

Effect of Cognitive Restructuring Counselling Technique on Test Anxiety among Students of Tertiary Institutions' Staff Secondary Schools in Kano State of Nigeria

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Abstract

This study examined the Effect of Cognitive Restructuring Counselling Technique on Test Anxiety among Students of Tertiary Institutions' Staff Secondary Schools in Kano state, Nigeria. A quasi experimental design involving pre-test, post-test control group was adopted for the study. Purposive sampling technique was used to draw sixty (60) students from Bayero University, Kano Staff Secondary School and Kano State Polytechnic Staff Secondary School. The sixty selected pupils were assigned into two groups of thirty, each including male and females. The treatment group was exposed to the treatment programme using cognitive restructuring counselling technique for the period of six weeks, while the control group received no treatment. Two instruments were used in this study. Westside Test Anxiety Scale (WTAS) was used to identify test anxious students while Test Anxiety Inventory was used for pre-test and post-test. The hypotheses were tested using analysis of covariance (ANCOVA). The findings of the study revealed significant effect of cognitive restructuring counselling technique on physical dimension of test anxiety in the treatment group with ($F = 1.396, P=0.000$) and significant effect of cognitive restructuring counselling technique exists on psychological dimension of test anxiety in the treatment group with ($F = 5.489, P=0.008$). Based on the findings of this study, it was recommended that Counsellors, Psychologists and Teachers should be encouraged and motivated to use cognitive restructuring counselling technique in minimizing the physical and psychological dimensions of test anxiety among staff secondary school students of tertiary institutions in Kano state, Nigeria.

Keywords: Effect, Cognitive restructuring, counselling technique, Test anxiety

Introduction

Anxiety is something that everyone experiences to some extent in any stressful situation. For students, one of the most frequent stressful or anxiety provoking experiences is taking a test. All students may feel some effects of anxiety associated with examinations. The anxious feeling can occur before the test, during the test or after the test and can range from a nervous feeling and sweating, forgetting and blanking out, to actually becoming physically ill. Test anxiety is an uneasiness or apprehension experienced before, during or after an examination because of concern, worry or fear. Almost everyone experiences some anxiety. But some students find that anxiety interferes with their learning and test taking to such an extent that their grades are seriously affected. Test anxiety is when symptoms of anxiety affect one's performance on a test and may result in emotional and/or physical distress, difficulty in concentrating and emotional upset. Tests and quizzes are more widely used in schools than ever. Teachers rely on written examinations to show whether students have learned the information presented in the course. Colleges and universities evaluate applicants' performance on entrance examinations such as the Scholastic Aptitude Test (SAT) to judge whether these applicants are likely to be successful in their programs. Test anxiety is "the set of phenomenological, psychological, and behavioral responses that accompany concern about possible negative consequences or failure on an exam or similar evaluative situations" (Chapell, Blanding, Takahashi, Silverstein, Newman, Gubi, & McCann, 2005, p. 268).

Test-anxious individuals have learned to believe that they will perform poorly. Irrational worries lead to distorted self-image and an inaccurate perception of themselves. This often results in poor self-esteem. Clearly therefore, overcoming test anxiety means that something has to change. Since the tests and their administration may remain fairly much the same, what must be altered is the students' approach to taking tests. Reducing test anxiety and stress reaction to a comfortable level means learning to alter the way the test anxious person feels, from being tensed up and rigid to being calm and relaxed. The way individuals think about themselves and their abilities have to change from the expectations of failure to the anticipation of success (Mohammed, 2014).

Cognitive Restructuring (CR) as one of the Cognitive Behavior Therapy (CBT) is a Counselling technique used to dispute irrational or maladaptive thoughts which is commonly associated with many anxieties such as test anxiety. It is being used to help individuals experiencing a variety of anxiety disorders, depression, bulimia, social phobia and the like. It is also a useful technique for understanding what lies behind negative moods. CR is a useful tool for understanding and turning around

negative thinking. It helps put unhappy, negative thought, under the microscope challenging them and in many cases receipting the negative thinking that lies behind them (Lawan, 2016). Cognitive restructuring starts with the identification of irrational negative thoughts (cognitive distortions). This is trickier than it sounds. Cognitive distortions can happen so quickly that they come and go before one notices them. They are more like a reflex than an intentional behaviour. It is against this background that the researchers examined the effect of cognitive restructuring counselling technique on test anxiety among students of tertiary institutions' staff secondary schools in Kano state, Nigeria.

Statement of the Problem

Test anxiety is an uneasiness or apprehension experienced before, during or after an examination because of concern, worry or fear. Almost everyone experiences some anxiety. But some students find that anxiety interferes with their learning and test taking to such an extent that their grades are seriously affected. It is a problem frequently experienced by college students. Almost every student who takes a test feels some anxiety, but for some, the feeling is so intense that it affects their performance with serious results. The anxious feeling can occur before the test, during the test or after the test and can range from a nervous feeling and sweating, forgetting and blanking out, to actually becoming physically ill. While all of these are symptoms of anxiety, most people don't experience anything worse than a nervous feeling. Slight amount of anxiety frequently results in improved test performance. But anxiety becomes a problem when it begins to adversely affect a person's performance on the exam. Test anxiety is a serious problem for many students' population. Test anxiety among students has been negatively associated with test performance, achievement of degrees and the selection of occupations. Students at all levels who suffer from test anxiety choose and pursue careers which involve infrequent evaluations and which, consequently, may not fully challenge their cognitive abilities.

Stressful emotions can inhibit a student's ability to absorb, retain and recall information. Anxiety creates a kind of "noise" or "mental static" in the brain that blocks persons' ability to retrieve what is stored in memory and also greatly impairs their ability to comprehend and reason. It can interfere with one's studying and may have difficulty in learning and remembering what he needs to know for the test. Further, too much anxiety may block one's performance. Test anxiety can cause a host of problems in students. Although, each person experiences a different collection of symptoms with differing degrees of intensity, test anxiety can be managed, if what causes it is understood. The problem of test anxiety which often lead to poor academic performance has become worrisome and unsatisfactory to

students, researchers, teachers, school administrators, parents and the larger society. The various efforts put forward in addressing the problem of test anxiety among students have been widely acknowledged, yet without satisfaction so far. The problem of this study can be posed thus: what is the effect of Cognitive Restructuring Counselling Technique on Test Anxiety among Students?

Objectives of the Study

The following objectives were stated for the study:

1. To find out the effect of cognitive restructuring counselling technique on physical dimension of test anxiety among staff secondary school students of tertiary institutions in Kano state.
2. To find out the effect of cognitive restructuring on psychological dimension of test anxiety among staff secondary school students of tertiary institutions in Kano state.

Research Questions

In line with the stated objectives, the following research questions were raised:

1. What is the effect of cognitive restructuring counselling technique on physical dimension of test anxiety among staff secondary school students of tertiary institutions in Kano state?
2. What is the effect of cognitive restructuring counselling technique on psychological dimension of test anxiety among staff secondary school students of tertiary institutions in Kano state?

Research Hypotheses

The following hypotheses were formulated:

1. There is no significant effect of cognitive restructuring counselling technique on physical dimension of test anxiety among staff secondary school students of tertiary institutions in Kano state.
2. There is no significant effect of cognitive restructuring counselling technique on psychological dimension of test anxiety among staff secondary school students of tertiary institutions in Kano state.

Methodology

The study employed quasi experimental design which involves pretest and posttest only. The design was used because it lacks full laboratory control and laboratory isolation, as it has taken place outside the laboratory setting. The population of this study comprised of all staff secondary school students in tertiary institutions of Kano state with the total number of one thousand one hundred and ninety six (1196). Five

hundred and sixty nine (569) are females while six hundred and twenty seven (627) are males. Purposive sampling technique was used in selecting the sample for this study. The researchers purposively selected a total of sixty (60) with high scores on Test Anxiety Inventory.

Two instruments were used for this study. The first instrument is Westside Test Anxiety Scale (WTAS) developed by Driscole (2004). The scale has five-point response options and was divided into two sections (A and B). Section A seeks for demographic data of the respondents while section B contains ten (10) items. The procedure for scoring the instrument, how to interpret it and the permission to use it were all found in Driscole (2004). The items mainly asked questions on aspects of poor cognition and emotionality which interfered with concentration on the main exam. Physiological stress was considered to be a weak indicator in the instrument. While, the second instrument is Test Anxiety Inventory developed by Spielberger, Anton and Bedell (1976) but revalidated in Nigeria by Omoluabi (2003), Perafom Psychometric Centre (PPC) in (1997), and further revalidated by some researchers in 2004 (Egbochukwu & Obadan, 2005). As stated by Anyamene, Nwokolo and Azuji, (2016), TAI has been adapted to Nigerian context and have been used extensively in Nigeria. The Test Anxiety Inventory (TAI) is a self-report psychometric scale which was developed to measure individual differences in test anxiety as a situation-specific trait. The test is one paged and contains twenty items. Based on 4-point rating Scale, ranging from 1 (almost never), 2 (sometimes), 3 (often) to 4 (almost always). This instrument was used as the first step to collect data (before and after the treatment sessions) by the researchers.

The adapted instruments Westside Test Anxiety Scale (WTAS) and Test Anxiety Inventory (TAI) were revalidated in Nigeria by Mohammed (2014) and Omoluabi (2003). The researchers therefore would not have to do any validation of the instruments again. Good psychometric properties have been reported as regards the TAI. Coefficient alpha of 0.92 and higher have been reported for TAI total scores (Spielberger al., 1976). Additionally, TAI has good internal consistency reliability among samples of secondary school and university students. Coefficient alphas of 0.88 and 0.90 respectively have been reported for both male and female samples. Test score stability over 2-4 weeks test-retest interval ranged from 0.80 to 0.81 for TAI (Spielberger et al., 1976). The coefficients of reliability obtained from the Nigerian samples ranges from 0.73 to 0.79 (Omoluabi, 2003). As regards the reliability of Westside Test Anxiety Scale, the Cronbach's alpha of 0.820 for the entire pilot study implies that the instrument is generally good and reliable. Hence, the instrument has excellent reliability as far as internal consistency is concerned (Mohammed, 2014).

Treatment procedure and method of data analysis

The treatment procedure was conducted in three phases for the period of six weeks in sixteen different sessions as follows: The first phase was the pre-treatment phase where the researcher collected baseline data from three schools (comprising of treatment and control groups) by administering the Westside Test Anxiety Scale to the students in order to identify the samples of the study. These samples identified otherwise known as participants, were given the test anxiety inventory to serve as pre-test. Data collected during the pre-test were scored, analyzed and saved. The data gave an information on the entry behaviour of the group individuals and was also used for future comparison with the post-test result in order to determine the effectiveness or otherwise of the techniques. The treatment sessions basically involved the use of cognitive restructuring and self-management counselling techniques. The sessions were conducted for a period of six weeks. There were a total of twelve sessions for the entire treatment which lasted for a period of 20-35 minutes conducted two days per week. The post-treatment phase was the third stage in the procedure. Data were also collected in this stage by re-administering the TAI to both the treatment and control groups after an equal number of eight weeks of the treatment. Statistical Package for Social Sciences was used to analyze the data collected. Mean and standard deviation were used to answer the research questions while Analysis of Co-variance (ANCOVA) was used in testing the hypotheses at 0.05 level of significance.

Presentation of results

Research Question One: What is the effect of cognitive restructuring counselling technique on physical dimension of test anxiety among staff secondary school students of tertiary institutions in Kano state?

Table 1: Mean and standard deviation of effect of cognitive restructuring counselling technique on physical dimension of test anxiety among staff secondary school students of tertiary institutions in Kano state

Technique	Dimension of Test Anxiety	N	Pre-test		Post-test		Mean Difference
			Mean	SD	Mean	SD	
Cognitive Restructuring	PDTA	30	25.13	3.51	10.93	4.17	14.2

The mean and standard deviation of effect of cognitive restructuring counselling technique on physical dimension of test anxiety among staff secondary school students in Table 1 revealed that physical dimension of test anxiety had a mean of 25.13 and standard deviation of 3.51 in the pre-test. The result of post-test also revealed a mean of 10.93 and standard deviation of 4.17 with a mean difference of 14.2. This implies that the mean of physical dimension of test anxiety in the pre-test was higher than that of the post-test which indicates that there was reduction in physical dimension of test anxiety of students after the cognitive restructuring treatment.

Hypothesis One: There is no significant effect of cognitive restructuring counselling technique on physical dimension of test anxiety among staff secondary school students of tertiary institutions in Kano state.

Table 2: Analysis of covariance (ANCOVA) statistics on the effect of cognitive restructuring counselling technique on physical dimension of test anxiety among staff secondary school students of tertiary institutions in Kano state

Source	Type III Sum of Squares	Df	Mean Square	F	P-value
PDTA					
Corrected Model	87.283 ^a	10	8.728	1.396	.000
Intercept	2568.000	1	2568.000	116.565	.000
Groups	87.283	10	8.728	1.396	.000
Error	418.583	19	22.031		
Total	4092.000	30			
Corrected Total	505.867	29			

Significant at $p < 0.05$

The one-way analysis of covariance (ANCOVA) was carried out for cognitive restructuring counselling technique on physical dimension of test anxiety as presented in Table 2. The results showed that the calculated P-value of physical dimension is less than the significant level of 0.05. This implies that there is significant effect of cognitive restructuring counselling technique on physical dimension of test anxiety. Therefore the null hypothesis which states that there is no significant effect of cognitive restructuring counselling technique on physical dimension of test anxiety among staff secondary school students of tertiary institutions in Kano state is rejected.

Research Question Two: What is the effect of cognitive restructuring counselling technique on psychological dimension of test anxiety among staff secondary school students of tertiary institutions in Kano state?

Table 3: Mean and standard deviation of effect of cognitive restructuring counselling technique on psychological dimension of test anxiety among staff secondary school students of tertiary institutions in Kano state

Technique	Dimension of Test Anxiety	N	Pre-test		Post-test		Mean Difference
			Mean	SD	Mean	SD	
Cognitive Restructuring	PSYDTA	30	22.50	2.23	9.90	3.14	12.6

The mean and standard deviation of effect of cognitive restructuring counselling technique on psychological dimension of test anxiety among staff secondary school students in Table 2 revealed that psychological dimension of test anxiety had a mean of 22.50 and standard deviation of 2.23 in the pre-test. The result of post-test also revealed a mean of 9.90 and standard deviation of 3.14 with a mean difference of 12.6. This implies that the mean of psychological dimension of test anxiety in the pre-test was higher than that of the post-test which means that there was reduction in psychological dimension of test anxiety of students after the cognitive restructuring treatment.

Hypothesis Two: There is no significant effect of cognitive restructuring counselling technique on psychological dimension of test anxiety among staff secondary school students of tertiary institutions in Kano state.

Table 4: Analysis of covariance (ANCOVA) statistics on the effect of cognitive restructuring counselling technique on psychological dimension of test anxiety among staff secondary school students of tertiary institutions in Kano state

Source	Type III Sum of Squares	Df	Mean Square	F	P-value
PSYDTA					
Corrected Model	33.486 ^a	11	3.044	5.489	.008
Intercept	8634.453	1	8634.453	1387.503	.000
Groups	33.486	11	3.044	5.489	.008
Error	112.014	18	6.223		
Total	15333.000	30			
Corrected Total	145.500	29			

Significant at $p < 0.05$

The one-way analysis of covariance (ANCOVA) was carried out for cognitive restructuring counselling technique on psychological dimension of test anxiety as presented in Table 4. The results showed that the calculated P-value of psychological dimension is less than the significant level of 0.05. This implies that there is significant effect of cognitive restructuring counselling technique on psychological dimension of test anxiety. Therefore the null hypothesis which states that there is no significant effect of cognitive restructuring counselling technique on psychological dimension of test anxiety among staff secondary school students of tertiary institutions in Kano state is rejected.

Discussion of Findings

The findings of this study revealed that significant effect of cognitive restructuring counselling technique exists on physical and psychological dimensions of test anxiety in the treatment group. This agrees with the findings of Mohammed (2014) who investigated the Effectiveness of the Cognitive Restructuring and Systematic Desensitization counselling techniques in the Control of High-Stakes Test Anxiety among Final Year Secondary School Students in Kaduna Metropolis, and reported that Cognitive Restructuring and Systematic Desensitization counselling techniques was found to be effective in reducing High-Stakes Test Anxiety among Final Year Secondary School Students in Kaduna Metropolis. Cognitive restructuring is not only effective on test anxiety, it is also effective on other behavioural problems.

Also the findings of Lawan (2016) who examined the effect of Cognitive Restructuring (CR) and Social Skills Training (SST) counselling Techniques on Avoidant Personality Disorder (APD) among Secondary School Students in Kano Metropolis confirmed that CR Counselling Technique has effects in the reduction of APD. Ahmed (2016) also investigated the effects of cognitive restructuring and graded exposure counselling technique on school phobia among secondary school students in Kaduna Metropolis, Nigeria and the findings of his study showed that Students exposed to CRT such as validity testing, modelling, and systematic positive reinforcement had a reduced school phobia as compared to those in control group and that Male and female students exposed to CRT had a reduced school phobia.

Conclusion

Based on the results of this study, it was concluded that cognitive restructuring is effective in managing physical and psychological dimensions of test anxiety of staff secondary school students of tertiary institutions in Kano state. Therefore, the use of cognitive restructuring counselling technique in helping students to reduce physical and psychological dimensions of test anxiety has been successful. As such, it can be concluded that the technique was effective and useful in helping the test anxious students to minimize such behaviour.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. Counsellors, Psychologists and Teachers should be encouraged and motivated to adopt the use of cognitive restructuring counselling technique in order to minimize students' physical dimension of test anxiety.
2. Counsellors, Psychologists and Teachers should also be encouraged and motivated to adopt the use of cognitive restructuring counselling technique to minimize psychological dimension of test anxiety among staff secondary school students.

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