

Impact of Examination Anxiety on Academic Performance Among Public Secondary School Students in Kajiado North Constituency, Kenya

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ABSTRACT

Although frequent examinations are part of the learning process, examination anxiety can make some students to underperform. This study carried out in Kajiado North Constituency, Kenya, was designed to compare levels of students' examination anxiety during normal school time and examination time; and to investigate the impact of examination anxiety on academic performance of students in public secondary schools. A sample of 360 was drawn from a population of 6268 students for 16 public school using cluster and simple random sampling techniques. The study used descriptive correlational research design. Two standardized tools were used to collect the data. A mark sheet was used to collect secondary data of student test/exam marks. Using SPSS, version 22, data was analyzed and presented in descriptive and inferential forms, and discussed according to the objectives. Examination anxiety was measured in non-high-stakes evaluative conditions. It was found that 69.7% participants experienced moderate level during normal school time and 62.8% during examinations. However, High examination anxiety levels increased from 28.3% in normal school time to 34.4% during examinations. The study also found out that the class of participants and type of school had significant influences on examination anxiety while gender, age, class, and type of school had significant influences on academic performance. The study revealed that, examination anxiety had a significant but weak and inverse correlation with academic performance both during normal school time ($r = -.159$, $p = .002$) and during examination time ($r = -.151$, $p = .004$). Regression analysis confirmed that examination anxiety predicted 6.1% increase in academic performance during normal school time. This reduced to 4.3% during examinations. Therefore, the study concludes that, despite being significant ($p = .000$ or $p = .009$), examination anxiety impacts dismally and negatively on academic performance.

KEY TERMS: Examination Anxiety, Academic Performance, Public Secondary School Students, Worry-Emotionality, Subject Components

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I. INTRODUCTION AND BACKGROUND

Anxiety is by far the most frequent psychological disorder encountered by school going adolescents in their daily life (Yusuph, 2016). According to Yusuph between 13% and 25% of adolescent students globally suffer from anxiety in their interactions in school. Anxiety is a discomfoting sensation of torment, anxiousness, panic, or worry. Additionally, anxiety is conceived as an imminent danger arising from the school setting that results in a distress that reduces the student's ability to listen, think and respond to academic questions appropriately (Culler & Holahan, 1980). Consequently, anxiety among students interferes with both their attention and their memory which are vital for their academic success.

Assessing educational achievement has grown to be a necessary requirement and practice in integral experience for all students (ADCET, 2020). Ideal teaching methods require the application of various evaluation criteria to monitor students' background knowledge and current learning using formal and informal tools (Burgstahler, 2013). With teacher training, mid-term or end of term exams have become a common occurrence in schools.

Generally, Test Anxiety (TA) has been perceived to impact negatively on academic performance among those of school going age. In Northern Ireland, Millar and Gallagher (2013) randomly selected 3983

students between ages 13 and 18 years. Anxiety among students was caused by school work. The worry about passing examinations was found to be the top major cause of anxiety. In Australia and South Africa, Chaplain (2017) found that examination was a distinctive source of anxiety among students in secondary schools. The level of anxiety increased depending on the standard assessment activity, such as a national examination, that would determine the student's future. Fear of failure and its consequences constantly affected the students' emotional well-being.

Several studies have explored Test Anxiety (TA) in relation to academic performance. Sangsiry and Sail (2006) take test anxiety to be a response to external motivations or stimuli within the particular student's experience of evaluative contexts. Hess (2014) linked neuropsychiatric disorders (mood and anxiety disorder) among students to be major contributors to failure in educational performance. Rizwan and Nasir (2010) revealed that there are detrimental performance outcomes as consequence of test anxiety. Besides, neuropsychiatric disorders, are found to impact on health and account for a high burden of disease that affected adolescents (Hess, 2014). Students who suffer from prolonged anxiety tend to be fearful, violent, and emotionally detached from others and to have many other associated mental issues. Anxiety disorders have become more prevalent in institutions of learning especially in secondary schools.

According to the American College Health Association (2013), the percentage of college students who suffer from anxiety increased from 6.7% to 12.9% in just over a decade from 2000 to 2013. In the United Kingdom (UK), the cases of distress and anxiety among students aged 11 to 16 years have been reported to be very high.

Peluso et al. (2010), in Sao Paulo, Brazil, pointed out that adolescents may present anxiety symptoms while preparing for high stakes university admission examinations. That study found that a significant number of female and male teenage students showed high levels of anxiety whenever the examinations approached. The effect of examination anxiety was assessed three times during the period before these admission exams. The positive affect did not show much change for test 1, test 2 and test 3. However, the negative affect had increasing levels, for male (18.6, 20.5 and 22.9) and for female (21.4, 23.2 and 24.5).

In Africa, stress and anxiety had been found to cause major setbacks in educational achievement especially among students in public high schools. Frank-Briggs and Alikor (2010) investigating anxiety disorders amongst secondary school children in Nigerian urban settings found that the anxiety prevalence of secondary school students between the ages of 11-19 years was 10.28%. Ebrahimi and Khoshima (2014) in South Africa identified several factors contributed to underachievement, especially, deficits in time management, in examination preparation and in note making during learning. In Dodoma, Tanzania, a study revealed that the majority of students experienced anxiety disorders which consequently had a negative effect on the students' academic performance (Yusuph, 2016). According to Yusuph, anxiety factors extend to punishments and adherence to school rules. The anxiety prevalence of the secondary school pupils aged between 11 and 19 years in Tanzania is estimated to be between 6-10%.

With many varied factors within the school environment associated with anxiety, it is important to have a link between mental health services and academics, so that those engaged in a school setting can creatively and realistically aim to provide favorable environments for students. The results of continental and regional studies create a resemblance to those in the Kenyan context despite the variations of type of examinations and the anxiety levels that such examinations generate which bear on the academic performance. The studies cited above do not refer to the same form of examinations. Some are general examinations within schools or school districts (such as USA and UK); while others are countrywide or national exams such as in Brazil, Australia and South Africa. In Kenya, the national examinations are high stakes and the preparations leading to these national examinations create high levels of stress, pressure and anxiety. However, this study was set to investigate the relationship between examination anxiety and academic performance in an environment not leading to national examinations, but rather to termly and end of year assessments.

In Kenya, a study estimated that about 26.4% of adolescents in secondary schools between the age of 13 and 19 have experienced general anxiety disorders (Nyayieka et al., 2020). Another study attributes university students' worrying to indiscipline, engaging in drug abuse, and a record of poor performance in examinations (Gichohi, 2019). Realizing that depression and anxiety among youth in Sub-Saharan Africa were poorly documented, Osborn, et al., (2019) carried out a study among Kenyan high school students. Besides the high depression levels (45.9%), the anxiety levels too (37.99%) were found to be above clinical cutoff. In the same study, gender and social class played a significant role in the anxiety characteristics. This study, however, did not mention academic performance as a contributing factor for anxiety, nor did it investigate examination anxiety.

Taking account of the studies globally, continentally, regionally, and nationally, anxiety among secondary school students is perceived to be a cause of concern for parents, teachers, and the society in general since it impacts on the academic performance. However, the direct impact of examination anxiety to academic performance in Kenya had not been fully investigated. This study therefore sought to investigate how

examination anxiety impacts on academic performance among secondary school students in Kajiado North Constituency to enable stakeholders to devise appropriate interventions.

II. METHODOLOGY

The study was guided by descriptive correlational survey research design. This quantitative design was chosen in order to analyze the magnitude and direction of relationships existing among examination anxiety, worry-emotionality and academic performance. The study was conducted on students in 16 public secondary schools of Kajiado North Constituency, Kenya. The target population was estimated to be 6268 students (3356 boys, and 2912 girls) aged between 12 to 20 years. A sample of 362 students was arrived at using Krejcie and Morgan (1970) formula. The sample population was clustered in Boarding Schools (for boys only and girls only) and Mixed Day Schools. Cluster and simple random sampling techniques were used to select specific schools.

The study used two questionnaires based on standardized scales: Test and Examination Anxiety Measure (TEAM) developed by Brookset al. (2015) and Subject Worry-Emotionality Questionnaire developed by Everson et al. (1993). The scales were piloted before use and found to be reliable. The TEAM scale with background data was administered twice; once during normal school time, and then during examination time. Respectively it was found to have Cronbach's reliability of .751 and .816 for normal school time and examination time. The Subject Worry-Emotionality scale was administered once during examination time and found to have reliability of .846. The researcher collected test marks of most recent examinations using mark sheets obtained from teachers and school authorities.

The IBM statistics 22 version of the SPSS was used to analyze the data. The descriptive statistics aided the summation of opinions of respondents by establishing the frequency of demographic variables, the Mean, and standard deviation from the study instruments (questionnaires). The students' marks were computed into five major subject component means: mathematics, languages, sciences, arts, and business/vocational. The scores of the subject components were then ranked to obtain the academic performance of Excellent, High, Average, Low and Very Low as scales to be utilized in the inferential analysis. The inferential statistics helped to establish a relationship between normal-school-time and evaluative-time examination anxiety measures and academic performance displayed in tables. The correlation and regression statistics were used to test hypotheses concerned with the change in levels of examination anxiety and the impact of examination anxiety on academic performance. The collection of data followed a series of steps to ensure strict and consistent observation of ethical conduct. Permissions were obtained from Tangaza University College ethics committee, National Commission for Science, Technology and Innovation (NACOSTI), Kajiado County education authorities, the sampled schools and the individual respondents.

III. FINDINGS

Demographic Characteristics of the Participants

The demographics of the participants are presented descriptively using the scheme of gender, age bracket, class of student, and type of school. The gender of the respondents was evenly distributed where males (n = 187, 51.9%) and females (n = 172, 48.1%). More respondents were between 15 to 17 years (n = 212, 58.9%) compared to the other age brackets: above 17 years (n = 121, 33.6%) while between 12 to 14 years (n = 27, 7.5%). More participants were in Form 3 (n = 162, 45.0%), followed by Form 2 (n = 155, 43.1%) and lastly Form 4 (n = 43, 11.9%). Majority (n = 288, 74.4%) of participants were in Mixed Day schools while 14.2% (n = 51) were in Boys' Boarding schools and 11.4% (n = 41) were in Girls' Boarding schools.

Change in Levels of Students' Examination Anxiety.

The first objective compared levels of examination anxiety measured twice. Besides other demographic features (age, class and type of school), gender was investigated critically to understand the change in examination anxiety during normal school time and examination time. The frequencies and percentage of participants showing high, moderate, and low levels of examination anxiety were compared. The comparative results for the subscales of emotional intensity, trait anxiety, rumination, worry, and distractibility are shown in Table 1. The results in Table 1 show that both male and female students recorded slight changes in levels of emotional intensity.

Table 1. Comparison of Levels in Examination Anxiety Factors for Gender

| | Emotional Intensity (Normal Time) | | | Emotional Intensity (Examination Time) | | |
|--------|---|----------------|----------------|--|----------------|----------------|
| | High | Moderate | Low | High | Moderate | Low |
| | Freq (f) & (%) | Freq (f) & (%) | Freq (f) & (%) | Freq (f) & (%) | Freq (f) & (%) | Freq (f) & (%) |
| Male | 42 (22.4) | 128 (68.4) | 17 (9.0) | 47 (25.1) | 133 (71.1) | 7 (3.7) |
| Female | 29 (16.1) | 125 (72.2) | 19 (10.9) | 42 (24.2) | 125 (72.2) | 6 (3.4) |
| Totals | 71 (19.7) | 253 (70.3) | 36 (10.0) | 89 (24.7) | 258 (71.7) | 13 (3.6) |
| | Trait Anxiety (Normal Time) | | | Trait Anxiety (Examination Time) | | |
| Male | 35 (18.7) | 121 (64.7) | 31 (16.5) | 45 (24.1) | 115 (61.5) | 27 (14.4) |
| Female | 42 (24.2) | 105 (60.7) | 26 (15.0) | 37 (21.4) | 96 (55.5) | 40 (23.1) |
| Totals | 77 (21.4%) | 226 (62.8) | 57 (15.8) | 82 (22.8) | 211 (58.6) | 67 (18.6) |
| | Rumination (Normal Time) | | | Rumination (Examination Time) | | |
| Male | 27 (14.4) | 147 (78.6) | 13 (6.9) | 45 (24.0) | 126 (67.3) | 16 (8.6) |
| Female | 34 (19.6) | 133 (76.8) | 6 (3.4) | 36 (20.8) | 121 (69.9) | 16 (9.2) |
| Totals | 61 (16.9) | 280 (77.8) | 19 (5.3) | 81 (22.5) | 247 (68.6) | 32 (8.9) |
| | Worry (Normal Time) | | | Worry (Examination Time) | | |
| Male | 121 (64.7) | 59 (31.5) | 7 (3.7) | 101 (54.0) | 71 (37.9) | 15 (8.0) |
| Female | 115 (66.4) | 54 (31.2) | 4 (2.3) | 95 (54.9) | 70 (40.4) | 8 (4.6) |
| Totals | 236 (65.5) | 113 (31.3) | 11 (3.0) | 196 (54.4) | 141 (39.1) | 23 (6.3) |
| | Distractibility (Normal Time) | | | Distractibility (Examination Time) | | |
| Male | 21 (11.2) | 81 (43.3) | 85 (45.4) | 55 (29.4) | 94 (50.2) | 38 (20.3) |
| Female | 31 (17.9) | 77 (44.5) | 65 (37.5) | 37 (21.3) | 67 (38.7) | 69 (39.8) |
| Totals | 52 (14.4) | 158 (43.8) | 150 (41.6) | 92 (25.5) | 161 (44.7) | 107 (29.7) |
| | Total Examination Anxiety (Normal Time) | | | Total Examination Anxiety (Exam Time) | | |
| Male | 49 (26.2) | 132 (70.5) | 6 (3.2) | 74 (39.5) | 108 (57.8) | 5 (2.7) |
| Female | 53 (30.6) | 119 (68.8) | 1 (0.6) | 50 (28.9) | 118 (68.2) | 5 (2.9) |
| Totals | 102 (28.3) | 251 (69.7) | 7 (2.0) | 124 (34.4) | 226 (62.8) | 10 (2.8) |

Key: Freq = Frequency

Table 1 also indicates for male student’s trait anxiety reported increase in High level (f = 35, 18.7%) in normal school time to High level (f = 45, 24.1%) in examination time. Instead the Moderate and Low levels decreased. For female students both High and Moderate levels in normal school time decreased in examination time. There were also slight changes observed for the levels of rumination during normal school time and examination time.

The interesting changes happened in the levels of worry. For both male and female students, the most prevalent change is reported in the High levels of worry during normal school time which substantially reduce during examination time: male High level (f = 121, 64.7%, normal school time) which decreased to High level (f = 101, 54.0%, examination time); female High level (f = 115, 66.4%, normal school time) which decreased to High level (f = 95, 54.9%, examination time). As opposed to worry, levels of distractibility during normal school time occurred in the low levels for both male and female students. These reduced during examination time. On the other hand, the small numbers of participants having high level of distractibility during normal school time increased substantially during examination time.

The changes are most notable in the overall examination anxiety. Results from Table 2 show that the levels of examination anxiety for female changed slightly; thus, during normal school time High (f = 52, 30.6%), Moderate (f = 119, 68.8%), and Low (f = 1, 0.6%) while during examination time High (f = 50, 28.9%), Moderate (f = 118, 68.2%), and Low (f = 5, 2.9%). The change in examination anxiety for male is remarkable, thus, during normal school time, High (f = 49, 26.2%), Moderate (f = 132, 70.5%), and Low (f = 6, 3.2%) while during examination time, High (f = 74, 39.5%), Moderate (f = 108, 57.8%), and Low (f = 5, 2.7%). The overall changes in examination anxiety for all students are therefore dependent on the male students.

Examination Anxiety during Normal School Time and Examination Time

The foregoing description compared levels of examination anxiety exhibited during normal school time and during examination time. Correlation analysis was used to ascertain if the levels of examination anxiety at the different times had any relationship. The correlation analysis findings are presented in Table 2.

Table2: Relationship of Levels of Examination Anxiety during Normal School Time and Examination Time

| Sub-Scales of Examination Anxiety | | Emotional Intensity (ET) | Trait Anxiety (ET) | Rumination (ET) | Worry (ET) | Distractibility (ET) |
|-----------------------------------|--------|--------------------------|--------------------|-----------------|-------------|----------------------|
| Emotional Intensity (NST) | r | .202 | .247 | .211 | .294 | .211 |
| | ρ | .000 | .000 | .000 | .000 | .000 |
| Trait Anxiety (NST) | r | .184 | .345 | .221 | .196 | .201 |
| | ρ | .000 | .000 | .000 | .000 | .000 |
| Rumination (NST) | r | .092 | .216 | .244 | .202 | .189 |
| | ρ | .082 | .000 | .000 | .000 | .000 |
| Worry (NST) | r | .217 | .266 | .238 | .400 | .175 |
| | ρ | .000 | .000 | .000 | .000 | .001 |
| Distractibility (NST) | r | .139 | .134 | .145 | .132 | .190 |
| | ρ | .008 | .011 | .000 | .012 | .000 |

Key: ET = Examination Time; NST = Normal School Time

The interest of the researcher was to find the relationship between examination anxiety factors measured twice for the same participants. The results in Table 2 show that there was a weak positive significant correlation between the two measures of Emotional Intensity ($r = .202, \rho = .000$). Similarly, Trait Anxiety ($r = .345, \rho = .000$), Rumination ($r = .244, \rho = .000$), and Distractibility ($r = .190, \rho = .000$) reported weak positive significant correlation, while Worry ($r = .400, \rho = .000$) showed a moderate positive significant correlation. These correlations, especially by giving direct (positive) relationships, confirm that there was change in levels of examination anxiety for all the factors, and that examination anxiety increased at examination time compared to normal school time.

The impact of Examination Anxiety on Academic Performance

The second objective sought to investigate the impact of examination anxiety on academic performance. Academic performance in the different subject components and overall performance were investigated, as well as the relationship of overall academic performance to the demographic features. Finally, academic performance and examination anxiety was investigated using correlation and regression analysis.

Academic Performance of Students in Public Secondary Schools

Secondary schools in Kajiado North County used the grading system adopted from the Kenya National Examination Council (KNEC). The subject category scores were classified as either Very Low (VL), Low (L), Average (A), High (H), and Excellent (E) performance. For Business/Vocational, Language, and Arts the performance presented as VL ($\leq 29, E$), L (30 to 44, D), A (45 to 59, C), H (60 to 74, B), and E (75 to 100, A), while for Mathematics and Science, as well as Overall Academic Score, the performance was presented as follows: VL ($\leq 24, E$), L (25 to 39, D), A (40 to 55, C), H (56 to 65, B), and E (66 to 100, A). The levels of subject performance are as shown in Table 3.

Table 3: Academic Performance of Students

| Subject Components | Mathematics | Business | Language | Science | Arts | Academic Score |
|--------------------|-------------|----------|----------|---------|-------|----------------|
| Mean | 25.67 | 31.60 | 44.85 | 27.29 | 35.20 | 32.92 |
| Standard Deviation | 19.48 | 23.97 | 16.78 | 19.29 | 18.94 | 15.48 |
| Minimum | .00 | .00 | 5.00 | .00 | .00 | 2.30 |
| Maximum | 89.00 | 92.00 | 85.00 | 85.50 | 86.50 | 72.70 |
| Range | 89.00 | 92.00 | 80.00 | 85.50 | 86.50 | 70.40 |

From Table 3 the results show that, despite the wide range of scores, the mean performance in most subject components was low. For instance, Mathematics ($M = 25.67$), Science ($M = 27.29$), Business/Vocational ($M = 31.60$), Language ($M = 44.85$), Arts ($M = 35.20$), and the Overall Academic Score ($M = 32.92$).

Using the scale VL, L, A, H and E, the results showed that overall academic performance levels were unevenly distributed with more being in the Low level (n = 126, 35.0%) followed by Very Low (n = 114, 31.7%), then Average (n = 84, 23.3%), High (n = 28, 7.8%), and lastly Excellent at 2.2%.

An investigation was done to find the distribution of performance in demographic characteristics. The results showed that for the overall academic performance females (M = 33.25, SD = 13.41) registered a slightly higher mean than males (M = 32.62, SD = 17.20). In terms of the participants' age bracket, the group of 12-14 years took the lead with an average performance (M = 42.56, SD = 16.70) followed 15-17 years with a low performance (M = 34.97, SD = 15.52) and above 17 years with low performance (M = 27.36, SD = 13.19). The performance according to class of student has Form 2 leading (M = 34.21, SD = 17.14) followed by Form 3 (M = 32.80, SD = 14.40) and Form 4 (M = 28.72, SD = 12.33). The scores for all the classes reported low level performance.

Interestingly, the results of type of school show well defined variation: Boys' Boarding schools led with average performance (M = 51.71, SD = 11.34) followed by Girls' Boarding schools also with average performance (M = 47.06, SD = 6.45) and lastly the Mixed Day schools with low performance (M = 27.18, SD = 12.67). An investigation of how the demographic features might influence overall academic performance produced the Chi-

| Demographic Features | Overall Academic Performance | |
|----------------------|------------------------------|------|
| | X ² | p |
| Gender | 21.121 | .000 |
| Age Bracket (Years) | 36.998 | .000 |
| Class of Student | 18.065 | .021 |
| Type of School | 202.032 | .000 |

Square results presented in Table 4.

Table 4: Influence of Demographic Features on Overall Academic Performance

The results in Table 4 show that gender, age, class, and school type have significant influences on overall academic performance: Gender (X² = 21.121, p = .000), Age (X² = 36.998, p = .000), Class (X² = 18.065, p = .021), and type of School (X² = 202.032, p = .000).

Relationship of Examination Anxiety and Academic Performance

The specific investigation sought to establish the relationship between examination anxiety and academic performance among students in public secondary schools. To ascertain this objective, a correlation analysis was performed. The results are presented in Table 5.

Table 5: Overall Academic Performance and Examination Anxiety.

| | | Overall Academic Performance | Total Examination Anxiety (Normal Time) | Total Examination Anxiety (Exam Time) |
|------------------------------|---------------------|------------------------------|---|---------------------------------------|
| Overall Academic Performance | Pearson Correlation | 1 | -.159** | -.151** |
| | Sig (2-tailed) | .000 | .002 | .004 |
| | N | 360 | 360 | 360 |

** Correlation is significant at the .01 level (2-tailed).

The results in Table 5 show that there was a significant but weak negative correlation between Overall Academic Performance and Total Examination Anxiety during normal school time (r = -.159, p = .002), and there was also a significant but weak negative correlation between Overall Academic Performance and Total Examination Anxiety during examination time (r = -.151, p = .004). The negative correlations imply that academic performance decrease with increasing levels of examination anxiety.

A regression analysis was conducted to establish how the factors of Examination Anxiety (IV) impacted on Academic Performance (DV), and the extent to which the DV is predicted by IV. The results are summarized in Table 6.

| Model Summary | | | ANOVA Results | | |
|---------------|----------|-----------------|---------------|---|------|
| R | R Square | Adjust R Square | df | F | Sig. |

| | | | | | | |
|---|------|------|------|--------|-------|------|
| Examination Anxiety (NT) and Academic Performance | .247 | .061 | .048 | 5, 359 | 4.608 | .000 |
| Examination Anxiety (ET) and Academic Performance | .206 | .043 | .029 | 5, 359 | 3.150 | .009 |

Table 6: Predictability of Academic Performance by Examination Anxiety

The results from Table 6 show that Examination Anxiety measures in normal school time predicted Academic Performance Scores, $R^2 = .061$, $F(5, 359) = 4.608$, $\rho = .000$. Similarly, Examination Anxiety measures during examination time predicted Academic Performance Scores, $R^2 = .043$, $F(5, 359) = 3.150$, $\rho = .009$. The examination anxiety factor predictions during normal school time were investigated and showed that only Emotional Intensity ($\beta = .093$, $\rho = .118$) had positive or direct relationship. The other factors had inverse relationships. Only Distractibility ($\beta = -.199$, $\rho = .001$) recorded a significant relationship. Similarly, examination anxiety factor predictions were investigated and found that, only Worry ($\beta = .107$, $\rho = .068$) had direct relationship. During the examination time none of the examination anxiety factors bears significant relationship because the ρ values are greater than alpha (.05).

Testing the First Hypothesis

The first objective of the study was to compare the level of students’ examination anxiety during normal school time and examination time. Related to this objective, the first null hypothesis was: students in public secondary schools do not experience any significant change in examination anxiety levels during examination time. The results of the correlation analysis are presented in Table 7.

Table 7. Total Examination Anxiety during Normal School Time and Examination Time

| | | Total Examination Anxiety (Normal Time) | Total Examination Anxiety (Exam Time) |
|---|---------------------|---|---------------------------------------|
| Total Examination Anxiety (Normal Time) | Pearson Correlation | 1 | .416 |
| | Sig (2-tailed) | .000 | .000 |
| | N | 360 | 360 |

The results in Table 7 show that there was a moderate positive significant correlation between Total Examination Anxiety during normal school time and Examination time. This positive or direct correlation implies an increase in examination anxiety levels. Therefore, the researcher rejects the null hypothesis (H_{01}) in favour of the alternative hypothesis (H_{a1}) to affirm that students in public secondary schools in Kajiado North Constituency experience significant change in examination anxiety levels during examination time.

Testing the Second Hypothesis

The second objective of the study investigated the impact of examination anxiety on academic performance. The second null hypothesis (H_{02}) of the study stated that examination anxiety has no significant impact on academic performance among students in public secondary schools. Both correlation and regression analyses were carried out to test this hypothesis.

It was established (Table 5) that there were significant but weak negative correlations between Overall Academic Performance and Total Examination Anxiety during normal school time ($r = -.159$, $\rho = .002$) as well as during examination time ($r = -.151$, $\rho = .004$). For both measures of examination anxiety, the ρ values were less than alpha ($\alpha = .05$).

Regression analysis, by providing the performance prediction, gives the quantitative values that can be used to explain the impact of the independent variable (examination anxiety) on the dependent variable (academic performance). From the regression analysis (Table 6) the prediction value $R^2 = .061$ (for normal school time) translated as 6.1% showing that examination anxiety impacted dismally on academic performance. The prediction value $R^2 = .043$ (for examination time) translated as 4.3% showed that increased examination anxiety impacted negatively on academic performance. From both analyses, the ρ values were less than alpha ($\alpha = .05$). Thus, the researcher rejected the null hypothesis (H_{02}), in favour of the alternative (H_{a2}), affirming that examination anxiety, besides having significant relationship to academic performance, had significant negative impact on academic performance among students in public secondary schools in Kajiado North Constituency.

IV. DISCUSSION

Comparison of levels of Students' Examination Anxiety during Normal School Time and Examination Time

The comparison of students' examination anxiety levels was investigated by administering the TEAM scale during normal school time and then during examination time. The investigation was guided by Brooks et al. (2015) on the scoring of the TEAM scale and its subscales, and the determination of levels of anxiety.

The study (Table 1) found that majority of total examination anxiety levels for gender were moderate for normal school time: Moderate (69.7%), High (28.3%), and Low (2.0). Despite the reported changes, still most of the total examination anxiety levels for gender were moderate during examination time: conversely, Moderate (62.8%), High (34.4%), and Low (2.8%). These findings show that there is change in examination anxiety, especially an increase in the high levels, from 28.3% to 34.4%. These findings, despite being specific to examination anxiety, portray a picture almost similar to that of Weale et al. (2019) who indicated that students in the UK had manifestations of very high levels of anxiety for ages 11 to 16 years. Similarly, the findings of this study almost agree with the Kenyan study by Osborn et al. (2019) which reported high anxiety levels (37.99%) found to be above clinical cutoff.

During the descriptive analysis the study had found that participants in the range 15-17 years reported slightly higher than age range 12-14 years and above 17 years. The results highlighted the need for anxiety to always be specified. Apparently, general anxiety or even academic anxiety have many components. If not investigated distinctively, the information might complicate addressing of challenges. Examination anxiety seems to reveal different trends from those of general anxiety and academic anxiety (Gichohi, 2019; Osborn et al., 2019; Wangui et al., 2016).

These findings differ with the previous studies that had posited anxiety increasing with age. For instance, Howard (2020) had pointed out the remarkable rise in anxiety for the UK youthful age range of 10 to 24 years and suggesting drop in adult years. He had highlighted the psychological concerns of early puberty. The case of anxiety increasing with age from 13 to 21 years had also been pointed out in a Brazilian study by Lopes et al. (2016). It is more common to find adolescents in the age range of 10 to 24 in school, this could imply that any measured form of anxiety for young people need to consider the impact of academic and especially examination related anxiety.

In relation to class of participant findings had shown that Form 2 reported higher values followed by Form 4 and lastly Form 3. In Kajiado North Constituency, age bracket 15-17 years was fairly spread in Form 2 and Form. This might provide possible explanation for levels of examination anxiety. Form 2 students, because they were taking many subjects, were exposed to many tests and exams. Besides, they have the imminent task of making subject choices to offer in Form 3. Literature in Kenya (KICD, 2017; Masood et al., 2018) shows that the reduction in number of subjects from 13 taken in Forms 1 and 2 to 8 subjects taken in Forms 3 and 4 indicate that learners in lower secondary school classes undertake more tests and probably have higher pressures from teachers and parents and the determination of subject choices. Instead Form 3 students appear to be used to tests or exams and to have determined their performance potentials; their examination anxiety levels were found to be lower. Form 4 students were faced with national examination pressures from the start of the year to the end starting with pre-registration exams, then mock exams, and lastly national examinations.

This study confirms what Chaplain (2017) identified in Australia and South Africa as the reason for the rise in examination anxiety, the determining nature of assessment or the specific stressor. Similarly, the study agrees with a USA research (Sansgiry & Sail, 2006) in pointing out that change in test anxiety is likely to be a response to external motivations or stimuli within the particular student's experience of evaluative contexts. Such anxiety can be triggered by external or internal (individual awareness) threats to self-esteem (Sridevi, 2013). Thus, when tests are used for Form 2 for subject selection or Form 4 pre-registration or mock exams, the examination anxiety is bound to increase. It can be argued that the change in levels of examination anxiety does not exhibit specified patterns in demographic characteristics such as gender, age, class, and type of school. Therefore, demographic characteristics cannot solely explain the change in examination anxiety.

The results (Table 2) showed that there were positive but weak significant correlations between emotional intensity, trait anxiety, rumination, and distractibility during normal school time and their corresponding factors during examination time. Instead, there were moderate positive significant correlations between worry ($r = .400, p = .000$) and total examination anxiety ($r = .416, p = .000$) during normal school time and the corresponding factors during examination time. The results confirm that examination anxiety changes between normal school time and during examination time. The results compared to the findings by Ndirangu et al. (2008) in Nyeri secondary schools. Ndirangu and colleagues had determined that test anxiety varies with time, before and after examination. Anxiety levels dropped 89.4% before to 27.7% after the examination (Ndirangu et al., 2008). In agreement with Ndirangu, et. al. (2008) the current study therefore concludes that

examination anxiety levels change between normal school time (even after examination) and examination time (few days before and during examination).

Impact of Examination Anxiety on Academic Performance

After categorizing academic performance in the public secondary schools of Kajiado North Constituency, the investigation focused on two areas: demographic features with academic performance and examination anxiety with academic performance. Generally, more participants performed at a Low level ($n = 126$, 35.0%) followed by Very Low level ($n = 114$, 31.7%), then Average level ($n = 84$, 23.3%), High level ($n = 28$, 7.8%), and Excellent level ($n = 8$, 2.2%). Combining the Very Low and Low levels portrays that majority (66.7%) of participants performed poorly. The prevalence of poor performance in public secondary school reflects the findings of Ahmed, S. Z. (2017) in Wah Chatt, Pakistan who posted a glaring difference of above average score 70.1% for private schools against 25.2% for public schools, 15.3% against 9.7% average score, and 7.2% again 50.5% below average score respectively.

The comparison is further supported by Adeyemi (2014) posting in Nigeriathat students' performance above average were 73.3% for private primary schools against 30.8% for the public primary schools. Similar assertions were reported by Rung'uno (2017) in Wereng District, Kenya. Thus, even though the current study did not compare academic performance of private and public secondary schools, the results confirm the undoubted challenge of poor performance of public schools. Similarly, in Zambia, Sampa (2005) had reported conditions uncontrollable by pupils as responsible for causing variation in levels of examination anxiety. These factors included threats to self-esteem, security and social affiliation needs. The results of the current study offer insight that class of participant and type of school features provide indicators that could possibly increase or reduce threats to self-esteem, especially in the all-boys or all-girls schools.

The findings show that students in public secondary school had low level academic performance much in agreement with Adeyemi (2014), Ahmed, S.Z. (2017) and Rong'uno (2017). Since some demographic features had strong bearing on total examination anxiety and academic performance, the researcher was prompted to investigate the factors of examination anxiety. The factor investigation found that only distractibility during normal school time had influence on academic performance ($\rho = .001 < .05$). This implied that the significant correlations of total examination anxiety on academic performance during normal school time ($\rho = .000$) and during examination time ($\rho = .000$) were results of the combined factor influence.

The results (Table 5) revealed that examination anxiety was inversely and weakly correlated to academic performance during normal school time ($r = -.159$, $\rho = .002$) and during examination time ($r = -.151$, $\rho = .004$). These correlations were found to be significant even at a higher confidence interval (0.01). These findings are similar to Mukolwe (2015) who posited $r = -.161$, and $\rho = .007$ for the students' performance in national examinations. The inverse correlations are indicators that as examination anxiety increases academic performance decreases. The results also imply that the fear or worry about tests or exams prevails all throughout the school time.

These findings disagreed with the findings of Gichohi (2019) who had posited high correlations ($r > 0.829$). The difference could result from the type of participants and variables. While Gichohi investigated academic anxiety among university students focused on career, this study investigated examination anxiety of high school students. Examination anxiety is one of the components of academic anxiety but there more factors to academic anxiety. Instead, the weak inverse correlation between examination anxiety and academic performance support the findings of Ahmed, H. A. (2018) studying the similar variable among nursing university students in Egypt. However, the findings of this study disagree with Ndirangu et al. (2008) that the correlations of examination anxiety are significant for academic performance. Ndirangu and colleagues had posted the contrary for students in Nyeri County secondary schools.

The current study confirms the inverse but significant relationship of examination anxiety with academic performance from the regression analysis which also helps to explain the impact of specific factors of examination anxiety on academic performance. Regression analysis (Table 6) showed that during normal school time examination anxiety predicted academic performance with $R^2 = .061$ or 6.1% which is very low. By implication, it means there are other factors that should account for the prediction of 93.9% during normal school time. The prediction reduced further during examination time, $R^2 = .043$ or 4.3% implying there are other factors which should account for 95.7%. Comparatively Mukolwe (2015) had posted an even lower coefficient of determination $R^2 = .026$ or 2.6% for students' performance in national examinations. By comparison too, the findings of Cassady and Johnson (2002) showed cognitive test anxiety (same as examination anxiety) improving or strengthening the prediction of examination anxiety on academic performance from 5% to 15%. Cassady and Johnson (2002) were investigating test anxiety and academic performance on undergraduate students in USA. Mukolwe (2015) instead investigated test anxiety and academic performance of students in public secondary schools in Kenya which is closely associated with the current study.

Taking into account the specific examination anxiety factor predictions, this study found that emotional intensity, distractibility and worry are considerable factors responsible for both the change in examination anxiety and for impacting on academic performance. As with Cassady and Johnson (2002 and with Mukolwe (2015), the current study finds the prediction of examination anxiety on academic performance dismal and thus the negative impact is confirmed.

VI. RECOMMENDATIONS

This study offers several recommendations. Teachers, school administrators, and counselors need to emphasize mechanisms to reduce examination anxiety, should be aware that examination anxiety has a dismal impact on academic performance, and thereby recommended to explore other factors that impact heavily on academic performance. The concerned departments of ministry of education and national examination council should sanction workshops and training programs for teachers and school administrators to equip them with alternative techniques of assessment and reduce tests modeled on national examination format. This study recommends that students in public secondary schools should positively embrace anxiety coping mechanisms and develop positive attitudes towards tests and examination as part of the learning process. The study strongly recommends the need for specifying anxiety components and to move away from overloaded concepts like general anxiety and academic anxiety. This study further recommends a quantitative study to explore specific external factors and their impact on academic performance.

REFERENCES

- [1]. Abbo et al. (2013). Prevalence, comorbidity and predictors of anxiety disorders in children and adolescents in rural north-eastern Uganda. *Child and Adolescent Psychiatry and Mental Health*, 7(1), pp.7-21. doi:10.1186/1753-2000
- [2]. Adeyemi, S. (2014). Comparative study of pupils' academic performance between private and public primary schools. *World Journal of Education*, 4(4), pp.55-60.
- [3]. Ahmed, H.A. (2018). Exploring the relationship between test anxiety and academic achievement among female nursing students at Zagazig University. *Journal of Critical and Diagnostic Research*, 12(7), pp. 16-19.
- [4]. Ahmed, S.Z. (2017). Comparative study of students' academic performance between private and public higher secondary schools of Wah Cantt. *Journal of Education and Practice*, 8(16), pp. 24-26.
- [5]. American College Health Association. (2013). *American college health association- national college health assessment II: Reference group executive summary Spring 2013*. American College Health Association.
- [6]. Bologun, A. (2017). Test anxiety and academic performance among undergraduates: the moderating role of achievement motivation. *Spanish Journal of Psychology*, 20(14), pp. 1-8.
- [7]. Bonsu, H. D. (2016). A comparative analysis of academic performance of public and private junior high schools in the basic education certificate in Sekondi/Takoradi. *European Journal of Basic and Applied Sciences*, 3(1), pp. 21-32.
- [8]. Brooks, B., Alshafei, D. & Taylor, L. A. (2015). Development of the test and examination anxiety measure (TEAM). *Psi Chi Journal of Psychological Research*, 20(1), pp. 2-10.
- [9]. Burgstahler, S. (2013). *Equal access: Universal design of instruction. A checklist for inclusive teaching*. Seattle: DO-IT, University of Washington. Url: http://www.washington.edu/doi/Brochures/Academics/equal_access_udi.html.
- [10]. Chaplain, R. (2017). *Schools under pressure: stress, coping and wellbeing among teachers, pupils and head teachers*. Dept. of Education: Lancaster University Press.
- [11]. Culler, R. E. & Holahan, C. J. (1980). Test anxiety and academic performance: The effects of study-related behaviors. *Journal of Educational Psychology*, 72(1), pp.16-20.
- [12]. Devi, S. (2017). *Developing a conceptual framework for research*. <https://doi.org/10.1136/bmj.j1490>
- [13]. Ebrahimi, M. & Khoshsima, H. (2014). On the association(s) between test anxiety and emotional intelligence, considering demographic information; A case of Iranian EFL university students. *International Journal on Studies in English Language and Literature (IJSELL)*, 2(7), pp.147-157.
- [14]. Everson, H. T., Tobias, S., Hartman, H., & Gourgey, A. (1993). Test anxiety and the curriculum: The subject matters. *Anxiety, Stress & Coping: An International Journal*, 6(1), pp. 1–8. doi.org/10.1080/10615809308249528
- [15]. Frank-Briggs, A. I., & Alikor, E. A. (2010). Anxiety disorder amongst secondary school children in an urban city in Nigeria. *International journal of biomedical science: IJBS*, 6(3), pp. 246–251.
- [16]. Gichohi, W.M.N. (2019). Influence of anxiety and academic performance among students at the Technical University of Kenya. *International Journal of Scientific and Research Publication*, 9(5), pp. 1-8. doi: 10.29322/IJSRP.9.05.2019. p89107

- [17]. Hess, J. (2014). *Anxiety Prevalence among High School Students*. Counselor Education Master's Theses. 170. Url: http://digitalcommons.brockport.edu/edc_theses/170
- [18]. Howard, E. (2020). *A review of the literature concerning anxiety for educational assessment*. Coventry: Ofqual.
- [19]. Jalena, F., Woogen, E., Amma, P., Sommia, A. & Cameron, E. (2020). *Nurturing every learner's potential: education reform in Kenya*. <https://www.creativecommons.org>
- [20]. KICD (2017). *Basic education curriculum framework*. Nairobi: Kenya Institute of Curriculum Development (KICD)
- [21]. Krejcie, R.V., & Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), pp. 607-610.
- [22]. Lopes, C.S., Abreu, G.A., Santos, D.F., Menezes, P.R., Carvalho, K.M.B., Cunha, C.F. et al. (2016). *ERICA: prevalence of common mental disorders in Brazilian adolescents*. *Rev Saude Publica*;50(suppl 1):14s
- [23]. Masood, S., Hameed, A. & Tatlah, A. I. (2018). Effect of Examination on Curriculum at Elementary Level in Punjab: A Mixed Methods Study, *Journal of Elementary Education*, 27(2), pp. 147-162.
- [24]. Millar, R., & Gallagher, M. (2013). Validity studies the “things i worry about” scale: further developments in surveying the worries of post-primary school pupils. *Educational and Psychological Measurement*, 56(6), pp. 972–994. doi.org/10.1177/0013164496056006005
- [25]. Ndirangu, G.W., Muola, J.M., Kithuka, M.R., and Nassiuma, D.K. (2008). An investigation of the relationship between test anxiety and academic performance in secondary schools in Nyeri District, Kenya. *Global Journal of Educational Research*, 7(182), pp. 1-7.
- [26]. Nyayieka, M.A., Nyagwencha, S.K. & Nzyuko, S. (2020). Correlation of clinical depression, anxiety and academic performance of adolescents in selected secondary schools in Kenya. *American Journal of Applied Psychology*, 9(1), pp. 14-21. doi:10.11648/j.ajap.20200901.13
- [27]. Omosidi, A. S. & Adigun, A. A. (2014). Patterns of examination anxiety among secondary school students in Ilorin Metropolis, Nigeria. *Nigeria Journal of Guidance and Counselling*, 19(1), pp. 60-72.
- [28]. Osborn, T. L., Venturo-Conerly, K. E., Wasil, A. R., Schleider, J. L., & Weisz, J. (2019). *Depression and anxiety symptoms, social support, and demographic factors among Kenyan high school students*. <https://doi.org/10.1007/s10826-019-01646-8>
- [29]. Peluso, M.A.M., Savalli, C., Mariana, C., Clarice, G. & Laura, H.A. (2010). Mood changes in the course of preparation for the Brazilian university admission exam - a longitudinal study. *Brazilian Journal of Psychiatry*, 32(1), pp. 30-36. doi.org/10.1590/S1516-44462010000100007
- [30]. Rizwan, A. R. & Nasir, M. (2010). Relationship between test anxiety and academic achievement. *Bulletin of Education and Research*, 32(2), pp. 63-74.
- [31]. Sampa, P. C. (2005). *Sources and effects of anxiety on academic performance among grade seven pupils: A case of Luanshya District*. Master's thesis, University of Zambia.
- [32]. Sansgiry, S.S. & Sail, K. (2006). Effects of student's perceptions of course load on tests anxiety. *American Journal of Pharmaceutical Education*, 70(2), p. 26.
- [33]. Sridevi, K. (2013), A study of relationship among general anxiety, test anxiety and academic achievement of higher secondary students. *Journal of Education and Practice*, 4(1), pp. 122-130.
- [34]. Weale, V. P., Wells, Y.D. & Oakman, J. (2019). The work life interface: A critical factor between work stressors and job satisfaction. *Emeral Publishing LTD*, 48(4), pp. 880-897.
- [35]. Yusuph, K. (2016). Anxiety and academic performance among secondary school pupils in Tanzania. *Journal of Education, Society & Behavioral*, 14(3), pp. 1-7.

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