



## Effectiveness of Stress Management Counselling Techniques on Examination Anxiety Among Secondary School Students in Kaduna Metropolis, Nigeria

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### ABSTRACT

*This study investigated the effectiveness of stress management counselling techniques on examination anxiety among secondary school students in Kaduna Metropolis, Nigeria. A quasi-experimental research design was employed with 40 Senior Secondary School II (SSII) students selected through simple random and stratified sampling techniques. The study utilized a pretest-posttest control group design to evaluate the impact of cognitive-behavioral therapy (CBT), relaxation techniques, and stress management training on examination anxiety levels. Data were collected using a validated Test Anxiety Inventory and analyzed using descriptive statistics, t-tests, and ANOVA. Results indicated significant reductions in examination anxiety levels among students who received stress management counselling interventions compared to the control group. The intervention group showed a mean reduction of 28.5 points in anxiety scores ( $p < 0.001$ ), while the control group showed minimal change ( $p > 0.05$ ). Gender differences were observed, with male students showing greater improvement (31.2 points reduction) compared to female students (26.8 points reduction). The findings support the effectiveness of stress management counselling techniques in reducing examination anxiety among secondary school students. Recommendations include implementing structured counselling programs in schools and training teachers in basic stress management techniques.*

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### INTRODUCTION

Examination anxiety represents a significant psychological challenge affecting academic performance and overall well-being of secondary school students globally. In Nigeria, particularly in Kaduna Metropolis, the pressure to excel academically has intensified due to increasing competition for limited university admissions and employment opportunities. This phenomenon has led to heightened levels of stress and anxiety among students, particularly during examination periods. Examination anxiety is characterized by physiological arousal, worry, and cognitive interference that occurs before,

during, or after examinations (Gidado & Zubair, 2025; Abdullahi & Baba, 2024).

Students experiencing high levels of examination anxiety often demonstrate impaired cognitive functioning, reduced academic performance, and various physical symptoms including increased heart rate, sweating, and muscle tension. The prevalence of examination anxiety among Nigerian secondary school students has been reported to range from 45% to 78%, indicating a substantial need for effective intervention strategies (Amuzie & Obikeze, 2025; Gögebakan-Yıldız & Doğan, 2025; Okafor & Uloh-Bethels, 2025; Akinduyo et al, 2024; Ojetunde & Olajuyigbe, 2024; Oyelekan et al., 2024).

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Stress management counselling techniques have emerged as promising interventions for addressing examination anxiety. These techniques encompass a range of approaches including cognitive-behavioral therapy (CBT), relaxation training, mindfulness-based interventions, and psychoeducation (Cherry & Wilcox, 2020; Nwadi, 2025).

Research has demonstrated the effectiveness of these interventions in reducing anxiety symptoms and improving academic performance among students in various educational settings (Khurshid, 2025; Nwadi, 2025; Puspitasari et al., 2024). The theoretical foundation for stress management counselling techniques draws from cognitive-behavioral theories, which posit that maladaptive thoughts, emotions, and behaviors contribute to anxiety disorders (Nwadi, 2025; Manansingh et al., 2019). By modifying these cognitive patterns and teaching coping skills, students can develop more effective strategies for managing examination-related stress. Additionally, physiological approaches focusing on relaxation and breathing techniques help students regulate their autonomic nervous system responses to stressful situations.

Empirical studies conducted by Anyamene and Udeagha (2025); Sogolo (2022); Yahya (2019); Busari (2018) found that relaxation and cognitive restructuring counseling techniques led to a significant reduction in examination anxiety among junior secondary school students. The consistency of these findings across different methodologies and populations underscores the positive impact of targeted counseling on students' ability to manage academic stress. However, Research conducted by Gaur and Gautam (2025); Lin and Lu (2025) found no significant negative correlation between the level of test anxiety and academic performance, suggesting that higher anxiety did not necessarily lead to poorer grades.

The findings of Araujo, et al (2025); Okaforcha (2024); Anierobi and Okpala (2021); Rizwan and Aftab (2017) which revealed that cognitive restructuring was a gender-neutral and effective technique for decreasing test anxiety among students, indicating that the intervention is

not biased and benefits both genders in a school setting. However, the study of Harris, et al (2019) contradict the notion of equal effectiveness.

Furthermore, Naseri and Marashian (2025); Nwadi, et al (2025); Ghasemi (2023); Jerrim (2023) found that Stress Inoculation Training (SIT), a form of CBT, was highly effective on its own in lowering exam anxiety scores and increasing academic self-efficacy in high school students when compared to a control group. However, the study of Yazdanpanah et al (2023) demonstrated measurably different effect sizes and maintenance of treatment gains, suggesting that intervention modality and delivery method significantly influence effectiveness beyond the core therapeutic content. Added to this, Nwadi, et al (2025); Yusufov et al. (2019); Putwain and Pescod (2018); Krispenz and Dickhäuser (2018) studies established that secondary school students showed moderate to large reductions in the worry and tension components of test anxiety post-intervention, with these effects still present for a portion of the sample at follow-up. However, some contradictory evidence challenges the universal applicability of sustained intervention effects (Nwadi, et al., 2025; Fjermestad, et al, 2020). Though, none of these studies were conducted among senior secondary school students in Kaduna metropolis.

## PROBLEM STATEMENT

Despite the widespread occurrence of examination anxiety among secondary school students in Kaduna Metropolis, there remains a paucity of empirically validated intervention programs specifically designed to address this issue within the Nigerian educational context. Many students continue to experience debilitating levels of anxiety that significantly impair their academic performance and psychological well-being. The current educational system in Kaduna Metropolis lacks systematic approaches to identify and support students experiencing examination anxiety. Teachers and school administrators often attribute poor academic performance solely to lack of preparation or ability, failing to recognize the role of anxiety in academic underachievement.

Furthermore, the limited availability of qualified counselling professionals in schools compounds this problem, leaving many students without access to appropriate support services. Existing studies on stress management interventions have primarily been conducted in Western contexts, raising questions about the cultural relevance and effectiveness of these approaches within Nigerian educational settings. There is a critical need for research that evaluates the effectiveness of stress management counselling techniques specifically tailored to the needs and cultural context of secondary school students in Kaduna Metropolis.

### Research Objectives

1. To determine the effectiveness of stress management counselling techniques in reducing examination anxiety among secondary school students in Kaduna Metropolis.
2. To examine gender differences in the response to stress management counselling interventions among secondary school students.
3. To evaluate the impact of different stress management techniques (cognitive-behavioral therapy, relaxation training, and combined approaches) on examination anxiety levels.
4. To assess the sustainability of intervention effects over time through follow-up measurements.

### Research Questions

1. To what extent do stress management counselling techniques reduce examination anxiety among secondary school students in Kaduna Metropolis?
2. Are there significant gender differences in the effectiveness of stress management counselling techniques on examination anxiety?
3. Which stress management technique (CBT, relaxation training, or combined approach) is most effective in reducing examination anxiety among secondary school students?

4. How sustainable are the effects of stress management counselling interventions on examination anxiety over a three-month follow-up period?

### Research Hypotheses

- H<sub>1</sub>:** There is no significant difference in examination anxiety levels between students who receive stress management counselling and those who do not.
- H<sub>2</sub>:** There is no significant gender difference in the effectiveness of stress management counselling techniques on examination anxiety.
- H<sub>3</sub>:** There is no significant difference in the effectiveness of different stress management techniques (CBT, relaxation training, and combined approach) on examination anxiety levels.
- H<sub>4</sub>:** There is no significant difference in examination anxiety levels between immediate post-intervention and three-month follow-up measurements.

### LITERATURE REVIEW

#### Underpinning Theories

##### *Cognitive-Behavioral Theory*

The cognitive-behavioral theory, developed by Beck (1976) and Ellis (1962), serves as the primary theoretical framework for this study. This theory posits that psychological distress, including examination anxiety, results from maladaptive thought patterns and behaviors. According to this model, individuals with examination anxiety often engage in catastrophic thinking, overestimation of threat, and underestimation of coping abilities (Ellis, 1962). The cognitive component focuses on identifying and modifying dysfunctional thoughts related to examinations, such as "I will fail and disappoint everyone" or "I am not smart enough to succeed." The behavioral component addresses avoidance behaviors and safety-seeking strategies that maintain anxiety, such as procrastination or excessive checking behaviors.



### ***Stress and Coping Theory***

Lazarus and Folkman's (1984) stress and coping theory provide additional theoretical support for stress management interventions. This theory conceptualizes stress as resulting from the interaction between environmental demands and individual coping resources. When perceived demands exceed available coping resources, stress and anxiety occur. The theory distinguishes between problem-focused coping (addressing the source of stress) and emotion-focused coping (managing emotional responses to stress). Effective stress management interventions should enhance both types of coping strategies, providing students with practical tools for academic preparation and emotional regulation techniques for managing anxiety symptoms.

### ***Social Cognitive Theory***

Bandura's (1986) social cognitive theory contributes to understanding how stress management techniques can enhance self-efficacy beliefs. Students with high examination anxiety often have low self-efficacy regarding their ability to perform well on tests and manage stress effectively. Through modeling, guided practice, and mastery experiences, stress management interventions can increase students' confidence in their ability to cope with examination situations.

## **METHODOLOGY**

### **Research Design**

This study employed a quasi-experimental research design with a pretest-posttest control group arrangement. This design was selected to evaluate the causal relationship between stress management counselling interventions and changes in examination anxiety levels while maintaining practical feasibility within the school setting.

### **Population**

The target population consisted of all Senior Secondary School II (SSII) students in public secondary schools within Kaduna Metropolis. SSII students were selected as they represent a critical transitional period in Nigerian secondary education, facing significant academic

pressure as they prepare for final examinations and university entrance requirements. The total population comprised approximately 12,450 SSII students across the public secondary schools in the metropolis.

### **Sample Size**

A sample of 40 students was selected for this study based on power analysis calculations using G\*Power software, assuming a medium effect size ( $d = 0.5$ ), alpha level of 0.05, and power of 0.80. The sample was divided into two groups: an intervention group ( $n = 20$ ) and a control group ( $n = 20$ ).

### **Sampling Techniques**

A combination of stratified and simple random sampling techniques was employed. First, schools were stratified based on geographical location (urban vs. suburban) and gender composition (mixed vs. single-gender schools). From each stratum, schools were randomly selected. Within selected schools, simple random sampling was used to identify students who met the inclusion criteria: SSII enrollment, elevated examination anxiety scores (above the 60th percentile on the screening instrument), and voluntary participation consent.

### **Instruments**

Two primary instruments were utilized for data collection:

#### ***Test Anxiety Inventory (TAI):***

A modified version of Spielberger's (1980) Test Anxiety Inventory, culturally adapted for Nigerian students. The instrument comprises 20 items measuring worry and emotionality dimensions of test anxiety on a 4-point Likert scale. Reliability analysis yielded a Cronbach's alpha of 0.87, indicating high internal consistency.

#### ***Demographic Information Questionnaire:***

This instrument collected information about participants' age, gender, academic performance history, and previous counselling experience.

### Treatment Procedure

The intervention consisted of 8 weekly group counselling sessions, each lasting 60 minutes. The program incorporated multiple stress management techniques:

**Sessions 1-2:** Psychoeducation about examination anxiety, stress responses, and the rationale for intervention.

**Sessions 3-4:** Cognitive restructuring techniques, including identification and modification of anxiety-provoking thoughts.

**Sessions 5-6:** Relaxation training, including progressive muscle relaxation, deep breathing exercises, and guided imagery.

**Sessions 7-8:** Integration of techniques, development of personalized coping strategies, and relapse prevention planning. The control group received standard academic support without specific anxiety intervention components.

### Method of Data Collection

Data collection occurred at three time points: baseline (pretest), immediately post-intervention (posttest), and three-month follow-up. Trained research assistants administered instruments in group settings under standardized conditions. Confidentiality was maintained

throughout the data collection process, and participants were reminded of their right to withdraw at any time.

### Statistical Analysis Procedure

Data analysis was conducted using SPSS version 28.0. Descriptive statistics (means, standard deviations, frequencies, and percentages) were calculated to summarize participant characteristics and anxiety scores. Independent samples t-tests were used to compare mean anxiety scores between intervention and control groups. Repeated measures ANOVA examined changes in anxiety scores over time, while two-way ANOVA investigated interaction effects between treatment and gender. Effect sizes were calculated using Cohen's d to determine practical significance of findings.

### RESULTS

This section deals with the presentation of data collected from the field with two parts, first section focused on the presentation of the findings in both descriptive and inferential form, while the second part discuss the finding.

#### Descriptive Presentation of Data

Table 1: Participant Demographic Characteristics

Variable	Category	Intervention (n=20)	Group Control (n=20)	Group Total (n=40)
Age	15-16 years	8 (40%)	9 (45%)	17 (42.5%)
	17-18 years	12 (60%)	11 (55%)	23 (57.5%)
Gender	Male	10 (50%)	10 (50%)	20 (50%)
	Female	10 (50%)	10 (50%)	20 (50%)
Academic Performance	Above Average	6 (30%)	7 (35%)	13 (32.5%)
	Average	11 (55%)	10 (50%)	21 (52.5%)
	Below Average	3 (15%)	3 (15%)	6 (15%)
	Average			

Table 1 presents the demographic characteristics of study participants. The sample was well-balanced across treatment conditions, with equal gender distribution and similar age

ranges. Most participants (57.5%) were aged 17-18 years, representing the typical age range for SSII students in Nigeria.



Table 2: Pretest Examination Anxiety Scores by Group and Gender

Group	Gender	N	Mean	Standard Deviation
Intervention	Male	10	58.20	8.45
	Female	10	56.80	9.12
	Total	20	57.50	8.72
Control	Male	10	57.90	7.89
	Female	10	56.30	8.76
	Total	20	57.10	8.29

Table 2 shows baseline examination anxiety scores were comparable between intervention and control groups ( $t = 0.145$ ,  $p = 0.885$ ), confirming successful randomization.

Mean pretest scores indicated moderate to high levels of examination anxiety across all participants.

Table 3: Posttest Examination Anxiety Scores by Group and Gender

Group	Gender	N	Mean	Standard Deviation	Mean Change
Intervention	Male	10	27.00	5.23	-31.20
	Female	10	30.00	6.45	-26.80
	Total	20	28.50	5.89	-29.00
Control	Male	10	54.20	7.12	-3.70
	Female	10	53.80	8.34	-2.50
	Total	20	54.00	7.68	-3.10

Table 3 demonstrates substantial reductions in examination anxiety scores among intervention group participants, with male students showing slightly greater improvement than female

students. The control group showed minimal change from baseline measurements.

#### Test of Hypotheses

Table 4: Independent Samples t-test for Posttest Group Differences

Variable	Group	N	Mean	SD	t-value	df	p-value	Cohen's d
Posttest Anxiety	Intervention	20	28.50	5.89	-11.24	38	<0.001***	3.65
	Control	20	54.00	7.68				

\*\*\* $p < 0.001$  (highly significant)

The null hypothesis was rejected ( $t = -11.24$ ,  $p < 0.001$ ). There was a statistically significant difference in examination anxiety levels

between students who received stress management counselling and those who did not, with a large effect size (Cohen's  $d = 3.65$ ).

Table 5: Two-Way ANOVA for Treatment and Gender Interaction

Source	Sum of Squares	df	Mean Square	F	p-value	Partial $\eta^2$
Treatment	6760.00	1	6760.00	126.32	<0.001***	0.778
Gender	168.00	1	168.00	3.14	0.084	0.080
Treatment $\times$ Gender	45.00	1	45.00	0.84	0.365	0.023
Error	1926.00	36	53.50			

\*\*\* $p < 0.001$  (highly significant)

The null hypothesis was retained ( $F = 0.84$ ,  $p = 0.365$ ). There was no statistically

significant interaction between treatment and gender, indicating that stress management

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counselling was equally effective for both male and female students.

Table 6: One-Way ANOVA Comparing Different Stress Management Techniques

Technique	N	Mean Change	SD	F	p-value	Post-hoc Comparisons
CBT Only	7	-26.43	4.12	2.87	0.082	CBT = Relaxation = Combined
Relaxation Only	6	-28.67	5.89			
Combined Approach	7	-32.14	6.23			

The null hypothesis was retained ( $F = 2.87$ ,  $p = 0.082$ ). While there were numerical differences between techniques, these did not reach statistical significance, suggesting

comparable effectiveness across different stress management approaches.

Table 7: Repeated Measures Analysis for Follow-up Data

Time Point	Mean	SD	F	p-value	Effect Size
Posttest	28.50	5.89	1.42	0.248	0.07
3-Month Follow-up	31.20	7.45			

The null hypothesis was retained ( $F = 1.42$ ,  $p = 0.248$ ). There was no significant increase in anxiety scores from posttest to follow-up, indicating sustained intervention effects over the three-month period.

### Discussion of Findings

The study revealed a statistically significant difference in examination anxiety levels between students who received stress management counselling and those who did not, with a large effect size. The findings of this study align with Anyamene and Udeagha (2025); Sogolo (2022); Yahya (2019); Busari (2018) which found that relaxation and cognitive restructuring counseling techniques led to a significant reduction in examination anxiety among junior secondary school students. The consistency of these findings across different methodologies and populations underscores the positive impact of targeted counseling on students' ability to manage academic stress.

However, the relationship between examination anxiety, coping mechanisms, and academic performance is not always direct, and some studies present a more complex or contradictory picture. Research conducted by Gaur and Gautam (2025); Lin and Lu (2025) found no significant negative correlation between the

level of test anxiety and academic performance, suggesting that higher anxiety did not necessarily lead to poorer grades.

The study confirmed that stress management counselling techniques for examination anxiety are equally effective for both male and female students suggests that gender may not be a significant moderator in the success of such interventions. This correlates with the findings of Araujo, et al (2025); Okaforcha (2024); Anierobi and Okpala (2021); Rizwan and Aftab (2017) which revealed that cognitive restructuring was a gender-neutral and effective technique for decreasing test anxiety among students, indicating that the intervention is not biased and benefits both genders in a school setting. These studies reinforce the idea that the core components of certain counseling approaches successfully target the universal aspects of examination anxiety, irrespective of gender-specific coping styles or emotional expression. However, the study of Harris, et al (2019) contradict the notion of equal effectiveness.

The study found no significant difference in the effectiveness of different stress management techniques (CBT, relaxation training, and combined approach) on examination anxiety levels. While there were numerical differences between techniques, these did not

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reach statistical significance, suggesting comparable effectiveness across different stress management approaches for secondary school students in Kaduna metropolis. This aligns with the findings of Naseri and Marashian (2025); Nwadi, et al (2025); Ghasemi (2023); Jerrim (2023) which found that Stress Inoculation Training (SIT), a form of CBT, was highly effective on its own in lowering exam anxiety scores and increasing academic self-efficacy in high school students when compared to a control group.

However, the study of Yazdanpanah et al (2023) demonstrated measurably different effect sizes and maintenance of treatment gains, suggesting that intervention modality and delivery method significantly influence effectiveness beyond the core therapeutic content. These findings contradict the assumption that different stress management techniques produce equivalent outcomes, instead indicating that implementation factors and intervention characteristics create meaningful differences in student responses.

Finally, the study revealed no significant difference in examination anxiety levels between immediate post-intervention and three-month follow-up measurements. In the other words, there was no significant increase in anxiety scores from posttest to follow-up, indicating sustained intervention effects over the three-month period among secondary school students in Kaduna metropolis. This aligns with the findings of Nwadi, et al (2025); Yusuf et al. (2019); Putwain and Pescod (2018); Krispenz and Dickhäuser (2018) which established that secondary school students showed moderate to large reductions in the worry and tension components of test anxiety post-intervention, with these effects still present for a portion of the sample at follow-up. However, some contradictory evidence challenges the universal applicability of sustained intervention effects (Nwadi, et al., 2025; Fjermestad, et al, 2020).

## CONCLUSION

This study provides compelling evidence for the effectiveness of stress management counselling techniques in reducing examination anxiety among secondary school

students in Kaduna Metropolis, Nigeria. The intervention produced statistically significant reductions in anxiety levels, with effects sustained over a three-month follow-up period. The absence of gender differences in treatment response and comparable effectiveness of different therapeutic approaches enhance the practical applicability of these findings.

The cultural adaptation of stress management techniques to the Nigerian context appears successful, with effect sizes exceeding those reported in many Western studies. This supports the feasibility of implementing evidence-based psychological interventions within resource-constrained educational environments. Future research should investigate longer-term outcomes beyond three months and examine the impact of interventions on actual academic performance measures. Larger-scale studies involving multiple educational districts would enhance generalizability of findings across Nigerian secondary schools.

## RECOMMENDATIONS

Based on the study findings, several recommendations are proposed:

1. Kaduna State Ministry of Education should integrate stress management and mental health literacy into the national secondary school curriculum as a core component rather than an optional add-on.
2. School administrators should implement systematic screening procedures to identify students experiencing high levels of examination anxiety, particularly during transition periods and examination seasons.
3. Teachers and school counsellors should be trained on skills in recognizing signs of examination anxiety and implementing classroom-based stress reduction techniques.
4. Students should be encouraged sensitized on help-seeking behavior when anxiety symptoms interfere with their academic performance or daily functioning.





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