcomes. Yet, the varying levels of stress among students in different schools may not affect students' academic performance in a similar way across all school environments. Although Mirghni and Elnour (2017) in Sudan indicated that 88% of students had stress, which interfered with their academic performance.

Owing to limited study focusing on students in Muthithi, Murang'a County, this study sought to fill this gap, hence this study investigated whether students in Muthithi Secondary School, Murang'a County, may be experiencing stress and how this is related to their academic performance. Despite the need to create a stress-free environment among public secondary schools in Murang'a County for enhanced students' academic performance, like many other different schools in the County, Muthithi may be encountering unique stressors and barriers to effective stress management. According to the principal of Muthithi secondary School (2023), academic performance in Muthithi Secondary School has not been good because students have not been performing well. Reports showed that there has been growing number of concerns of cases of poor academic performance. Some students were observed to be struggling with loss of loved ones who used to be the backbone of the family, late arrival of students in school, late submission of assignments and reports of pressure from parents and sponsors on students to perform excellently in their academic.

With the various issues observed in the school, this further raises critical concern as whether students could be experiencing stress and poor academic performance. There are limited studies that directly pinpoint the exact factors contributing to academic underperformance among students in Muthithi secondary schools. Therefore, the researcher intends to carry out an investigation on the relationship between stress and academic performance among high school students in Muthithi Secondary School, Muranga County, Kenya.

METHODOLOGY

This study applied correlational research design where quantitative data was measured, then used to address the research problem and following thorough study, statistical conclusions about the population would be drawn from the data acquired. This technique enabled data collection, processing, presentation, and interpretation while providing some insight into the overall issue (Rose & Shevlin, 2016). The design was utilized to better facilitate the realization of the research objective. A correlational research shows the degree of the association between the research variables rather than a causative connection (Mugenda & Mugenda, 2013).

This study was conducted at Muthithi Secondary School, located in Kigumo Constituency within Murang'a County, which is a mixed day secondary school. Muthithi is in one of the eight sub counties in the County. Muranga County is one of the 47 counties in Kenya. The researcher chose this location due to recent happenings in the schools that have stressed students, that is, death of students, increase rate of divorce within the families and reduction of number of students that used to join university annually from Muthithi secondary school. This study had a target population of 500 students of Muthithi Secondary School in Muranga County, Kenya, having the sample size of 217. The participants of this study were drawn from four classes; Form 1, Form 2, Form 3, and Form 4 respectively. The participants of this study were specifically male and female students between the ages of 13-18 years.

The research used simple random sampling method. Aggarwal and Ranganathan (2019) posit that simple random sampling allows the researcher to randomly select a subgroup of individuals from a target population where every member of the group has equal chances of being selected for participation in the research. The researcher selected participants at random from each of the classes, from Form 1 to Form 4. Through the formula of Krejcie and Morgan (1970), a sample size of 217 participants was selected to participate in the study.

This study used the socio-demographic questionnaire so as to gather information about the participants. The questions were developed by the researcher, and the respondents' details included; age, gender, and class. Perceived Stress Scale (PSS) is a psychological instrument for measuring the perception

of stress in one's life. It is a measure of the degree to which situations in a person's life are seen as stressful. Items were designed to tap how unpredictable, uncontrollable, and overloaded participants find their lives. The scale was made by Cohen et al. (1988). Responses are scored on a 5-point Likert scale where 0 = Never, 1 = Almost Never, 2 = Sometimes, 3 = Fairly Often, 4 = Very Often. Out of the 10 items, questions 4, 5, 7, and 8 are reversed scored. Score is then obtained by summing across all 10 items. Higher scores indicate higher levels of perceived stress. Scores ranging from 0-13 would be considered low stress. Scores ranging from 14-26 would be considered moderate stress. Scores ranging from 27-40 would be considered high perceived stress. Academic performance was based on the rating of Muthithi Secondary School in Muranga County, Kenya. Academic performance rating scores according to Muthithi Secondary School meanscores ranged from 0-39 = low academic performance, 40-64 = average academic performance, 65-100 = good academic performance (Office of the Dean of Studies, 2024).

Data collection entails gathering information from sampled respondents for purposes of answering the research questions (Ventresca & Mohr, 2017). The questionnaires were self-administered by the respondents. In this sense, blank questionnaires were delivered to participants, then collected by the researcher for collating, coding and data entry processes. The respondents were encouraged to consult further with the researcher anytime they needed some clarifications on unclear areas.

Before commencement of data collection, all relevant authorizations were obtained from various institutions. Tangaza University first issued an official letter allowing the researcher to proceed for fieldwork. This then allowed the researcher to make an application to the National Commission of Science, Technology and Innovation (NACOSTI) for a research permit. The researcher also sought permission from the county education office and county commissioner office. The researcher further formally contacted the sampled school managements and sought authorization to conduct the research in the school. The respondents were requested to wait in the school hall during the distribution and filling in of questionnaires. The respondents were allocated adequate time of 30 minutes so as to respond to the questions, then debrief was carried out afterwards. Quantitative data were analyzed using descriptive and inferential statistics such as frequencies and percentages, with the utilizing SPSS software version 25. Descriptive statistical score was used to analyze the demographic of participants. The Pearson's Coefficient Correlation analysis was employed to analyze the relationship between stress and academic performance among the secondary school students.

RESULTS AND DISCUSSION

This section presents the findings of the study. It presents the demographic characteristics of participants, and the findings in line with the objective of the study respectively.

Demographic Characteristics of the Participants

Data was gathered under the following demographics: Gender, age and education level. The results for demographic characteristics are presented in Tables `1.

Table 1: Demographic Characteristics of the Participants

Gender of respondent		
Male	118	47.6
Female	130	52.4
Total	248	100.0
Age bracket		
14-15 years	110	44.4
16 - 17 Years	119	48.0
18 - 19 Years	19	7.7
Total	248	100.0
Level of education		
Form one	65	26.2
Form two	57	23.0
Form three	58	23.4
Form four	68	27.4
Total	248	100.0

The findings in table 1 showed that most (52.4%, $n = 130$) of the participants of this study were female students, then followed by the male participants. It was also found that 48.0% ($n = 119$) of the participants were between the ages of 16 - 17 years, while 7.7% ($n = 19$) of the participants were 18 - 19 years. This implies that most of them attend school at 16 and 17 years.

Relationship between Stress and Academic Performance among Students in Muthithi Secondary School, Muranga County, Kenya

The Pearson's correlation coefficient analysis was conducted to determine the relationship between stress and academic performance among students. The findings are presented in table 2.

Table 2. Relationship between Stress and Academic Performance among Students

		Stress	Academic Performance
Stress	Pearson Correlation	1	-.092
	Sig. (2-tailed)		.003
	N	248	248
Academic Performance	Pearson Correlation	-.092	1
	Sig. (2-tailed)	.003	
	N	248	248

Results in table 2 showed that there was a negative significant relationship ($r = -0.92$, $P = .003 \leq 0.05$) between stress and academic performance among students in Muthithi Secondary School, Muranga County, Kenya. This implies an inverse relationship, whereby an increase in one variable leads to a decrease in another variable; thus, an increase in stress leads to a decrease in academic performance among the participants. The findings of this current contradict the findings by Iqbal et al. (2021) in Pakistan. Findings indicated that academic workload, separation from school were all positively correlated with stress ($r = .152$, $p < .01$; $r = .207$, $p < .01$; $r = .133$, $p < 0.01$, respectively). This study's findings are dissimilar with the findings by Karki et al. (2022) in Nepal. It was reported that there was statistically significant correlation ($p = 0.03$) between stress and performance of students in their academic work, while the current study revealed a negative but significant correlation between stress and academic performance. The findings of the present study also disagree with the findings by Saqib and Rehman (2018) in Nigeria. It was found that stress had significant impact on student's academic performance ($F=773.75$, $p = .000$).

The outcomes of the current study suggest an inverse relationship whereby, an increase in one variable leads to a decrease in another variable. Thus, an increase in stress leads to a decrease in academic performance. Turner et al. (2012) affirms this by stating that stress can significantly impact students' academic outcomes, and understanding this relationship is crucial for developing effective interventions and support systems for students.

The inverse relationship between stress and academic performance among students can be attributed to several interrelated factors: one of these factors could be cognitive overload and reduced motivation. Building on this assertion, Kumar et al. (2023) argue that high levels of stress may impair cognitive functions such as attention, memory, and problem-solving. When students are stressed, their cognitive resources are diverted away from academic tasks, making it harder for them to concentrate and retain information. Also, stress can diminish a student's motivation to engage in academic activities; such that students feel overwhelmed, they may become less inclined to study or participate in class, leading to poorer academic performance (Kumar et al., 2023). High stress thwarts students' meaningful academic engagements leading to failure. O'Connor et al. (2023) affirm that stress impairs working memory and attention, and these are crucial bio-psychological aspect that facilitates academic progress and success. Students who are stressed might struggle with prioritizing tasks or may procrastinate, resulting in incomplete or very poor academic work. It is also possible that when students are deeply stressed, it may reduce engagement with others, and they may become less involved in classroom discussions, incomplete assignments, and other learning opportunities, impacting their overall academic performance (Liu et al., 2023; Miller & Harkins, 2023; Smith & Thomas, 2024).

The relationship between stress and academic performance is complex and influenced by various factors, including cognitive functioning, motivation, and coping strategies. While stress can have detrimental effects on academic outcomes, effective coping mechanisms and support systems can help mitigate these effects and improve students' overall academic performance and well-being.

CONCLUSION

The study concluded that there was a negative significant relationship between stress and academic performance among students in Muthithi Secondary School, Muranga County, Kenya. The relationship between stress and academic performance among students is complex and multifaceted. Research consistently shows that while a moderate level of stress can be motivating and enhance performance by increasing focus and effort, excessive or chronic stress generally has detrimental effects. High levels of stress can impair cognitive functions such as memory and concentration, reduce problem-solving abilities, and lead to emotional exhaustion, all of which negatively impact academic performance. Stress can also contribute to physical health problems, such as sleep disturbances and anxiety, further exacerbating its negative impact on academic outcomes. Conversely, low

levels of stress can result in a lack of motivation and drive, potentially leading to underperformance. Therefore, finding a balanced level of stress, where students are challenged yet not overwhelmed, is crucial for optimal academic performance.

RECOMMENDATIONS OF THE STUDY

The Ministry of Education should consider employing counseling psychologists as a way of enhancing mental and psychological support for students. This may significantly help the students handle academic stress and other related stressors. The school administration should develop a healthy coping strategy, fostering resilience, and ensuring access to support systems. School can play a significant role by providing resources and creating environments that help students manage stress in a constructive way. Apart from the school administration, addressing stressors involve a combination of support from parents, teachers, and counselors, as well as developing coping strategies and time management skills for the students themselves. Teachers and parents should consistently communicate concerns of students. The students should be encouraged to develop a personal coping strategies, such as effective time management, balanced lifestyle choices, and seeking social support, can help them better handle stress and improve their academic performance.

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