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ANXIETY AMONG SECONDARY SCHOOL STUDENTS IN A PASTORALIST COUNTY: PREVALENCE AND CAUSES OF ANXIETY IN SAMBURU COUNTY, KENYA

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Abstract

Anxiety has emerged as one of the most prevalent mental health concerns affecting adolescents globally, yet its expression among learners in marginalised pastoralist communities of sub-Saharan Africa remains poorly documented. This study examined the levels and causes of anxiety among secondary school students in Samburu County, Kenya, a region characterised by persistent academic underperformance, socio-economic precarity, and distinctive cultural dynamics. Guided by Cognitive Behavioral Theory and Socio-Cultural Theory, the study adopted a concurrent mixed methods design. Quantitative data were gathered from 292 students using the Generalized Anxiety Disorder 7 item (GAD-7) scale and a structured Likert questionnaire, while qualitative data were drawn from focus group discussions with students across eight purposively stratified schools. Descriptive statistics summarised anxiety levels and causes, and thematic analysis was applied to the qualitative material. The findings revealed that 25.1% of students experienced moderate to severe anxiety, a clinically significant minority requiring psychological support. The GAD-7 results indicated that 40.5% of students reported minimal anxiety and 34.3% reported mild anxiety. Item level analysis revealed pronounced anticipatory anxiety about future academic success, salient test related physiological symptoms, and frequent feelings of being overwhelmed by academic workload. The strongest causes of anxiety were fear of poor grades and high-performance expectations, each endorsed by more than 80% of respondents, followed by inadequate preparation, ineffective orientation, and interpersonal stressors including peer pressure, parental disapproval, and teacher harshness. Qualitative findings situated these pressures within fee insecurity, gendered family expectations, and a cultural reluctance to disclose distress. The findings suggest that adolescent anxiety in this setting is co-produced by cognitive appraisals and socio-cultural conditions, underscoring the need for culturally responsive, school based mental health support.

Keywords: *Anxiety, Adolescents, Secondary School Students, Generalized Anxiety Disorder, Academic Stress, Samburu County, Kenya*

INTRODUCTION

Anxiety disorders constitute one of the most prevalent mental disorder classes globally and the clustering of these disorders in adolescence has specific implications for school involvement and psychosocial functioning. The World Health Organization (2021) states that anxiety disorders are among the most prevalent mental health conditions worldwide, impacting about 4% of the world population, which includes generalized anxiety disorder, social anxiety disorder and specific phobias. According to Yang (2021), there were over 260 million people suffering from anxiety disorders worldwide, with women being disproportionately affected. In addition to epidemiological impact, anxiety has consequences due to the experience of anxiety. According to O'Hare and Beer (2020), anxiety has both obvious and hidden symptoms, with Alharbi et al. (2019) describing it as a state of acute tension and fear that interferes with daily life and academic activities leading to forgetfulness and a loss of self-confidence. Such co-occurrence of prevalence and impairment highlights the importance of the issue of adolescent anxiety for educational systems, which rely on sustained attention, memory and engagement.

The worldwide picture masks significant regional variation and evidence base for the African context is relatively sparse. According to the World Health Organization (2021), nearly 10% of the population of sub-Saharan Africa suffers from anxiety disorders and new school-based research is finding adolescents are not spared. In Nigeria, Chukwuere et al. (2020) conducted a study on urban secondary students and found that 10.28%

of the students aged 11-19 years were identified as anxious. In Zambia, Chiwanda et al. (2020) reported a strong relationship between academic anxiety and achievement of secondary school pupils with salient correlates being examination stress and socio-cultural performance pressures. Moyo and Moyo (2021) also found that mental ill health, especially the social anxiety, had an impact on the academic functioning of South African students and affected their concentration. This trend was corroborated by Sikhwari et al. (2020), who found a higher level of anxiety during the period of the exams. The findings indicate that anxiety is widespread and disruptive to learning; however, there has been limited research conducted in specific countries, and the majority of studies have focused on urban areas or in relatively high resource environments.

In Kenya, anxiety is starting to garner empirical attention and the numbers are alarming. According to Kenya Mental Health Foundation (2021), 23.4% of Kenyan adolescents (13-17 years) suffered from anxiety during the previous year and 17.8% secondary school students were consistently worried about school-related matters. Kamau et al. (2020) reported that 25% of the secondary school respondents experienced anxiety in relation to academic performance, which is often exacerbated by the level of importance given to national examinations such as the Kenya Certificate of Secondary Education. Nyayieka et al. (2020) estimated that near a quarter (26.4%) of Kenyan adolescents aged 13 to 19 years exhibited generalised anxiety symptoms, while Osborn et al. (2020) reported high levels of anxiety and depression, exceeding clinical thresholds, among Kenyan high school students. Anxiety associated with exam, family pressure, financial constraint, teacher expectations and peer comparison that negatively influenced students' experiences was also reported by Mutisya and Muli (2020) and Mwangi and Nyaga (2021) in Nairobi and Murang'a counties respectively. With regard to anxiety, this shows that Kenyan adolescents experience significant amounts of anxiety, and that this body of work has been produced primarily in urban and peri-urban counties.

These gaps are thrown into relief in Samburu County. Samburu is a marginalised county in the Rift Valley region of Kenya, with low access to quality learning facilities, high levels of poverty and a long history of cultural barriers to formal education. According to the successive Kenya Certificate of Secondary Education mean scores, the Kenya National Examinations Council (2021), the County has been performing below the national average in the academic performance. Performance is still low despite the interventions like teacher training, provision of learning materials, in-service courses and curriculum revision, which resulted in concern among stakeholders. Anxiety is known to have corrosive effects on concentration, motivation and engagement (Abbo et al., 2021; Chiwanda et al., 2020; Kamau et al., 2020; Moyo & Moyo, 2021) and thus widely recognized as a significant contributor to such under performance. However, the anxiety profile that students in a pastoralist, resource constrained county experience has not been described and drivers of their anxiety have not been examined.

This study thus attempts to answer two problems. One, while anxiety is a common phenomenon among Kenyan adolescents, the prevalence and severity of anxiety among secondary school students in Samburu County was not known using a validated screening tool. Second, while there is a significant literature that identifies academic, familial, socio-economic and cultural causes of student anxiety, there was no literature that indicated the relative salience of these causes in the unique socio-cultural ecology of a pastoralist county. A few researchers have examined correlates and academic underperformance without a primary focus on anxiety (Ganley et al., 2021; Sylvia et al., 2023; Yang et al., 2019) and what little literature exists in Kenya has focused on the relationship between anxiety and performance rather than on prevalence as a primary concern. In addition, there is very little research that has focused specifically on the ways that local cultural norms, family expectations and community pressures affect students' experiences of anxiety in rural Kenyan contexts.

This study aimed to evaluate the prevalence of anxiety and identify some of the factors contributing to anxiety among secondary school learners in Samburu County, Kenya. The objectives steered the investigation in two directions: to determine the level of anxiety of secondary school students in Samburu County and to establish the causes of anxiety of secondary school students in Samburu County. The study provided evidence of the levels of anxiety and the sources of anxiety within an under-researched pastoralist context that can be used to inform culturally appropriate, school based mental health provision. It also addresses the acknowledged need for research that is sensitive to the socio-cultural contexts of marginalised communities in Kenya, and does not just extrapolate from the urban context.

LITERATURE REVIEW

Anxiety in Adolescence

Anxiety is not one single entity, but a family of related constructs which vary in their persistence, triggers and developmental importance. Ajmal and Ahmad (2019) conclude that there is an important distinction between trait anxiety and state anxiety. Trait anxiety is a relatively stable tendency to become anxious in each and every situation regardless of context or precipitating history, so that the person is generally disposed to apprehension in class, at play or in sport. State anxiety, on the other hand, is a passing state of nervousness or uneasiness that reflects the moment-to-moment changes in the level of arousal. In the context of education, this general architecture manifests itself in different forms of context specific anxieties, like test anxiety, mathematics anxiety, foreign language anxiety, writing anxiety, statistical anxiety, computer anxiety, etc., which can affect learning when it surfaces. Adolescence is a developmental stage of vulnerability to these types of anxiety because of the confluence of rapid biological development, escalating

cognitive demands of academic work, and increased peer assessment.

Importantly, academic anxiety does not just exist amongst those who struggle with school. Flett et al. (2022) showed that gifted and high achieving students are also vulnerable, as perfectionism and achievement motivation can lead to academic anxiety through the unrealistic expectations that gifted and high achieving students have for themselves or others have for them. This observation is a reminder that that anxiety cannot be equated with low ability and that it is related to the cognitive appraisal that leads to distress. Similarly, Mamolo (2022) noted that anxious learners can be affected in the behavioural, cognitive and physiological aspects, with high stakes testing being a specific challenge for anxious learners, which in severe cases can lead to depressive symptomatology. All of these accounts confirm a multi-faceted nature of adolescent anxiety with its manifestations transcending academic levels.

Levels of Anxiety Among Secondary School Students

Evidence has consistently demonstrated that anxiety is a significant issue among students in secondary school. However, there are variations respective to population, approach of measurement and educational settings. Parodi et al. (2022) and Wakui et al. (2021) reported that one in three adolescents are affected by concerns around anxiety which pinpointed a rising burden experienced by students with intensified academic and social demands. Contrastingly, Mohammadi et al. (2020) concluded that generalized anxiety disorder had lower rates of prevalence (5-10%) among students. This variation shows that anxiety prevalence varies as a result of how general anxiety symptoms are measured, specific disorders or anxiety related to specific situations. Nonetheless, the convergence in studies demonstrate the effect of anxiety faced by a significant population of adolescents.

Evidence in Sub-Saharan Africa supports the pattern of prevalence among adolescents in academic environments. Abbo et al. (2021) revealed that 30% of students in Uganda experienced symptoms of anxiety especially during exams and exam pressure exacerbated the symptoms. This complements evidence by Parodi et al. (2022) but emphasizes anxiety related to examinations rather than anxiety as a general condition. Further, in the Kenyan context, evidence shows that anxiety by adolescents is both an educational and mental health issue. Substantial levels of anxiety have been reported by Kenya Mental Health Foundation (2021), Kamau et al. (2020), Nyayieka et al. (2020), and Osborn et al. (2020). However, there are variations in estimated anxiety levels due to different measures and populations. The studies highlight the prevalence of anxiety among adolescents but closely associates it with academic experiences and educational demands. Whereas studies converge, there is still a contextual limitation as much of the evidence has examined general anxiety or focused on urban populations, which limits the understanding of the distribution of anxiety among adolescents in marginalized pastoralist communities. The studies broadly highlight the prevalence of anxiety among adolescents but inadequately explains the variation in patterns in different settings or the severity of the disorder. The current study sought to address this gap by examining the levels of anxiety among students in secondary schools in Samburu County, utilizing the Generalized Anxiety Disorder-7 (GAD-7) scale to produce a profile that is severity-stratified and comparable to regional and national evidence.

Causes of Anxiety Among Students

Literature generally reveals that anxiety is multifactorial and results from an interaction of family, cultural, academic and socio-economic and not a single factor. For example, Fia et al. (2022) identified institutional, political, societal, personal and familial stressors whereas Koi-Akrofi et al. (2020) concluded that anxiety is linked to specific modalities in the educational environment such as social, computer and language anxiety. These studies provide varying stressors, yet they converge on the conclusion that adolescents' anxiety is influenced by environmental and individual circumstances. The multifactorial lens offers a basis for examination of adolescents' anxiety contextualized in an environment characterized by intersecting economic, familial and cultural factors.

School Environment Factors

The most consistent source of anxiety among adolescents has been reported to be academic pressure. Ajmal and Ahmad (2019) concluded that primarily, academic anxiety is stress related to performance, especially students' fear of failure, whereas Pascoe et al. (2020) concluded that in environments with high competition, teachers', peers' and parents' expectations intensify the fear of failure among adolescent students and makes them more concerned over their grades. While Ajmal and Ahmad place emphasis on the adolescents' perception of performance, Pascoe et al. on the other hand reveal that adolescents' perceptions are reinforced by their social environment which is tied to educational achievement. These perspectives complement one another; hence anxiety is internally generated by academic demands and anxiety is further intensified by achievement expectations.

Another dimension of the educational environment is peer relationships. Coyle et al. (2021) established that victimization by peers, harassment, social exclusion and bullying increase adolescents' anxiety. Unlike studies centered on academic performance, the findings by Coyle et al. reveal how anxiety results from the social experiences of adolescents within the academic environment. Evidence thus reveal that schools are environments rife with anxiety factors through negative interactions among peers as well as academic competition. Nonetheless, literature is limited in interrogating how school-based pressures explain anxiety in marginalized pastoralist settings where expectations distinctively interact with community and familial pressures.

Family Factors

Familial influence has been identified to be a multidimensional factor. Lu et al. (2021) associated demands of parents with perfectionist characteristics, perceived mismatch between parents' and students' goals and fear of failure. However, Laletas and Khasin (2021) broadened this observation by revealing that anxiety related to familial factors also arises from bereavement, parental conflict, divorce and financial strain. These studies augur that anxiety mainly emanates from the family but the emphasis is that this relies on varied mechanisms. Lu et al. emphasizes academic expectations while Laletas and Khasin broaden the factors to familial stressors. Literature provides the indication that relationships in the family may be protective and anxiety may be minimized by encouragement, emotional validation and guidance, which suggests that the family is a major contributor on the prevalence of adolescents' anxiety.

Socio-Economic Factors

Another pathway that anxiety has been established to persist is socio-economic circumstances. Khan and Nadeem (2020) linked economic instability, financial insecurity and unemployment to prevailing anxiety among adolescents, due to the fact that access to basic needs is restricted by economic disadvantage and familial relationships are also strained as a result. Subramaniam et al. (2020) on the other hand, concluded that socio-economic disadvantage has a negative effect on mental health service access, hence adolescents with significant logistical and financial barriers receive less psychological support. These findings are complementary, whereby Khan and Nadeem pinpoint anxiety to emerge from socio-economic conditions whereas Subramaniam et al. reveal that socio-economic disadvantage restricts adolescents' access to psychological interventions. The relationship is significant to Samburu County, since economic disadvantage is prevalent, leading to adolescents' anxiety and limiting access to psychological support.

Cultural Factors

Adolescents' anxiety can further be explained by cultural factors since they influence distress-generating expectations and adolescents' willingness/unwillingness for disclosure. Cong and Ling (2020) concluded that cultures with strong values on academic achievement leads to intensified anxiety levels as adolescents' pressure to satisfy expectations is heightened especially among disadvantaged and minority students. Similarly, cultural stigma plays a role in discouraging adolescents from seeking support since anxiety may be seen as shame, failure or weakness. In addition, culture operates interconnectedly between mechanisms, hence it contributes to anxiety and at the same time restricts adolescents' opportunities for intervention and disclosure. This is important or the current study since evidence is limited with regard to how community pressures and cultural norms lead to adolescents' anxiety in Kenya's rural pastoralist communities.

THEORETICAL FRAMEWORK

Cognitive Behavioral Theory

The work of Aaron T. Beck and Albert Ellis has led to the development of a powerful theory of how thoughts, behaviours, and feelings can contribute to the onset and maintenance of anxiety. In this model, dispositions to anxiety are assumed to stem from maladaptive schemas and habitual misinterpretation, both of which can be targeted in intervention (Hidayati & Thompson, 2025). The theory posits that incoherent and irrational thinking triggers "cognitive distortions" which then increase anxiety. Catastrophizing, overgeneralization, and dichotomous or black-white thinking are three ways in which the reality of experiences is skewed and fear is heightened. Considering that anxiety is believed to stem from these appraisals, the theory targets intervention at identifying and restructuring maladaptive cognition.

The behavioural aspect of the theory provides an additional range of techniques such as cognitive re-structuring, exposure and relaxation training (Chellappa & Aeschbach, 2022). Cognitive restructuring is an exercise in identifying irrational or negative thoughts about anxiety and challenging them, allowing them to be replaced with more balanced thoughts. Exposure-based approaches involve systematic, gradual exposure to feared situations, allowing them to become accustomed to them and build coping ability. Relaxation techniques such as controlled breathing, progressive muscle relaxation, guided imagery, and meditation focus on the physiological arousal that is associated with anxiety. The strength of this perspective is that it is well supported by empirical research; Hofmann et al. (2012) found that CBT was one of the most well researched and well-supported therapeutic perspectives, with ample evidence supporting its efficacy in the treatment of anxiety and academic anxiety. Lowe et al. (2019) also pointed out that it provides students with concrete tools that they can use in the future to improve their wellbeing through skills training such as stress and time management and that Alford and Beck (2019) noted its adaptability to different cultural and social contexts.

However, the theory is not without its limitations and this is particularly relevant in the context of Samburu County. Cohen et al. (2019) warned that while the method can be effective in reducing anxiety, it might not tackle the socio-cultural foundations of the problem as the distress experienced by students in a marginalised rural area is not only due to internal cognitive distortions but also due to external factors such as stressors, family and society norms which are not targeted by cognitive restructuring. However, Sanchez and Lee (2019) noted that it is resource intensive, requires a lot from the student, and may not be most effective for those chronically anxious and may need to be used with other modalities. These reservations prove to be a driving force for the combined approach of cognitive behavioural and a socially and culturally aware perspective.

Socio Cultural Theory

The Socio-Cultural Theory, which builds on the work of Lev Vygotsky, places emphasis on the social and cultural aspects that shape the experience, expression and management of anxiety (Glăveanu, 2020). Social determinants of mental health, such as social support networks, socio-economic status and environmental stressors, are highlighted. Positive relationships with family, friends, and others in the community buffer against anxiety, whereas isolation puts one at risk; financial insecurity and lack of access to healthcare and other resources and opportunities increase risk due to lower socio-economic status, and feeling unsafe in the community due to violence, discrimination, or trauma can contribute to the development of anxiety disorders (Frederick & Reynolds, 2021). Rutter and Sroufe (2019) suggested that it is important to account for students' cultural backgrounds and context to provide a more complete understanding of their mental health and academic struggles, and this is pertinent to a county where behaviour is heavily defined by gender roles, family expectations, and cultural values. Wang et al. (2020) highlighted family, peer and community support as a protective factor to minimise the effects of academic stress.

There are limitations in the theory. It may downplay individual differences in the experience of anxiety, as not all students in a culture react the same way to a stressful situation, and Kleinman and Good (2019) found the perspective can conceal the cognitive and emotional aspects of anxiety. Furthermore, cultural norms can negatively reinforce, rather than support, direct contact with mental health issues, and stigma surrounding mental health distress can be a barrier to seeking help. Chen et al. (2020) also warned that effectiveness in a particular cultural setting, might not be the same in another, a generalisability issue which is of particular significance in designing appropriate support in Samburu County.

Conceptual Integration

The two theories work best when read together and not separately as they complement each other when explaining the same phenomenon. Cognitive Behavioral Theory sheds light on the inner workings of anxiety, the mental, evaluative processes that involve distorted thinking, harmful actions, and physical tension, all of which contribute to distress and its perpetuation. In the context of Socio-Cultural Theory, that machinery is part of the external web of family expectations, socio-economic conditions, peer relationships, and cultural norms that supply its content and shape its expression (Simmons & Glover, 2017). A combination of the two views allows an analysis that neither diminishes the anxiety to flawed thinking nor eradicates it in the social structure but rather an interaction between the individual and the societal level. This is an integrated lens that will guide the present study to believe that anxiety is an intelligible phenomenon only as the joint product of cognitive appraisal and socio-cultural circumstance and that effective interventions will require a combination of cognitive behavioural tools with culturally grounded, community-oriented support.

METHODOLOGY

Research Design

This study used a concurrent mixed methods design to gain a holistic understanding of the research problem by using both quantitative and qualitative approaches (Dawadi et al., 2021; Stern et al., 2021). The quantitative strand used a descriptive survey that is suitable for systematically describing the characteristics, trends, and status of a population to answer what, where, when, and how questions (Siedlecki, 2020). This strand allowed the objective measurement of anxiety levels and comparison of the pattern of anxiety among the student sample. The qualitative strand was used to understand the lived experiences of students and contextual factors that influenced student anxiety to give voice to participants and to elicit meanings and explanations that could not be captured through statistical analysis (Johnson et al., 2020). Triangulation was possible with the concurrent design as both types of data were used in enhancing one another.

Study Area

The study was carried out in Samburu County which falls in Rift Valley Province and is adjacent to the counties of Turkana, Baringo, Marsabit, Isiolo and Laikipia. The county is unique in its cultural heritage and traditionally nomadic/pastoralist population. Its education sector faces problems similar to other parts of rural Kenya such as inequality of access to good education, poverty levels, and cultural constraints on modern education. County students' performance has remained below the national average (Kenya National Examinations Council, 2021) and even though interventions have been ongoing, they have not yielded positive results. Such attributes added a special socio cultural and educational disadvantage and made it a very interesting location for the study of anxiety among learners.

Population

The study population consisted of secondary school students aged 14 to 18 years of both sexes, from all over the mixed communities of Samburu County which includes the Samburu, Turkana and Borana groups. The Samburu County Director of Education (2024) statistics indicated that the county had 461 teachers in 25 secondary schools of which two were boys' schools, two were girls' boarding schools and 21 were mixed day schools with a total of 18,514 students.

Sampling Procedures and Sample Size

A stratified sampling strategy was used at the level of schools. The secondary schools were stratified by type: boys' boarding schools, girls' boarding schools and mixed day schools and simple random sampling was used within each stratum to provide a proportionate representative selection (Berndt, 2020; Lohr, 2021). Based on the established methodology that between 10-30% is enough

of the population, 30% of schools was selected to give a sample of eight secondary schools.

The population size for students was above 10,000, the formula for large population was used, the proportion in the target population was estimated at 0.5, the level of significance was 0.05 and the standard normal deviate was 1.96. This produced a desired sample of 384 students. In each sampled school the students were stratified by form and simple random sampling was used to select students in proportion to the number in each form, providing representation of students in Form 1 through to Form 4.

Instruments

Structured questionnaires which were self-developed, Generalized Anxiety Disorder 7 item scale (GAD-7) were used for the collection of quantitative data from students and teachers. GAD-7 is a short, commonly used instrument of anxiety symptoms based upon the criteria for generalized anxiety disorder as specified in the Diagnostic and Statistical Manual of Mental Disorders. Each of seven items was rated on a 0-3 scale, with anchors “not at all”, “several days”, “more than half the days” and “nearly every day”, and total scores ranged from 0 to 21, with the following self-determined severity bands: minimal anxiety (0-7), mild (8-11), moderate (12-14), and severe (15-21). The structured questionnaires were answered on a Likert scale with respondents marking their level of agreement with statements describing anxiety symptoms and possible causes of anxiety.

Qualitative data was collected from focus group discussions with students. A sample of 8 students in 4 groups totaling 32 students was selected for participation in the study. The focus group discussions were designed to elicit the perspectives and direct testimonies of the students in small groups of 8–12 students per group, which was an appropriate format for the specific context of the study to allow for group dynamics and collective (shared) views in a relatively brief period (Akyildiz & Ahmed, 2021; Cortini et al., 2019). The qualitative instrument complemented the questionnaire to enable triangulation of the data sources (Cheung, 2021; Iwaniec, 2019).

Validity and Reliability

To ensure the content validity of the questionnaire, the questionnaire was reviewed by two university appointed supervisors who examined the questionnaire to determine that all aspects required in the study were covered. The instruments were not presented for interrogation to an expert panel, however, to address this limitation, the two supervisors ensured that they provided adequate feedback respective to consultations between them and the researcher. Cronbach's alpha was used to evaluate internal consistency, and values of 0.7 or higher were considered acceptable reliability; the actual coefficient for Generalized Anxiety Disorder 7 item scale (GAD-7) was 0.847 whereas the coefficient of the self-developed questionnaire was 0.820, which is a good level of internal consistency for both instruments. Trustworthiness for the qualitative tools was achieved by providing an expert review of the interview and focus group discussion guides for clarity and relevance to the study aims and by checking for consistency in the information gathered across the interviews and focus group discussions. To further validate the reliability, the same questions were asked from all respondents and participants were asked to go back to their answers and clarify them, and reported utterances were used to ensure a grounding in the data (Ahmed & Ishtiaq, 2021).

Data Collection Procedures

Before data was collected the researcher had preliminary visits with the sampled schools to acquaint the principals with the research intent and to schedule appropriate dates. The required permissions were given which comprised a research permit from the National Commission for Science, Technology and Innovation, an introductory letter from the university which established rapport and consent and guaranteed confidentiality of information for principals, teachers and students. Class teachers informed of procedures and helped coordinate the exercise. The data was gathered through three phases: questionnaires, teacher interviews and student focus group discussions. All information was kept in line with privacy protocols and only what was needed.

Pre-Testing

The instruments were pre tested on a sample similar to the target population to check the questions for their substantive, comprehensiveness and understandability while considering the literacy levels and cultural context of the setting (Latimier et al., 2019). The process of pre testing was done in one school in Isiolo County with 14 teachers and 38 students representing about 10% of the sampled teachers and students. The researcher was able to identify and correct the weaknesses of the instruments during this process which led to their reliability and validity (Ikart, 2019).

Data Analysis

Using descriptive statistics, the quantitative data was summarised by means, frequencies, percentages using the Statistical Package for the social Science (SPSS v31.0.0) to show the prevalence of anxiety and the relative salience of causes of anxiety among the students (Ali, 2020). Thematic analysis of qualitative data from the interviews and focus group discussions was used to identify themes, patterns and insights that were then linked to the quantitative results for comprehensive analysis by integrating the narratives to quantitative findings (Jackson et al., 2019).

Ethical Considerations

Ethical concerns were regarded as paramount, as mental health is a sensitive area, and minors were involved (Nichol et al., 2021). Students ranged in age from 14 to 18 years, and were unable to give their own consent to participate, therefore assent was obtained from the students as well as consent from teachers and school

administrators. Participants were told in detail the purpose of the study, that participation was voluntary, potential risks and benefits, the measures taken to ensure the confidentiality of the data, and the ability to withdraw at any time without any consequences, and consent forms were written in a clear, accessible manner. Confidentiality and anonymity was protected by de-identifying and/or anonymising data, following the data protection requirements, limiting access to the raw data to the researcher and reporting findings in an aggregate manner. The researcher was always mindful of possible distress and had the necessary resources to provide support as outlined in beneficence.

RESULTS

Participant Characteristics

The surveys were sent to 384 students, of whom 292 (76%) responded to the questionnaires.

Table 1: ***Response Rate***

Questionnaire Response	Frequency	Percentage
Questionnaires Responded	292	76%
Questionnaires not Responded	92	24%
Total	384	100%

The response rate was well above the 50% level which was considered sufficient for analysis. Creswell and Creswell (2017) argue that for analysis to be comprehensive, the response rate should be at least 50%.

Table 2: ***Student's Gender (N = 292)***

Students' Gender	Frequency	Percentage
Male	129	44.2%
Female	163	55.8%
Total	292	100%

The findings revealed a higher percentage of female students compared to male students which indicted a gender imbalance between the students' population in schools in Samburu County.

Table 3: ***Student's Age (N = 292)***

Students' Age	Frequency	Percentage
14 years	7	2.4%
15 years	13	4.5%
16 years	59	20.2%
17 years	109	37.3%
18 years	104	35.6%
Total	292	100%

The study indicated that students were predominant in their senior year, reflecting the typical age of students. Lower percentages were established in students of lesser ages, which indicated that they were less represented in the population. Nevertheless, the findings showed that students were gradually progressing from lower to upper classes.

Table 4: ***Student's Class (N = 292)***

Students' Class	Frequency	Percentage
Form 1	0	0.0%
Form 2	73	25.0%
Form 3	76	26.0%
Form 4	143	49.0%
Total	292	100%

The findings revealed a fair distribution among students in Form 2 and Form 3. Students in Form 4 were the dominant population in the study. Notably, there was an absence of Form 1 students which was attributed to their limited presence at the time of carrying out the study. The situation may be associated with the timing of the study, when Form 1 learners had not yet attained the same level of attendance and participation as students in the higher forms.

Anxiety Levels Among Students

The GAD-7 scale was used to give a severity-stratified profile of anxiety the students experienced, which is summarised in Table 5. The highest proportion (40.5%) of pupils were in the minimal/no anxiety range and an additional 34.3% experienced mild anxiety. However, there were 12.4% who said they were moderately anxious and 12.7% who said they were severely anxious, meaning roughly a quarter of this sample (25.1%) was moderately to severely anxious. The finding of a large minority of students with clinically meaningful symptoms is thus more important, as it indicates a group of students who may need psychological support and intervention.

Table 5: ***Distribution of Anxiety Severity Based on GAD-7 Scores (N = 292)***

GAD-7 score range	Anxiety level	Percentage of students
0 to 7	Minimal or no anxiety	40.5%
8 to 11	Mild anxiety	34.3%
12 to 14	Moderate anxiety	12.4%
15 to 21	Severe anxiety	12.7%

The item level questionnaire on anxiety levels elaborated this profile, with mean scores across statements ranging from 1.76 to 3.14 on a five-point scale where higher means indicated more agreement to items, establishing a general pattern of moderate to high anxiety in several domains of academic life. These results are summarised in Table 6. The single most pronounced concern was anxiety about future academic success, which recorded

the lowest mean of 1.76, with 58.9% of students strongly agreeing and a further 21.9% agreeing that they worried about their academic future. Test related anxiety was also prominent: 50.4% of students agreed or strongly agreed that they experienced physical symptoms such as a racing heart or sweaty palms when thinking about examinations, a statement with a mean of 2.73. Almost half of the students, 49.7%, reported feeling overwhelmed by school assignments and deadlines, and 39.4% reported avoiding certain school activities because of anxiety. Although 52.1% of students indicated that they could manage their anxiety effectively, a sizeable 25.7% felt unable to do so, and 40.1% agreed or strongly agreed that their anxiety felt out of their control.

Table 6: ***Anxiety Levels Among Students: Agreement and Descriptive Statistics (N = 292)***

Statement	SA	A	N	D	SD	Mean	SD
I often feel nervous or worried about school related activities	17.1%	20.5%	20.2%	21.6%	20.5%	3.08	1.389
I experience physical symptoms like a racing heart or sweaty palms when thinking about exams	27.1%	23.3%	15.1%	18.5%	16.1%	2.73	1.442
I feel overwhelmed by school assignments and deadlines	18.2%	31.5%	22.3%	16.1%	12.0%	2.72	1.269
I often have trouble concentrating due to anxiety about school	20.2%	20.5%	19.9%	17.5%	21.9%	3.00	1.439
I find myself worrying about my future academic success	58.9%	21.9%	8.2%	5.8%	5.1%	1.76	1.147
I experience anxiety during class presentations or when asked to speak in front of others	19.2%	21.9%	20.9%	17.5%	20.5%	2.98	1.410
I feel that my anxiety negatively affects my ability to perform well academically	30.1%	29.8%	16.4%	10.3%	13.4%	2.47	1.366
I avoid certain school activities because of anxiety	18.5%	20.9%	16.4%	16.1%	28.1%	3.14	1.490
I frequently feel that my anxiety is out of my control	15.4%	24.7%	24.7%	18.8%	16.4%	2.96	1.309
I am able to manage my anxiety effectively when it arises	25.7%	26.4%	22.3%	12.0%	13.7%	2.62	1.348

These results indicate that students in Samburu County carry a considerable load of school related anxiety, most acutely in relation to their academic future, examination situations, and workload. The salience of physical symptoms such as a racing heart and sweating reflects the somatic toll of academic stress, while the prevalence of feeling overwhelmed suggests that many students perceive their academic load as unsustainable. The reported avoidance of school activities is consistent with the emergence of maladaptive coping, and the substantial proportion of students who feel unable to control their anxiety reinforces the need for targeted support.

Causes of Anxiety Among Students

The causes of anxiety, assessed through the same Likert format, revealed a clear hierarchy of drivers, presented in Table 7. The two most strongly endorsed causes were fear of poor grades, with a mean of 1.68, and high expectations, with a mean of 1.84, each agreed or strongly agreed with by more than 80% of students. Inadequate preparation followed as a significant contributor, with a mean of 2.25 and roughly two thirds of students in agreement. Self-esteem concerns recorded a mean of 2.58. A second cluster of interpersonal and environmental stressors comprised teacher harshness with a mean of 2.85, peer pressure with a mean of 2.98, helplessness with a mean of 3.06, parental disapproval with a mean of 3.08, and ineffective orientation with a mean of 3.19. The relatively higher mean for ineffective orientation signals that institutional support processes were perceived as inadequate by a meaningful share of students.

Table 7: ***Causes of Anxiety Among Students: Agreement and Descriptive Statistics (N = 292)***

Cause	SA	A	N	D	SD	Mean	SD
High expectations	49.3%	30.8%	9.9%	6.8%	3.1%	1.84	1.059
Grades	49.3%	37.7%	8.9%	2.7%	1.3%	1.68	0.829
Self esteem	19.2%	29.8%	32.9%	9.9%	8.2%	2.58	1.150
Helplessness	19.2%	17.8%	21.9%	20.2%	20.9%	3.06	1.409
Peer pressure	21.2%	20.2%	20.2%	16.4%	21.9%	2.98	1.449
Parental disapproval	21.2%	13.7%	23.6%	18.5%	22.9%	3.08	1.445
Teachers' harshness	27.1%	14.4%	23.3%	16.8%	18.5%	2.85	1.456
Ineffective orientation	12.7%	18.8%	24.0%	25.7%	18.8%	3.19	1.294
Inadequate preparation	35.6%	31.5%	14.4%	8.9%	9.6%	2.25	1.289

The quantitative hierarchy positions academic performance pressures, namely grades and high expectations, as the dominant causes of anxiety, with preparation and orientation deficits and a constellation of interpersonal stressors forming important secondary sources. The prominence of grades and expectations indicates that anxiety in this setting is closely bound to the perceived stakes of academic achievement and to the evaluative gaze of parents, teachers, and peers.

Qualitative Findings

The quantitative hierarchy was given texture and emotional depth in the focus group discussions and was continually raised by the students in their open testimony: fear of failure, fear of punishment and fear of judgement. One student said that the somatic and anticipatory aspects of examination anxiety were like the test anxiety findings:

> *"Before exams, I get a knot in my stomach, I feel anxious before exams especially in subjects like mathematics and chemistry, because I feel it will affect my chances of going to a university."*

Another related fear of being sanctioned by the teacher:

> *"I get anxious when I don't finish my homework; I am afraid that the teacher will be mad or embarrassed in front of the class."*

A third identified the fear of being assessed by a peer audience as a source of anxiety in making oral presentations:

> *"Oral presentations make me nervous because I don't like the idea of people in my class judging me, sometimes my hands shake, sometimes I stutter."*

One theme that featured in a recurring way was the burden of national examinations and the social stigma that comes from their results. One participant explained:

> *"The pressure to pass national exams is overwhelming; if you fail, you are as if you have no future; parents, teachers and even the community judge you based on your grades."*

What was unique about this pastoralist and economically limited environment was the worry created by fee insecurity, which several learners reported as affecting their focus:

> *"Some of us worry about school fees, which directly affects our concentration. When you're not sure if you'll be sent home tomorrow, how can you concentrate?"*

The gendered nature of the family expectation was also very much on the surface:

> *"There's also the fear of disappointing our families, especially for girls. Some parents invest a lot in their daughters, hoping they'll succeed and change the future of the family."*

Peer comparison and teacher behaviour completed the picture with students saying they were "trying to be the best" and that "when some teachers shout at or embarrass students in front of the class for getting wrong answers, they become hesitant to participate".

Integrated Results

The study used narrative integration in its mixed methods design, whereby the quantitative and qualitative results were weaved together. Blending the descriptions of statistical findings and thematic qualitative quotes clarified and contextualized the meaning of the combined data (Lynam et al., 2020). The qualitative data corroborates the quantitative data, giving greater credibility to the central findings and a deeper understanding of the functioning of the measured drivers in students' lives. The quantitative dominance of grades and high expectations was paralleled by the qualitative emphasis on the existential stakes of national exams and the fear of communal judgement, and the statistical hierarchy was a real lived hierarchy of concern. Visceral descriptions of stomach knots, shaking hands, and stuttering paralleled the salience of test related physical symptoms in the questionnaire, evidencing the somatic reality behind the numbers. Importantly, two locally specific stressors emerged from the qualitative strand that were not fully captured by the closed item questionnaire: fee insecurity and family gendered expectation which indicate the socio-economic and cultural particularity of anxiety in Samburu County. The low means for distress and the high means for self-esteem and helplessness, as well as students' descriptions of struggle in the inner world, also point to the cultural stigma referred to in the literature. The overall findings from the integrated analysis depict the construal of anxiety in this context as a complex phenomenon with various factors contributing to its manifestation, such as academic pressure, social expectation, family dynamics, economic precarity, and cultural influences.

DISCUSSION

Interpretation of Anxiety Levels

The meaning of the severity profile produced by the GAD-7 is not easily summarized. One interpretation of this finding is that the majority of the students (around three quarters) are in minimal to mild end of the scale which is a cautious reassurance that disabling anxiety is not the modal experience in Samburu secondary schools. The second and more urgent interpretation is that the minority of students (about 25%) who experienced moderate or severe anxiety form a clinically significant group, whose needs can be easily lost in the aggregate optimism. This ratio is well within and slightly higher than the range found in the broader literature. It is higher than the generalized anxiety disorder prevalence of 5-10% reported by Mohammadi et al. (2020) in school aged populations, is similar to the anxiety concern rate of 30% reported by Parodi et al. (2022), and is generally similar to the higher Kenyan estimates of Nyayieka et al. (2020) and the high clinical threshold rates reported by Osborn et al. (2020). The convergence is striking, considering the

unique hardship of the study context, and implies that Samburu students are at least as likely to experience anxiety as are their better resourced counterparts in the country.

The item level results are used to clarify where the anxiety is focused. It was just that the largest concern for the future, the lowest mean of the entire anxiety battery, was anticipatory anxiety related to the high-stake nature of Kenyan secondary education, where the Kenya Certificate of Secondary Education serves as a ticket to further opportunity. This finding aligns with the work of Awadalla et al. (2020) who explained how constant worry reduces attention, memory and concentration, and the more general literature that performance anxiety is exacerbated by an examination-centred approach (Pascoe et al., 2020). This salience of test-related physiological symptoms is in line with research on test anxiety, in which somatic anxiety (e.g., sweating, heart rate) is a key characteristic (Cassady, 2022; Cipra & Müller-Hilke, 2019). The pattern makes sense from a CBT perspective as the result of catastrophic and overgeneralized appraisals regarding academic failure, where experiencing one feared event becomes a judgement on the whole of the student's future; exactly the types of cognitions described in the foundational CBT model, and reported as drivers of anxiety by Wood et al. (2020). The reported avoidance of school activities, in turn, represents the predicted maladaptive behavioural coping which ensues from such appraisals and which, by limiting exposure, tends to exacerbate anxiety rather than to relieve it.

Interpretation of Causes of Anxiety

According to the hierarchy of causes the top layer is academic performance pressures and there is supporting evidence in the literature. The high prevalence of fear of poor grades (83%) and high expectations (81%) are consistent with Ajmal and Ahmad (2019) who attributed academic anxiety to performance-related stress, such as the fear of failing or doing badly and with Pascoe et al. (2020) who reported the high level of overlap of expectations held by parents, teachers, and students creating a high stress academic climate. Unpreparedness in high stakes environments is confirmed by the salience of inadequate preparation, with the higher score of ineffective orientation indicating that support processes within the institution may not be adequate to help students meet academic demands, which may leave them feeling disoriented and overwhelmed (Green, 2022). The cognitive behavioural model is coherently explained these academic causal relationships, with the appraisals of threat based on the discrepancy between perceived demand and perceived capacity being the basis of anxiety.

The second set of interpersonal and environmental factors provides an opportunity to read the text socio-culturally. Notably the endorsement of peer pressure is similar to Coyle, Malecki, and Emmons (2021) who showed that negative peer interactions and bullying are significant contributors to student anxiety, and the qualitative descriptions of self-doubt resulting from peer comparison directly portrays this mechanism. Lu, Nie, and Sousa-Poza (2021) demonstrated that fear of parents' disapproval is a significant source of stress, and this is evident in how students speak of the investment that parents place in their children, especially their daughters, to achieve academic success. The driver of teacher harshness is consistent with the testimony that teacher shouting or embarrassing students when they make mistakes makes them feel afraid to participate and consistent with Mamolo (2022) and the general understanding that unsupportive or punitive pedagogy can make students feel unsafe, judged, and afraid to participate. The higher means of helplessness and self-esteem concerns (but not specifically related to the measured causes) align with the socio-economic and family stressors found by Khan and Nadeem (2020), Laletas and Khasin (2021) and Subramaniam et al. (2020), and the qualitative highlighting of fee insecurity gives a localised example of the economic stressors.

The cultural dimension is of particular importance as it is a source of anxiety and a condition for its disclosure. This communal judgement associated with examination outcomes manifests in students' perception that their parents, teachers and the community at large judge them based on their examination results, which Cong and Ling (2020) connected to increased anxiety. The same cultural matrix seems to be discouraging help seeking as students described internalising struggles instead of expressing them, which Cong and Ling (2020) identified as a barrier to support and which the socio-cultural perspective would consider as a structural impediment to relief. The gendered nature of family expectation, expressed in the special burden placed on girls who fall short of family expectations in the form of education, further locates anxiety within the specific cultural economy of a pastoralist county where the hope for change is invested in education.

Comparison with Previous Studies

The current results confirm previous studies and provide new insights into current patterns. The prevalence and severity profile are generally consistent with national estimates of prevalence in Kenya (Kenya Mental Health Foundation, 2021; Nyayieka et al., 2020; Osborn et al., 2020) and with other regional studies in Africa which report high levels of school-based anxiety (Abbo et al., 2021; Chiwanda et al., 2020; Chukwuere et al., 2020). The centrality of examination and grade related anxiety is consistent with the findings of Abbo et al. (2021) in Uganda, where they reported increasing levels of anxiety during periods of academic stress, and Kamau et al. (2020) in Kenya who related anxiety to the high-stake nature of the national examination. The causes' arrangement is reminiscent of the multifactorial explanation proposed by Fia et al. (2022), which pinpointed the key sources of academic anxiety as personal, family, institutional, and societal stressors. The current study builds on literature by illustrating how these well-established drivers of change are intertwined with, and shaped by, the unique socio-economic and cultural factors present in a marginalised pastoralist county, where fee insecurity and gendered family expectations have received less attention in the literature, despite their

salience for the local context. However, the study diverges from findings by Pérez-Jorge et al. (2025) who revealed that academic stress is not strong enough to indicate a direct predictive effect among students. Similarly, the findings differ with Chen et al. (2024) and Kristensen et al. (2023) who concluded that whereas anxiety may have an effect on performance, its effects are mitigated by institutional strategies and students' coping strategies.

Theoretical Implications

The results support the use of both Cognitive Behavioral Theory and Socio-Cultural Theory in the study, instead of either one alone. The appraisal-driven nature of the observed anxiety is clearly explained by the cognitive behavioural framework: the catastrophic worry about academic failure is an automatic negative thought; the somatic arousal, characteristic of test anxiety, is a bodily reaction to this negative thought; and the avoidance behaviors through which students try to deal with their distress, is a counterproductive coping strategy. However, a purely cognitive reading of the appraisals would not account for the widespread dissemination of those appraisals nor for the fact that some aspects of those appraisals, especially fear of communal judgement and anxiety about school fees, recur throughout the sample. It is precisely this context that the socio-cultural dimension provides, placing content and intensity of pupils' appraisals in terms of family expectations, economic precarity, peer dynamics and cultural norms of achievement and disclosure. The data therefore lend weight to the integrated proposition that anxiety in this context is co-produced at the individual and societal levels (as suggested by Simmons & Glover, 2017) and that the cautions of Cohen et al. (2019) and Sanchez & Lee (2019) about cognitive intervention in isolation from socio cultural context ring true. Likewise, the differences in student self-reported ability to manage anxiety by subject matter challenge a purely socio-cultural explanation because, as Kleinman and Good (2019) remind us, there are individual differences in cognition and emotions within a common culture.

Contextual Implications for Samburu County

The results have implications that are directly linked to the pastoralist and resource constrained nature of Samburu County in particular. The importance of fee insecurity as an anxiety source suggests that economic factors, such as expanding bursaries and providing access to basic learning materials, are not extraneous to, but in the very center of mental health, as financial precarity directly affects the concentration on which learning depends (Khan & Nadeem, 2020; Subramaniam et al., 2020). However, the cultural stigma of distress and the fact that mental health resources are scarce in low-income schools suggests that the 'usual' clinical model of service provision is unlikely to be successful, and that approaches based in the community and culturally endorsed by elders, religious leaders and community organisations will be needed to normalise seeking help. The gendered texture of family expectation also indicates, further, that interventions need to be sensitive to the specific pressures on girls in a context where education is fraught with family expectation for progress. These contextual implications underscore the need to take a socio culturally grounded perspective to integrate general principles of anxiety management into local contexts instead of simply transplanting models that were developed in urban or Western contexts (Chen et al., 2020).

Contributions to Knowledge

This study contributes in a number of ways. Empirically, it is the first study to use a validated instrument to produce a severity stratified profile of anxiety among secondary school students in a pastoralist county in Kenya and to establish a clear and locally based hierarchy of the causes of that anxiety. Based on the theoretical background, it provides an integrated account of cognition and culture, showing an analytic advantage of considering individual appraisal and social context as jointly constituting adolescent anxiety. That it used a concurrent mixed methods design methodologically demonstrates how the qualitative testimony can reveal local stressors (such as fee insecurity and gendered expectation) that may not be captured by closed item instruments from other locations. Together, these works fill the recognised research void for anxiety in socio culturally unique Kenyan communities and provide evidence for contextually appropriate interventions.

CONCLUSION

This study was aimed at evaluating the anxiety levels and anxiety causes of secondary school learners of Samburu County, Kenya. The evidence with regard to the first objective showed that while most students experienced low to moderate anxiety, there was a clinically significant minority of approximately one quarter of students who experienced moderate to high anxiety, with anxiety being highest on the future academic success, examination related physiological symptoms, and academic workload. The key take-home message on anxiety levels is that there is indeed a burden of anxiety, it is not even across this spectrum, and that there is a significant minority that is in need of psychological support which is not being provided through the generic statistics. Regarding the second objective, the study concludes that the causes of anxiety among the Samburu students are mainly academic in nature, namely fear of failing to achieve good grades and high expectations of the parents, teachers and peers, which is worsened by inadequate preparation, poor orientation and worsened by peer pressure, parent disapproval and teacher harshness. Such academic and interpersonal factors are framed by, and exacerbated by, socio-economic precarity, such as fee insecurity, and by cultural norms that celebrate achievement, link community appraisal to school exam results, have specific expectations of girls, and demonise showing distress. The general conclusion is that the adolescent anxiety in this pastoralist county is not only an individual or academic phenomenon but a multifaceted condition, that can only be understood and addressed through an integrated lens,

co-produced by the cognitive appraisal and socio-cultural circumstance.

Practical Implications

The results have a number of implications that are relevant to the levels and causes of anxiety reported here. Firstly, the mental health provision at Samburu schools should be strengthened with school-based provision, including access to trained counselling personnel, and routine, confidential identification of the students whose symptoms fall outside of the reassuring averages, and whose mental health needs are therefore not being met. Secondly, academic performance pressure was identified as the primary source of anxiety, making a compelling argument for embedding mental health and life skills, for example, stress management and time management, and realistic goal setting, into the school journey and also having a review of assessment practices which places less emphasis on high stakes performance and more on formative and supportive approaches. Third, teachers should be trained and more specifically, to recognize anxiety, respond with empathy rather than punitive discipline, and be trained to provide structured orientation, especially in the cases of students entering into and moving on in secondary school.

Fourth, the socio-economic precarity and fee insecurity were identified as real sources of anxiety and thus reducing economic stressors through increasing bursary support and making essential learning materials available should be regarded as an essential part of, not an adjunct to, the county's mental health response. Fifth, since cultural stigma deters help seeking, it is important to include families, local elders, religious leaders and community organisations in promoting a normal discussion of mental health and the reduction of stigma, as well as to consider the gendered pressures faced by girls and to promote early help seeking. Lastly, family expectation and parental disapproval added to students' anxiety, hence sensitisation meetings with parents should be held by the school so as to improve their awareness of the psychological needs of adolescents and their ability to provide emotional support without putting pressure on the students' studies. If adopted collectively, the measures would tackle both the cognitive and the socio-cultural underpinnings of the anxiety that this study has highlighted and provide a contextually relevant and coherent answer to a need that is pressing in secondary schools of Samburu County.

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