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CONTENTS

	Pages
A review on the concept of entrepreneur myth in Nigeria. <i>Olatoye Adeolu O. and Adekunle Aderonke G.</i>	1-18
Assessment Of Life Satisfaction Among Retirees In Ibadan Oyo State: Implications For Counselling <i>Awoyemi A.E. Ph.D</i>	19-31
Predictors Of The Decline In Choice Of Health Education And Physical Education As A Subject In Secondary Schools In Odeda Local Government Area Of Ogun State <i>Famuyiwa, S.A. (Ph.D.) & Ufoegbune C.I.</i>	32-46
Predictive Values Of Information And Communication Technology In The Reforming Gender Education In Nigeria <i>Osisanwo F.Y. & Awoyele I.O.</i>	47-61
Emotional Intelligence and Organisational Commitment as Correlates of Job Performance Among Bank Workers in Ijebu Local Government of Ogun State, Nigeria. <i>Muraina Kamilu Olanrewaju and Hamed Adeoye</i>	62-73
Gender Variation As Correlates Of Life Skills Among Junior Secondary School Students In Oyo State, Nigeria <i>Dr. Sunday G. Olawale, Dr. John Idowu Shittu and Omolara O. Arewa</i>	74-84
Effectiveness Of Graphic Instructional Media In Enhancing Teaching In Nigerian Secondary Schools <i>Dr. Abiodun Banjo, Akintayo, Wole Lateef and Osinaike Abayomi Olugbenga</i>	85-102

- Effects Of Rational Emotive Behaviour And Relaxation Therapies On Management Of Test Anxiety Among Students With Hearing Impairment In Ibadan, Oyo State, Nigeria 103-125
Dr. Isaiah, O.O. and Oladipupo Wumi
- Costs and Benefits In Sustainable Banking Principles And Bank Operations In Nigeria 126-138
Arowoogun, O. Timothy
- Corporate Adaptation To Changes In Technological Environments 139-153
Adebayo, Adebola Ademola
- Self-Management Technique And Well Being Therapy Enhancing Quality Of School Life Among Secondary School Students In Ibadan, Nigeria 154-181
Samuel Olayinka Salami, Ph.D and Isiaka Ojo Olayiwola, Ph.D
- Activity-Based Learning Method On The Academic Performance Of Pre School Pupil In Elementary Science In Mushin Local Government Education Area In Lagos State 182-197
Dr. Sarah Sopekan and Banire Monsurat Abike
- Preventing Hiv Transmission In Nigeria: The Roles Of The Dental Personnel 198-207
Faloye Adeyemi Ezekiel
- School location and School Ownership as Correlates of Job Performance of Basic School Teachers in Aguata South and North Local Government Areas Anambra State, Nigeria. 208-222
Jonathan C. Nwosu Ph.D & Obioma J. Ezeifeoma Ph.D
- Parental Social Support, Emotional Intelligence And Locus Of Control As Predictors Of Adolescents Risk Taking Behaviour Among Undergraduates Of University Of Ibadan, Ibadan 223-237
Awoyemi A. E. Ph.D.

EFFECTS OF RATIONAL EMOTIVE BEHAVIOUR AND RELAXATION THERAPIES ON MANAGEMENT OF TEST ANXIETY AMONG STUDENTS WITH HEARING IMPAIRMENT IN IBADAN, OYO STATE, NIGERIA

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Abstract

Test taking becomes a tensed competition among students, particularly, students with hearing impairment who suffer significant academic setback, struggle hard with their hearing counterparts in test taking, creating varying degrees of test anxiety among this category of students. Thus, it became imperative to seek therapy that can best manage test anxiety among students with hearing impairment. This study therefore, examined the effect of rational emotive behaviour (REBT,) and relaxation (RT) therapies on test anxiety management among students with hearing impairment. The study adopted a pretest-posttest control group quasi-experimental research design with 3x2x2 factorial matrix. The study was conducted in 3 schools for students with hearing impertinent within Ibadan metropolis. 60 students were purposively select Jar the study. Each study group was pretested with English language achievement test at first session and post tested at last session to get the effectiveness of the treatments. Seven hypotheses were tested at 0.05 level of significance. Data were analyzed using analysis of covariance (ANCOVA,), scheffe post-HOC was used to establish the area of significance.

Both REBT and RT were found to be effective in reducing test anxiety among students with hearing impairment. ($F(2,36) = 20.668 P < .05, = .605$). Gender

and academic self-concept were also found to be significant on test anxiety among students with hearing impairment as represented in the result, ($F(3,7) = 6.597, P < .05, \eta^2 = .196$), and ($F(0,37) = 4.498, P < .05, = .143$) respectively. There was no significant main or interaction effect of treatment on gender and academic self-concept among the participants.

It was concluded that both REBT and RT were good in reducing test anxiety among students with hearing impairment. Therefore, it was recommended that teachers and stakeholders should employ the use of REBT and RT in reducing test anxiety among students with hearing impairment. Positive academic self-concept should be enhanced among these students.

Keywords: Rational emotive behaviour, relaxation, students with hearing impairment.

Introduction

Over the years in our educational system, success has become very difficult for many students at all levels. The state of minds of students is notably an important factor in this regard as students go through a number of experiences that affect their emotions. Students with hearing impairment in particular have their emotional status affected by different stressors and these go a long way in their academic outcomes. It therefore becomes pertinent for professionals to resolve the issues of test anxiety, poor academic performance, low academic self-concept and gender influences as affect the education and academic achievement and quality of life of persons with hearing impairment.

Notably, the education of individuals with hearing impairment is becoming more diversified by inclusion of various stakeholders. It has highly become a collaborative effort among different professionals like psychologist, counselor, nurses, audiologist, therapist, sign language interpreter and classroom teachers unlike the usual "the special teacher does it all" syndrome. Consequently, this has brought about diversities in the educational and rehabilitative approaches. Despite this, much more are still discovered undone or lacking the needed attention. Notably, there is overconcentration on speech and auditory challenges as the primary causative factors of poor test performance and other academic deficiencies as being experienced by students with hearing

impairment. Hence, issues such as test anxiety are discovered being undermined.

Test anxiety is defined as a state of uneasiness and distress before and during a test that often lowers performance (Web and Miller 2015). Huberty (2009) observed that, test anxiety remains one of the students exhibited behaviour that could be detrimental in a school setting and students' academic outcome. Meanwhile, Iroegbu (2013) observed that in Nigeria, academic excellence, qualifications and high performance have been regarded very seriously as the parameters for recruitment, placement and advancement in both public and private sector organizations. More importantly, these parameters are also highly adopted in selection of candidates for admission into tertiary institutions. Due to this high premium placed on academic performance, individuals do everything possible to obtain excellent results. This no doubt places those concerned, particularly students at varying levels of anxiety and tension in the process, since success in examinations may implicitly be synonymous in work and life. Based on this expectation and the society's demand for excellence, the children on their part strive to compete and excel. Examination stress and test anxiety are pervasive problems in modern society. As the information age continues to evolve, test scores will become even more important than they are today in evaluating applicants for demanding jobs and candidates for admission into highly competitive educational programmes.

Though, it is perfectly natural to feel some levels of anxiety or stress regarding upcoming test, papers or presentations, the degree at which students experience this anxiety differs and this differences determine the effect it has on their respective test outcome and general academic achievement. As test anxiety is said to be detrimental to students academic so also can it be beneficial, an average anxiety about upcoming test will make a student adequately prepare for the upcoming test or examinations while high anxiety will impede on the student willingness to read ahead of the exam and prevent him from exploring the knowledge he has even during exam. Therefore, too much anxiety generally causes decrements in performance and undermines academic

achievement in today's environment, yet, it is a common normal phenomenon of everyday life. It plays a crucial role in human life. because all of us are the victims of anxiety in different ways.

Afolayan, Donald, Onasoga, Babafemi and Agama (2013), opined that anxiety generally is in four classes and the effect of it on individual is basically a factor of the class one suffers; According to them, the classes and the consequence of each are given as: Mild level of anxiety is healthy, at this level, perceptual field is heighten, pupils dilate to accommodate much light, hearing and smelling intensified, and sense of touch is highly sensitive. The individual is highly alert and attentive and learning and cognition is in its best state. This stage improves academic performance. Moderate level of anxiety on the other hand is unhealthy, the perceptual field of a person at this level is narrowed; individuals experiencing this level of anxiety have selective inattention. They have decreased focus and automatism can be observed as repetitive purposeless movements such as shaking of the hands and feet, twirling of hair and, tapping of fingers. Academic performance at this level depends on the individuals ability to control the anxiety and carry out the assigned task, severe level of anxiety is characterized by reduced perceptual field and a difficulty in communication. Gross motor movements, such as pacing are characteristic of people at this stage. Academic performance at this stage depends on the educator's ability to recognize such individuals and provide a safe environment for them. Communication should be kept short and simple since communication is altered. Performance at this stage is reduced since most educators may not be able to provide such environment for the student and panic level of anxiety is the worst and most severe form of anxiety. Total disruption of perceptual field is present. It is also characterized by loss of ability to communicate, loss of rational thought and total loss of conscious thinking. Academic performance at this level is very poor since the student will be unable to remember exactly what he/she is supposed to do. The anxiety symptoms at this level are extremely common in childhood and adolescence and can negatively interfere with general well-being, social life, academic performance and development of social skills.

Birjandi and Alemi (2010) were of the opinion that trait, state and situation specific anxiety are famous amongst students, these they perceived as being detrimental to academic outcomes of the students. Each of the trichotomy is dependent of circumstances favorable to manifestation. Trait anxiety is regarded as an aspect of personality, a more permanent predisposition to be anxious. Trait anxiety is generally associated with people who have an anxiety disorder, and it is regarded as a fixed stage of anxiety, which is undergone by a person who has the propensity to become extra anxious and persistently displays unhealthy responses when he encounters stimuli that provokes him. A person who suffers from trait anxiety can become anxious from a number of things that another person would not even pick up on; for example, their anxiety may be triggered by a leaf blowing in the wind, or a specific color (things that people without the condition would not even begin to perceive as a threat). Situation-specific anxiety is aroused by a specific type of situation events such as public speaking, examinations, or class participation. Language anxiety is a type of situation-specific anxiety associated with attempts to learn an L2 (2nd Language) and communicate in it. State anxiety is defined as an apprehension experienced at a particular moment in time as a response to a definite situation. It is a combination of trait and situation-specific anxiety. State anxiety is identified as an unpleasant emotional stimulation that occurs when a person comes into contact with frightening stressors or dangers while trait anxiety signifies a persons continual tendency to react with state anxiety, because they're persistently expecting bad circumstances to transpire. Going by this submission, test anxiety is seen as a disorder, combining it with another disabling condition such as hearing impairment makes it a tedious challenge which may be difficult coping with.

According to Mark & Karen, (2014), test anxiety can cause a lot of problems in students. Although each person will experience a different collection of symptoms with differing degrees of intensity, the symptoms fall into a few categories which include:

Physical; headaches, nausea or diarrhea, extreme body temperature changes, excessive sweating, shortness of breath, light-headedness or

fainting, rapid heartbeat, and/or dry mouth; Emotional; excessive feelings of fear, disappointment, anger, depression, uncontrollable crying or laughing, feelings of helplessness.

Behavioral; fidgeting, pacing, substance abuse, avoidance; *Cognitive*; racing thoughts, 'going blank, difficulty concentrating, negative self-talk, feelings of dread; comparing yourself to others, difficulty organizing your thoughts. Stressful emotions can inhibit a student's ability to absorb, retain and recall information. They went further emphasizing its effect by submitting that Anxiety creates a kind of "noise" or "mental static" in the brain that blocks our ability to retrieve what's stored in memory and also greatly impairs our ability to comprehend and reason. Corroborating this, Cerbin (2011) established that many school students have test anxiety that interfere with their academic performance. Not only does anxiety affect students' test performance but also interferes with their test preparation and contributes to the belief that there is little they can do to improve their performance also bringing about negative self-concept.

Hearing impairment is a condition that affects individuals ability to work and as well hampers performance (Mohanraj & Selvaraj, 2013), thus combining it with other condition(s) that adversely affect academic performance such as test anxiety calls for serious intervention from all and sundry. Researches on the implication of test anxiety on performance have repeatedly demonstrated that high levels of cognitive test anxiety promote the probability of notable declines in test performance (Cassady 2004).

Considering the relationship between Self-concept and test anxiety as it affects academic performance of persons with hearing impairment, it has been observed that this category of students perceived hearing colleagues better than they are due to constraints they encountered as a result of communication incompetence. Positive self-concept refers to a highly favourable global evaluation of the self while negative self-concept means an unfavourable definition of the self Thus, positive self-concept may refer to an accurate, justified, balanced appreciation of one's worth as a person and one's successes and competencies, but it can also refer to an inflated, arrogant, grandiose, unwarranted sense of

conceited superiority over others. By the same token, negative self-concept can be either an accurate, well-founded understanding of one's shortcomings as a person or a distorted, even pathological sense of insecurity and inferiority, (Ataabadi, Yusefi and Moradi 2013). Meanwhile, by virtue of nonfunctional auditory mechanism, students with hearing impairment see their hearing counterpart better, bringing negative self-concept.

Leaving issues such as test anxiety with no or less attention therefore amounts to endangering the academic life of individual victims of the condition, most especially, students with hearing impairment as this tends to complicate their learning environment. In this regard, Stephanie; Theunissen; Carolien; Maartje; Leo; Wim; Jeroen; Johan & Frijns (2013) submitted that children with hearing impairment encounter communicative, social, and emotional problems beyond those experienced by their normal hearing counterparts. These additional difficulties may increase the risk of developing psychopathology, such as anxiety disorder.

From the fore-going, test anxiety as being experienced by students today becomes almost unavoidable in formal school settings. The case of students with hearing impairment is more complicated, this is because of the indifferent nature of the environment to their academic development as hearing impairment prevents accidental learning as opportune by their hearing counterparts. Also, parents of this category of students and the society at large as well place a very high expectation on them forgetting their nature of special needs. Students with hearing impairment on their part therefore domicile cognitive worry and concerns in breaking the limitations. This urge to excel and meet the societal premium results in high anxiety which may also result in negative test performance.

In the light of this, it becomes paramount looking into appropriate and effective intervention and coping strategies for student in this categories. There are different therapies being used for reduction of test anxiety among students, their efficacy and effectiveness in combating complicated conditions such as that of students with hearing impairment has to be established. Moreover, the clusters of interrelated

factors that are contributing to test anxiety among students with hearing impairment have to be investigated holistically.

The notion of test anxiety is that test anxiety is not entirely detrimental to students academic achievement, but can also serve as basis for adequate preparation ahead of the upcoming tests. The determinant of what effect it has to do with the level at which it manifests in each student, for instance, students who have anxiety levels between comfortably low to high normal test anxiety levels are believed to be in better position to prepare for the test as a result of the anxiety while students that manifest anxiety level from moderately high to extremely high anxiety levels are more liable to have their preparation and test taking distorted by the anxiety. Therefore, the interventions rather focus on reducing the symptoms to minimum bearable level. Moreover, the manifestation of test anxiety is in three major dimensions namely: Cognitive, Behavioural and physiological domains (Huberty, 2009). Scholars over the years have attempted to reduce test anxiety among students with a lot of therapies and strategies. Such therapies that could be used in reducing test anxiety include Rational Emotive Behaviour and Relaxation Therapies. Rational Emotive Behaviour Therapy (REBT) is one of the cognitive behavioural therapies being used to combat psychological and behavioural disorders. Also relaxation therapy is another intervention popularly used in reducing fatigue, tension, worry or anxiety behaviour to a very minimal level capable of posing challenge and encouragement to students rather than militating against their health and effectiveness.

Theories of REBT as developed by Albert Ellis (1950s) rest on the premise that emotional, behavioural disorder or psychological problems are generated by wrong beliefs said to be irrational, meanwhile, irrational beliefs are product of irrational thoughts generated by human cognition. For instance, some students perceive test taking as 'do or die' (Irrational belief) therefore, anxiety, particularly, as regards test taking emanates from the state of student cognition, in such case, REBT will work on the process of cognition so that it stops the unproductive thoughts (Irrational). REBT believes in substituting irrational thoughts with their rational correspondent to have a complete peaceful,

resourceful and effective mind which will be free of external influence or stressors. REBT also believes in ability of an individual to take charge of his thoughts, not the thought controlling reactions and responses to stimuli around.

Similarly, relaxation therapy is a treatment also known to be effective in reducing test anxiety. Relaxation therapy is the releasing of physical and mental tensions. The relaxation response is defined as one's personal ability to make the body release chemicals and brain signals that make muscles and organs slow down and increases blood flow to the brain. It is possible to get the body relaxed while remaining conscious and aware at the same time for free flow of responses to stimulus around. To be physically relaxed and mentally alert is the goal of the relaxation therapy. In a broader perspective, Williams and Carey (2003) see relaxation therapy as simple technique capable of: increasing energy, decreasing fatigue as well as increase in arousal from a drowsy state. They explained further that it can increase motivation, productivity, and improve decision-making ability. The relaxation response lowers stress hormone levels and lowers blood pressure. Meanwhile these are the sets of negative responses that militate against productive thinking, and sound memory needed for a successful test task.

The effects of these treatments in combating test anxiety in relation with complexity of students with hearing impairments academic needs are worth determining. In the same vein, which of the treatments is more suitable and captures test anxiety traits as being exhibited by these students is of utmost concern to the researcher. Also, the interrelationship of gender, students' academic self-concept and test anxiety in students with hearing impairment are to be investigated. This study therefore investigated the effects of Rational Emotive Behaviour and Relaxation Therapies on test anxiety management among students with hearing impairment in Ibadan, Oyo State.

Statement of the problem

Poor test performance among students with hearing impairment is becoming more worrisome that makes it imperative for teachers and

other stakeholders in special education to proffer a lasting remedy. It is evident that language barrier and communication deficiencies characterized with hearing impairment are principally responsible for this; notwithstanding, there are intercessions of variables that adversely affect test outcomes as experienced by this category of students. Factors such as negative self-concept, gender sentiments militate against test confidence which in turn translate into excessive anxiousness in test taking. Several studies have used some technique to reduce test anxiety among students, yet, symptoms of test anxiety still persists increasingly among students with hearing impairment. This study therefore examined the effects of rational emotive behaviour and relaxation therapies in managing test anxiety, particularly, among students with hearing impairment. This was done by cross examining the effects of students' self-concept and gender differences in test anxiety among these students.

Methodology

Research design

The study adopted the pretest-posttest, control group quasi experimental research. A 3x2x2 factorial matrix was employed: (Rationale Emotive Behaviour Therapy, Relaxation therapy and Control Group) with self-concept and gender at two levels.

The design is represented thus:

Experimental Group 1	(E1):	O_1	X_1	O_4
Experimental Group 2	(E2):	O_2	X_2	O_5
Control Group 3	(C):	O_3	X_3	O_6

Where;

O_1 , O_2 and O_3 represents pretest scores of experimental group 1, 2 and the control group respectively and;

O_4 , O_5 and O_6 represents posttest scores of experimental group 1, 2 and the control group respectively.

X_1 represents the treatment for experimental group I (Rational Emotive Behaviour Therapy)

X₂ represents the treatment for experimental group 2 (Relaxation Therapy)

X₃ represents the Control group for modified teaching and reading method of Reducing Test Anxiety.

Selection of Participants

The participants for this study were sixty students with hearing impairment in schools for the deaf in Ibadan, namely; Ijokodo high school, Methodist secondary school, and Christian mission for the deaf Ibadan. These were selected because students with hearing impairment in the schools are exposed to challenging test situations that make them vulnerable to test anxiety. Also the researcher envisaged having more participants for the study.

Students with hearing impairment from these schools were used for the study. Sixty participants across the three schools will be purposively selected to constitute the participants. The researcher will group the subjects into three and different treatment packages were used for each of the first two groups at the same period while the other served as control group.

Research Instruments

The following instruments were used for data collection in this study:

1. Westside Test anxiety scale (WTAS)
2. Rational Emotive Behavioural Therapy Guide (REBTG)
3. Relaxation Therapy Guide (RTG)
4. Academic Self-concept Scale (AScS)
5. English Language Achievement Test for Senior Schools (ELATSS)

Procedure for Test Administration

The research pre-visited the selected schools to introduce themselves and communicate their mission to the three selected schools' principals. At the arrival and commencement of the administration in Methodist Grammar School, the researchers met the students at the general assembly during literary and debate, the researchers then used the

opportunity to interpret and interact with the participants. This created the first familiarization contact with the participants in this school. The researchers trained and made use of the special teachers on the use of the treatment strategies. The special teachers served as research assistants and were exposed to the intricacies of the research. The test administration was given for eight (8) weekly sessions while each session lasted 60 minutes. Pretest administration was conducted at the commencement of first session and posttest at the end of last session. The data collected were thereafter analyzed using analysis of covariance (ANCOVA) and Scheffe Post-HOC analysis was used to elicit the area of significant different.

Results

The results of the study is presented thus:

HO₁: There is no significant main effect of treatment on Test Anxiety among students with hearing impairment

Table 1: ANCOVA table showing the significant main and interaction effects of Treatment, Gender and Academic Self-concept on Test Anxiety.

Source	Sum of Squares	DF	Mean Square	F	Sig.	Eta ²
Corrected Model	2972.857	11	270.260	5.957	.000	.708
Pretest Test Anxiety	19.826	1	19.826	.437	.514	.016
Main Effect:						
Treatment Group	1875.468	2	938.734	20.668	.000	.605
Gender	299.297	1	299.297	6.597	.016	.196
Academic Self-Concept	204.080	1	204.080	4.498	.043	.143
2-way Interactions:						
Treatment x Gender	135.278	2	67.639	1.491	.243	.099
Treatment x Self concept	83.005	2	41.502	.915	.413	.063
Gender x academic Self-concept	1.602	1	1.602	.035	.852	.001

3-way Interactions: Treatment x Gender x academic Self- concept	28.087	1	28.087	.618	.438	.022
Error	1225.040	27	45.372			
Total	4197.897	38				

The result from table 1 above shows that there was a significant main effect of Treatment on Test Anxiety among students with hearing impairment ($F(2,36) 20.668 P < .05, \eta^2 = .605$). Hence, the null hypothesis is rejected. This implies that the treatments have significant main effect on test anxiety among the participants. This result therefore proves that both REBT and RT were found to be effective in reducing test anxiety among students with hearing impairment.

Table 2: Estimated Marginal Means Scores on Treatment Groups

Treatment Groups	Mean	Std. Error
Treatment I	66.927	1.959
Treatment II	58.925	2.217
Control	45.305	2.840

Table 2 above shows the Estimated Marginal Mean Scores from the analysis. Table 2 above shows that treatment 1 (REBT) is more significant than treatment 2 (RT) with significance of 8.002 mean difference.

Table 3 Scheffe Post-Hoc Pairwise multiple range test

Treatment Groups	Treatment Group	Std. Error
Treatment I	Treatment II	.004
	Control	.000
Treatment II	Treatment I	.004
	Control	.010
Control	Treatment I	.000
	Treatment II	.010

Table 3 above shows there were significant differences between Treatment I and Treatment II, between Treatment I and Control and between Treatment II and Control respectively. The results present that treatment 1 (REBT) has higher significance than treatment 2 (RT) and treatment 2 has higher significance than the control group. This implies that even though both treatments are effective in reducing test anxiety among the participants, REBT has greater effect in reducing test anxiety among students with hearing impairment than RT.

HO2: There is no significant main effect of Gender on Test Anxiety among students with hearing impairment

The result from table 1 above shows that there was a significant main effect of Gender on Test Anxiety among students with hearing impairment ($F_{(1,37)} = 6.597, P < .05, \eta^2 = .196$). Hence, the null hypothesis is rejected. This implies that gender makes a significant effect on test anxiety among the participant. The result shows that female participants exhibit test anxiety traits than their male counterparts as presented in table above. The test anxiety mean score between male and female participants as given has 4.519 positive significance main effect on test anxiety than male participants.

Table 4 Estimated Marginal Means of the analysis on Gender

Gender	Mean	Std. Error
Male	55.655	2.139
Female	60.174	1.783

Table 4. above shows the Estimated Marginal Mean Scores from the analysis.

HO3: There is no significant main effect of Self Concept on Test Anxiety among students with hearing impairment

The result from table 1 above shows that there was a significant main effect of academic self-concept on Test Anxiety among students with hearing impairment ($F_{(1,37)} 4.498, p < .05, r^2 = .143$). Hence, the null

hypothesis is rejected. This implies that there is significant main effect of academic self-concept on test anxiety among students with hearing impairment.

Table 5: Estimated Marginal Means Scores

Academic Self-concept	Mean	Std. Error
Negative	60.043	2.688
Positive	55.813	2.281

Table .5 above shows the estimated marginal mean scores from the analysis. The result presents that the participants with negative self-concept score higher in test anxiety score than those with positive self-concept. The table below presents the estimated marginal mean scores representing the effect of self-concept on test anxiety.

HO4: There is no significant interaction effect of Treatment and Gender on Test Anxiety of students with hearing impairment.

The result from table 1 above shows that there was no significant interaction effect of Treatment and Gender on Test Anxiety of students with hearing impairment ($F_{(2,36)} = 1.1491, P > .05, \eta^2 = .099$). Hence, the null hypothesis is accepted. This implies that interaction effects of treatment and gender has no statistical effect on reduction of test anxiety on students with hearing impairment. The mean score of participants based on treatment and gender is presented in the table below

Table 6: Estimated Marginal Means from the interaction effect of Treatment and Gender on Test Anxiety among students with hearing impairment

Treatment Groups	Gender	Mean	Std. Error
Treatment I	Male	66.033	2.420
	Female	67.822	3.203
Treatment II	Male	57.270	2.547
	Female	63.579	3.744
Control	Male	37.670	7.194
	Female	49.122	2.071

Table 6 above shows the estimated marginal mean scores from the experimental groups and the control in relation to gender of the participants. It shows that treatment in relation with male participants had a mean value of 66.033 and 54.270 in treatment 1 and treatment 2 respectively while in relation to female students had 67.822 and 63.579 in treatment 1 and 2 respectively. The mean value therefore has no statistically significant difference between the treatment and gender differences as regards test anxiety reduction among students with hearing impairment.

HO5: There is no significant interaction effect of Treatment and Academic Self- concept on Test Anxiety among students with hearing impairment

The result from table 1 above shows that there was no significant interaction effects of Treatment and Academic Self-concept on Test Anxiety among students with hearing impairment ($F(2,36) = .915$, $P > .05$, $\eta^2 = .063$). Hence, the null hypothesis is accepted. This indicated that the interaction effects of treatment and academic self-concept has no statistical effect on reduction of test anxiety among students with hearing impairment.

Table 7: Estimated Marginal Means Scores from the effects of Treatment and Academic Self-concept on Test Anxiety among students with hearing impairment

Treatment Groups	Academic Self- concept	Mean	Std. Error
Treatment I	Negative	69.438	3.426
	Positive	64.417	3.430
Treatment II	Negative	65.446	3.957
	Positive	52.403	2.834
Control	Negative	45.245	4.288
	Positive	45.424	2.970

Table 7 above shows the mean value of experimental groups and control group in relation with academic self-concept among the participants. It

shows that the treatment in relation with students with negative self-concept had mean scores of 69.438 and 65.446 in treatment group I and 2 respectively while in students with positive self-concept had 64.417 and 52.403 in treatment group 1 and 2 respectively. However, the mean value shows that there is no statistically significant difference between the treatment and academic self-concept of students with hearing impairment who were exposed to rational emotive behaviour and relaxation therapies.

HO6: There is no significant interaction effect of Gender and academic self- concept on Test Anxiety among students with hearing impairment.

The result from table I above shows that there was no significant interaction effects of Gender and Academic Self-concept on Test Anxiety among students with hearing impairment ($F(1,37) .035, P > .05, \eta^2 = .001$). Hence, the null hypothesis is accepted. This implies that the interaction of gender and academic self-concept statistically has no significant effect on test anxiety behaviour among students with hearing impairment. The mean score of the participants based on gender and academic self-concept is presented in the table below.

Table 8 Estimated Marginal Means from the interaction effect of Gender and academic Self-concept on Test Anxiety among students with hearing impairment

Gender	Academic Self- concept	Mean	Std. Error
Male	Negative	55.483	3.513
	Positive	55.915	2.764
Female	Negative	64.604	3.231
	Positive	55.745	2.855

Table 8 above shows the Estimated Marginal Mean Scores from the gender (male and female) with academic self-concept (negative and positive). It shows that male students with negative academic self-concept had.

H07: There is no significant interaction effect of Treatment, Gender and academic self-concept on Test Anxiety among students with hearing impairment

The result from table 1 above shows that there was no significant interaction effects of Treatment, Gender and academic self-concept on Test Anxiety among students with hearing impairment ($F_{(1,37)} = .619, P > .05, 112 = \eta^2 = .022$). Hence, the null hypothesis is accepted. The mean and standard deviation scores of the participants based on the treatment, gender and academic self-concept are represented on table 4.8 above.

Table 9: Estimated Marginal Means Scores from the interaction effect of Treatment, Gender and academic self-concept on Test Anxiety among students with hearing impairment

Treatment Groups		Academic Self-concept	Mean	Std. Error
Treatment I	Male	Negative	69.429	4.002
		Positive	62.637	3.612
	Female	Negative	69.446	4.974
		Positive	66.197	5.056
Treatment II	Male	Negative	59.349	3.638
		Positive	49.192	3.955
	Female	Negative	71.544	6.786
		Positive	55.614	3.670
Control	Male	Negative	37.670	7.194
		Positive	00.000	0.000
	Female	Negative	52.820	3.533
		Positive	45.424	2.970

Table.9 above shows the Estimated Marginal Mean Scores from the analysis.

The table reveals the mean scores of the both treatment groups and the control in relation with gender differences and academic self-concept.

The table showed that treatment 1 (rational emotive behaviour) had a mean score of

Discussion of findings

Main effect of treatment on Test Anxiety among students with hearing impairment.

The study found a significant main effect of treatments on students with hearing impairment in test anxiety reduction. This implies that the treatments have significant main effect on test anxiety reduction among the participants. This hypothesis was therefore rejected. To establish and determine the actual source of the observed significant, the effect in ANCOVA, a scheffe post HOC analysis was carried out on the post-test mean scores of the three groups. The post Hoc multiple comparison showed the performance of the participants in all the groups. The direction of the decreasing main effect of treatments on the reduction of test anxiety among students with hearing impairment. The treatments are rational emotive behaviour therapy, relation therapy and control group. The results further show that the effect rational emotive behaviour therapy was more significant than relaxation therapy, the result corroborates the findings of Kumar (2009), Alwaye and Akinsola (2013) and Baranovich and Najafi (2014). The researchers also used the REBT on test anxiety and reported a significant effect test anxiety reduction. Meanwhile, Alwaye and Akinsola (2013) also confirmed that relaxation is an effective way of releasing fatigue in any form of anxiety.

Main effect of Gender on Test Anxiety among students with hearing impairment. The result also reveals that there is main significant of gender on test anxiety behaviour among students with hearing impairment. This means that test anxiety behaviour varies from gender. The study shows that female students with hearing impairment show more anxiety behaviour than male counterparts. This hypothesis was therefore rejected. Even though this result is in contrast to Akinsola and Nwajei (2013) who says there is not enough research evidences to establish any effect of gender on test anxiety, it corroborates Kumar

(2009), Cohen (2010), Zaheri et.al Cassady and Johnson (2002), (2012), Divine et.al (2012) and Iroegbu (2013) the researchers reported a significant main effect of gender on test anxiety. Each study reported that female anxiety level was higher than their male counterpart in test taking situation.

Main effect of Self Concept on Test Anxiety among students with hearing impairment

The result also reported a significant main effect of academic self-concept on test anxiety among students with hearing impairment. Students with hearing impairment who have negative academic self-concept scored higher in test anxiety scale than their counterparts with positive academic self-concept. This shows that students with hearing impairment who have positive academic self-concept are likely to face test situation with more confidence than their counterparts with negative academic self concept. Though, this finding negates Matovu (2012) who posited that there is no significant correlation in the students academic self-concept and test anxiety behaviour.

Interaction effect of Treatment and Gender on Test Anxiety of students with hearing impairment.

The result of the study indicated that there was no significant interaction effect of treatment and gender on test anxiety behaviour of students with hearing impairment. This implies that there was no significant statistical analysis effect of the treatments and gender on test anxiety behaviour of students with hearing impairment. The null hypothesis was therefore accepted.

Interaction effect of Treatment and Academic Self-concept on Test Anxiety among students with hearing impairment

The result of the study indicated that there was no significant interaction effect of treatment and academic self-concept. Hence, it established the fact that the treatments are effective with the participants in spite of their nature of academic self-concept whether positive or negative. By implication, this implies that both positive and

negative academic self-concept students with hearing impairment benefited maximally in the treatment on test anxiety reduction technique.

Interaction effect of Gender and academic self-concept on Test Anxiety among students with hearing impairment.

Furthermore, the result from this research found out that there was no interaction effect of gender and academic self-concept on test anxiety among students with hearing impairment. This implies that, regardless of the gender types, nature of academic self-concept, the test anxiety behaviour remain dominant among students with hearing impairment. That is, gender differences and academic self-concept do not make a significant effect on test anxiety behaviour among students with hearing impairment. The null hypothesis was therefore accepted.

Interaction effect of Treatment, Gender and academic self-concept on Test Anxiety among students with hearing impairment

Finally, the results of this study shows that there was no significant interaction effect of treatments, gender and academic self-concept on test anxiety behaviour among students with hearing impairment. This implies that the interaction effect of treatment, gender and academic self-concept does not make any significance statistical effect on test anxiety behaviour among students with hearing impairment. the null hypothesis was therefore accepted.

Conclusion

Both therapies showed significant main effect on test anxiety reduction among students with hearing impairment. Out of the two therapies, rational emotive behaviour therapy shows more significant effect, this probably is due to its approach and focus on the cognition as the processor of thoughts which in turn produces anxiety provoking thoughts called irrational thoughts and irrational beliefs and changes the irrationals to the corresponding rational. It was also concluded that academic self-concept should be keenly looked into as an indicator of test anxiety among students with hearing impairment. Teachers and

stakeholders should be gender sensitive in testing students with hearing impairment.

Recommendations

1. State of mind of students with hearing impairment should be of utmost priority to the teacher.
2. Test anxiety reduction should be prioritized among students with hearing impairment.
3. Rational emotive behaviour therapy should be given preference in selection of therapies to reduce test anxiety among students with hearing impairment.
4. In the course of administering the therapy, the specialist must acquaint himself and other personnel on the use of the therapy.
5. Seminars should be organized in order to give tips on examinations preparations for students with hearing impairment.

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