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EFFECT OF COGNITIVE RESTRUCTURING TECHNIQUE ON TEST ANXIETY AMONG SECONDARY SCHOOL STUDENTS IN ANAMBRA STATE

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ABSTRACT

The quest for a permanent solution to decreasing test anxiety among young people necessitated the study on the effect of cognitive restructuring technique on test anxiety among secondary school students in Awka- South L.G. A of Anambra State. two research questions and two null hypotheses tested at 0.05 level of significance guided the study. The study adopted a quasi-experimental design, specifically the pretest posttest non randomized control group. five hundred and eighty students constituted the population. The sample for the study comprises of one hundred and sixty four senior secondary year one and two (SS1 and SS2) students who are test anxious sampled from three government owned co – educational schools in Awka-South L.G.A of Anambra State. The sampled students were assigned to experimental and control groups respectively. The instrument used for data collection was an adopted Speideger test anxiety inventory. The reliability of the instrument was that of internal consistency established using Alpha Cronbach. The experimental group were taught cognitive restructuring technique for eight weeks while the control group were given the conventional counselling. Mean was used for answering the research questions while analysis of covariance (ANCOVA) was used in testing the null hypotheses. The findings of the study revealed cognitive restructuring technique were effective in modifying test anxiety behaviour among secondary school students. Moreover, the findings further revealed that cognitive restructuring technique was more effective in reducing female secondary school students' test anxiety behaviour. It was therefore recommended that school counsellors, teachers and psychologists should employ appropriate psychotherapies, particularly cognitive restructuring technique in modifying test anxiety of students, teacher training colleges and institutions should emphasize and adopt cognitive restructuring technique in training pre-service guidance counsellors. Seminars, symposia, workshops, and conferences should be organized for guidance counsellors by the government, education stakeholders and professional bodies like Counselling Association of Nigeria (CASSON) to familiarize guidance counsellors with this innovative technique that can help reduce test anxiety behaviour among student.

Keywords: Effect, test anxiety, cognitive restructuring, secondary school students

Introduction

In Nigeria like any other country, test administration has become an integral exercise that determines individual's placement in every sphere of life. The kindergarten children, the primary school pupils, students in secondary schools and tertiary institutions all take tests. It has become a requirement for proper transition from one level of education to the other. In the labour market, test is the requisite for employment or any other engagement, which makes test very inevitable in an individual's life. Peoples' skills, abilities, competencies pro-activeness and intelligence are evaluated through the administration of tests. To the educational system, test provides the teachers with the picture of curricular goal attainment and quality of instruction. Test enables the teachers to gather information about the students' progress, as well as the extent to which methods of instruction deployed in the classroom are helping the students achieve these goals. To effectively do this, tools such as test, portfolio among others are employed and used in evaluating students' academic achievement.

Test is a means of evaluating something such as a series of questions or exercises, for measuring the skill, knowledge, intelligence, capacities, or aptitudes of an individual or group. It is a procedure, reaction, or reagent used to identify or characterize a substance or constituent. Adikwu, Aduloju & Agi (2016) sees test as a set of questions, tasks or problems, intended to measure or give a measure of the extent of knowledge, aptitude, intelligence and other mental traits possessed by the learners. Various institutions of learning place a high premium on test results in order to make decisions about the test takers and this most times, creates anxieties among test takers. Iroegbu (2013) opined that students as well as other individuals could be uncomfortable as they anticipate test result outcomes thus leading to test anxiety. Test anxiety refers to the nervousness that comes with writing a test. It emerges from the desire to score highly on a test. Alam (2013) describes test anxiety as a 'distressful' and anticipatory state or feeling that influences examination performance. Test anxiety affects both the young and the old, test anxiety can also be experienced by all individuals who are eligible to write a test. People acts differently prior to taking test, during the test and after the test. Some feel pressured, stressed, unprepared, too prepared, overzealous, under zealous, excited, and even afraid before, during or after test. Experiencing text anxiety is not uncommon, it is a basic human emotion that can posses both

facilitating and debilitating effects on the learning process (Bolbolian, Asgari, Sefidi & Zadeh, 2021).

When investigating the causes of examination anxiety in secondary school students, (Moses, 2023) reported behavioural causes such as inadequate rest, insufficient physical activity, poor nutrition, lack of time management and required information, procrastination, poor study habits, and poor test-taking skills as key contributors to test anxiety. Yang, (2023) agrees with him when reporting that inconsistent content coverage, studying all night before examinations and poor revision of studied subject material are significant causes of examination-related anxiety in students.

Before now, school teachers and educational managers have used prep, talks, school orientation programme, advice, individual and group counselling, class repeat, ensuring clarity of test questions and avoiding use of ambiguous words in setting examination questions to help test anxious students overcome their anxiety (Woods & Symes, 2010). A number of psychologically-informed interventions for test anxiety have also been developed and evaluated by guidance cousellors, mental health professionals and psychologists for example: STEPS strategies to tackle examination pressure and stress (Putwain/ AQA, 2014) Cognitive Bias Modification (Sportel, Hullu, Jong & Nauta, 2013). Behavioural approaches incorporating systematic desensitization, relaxation training, biofeedback, disruptive spatial or motor behaviours, such as eye movement, emotional freedom technique (EFT) progressive muscular relaxation. anxiety reduction techniques, anxiety management training and other behavioural techniques such as rational emotive therapy, and skill deficit treatment approaches involving study skills training, test taking skills training, other skill deficit approaches and treatment approaches simultaneously. Unfortunately, the problem of test anxiety is far from being solved. This may be because those techniques only created an atmosphere where students feel threatened by been called upon to give oral answer before others in the class.

Cognitive restructuring technique (CRT) was developed by Aaron Beck in 1963. Cognitive restructuring is a structured, goal – oriented, and collaborative intervention strategies that focus on the exploration, evaluation, and substitution of the maladaptive thoughts, appraisals and beliefs that maintain psychological disturbance. It is a type of psychotherapeutic process which refute one's irrational ideas and replaces them with rational ones (Ogugua, 2010). This study intends to

examine the effect of cognitive restructuring technique on test anxiety and the effectiveness of test anxiety on secondary school students male and female students using their pre-test and post-test score

Purpose of the Study

The main thrust of this study was to determine the effect of cognitive restructuring techniques on test anxiety among secondary school students in Awka south L.G.A Anambra State. Specifically, the study sought to determine:

1. Effect of cognitive restructuring technique on text anxiety of secondary school students when compared to those in the control group using their pretest post-test mean scores.
2. Effectiveness of cognitive restructuring techniques on test anxiety of male and female students using their pre- test and post- test mean scores.

Research question

1. What is the effect of cognitive restructuring technique on test anxiety of secondary school students in Awka south local government area of Anambra State when compared to those in the control group using their pre- test and post- test mean scores?

2. What is the effect of cognitive restructuring technique on test anxiety of male and female secondary school students using their pre-test and post-test mean scores?

Hypotheses

The following null hypotheses guided the study and was tested at 0.05 level of significance:

1. There is no significant difference in the effect of cognitive restructuring when compared with those in the control group who received conventional counselling using their post-test mean score.
2. There is no significant difference in the effect of cognitive restructuring technique on test anxiety of male and female secondary school students using their post- test mean scores.

Method

The study adopted a quasi experimental research. The specific design adopted for this study was a non- randomized pre-test post-test control group design. This is because subjects were not to be randomly assigned to groups. Nworgu (2015) described a quasi

experimental study as an empirical interventional study used to estimate the casual impact of an intervention on target population without random assignment.

In this study, there were two groups of participants from three co-educational schools sampled. One groups served as experimental group while the other group served as the control group. The two groups were tagged Experimental group 1, and control group. Experimental group 1 were treated with cognitive restructuring Technique (CRT) while the control group received no treatment but neutral interaction with the school guidance counsellors. The study was carried out in Awka south local government area of Anambra State. Awka south is made up of nine surrounding towns, namely, Amawbia, Awka, Ezinato, Isiagu, Mbaukwu, Nibo, Nise, Okpuno and Umuawulu. The population of this study was made up of Five hundred and eighty (580) SS 1 and SS2 students in the 16 government owned co- education secondary schools in Awka south local government area of Anambra State.

The sample size for the study consisted of one hundred and sixty four (164) (75 males and 89 females) SS 1 and SS2 students with test anxiety drawn through multi-stage sampling procedure. Out of the 580 (281 males and 299 females) students in the 16 co- educational public secondary schools in Awka south local government area of Anambra State. The sample of the study was obtained using multi-stage sampling procedure which was employed as fellows:

A purposive sampling technique was used to choose only public secondary schools in Awka south. all the 16 co educational government secondary school in the chosen local government area. Simple random sampling technique was used to draw 3 co- educational secondary schools from all the 16 public secondary school in the area. Out of the three selected schools, two were randomly assigned to experimental (pretest and post-test) groups and the control group using simple random sampling technique (flip of a coin). In each of the three sampled schools, the various arms of SS 1 and SS2 classes were listed on three pieces of paper, folded and using balloting, two of the arms were picked. The experimental group 1 consists of 51 students (31 males and 20 females) and group 2 also consists of 51 students (16 males and 35 females) respectively and finally the control group consisted of 62 students (30 males and 32 females) making the total sample number 164 as stated earlier.

Instrument used for data collection was a questionnaire titled "Test Anxiety Inventory (TAI)", originally developed by Speielberger (1980), but was revalidated for use with Nigerian sample by Omoluabi (2003). Test anxiety inventory TAI has been adopted to the Nigeria context and has been extensively used in Nigeria and other parts of the world. (TAI) is a self report psychometrics scale which was developed to measure individual's differences in test anxiety as situational specific trait.

The instrument served two purposes; it was administered before the experiment as pre-test on both the experimental and the control group

. Mean was used in answering the research questions, and analysis of covariance (ANCOVA) was used in testing the null hypotheses at 0.05 level of significance.

Results

Table 1: Pretest and Posttest mean scores on test anxiety of secondary school students treated with cognitive restructuring technique and those treated with conventional counselling (Norm = 40)

Source of Variation	N	Pretest Mean	Posttest Mean	Lost Mean	Remark
Cognitive restructuring Tech.	51	72.88	29.47	43.41	Effective
Conventional Couns. Tech.	62	67.13	50.68	16.45	

In table 3 it was observed that secondary school students treated with cognitive restructuring technique had pretest mean score of 72.88 and posttest mean score of 29.47 with lost mean 43.41 in their test anxiety, while those in the control group who received conventional counselling had pretest mean score of 67.13 and posttest mean score of 50.68 with lost mean 16.45. With posttest mean scores of 29.47 which is less than the norm of 40.00 cognitive restructuring technique is effective in reducing test anxiety of secondary school students in Awka South Local government area.

Table 1: ANCOVA on the effect of cognitive restructuring technique on test anxiety of secondary school students when compared with those who received conventional counselling

Source of variation	SS	df	MS	Cal. F	Pvalue	P ≤ 0.05
Corrected Model	13045.195	2	6522.597			
Intercept	42.355	1	42.355			
Pretest Scores	460.723	1	460.723			
Treatment Methods	11359.125	1	11359.125	359.929	0.000	S
Error	3471.531	110	31.559			
Total	207455.000	113				
Corrected Total	16516.726	112				

Table 4 reveals that at 0.05 level of significance, 1df numerator and 112df denominator, the calculated F is 359.93 with Pvalue of 0.000 which is less than 0.05. Therefore, the second null hypothesis is not accepted. So, the effect of cognitive restructuring technique in reducing test anxiety of secondary school students in Awka South L. G. A. is significant.

Table 2: Pretest and Posttest mean scores on test anxiety of male and female secondary school students treated with cognitive restructuring technique (Norm = 40)

Source of Variation	N	Pretest Mean	Posttest Mean	Lost Mean	Remark
Male	16	73.50	30.13	43.37	
Female	35	72.60	29.17	43.43	More Effective

In table 9 it was observed that male secondary school students treated with cognitive restructuring technique had pretest mean score of 73.50 and posttest mean score of 30.13 with lost mean 43.37 in their test anxiety, while their female counterparts had pretest mean score of 72.60 and posttest mean score of 29.17 with lost mean 43.43. With posttest mean scores of 43.43 for the female students which is greater than the 43.37 for the male students, cognitive restructuring technique is more effective in reducing test anxiety of female secondary school students in Awka South Local government area.

Table 2: ANCOVA on the effectiveness of cognitive restructuring technique on test anxiety of male and female secondary school students

Source of variation	SS	df	MS	Cal. F	Pvalue	P ≤ 0.05
Corrected Model	53.369	4	13.342			
Intercept	61.514	1	61.514			
Pretest Scores	.274	1	.274			
Gender	1.359	1	1.359	0.120	0.730*	NS
Class level	39.394	1	39.394	3.489	0.068	
Gender * Classlevel	18.030	1	18.030			
Error	519.337	46	11.290			
Total	44867.000	51				
Corrected Total	572.706	50				

Table 10 indicates that at 0.05 level of significance, 1df numerator and 50df denominator, the calculated F is 0.120 with Pvalue of 0.730 which is greater than 0.05. Therefore, the fifth null hypothesis is accepted. So, the difference in the effects of cognitive restructuring technique in reducing test anxiety of male and female secondary school students in Awka South L. G. A. is not significant.

Discussion

The findings showed that treatment with Cognitive Restructuring technique had significant effect in reducing test anxiety scores of secondary school students. The reason for the reduction of students test anxiety scores could be as a result of the students' acquisition of cognitive restructuring skills. Students were taught the negative effect of maladaptive thought that would lead to test anxiety and the positive effects of developing positive thought to get out of the anxiety

The findings of this study collaborates with the findings of Busari (2018) who found that there was a significant effect of cognitive restructuring in the reduction of examination anxiety of students studing in remedial classes. Similarly the findings of this study is in line with the findings of Sogolo (2022) who reported that cognitive restructuring was effective in managing adolescents with test anxiety in secondary schools. Ernest- Ehibudu & Wayii (2017) confirmed that Cognitive restructuring was effective on the reduction of mathematics anxiety among senior secondary school students in Nigeria. Also, Aliyu, Idris, Gurukuma, Saidu & Gamsa, (2023) reported that Cognitive restructuring technique is the most efficacious intervention for any form of anxiety in

adolescents. These findings are consistent with existing evidence of the efficacy of cognitive restructuring.

The findings of the study revealed that cognitive restructuring technique are both effective in reducing test anxiety of male and female secondary school student. This simply implies that cognitive restructuring technique is not gender biased. That is, the technique is a gender friendly approach that reduces test anxiety among secondary school students irrespective of gender This might be as a result of the equal opportunities given to both male and female students in the experimental group to discuss the possible causes of test anxiety and possible ways of reducing it. However, on testing the null hypothesis, it was discovered that cognitive restructuring was more effective with females participants than the males. Though the differences is not significant. The reason could be as a result of the fact that females are more prone to anxiety. The findings of Anyamene & Ogugua (2019) and Sogolo, Osunde & Osunde (2021) indicated that the difference in the post-test mathematics test anxiety and mean scores of male and female students treated with CRT was significant. In particular, the decrease in mathematics anxiety level of female students was higher than that of male students after they had participated in CRT treatment. This suggests that although both male and female students benefited from the treatment, female students benefited more from CRT than male students. The implication of this finding is that sex affect anxiety in mathematics among students and that both male and female students are not equally prone to anxiety in mathematics. The study is consistent with the findings of Olubusayo (2014) who reported significant difference on the effect of cognitive restructuring on mathematics anxiety due to gender. Also, Nwankwo & Enenmuo –Tagbo (2024) though refuted as they indicated that males benefited more from cognitive restructuring in the treatment of panic disorder.

Conclusion

The findings from this study indicated a notable effectiveness of cognitive restructuring technique in decreasing test anxiety among secondary school students test anxiety irrespective of their gender. As the experimental group taught with cognitive restructuring technique had reduced post test anxiety scores than their counterpart taught with the conventional method. Cognitive restructuring is not gender biased and should be adopted to help student that are test anxious.

Recommendation

1. School teachers and Guidance Counsellors in secondary schools should adopt cognitive restructuring techniques in the treatment of test anxiety.
2. School teachers should actively involve male and female students in learning activities to avoid gender stereotyping. Both male and female students benefited from cognitive restructuring techniques as evident from the research outcome.
3. Counsellors should through counseling assist the female students minimize their high level of emotionality and also counsel them on how to reduce their test anxiety.

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