

## EFFECT OF COGNITIVE RESTRUCTURING TECHNIQUE ON EXAMINATION ANXIETY AMONG UNDERGRADUATE STUDENTS OF IBRAHIM BADAMASI BABANGIDA UNIVERSITY, LAPAI, NIGER STATE, NIGERIA

<sup>1</sup>DR. YUNUSA SALIHU, DR. <sup>2</sup>YAKUBU ABBAS PAIKO & <sup>3</sup>MAIGIDA BAHAM WILLIAM

<sup>1</sup>Department of Educational Psychology and Counselling

Faculty of Education, Ahmadu Bello University, Zaria, Nigeria.

<sup>2&3</sup>Department of Counselling Psychology, Faculty of Education and Arts  
Ibrahim Badamasi Babangida University, Lapai, Niger State

### Abstract

This study examined the effect of cognitive restructuring technique on examination anxiety among undergraduate students of Ibrahim Badamasi Babangida University, Lapai, Niger State, Nigeria. Two objectives guided the study and two hypotheses were tested at 0.05 levels of significance. Hypothesis one measured significant effect of cognitive restructuring technique on examination anxiety among undergraduate students of Ibrahim Badamasi Babangida University, Lapai, Niger State. Hypothesis two measured significance difference in the effect of cognitive restructuring technique on examination anxiety among students of Ibrahim Badamasi Babangida University, Lapai, Niger State based on gender. Quasi-experimental design was adopted for the study. The population of this study comprised of one hundred and seventy-three (173) undergraduate students identified with examination anxiety in two sampled Departments in Ibrahim Badamasi Babangida University, Lapai, Niger State. Forty (40) undergraduate students with examination anxiety were selected and used for the study. Examination Anxiety Screening Scale (EASS) was used for identification of students with examination anxiety and Modified Examination Anxiety Scale (MEAS) was used for the collection pre-test and post-test data for the study. The data collected were analyzed using independent sample t-test. The finding revealed that there is significant effect of cognitive restructuring technique on examination anxiety among undergraduate students of Ibrahim Badamasi Babangida University, Lapai, Niger State. The finding also indicated that there is no significant difference in the effect of cognitive restructuring technique on examination anxiety of male and female undergraduate students of Ibrahim Badamasi Babangida University, Lapai, Niger State. Based on these findings, it was recommended among others that professional school guidance counsellors and school psychologists should be encouraged to use cognitive restructuring technique in order to reduce examination anxiety among undergraduate students so as to improve their examination performance.

**Keywords:** Cognitive Restructuring Technique, Effect, Examination Anxiety, Undergraduate Student

### Introduction

Almost everyone will feel nervous or experience some level of anxiety when faced with an exam or assessment situation. This is a common and natural response for many students in the preparation before, and during exams. In fact, a moderate level of anxiety is crucial to performing well, this helps to be psychologically and physically alert in an exam or assessment situation. The challenge is when the level of anxiety increases beyond an optimal level such that it interferes with our studying or

performance. Examination anxiety refers to the nervousness that comes with writing an examination (Einat, 2017). It emerges from the desire to score highly on an exam. Illinois Counselling Centre. (2019) describes examination anxiety as a ‘distressful’ and anticipatory state or feeling that influences examination performance. Robinson (2021) further describes it as a feeling of apprehension and discomfort that leads to difficulties in cognition while writing an examination, additionally identifies the cognitive, emotional and social elements of anxiety, emphasizing that anxiety generally peaks at the beginning of the causal event and subsides once the event starts. Robinson (2021) also opines that test anxiety sometimes lingers on in the victim until the end of the examination.

It is construed from the foregoing comments that examination anxiety is inevitable amongst students in all academic environments because once there are tests and examinations, anxiety will emerge and fester. Considered as a multi-dimensional phenomenon that involves worry, emotionality, and behavioural response to being preoccupied by the possible negative outcome of academic scores (Chapell et al., 2023). According to them, test anxiety also relates to the subjective feeling of tension, apprehension, nervousness, and worry associated with an arousal of the automatic nervous system. Deductively, the above definitions suggest that examination anxiety is the feeling of apprehension which learners portray due to their perception of undesirable outcome of an impending examination and that examination anxiety is a personal expression of fear in relation to an examination. In this study, examination anxiety is defined as the individual expression of fear associated with examinations. It is, therefore, evident that total elimination of examination anxiety cannot be thought of because it is pervasive in all academic endeavours however, should be well managed to forestall any ripple effects (Chapell, et al., 2023).

Examination anxiety is described as having two major aspects, namely, physiological hyper-arousal and cognitive disorganization. The physiological factors manifest in increased heart rate, increased blood pressure, shortness of breath, and profuse sweating (Adebayo, 2016). The cognitive factors are described by Robinson (2019) as including symptoms like difficulty in thinking, low self-confidence, having negative thoughts and doubts about one’s academic ability, difficulties in understanding examination questions, and difficulties in recalling learnt information. Hashmat et al. (2018), Harris & Coy (2019) also confirm the emotional aspect of examination anxiety, describing it as a common experience among students, reporting symptoms like excessive worry, depression, nervousness, irrelevant thoughts, nausea, and frequent urination as typical in examination-anxious people, including symptoms such as stomach aches, headaches, shivering, sweaty palms, dry mouths, fainting and nausea are also reported.

According to Revina et al. (2022), anxiety causes students to go blank, feel helpless and develop sweaty palms during examinations. High levels of anxiety, also affect students’ memory, reasoning abilities, self-esteem and academic achievement. Other mental reactions like worrying about poor test performance, perceiving examinations as threats, and difficulties concentrating or recalling learnt materials, also exist (Illinois Counselling Centre, 2016; Lufi et al., 2018). Birenbaum (2020) highlighted worrying as a key hindrance to information retrieval among examination-anxious people, but emphasizes poor examination preparation as a major cause of low examination performance among such students. Similarly, Cassady (2018) discovered that highly examination-anxious students usually had poor study habits, felt threatened by tests and also performed poorly on examinations.

The factors that cause examination anxiety, as indicated by several authors such as Duraku (2016) and Lufi et al. (2018) are diverse and vary from person to person. These factors that causes examination

anxiety can, however, be generally categorized as psychological, behavioural, physical, or cognitive in nature (Duraku, 2016). When investigating the causes of examination anxiety among students, Hashmat et al. (2018) 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 examination anxiety. Birenbaum (2020) agrees with them when reporting that inconsistent content coverage, studying all night before examinations and poor revision of studied course material are significant causes of examination-related anxiety in students. The California Polytechnic Academic Skills Centre (2013) highlights additional common behavioural and cognitive causes of examination anxiety as negative past experiences of exams; lack of adequate preparation, or knowledge of exam-taking skills, techniques or study methods; unhelpful thinking about exam situation (e.g. “I’m going to loss control, I can’t do this, I’m going to fail.”); excessive pressure to achieve or perform; and strong fear of failure.

Examination anxiety has negative influence on students’ performance. Harris and Coy (2019) describe examination anxiety as a ‘severely disabling’ condition that ‘paralyses’ students’ thought processes and hinders their performance in examinations despite their high cognitive abilities. Eysenck (2016) additionally reports a significant relationship between high levels of examination anxiety and low cognitive performance. In a similar vein, Vasa et al. (2017) found that respondents with high examination anxiety had lower memory scores, and Chapell et al. (2023) additionally reveal that anxiety interferes in students’ performance in most assessment situations. Bodas and Ollendick (2018) suggested that examination anxiety is a key cause of psychological distress, low academic performance or underachievement, and feelings of insecurity among students. However, the Illinois Counselling Center (2016) asserts that, despite its predominantly negative nature, anxiety could sometimes be useful when it enables the individual to escape or avoid dangerous situations. Spielberger et al. (2017) similarly believe that a little nervousness is important to push the individual into peak performance.

Cognitive Restructuring Technique (CRT) is a counselling intervention technique that helps people to understand the influence of their thoughts and feelings on human behaviour. According to Kathleen (2020), CRT is an intervention technique used by counsellors and other therapists to guide and teach clients how to change negative thoughts, beliefs and feelings through thought patterns. Cognitive restructuring technique is a psychotherapy based on modifying everyday thoughts and behaviours with the aim of positively influencing emotions (Ali, 2023). This technique is based on the premise that people’s thoughts, feelings, physical sensations and actions are interconnected, and that negative thoughts, feelings and beliefs can lead to maladaptive behaviours. Hence, negative and unrealistic thoughts and beliefs could cause emotional distresses and may result to examination anxiety. Basco and Rush (2017) therefore opined that cognitive restructuring is directed towards alleviating cognitive biases and distortions, and developing a positive thinking pattern.

However, for the purpose of this study, cognitive restructuring technique is defined as a cognitive change method used by counsellors and other therapists to resolve clients’ problems by replacing negative or irrational thoughts and beliefs with positive or rational thoughts and beliefs. It involves learning how to think differently, to change fundamental faulty thinking and to replace it with more rational, realistic and perhaps positive thinking. The aim of cognitive restructuring is to assess the negative thoughts clients have about themselves and their view of the world around them, and to replace such thoughts with more positive and rational thoughts, beliefs, and behaviours. CRT is a structured programme that perhaps may help clients to identify and replace their thoughts and beliefs that cause

examination anxiety with those that promote boldness and confidence.

Studies have shown that gender is significantly correlated with the problem of examination anxiety (Lufi et al., 2018). Gender refers to the state of being a male or female (Oguzie et al., 2019). Studies have indicated controversy on the gender difference in the effects of cognitive restructuring technique in reducing maladaptive behaviours. Chiang et al. (2017) and Oguzie and Nwakolo (2019) in their studies observed that cognitive restructuring was more effective in changing maladaptive behaviours among male participants than their female counterpart. In contrary, Onyia (2010) found that cognitive restructuring technique was significant more effective in changing maladaptive behaviours among female students than their male counterpart. Similarly, Akujieze and Nwadinobi (2015) in their study reported that there was no gender difference in the effect of cognitive restructuring technique in changing maladaptive behaviours among students. Hence, the present study will be carried out to determined effectiveness of cognitive restructuring technique on examination anxiety among undergraduate students of Ibrahim Badamasi Babangida University, Lapai and also resolves the gender controversy on the effect of cognitive restructuring technique on Examination anxiety.

Cognitive Restructuring Technique (CRT) is a psychotherapeutic process of learning to identify and dispute irrational or maladaptive thoughts known as cognitive distortion. Cognitive behavioural therapists believed that thinking influences behaviour and they assumed that event that happened to a person does not cause stress, anxiety, depression or other disorder, but the way the individual thinks or feels about the event especially, if the individual thinks negatively about the event. Thus, the researcher observed that examination anxiety is associated with the negative view about self and examination. It is based on the above; the researcher of this study is motivated to examine the effect of cognitive restructuring technique on examination anxiety among undergraduate students of Ibrahim Badamasi Babangida University, Lapai, Niger State, Nigeria.

### **Statement of the Problem**

The negative effects of examination anxiety make the extensive use of examinations in recent times a worrisome phenomenon. Researchers such as Marszal-Wisniewska et al. (2011) and Bensoussan (2016) reported that students felt both positive and negative emotions before, during, and after an examination; students who are motivated had higher levels of emotional functioning when faced with anxiety during the examination; and teachers' willingness to work with their students to enhance their examination scores has a positive effect on reducing examination anxiety. However, the key to improve students' academic performance is to help students to reduce or resolve problem of examination anxiety. Consequently, Putwain et al. (2019) stressed that examination anxiety is a very serious problem that affect students' academic performance negatively. Although many efforts have been made by various stakeholders such as parents and teachers/lecturers to help students overcome examination anxiety problem through use of motivation and advice but it seems that the efficacy of such efforts still remains questionable bearing the high cases of examination anxiety witnessed by students before and during examination.

Therefore, the need to explore a more effective means and long lasting counselling technique for reducing examination anxiety among students becomes inevitable. Since examination anxiety has been identified as a condition with maladaptive effects, many efforts such as the use of motivation and advice to curb the problem of examination anxiety among students, but unfortunately, such efforts appear to have met with limited success due to their short-lasting results. Hence, the researcher selected an effective cognitive intervention measure known as cognitive restructuring technique to determine its

efficacy in reducing examination anxiety among undergraduate students of Ibrahim Badamasi Babangida University, Lapai, Niger State. The researcher's choice of cognitive restructuring technique was based on its efficacy in managing both cognitive and behaviour problems (Ekennia et al., 2022).

### **Objectives of the Study**

Specifically, the following objectives guided the study:

1. To find out the effect of Cognitive Restructuring Technique on examination anxiety among undergraduate students of Ibrahim Badamasi Babangida University, Lapai, Niger State.
2. To examine the difference in the effect of Cognitive Restructuring Technique on examination anxiety among undergraduate students of Ibrahim Badamasi Babangida University, Lapai based on gender.

### **Research Hypotheses**

The following null hypotheses were tested:

HO<sub>1</sub>: There is no significant effect of cognitive restructuring technique on examination anxiety among undergraduate students of Ibrahim Badamasi Babangida University, Lapai, Niger State.

HO<sub>2</sub>: There is no significance difference in the effect of cognitive restructuring technique on examination anxiety among students of Ibrahim Badamasi Babangida University, Lapai, Niger State based on gender.

### **Methodology**

This study adopted quasi experimental design involving pre-test and post-test for control and experimental groups design. According to David and John (2017) quasi-experimental design establishes cause-and-effect relationships. Lambert (2019) indicated that quasi-experimental design involves the manipulation of one or more independent variables but there is no random assignment of participants to conditions. One hundred and seventy three (173) undergraduate students were identified with examination anxiety in two sampled Departments in Ibrahim Badamasi Babangida University, Lapai, Niger State through the use of Examination Anxiety Screening Scale (EASS) developed by Gyimah (2015). The sample size for this study comprised of forty (40) undergraduate students. Purposive sampling technique was used to select forty (40) students out of 173 undergraduate students identified with examination anxiety. After the selection, twenty (20) participants were assigned to the experimental group which was exposed to cognitive restructuring technique treatment and twenty (20) participants were also assigned to the control group which were not giving any treatment. The selection of 20 participants for each group was guided by the opinion of Ezhumalai (2018) who maintained that for counselling session to be effective, the group membership need not to be too large. Also, Ray (2000), and Cohen and Marison (2000) emphasized that a smaller sample size is recommended most appropriate in counselling interventions.

Examination Anxiety Screening Scale (EASS) developed by Gyimah (2015) was used for identification of students with examination anxiety and Modified Examination Anxiety Scale (MEAS) was used as the main instrument for the collection of pre-data and post-data. MEAS was adapted by the researchers with little modification from Driscoll (2004). The MEAS has section A with 4 items on participants' demographic information. These are gender, level, age and course of study. Section B has ten (10) items on specific symptoms that are expected from student experiencing examination anxiety. The items are structured on a five-point Likert scale response options, namely: Always True (ST), Usually



True (UT), Sometimes True (ST), Rarely True (RT) and Never True (NT) which was scored 5, 4, 3, 2, and 1 respectively. To ascertain the face and construct validity of the Modified Examination Anxiety Scale (MEAS), copies of MEAS were given to three (3) lecturers from the Department of Counselling Psychology, Faculty of Education and Arts, Ibrahim Badamasi Babangida University, Lapai for vetting, and their observations, corrections, opinions and suggestions were considered and harmonized. While reliability coefficient of MEAS was ascertained through the use of test retest method of reliability coefficient. A pilot testing was carried out at Department of Economics, Faculty of Management and Social Science, IBBUL and the psychometric property of 0.86 e value was obtained, which indicated that MEAS was reliable and the researchers of this study considered it appropriate for use in this study. Eight (8) weeks treatment procedure of cognitive restructuring technique was administered to the participants in the experimental group and no treatment was given to participants in control group.

The summary of the eight weeks session of CRT weekly activities include: Week 1: Pre-test and Understanding the concept of anxiety and Examination anxiety, and its effects on the academic achievement (on the basis of examination anxiety); week 2: Identify and explain two components of examination anxiety (state and trait anxiety's symptoms, causes and effects); week 3: Determine the extreme irrational core beliefs about taking examinations and study habits and identify the ABCDE model in examination anxiety (on the basis of REBT model); week 4: Introduce and practice four dialectic techniques to understand the rational thoughts such as recognizing, challenging, questioning, and disputing the irrational thoughts (on the basis of REBT model); week 5: Identify the adverse effects of perfectionism on examination anxiety and academic achievement (on the basis of REBT model); week 6: Describe the worrisome task-irrelevant and task-relevant thoughts (on the basis of SRR model); week 7: Identify how to control their anxiety by controlling task-irrelevant thoughts (on the basis of SRR model); and week 8: Describe some different kinds of cognitive restructuring methods to cope with examination anxiety and post-test. The pre-test and post data were subjected to statistical analysis. Independent sample t-test was used to test hypotheses 1 and 2 at 0.05 levels of significance.

## Results

In this section, two null hypotheses were tested at 0.05 levels of significance.

Hypothesis One: There is no significant effect of cognitive restructuring technique on examination anxiety among undergraduate students of Ibrahim Badamasi Babangida University, Lapai, Niger State.

**Table 1: t-test Comparison of the Post-test Mean Scores of Experimental Group and Control Group on Examination Anxiety**

Variable	N	Mean	SD	df	t-value	P-value
Experimental Group	20	19.682	3.76			
38	7.51	0.002				
Control Group	25	43.160	6.17			

### Significant at 0.05 levels

The result in Table 1 showed the t-test comparison of the means of experimental group and control group on examination anxiety among undergraduate students of Ibrahim Badamasi Babangida University, Lapai, Niger State. The mean of the participants in the experimental group is 19.682 and standard deviation of 3.76, while the mean of the participants in the control group is 43.160 and standard deviation of 6.17. The t-test result is  $t = 7.51$ ,  $df = 38$  and  $p = 0.002$ . Since the p-value is less than 0.05 levels of significance, it showed that there is significant effect of cognitive restructuring technique on

examination anxiety among undergraduate students of Ibrahim Badamasi Babangida University, Lapai, Niger State. Thus, the null hypothesis was rejected. This implies that there is significant difference in the post- test mean scores of experimental group and control group on examination anxiety among the participants in the control and experimental groups.

**Hypothesis Two:** There is no significance difference in the effect of cognitive restructuring technique on examination anxiety among undergraduate students of Ibrahim Badamasi Babangida University, Lapai, Niger State based on gender.

**Table 2: t-test Comparison of Mean Scores of Post-test between Male and Female Participants Exposed to Cognitive Restructuring Technique Treatment on Examination Anxiety**

Variable	N	Mean	SD	df	t-value	P-value
Male	10	18.311	3.29			
	18	5.17	0.731			
Female	10	19.173	3.183			

#### Not Significant at 0.05 levels

The result in Table 2 showed that the mean score of the male participants was 18.311 and standard deviation of 3.29 while the mean score of the female participants is 19.173 and standard deviation of 3.183. The t-value is 5.82,  $p = 0.731$ . Since the p-value is greater than 0.05 levels of significance, it indicated that there is no significant difference in the effect of cognitive restructuring technique on examination anxiety of male and female undergraduate students of Ibrahim Badamasi Babangida University, Lapai, Niger State. Therefore, the null hypothesis was retained. This implies that there is no significant difference in the post-test mean scores between male and female participants exposed to cognitive restructuring technique treatment on examination anxiety among undergraduate students of Ibrahim Badamasi Babangida University, Lapai, Niger State.

#### Discussion of Findings

The finding of hypothesis one revealed that there is significant effect of cognitive restructuring technique on examination anxiety among undergraduate students of Ibrahim Badamasi Babangida University, Lapai, Niger State. This means that cognitive restructuring technique is effective in reducing examination anxiety among undergraduate students. The implication of this finding is that examination anxiety can be modified successfully with CRT treatment. The finding of hypothesis one is in line with the findings of previous studies such as Owens-Sogolo et al. (2024) who carried out a study on the effect of cognitive restructuring technique in the reduction of test anxiety among secondary school students in Benin metropolis of Edo State and reported that cognitive restructuring technique was effective in the reduction of test anxiety scores among secondary school students in Benin metropolis of Edo state. The finding also agreed with the finding of Lukman (2022) investigated effect of cognitive restructuring on test anxiety among newly admitted undergraduate students of Federal University Gusau, Zamfara State and reported that cognitive restructuring technique (CRT) was effective in the reduction of the test anxiety among newly admitted undergraduate students exposed to the treatments. This finding corroborated with the report of Abubakar (2022) who conducted a study on effect of cognitive restructuring on social phobia among secondary school students in Kaduna Metropolis, Nigeria and reported that students exposed to cognitive restructuring (CR) had a reduced excessive fear of social interactions.

On the other hand, this finding disagreed with the finding of Yahaya and Tambuwal (2023) who studied effect of cognitive-restructuring counselling techniques in managing chemistry anxiety among Senior Secondary School in Tambuwal Local Government Area of Sokoto State and reported that there was no significant difference on the anxiety level between the group exposed to cognitive restructuring counselling technique and those in the control group in Tambuwal Local Government. Similarly, Mbakwe and Enwere (2022) studied effect of cognitive restructuring on self-esteem among adolescents in Anambra State and reported that cognitive restructuring technique was not effective on self-esteem among adolescents in Anambra State.

The finding of hypothesis two revealed that there is no significant difference in the effect of cognitive restructuring technique on examination anxiety of male and female undergraduate students of Ibrahim Badamasi Babangida University, Lapai, Niger State. This means that there is no gender difference in the effectiveness of cognitive restructuring technique in reducing examination anxiety among undergraduate students. The implication of this finding is that examination anxiety can be modified successfully with CRT treatment in both male and female students. The finding of hypothesis two is in line with the findings of previous studies such as The finding also agreed with the report of Zakariyah et al. (2023) who investigated effect of cognitive restructuring counselling technique on self-concept of secondary school underachievers in Ilorin Metropolis, Nigeria and reported that no significance differential effect of cognitive restructuring technique in improving self-concept of male and female secondary school underachievers in Ilorin metropolis. This finding also agreed with the finding of Mbakwe and Enwere (2022) who find out the effect of cognitive restructuring on self-esteem among adolescents in Anambra State and reported that there was no significant difference of cognitive restructuring technique on the mean self-esteem scores of male and female students taught using cognitive restructuring. Similarly, this finding correlated with the finding of Basiru et al. (2023) who studied effect of cognitive restructuring counselling technique on reduction of bullying behaviour among secondary school students in Sokoto metropolis, Nigeria and reported that significance difference was not found between male and female students in the effect of cognitive restructuring technique in reducing bully behaviour among secondary school students in Sokoto metropolis.

On the other hand, this finding contradict the finding of Owens-Sogolo et al. (2024) who studied impact of Gender on the effectiveness of cognitive restructuring technique in the reduction of test anxiety among secondary school students in Benin metropolis of Edo State and reported that there was significant impact of gender on the effectiveness of cognitive restructuring technique; and that cognitive restructuring technique was more effective for females than males on the reduction of test anxiety scores. This finding also disagreed with the finding of Yahaya and Tambuwal (2023) who studied effect of cognitive-restructuring counselling techniques in managing chemistry anxiety among Senior Secondary School students in Tambuwal Local Government Area of Sokoto State and reported that cognitive-restructuring counselling technique was more effective in reducing chemistry anxiety among male Senior Secondary School students in Tambuwal Local Government Area of Sokoto State than their female counterpart.

## **Conclusion**

On the basis of the findings of this study, the following conclusions were made: cognitive restructuring technique is effective in reducing examination anxiety among undergraduate students of Ibrahim Badamasi Babangida University, Lapai, Niger State; and no significant gender difference in the effectiveness of cognitive restructuring technique in reducing examination anxiety among undergraduate students of Ibrahim Badamasi Babangida University, Lapai, Niger State.



## Recommendations

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

1. The professional school guidance counsellors and school psychologists should be encouraged to use cognitive restructuring technique in order to reduce examination anxiety among undergraduate students so as to improve their examination performance.
2. School guidance counsellor should be encouraged to employ client centered approach in using cognitive restructuring technique to address examination anxiety with respect to gender.

## References

- Abubakar, H. (2022). *Effect of cognitive restructuring and social skills training on social phobia among secondary school students in Kaduna Metropolis, Nigeria*. An Unpublished Thesis Submitted to Department of Educational Psychology and Counselling, Faculty of Education, Ahmadu Bello University, Zaria, Nigeria.
- Adebayo, O.S. (2016). *Students' beliefs, perseverance and gender as correlates of their attitude towards examination anxiety*. Retrieved from <https://www.researchgate.net/profile/sulaiman-adebayo/25373/...>
- Akujieze S. H. & Nwadinobi A. R. (2015). Effectiveness of cognitive restructuring and Proper Study Skills in the reduction of test anxiety symptoms among students in Khalkhal, Iran. *American Journal of Educational Research*. 3 (10) 1230-1236.
- Ali, K. (2014). Effectiveness of cognitive behavioural therapy on academic stress among high school students. *Indian Journal of Fundamental and Applied Life Sciences*, 4(3), 681-694.
- Basco, M.R. & Rush, A.J. (2017). *Cognitive behavioural therapy for bipolar disorder*. (2nd ed.). New York: The Guilford Press.
- Basiru, U. A., Ibrahim, M. S. M. & Shehu, Y. T. (2023). Effect of cognitive restructuring counseling technique on reduction of bullying behaviour among secondary school students in Sokoto metropolis. *Journal of Educational Research in Developing Area*. 4 (1), 50-64.
- Bensoussan, M. (2016). Alleviating test anxiety for students of advanced reading comprehension. *RELC Journal*, 43(2), 203–216.
- Birenbaum, M. (2007). Assessment and instruction preferences and their relationship with test anxiety and learning strategies. *Higher Education*, 53: 749-768.
- Bodas, J. & Ollendick, T. H. (2015). Test anxiety: A cross-cultural perspective. *Clinical Child and Family Psychology Review*, 8: 65-88.
- Califonia Polytechnic Academic Skills Center. (2013). *What is test anxiety?* Retrieved from <http://www.sas.capoly.edu/asc/ssl/testanxiety.html> (accessed on 30 January 2013).
- Cassady, J. C. (2018). The influence of cognitive test anxiety across the learning-testing cycle. *Learning and Instruction*, 14: 569-592.
- Chappell, M. S., Blanding, Z. B., Silverstein, M. E., Takahashi, M., Newman, B. & Gubi, A. (2013). Test anxiety and academic performance in undergraduate and graduate students. *Journal of Educational Psychology*, 97(2): 268-274.
- David, C. & John, W. (2017). *Research design, qualitative, quantitative, and mixed methods approaches*. Retrieved from [www.thriftbooks.com>john-w-cres...](http://www.thriftbooks.com>john-w-cres...)
- Duraku, Z. H., (2016). Factors influencing test anxiety among university students. *The European Journal of Social and Behavioural Sciences*, 18(1), 2325–2334.
- Ekennia, H. C., Egbunike, N. S. & Nwankwo, C. A. (2022). Effect of cognitive restructuring technique on academic task procrastination of secondary school students in Onitsha, Anambra State. *Socialscientia Journal of the Social Sciences and Humanities*. Vol. 6 (2), 97-119.
- Einat, A. (2017). *Learning disabilities - The challenge (in Hebrew)*. Tel Aviv, Israel: Reches Publishers,

## Educational Projects.

- Eysenck, M. W. (2016). *Principles of cognitive psychology*. Hove, UK: Psychology Press.
- Ezhumalai, S. (2018). *Maximizing the therapeutic effectiveness of small psychotherapy groups*-Jstor. <http://www.jstor.org>stable>
- Gyimah, O. (2015). *Test anxiety: Theory, assessment, and treatment (clinical and community psychology)*. Taylor & Francis.
- Harris, H. L. & Coy, D. R. (2019). *Helping students cope with test anxiety*. Retrieved from [www.ericdigests.org/2005-2/anxiety.html](http://www.ericdigests.org/2005-2/anxiety.html) (accessed on 21 March 2012).
- Hashmat, S., Hashmat, M., Amanulla, F. & Aziz, S. (2018). Factors causing examination anxiety in medical students. *Journal of Pakistan Medical Association*, 58(4): 167.
- Illinois Counselling Centre. (2019). *Test anxiety*. Retrieved from <http://www.counsellingcentre.illinois.edu/?page-id-114w> (accessed on 30 January 2013).
- Kathleen, F. P. (2020). Treatment of complicated grief. A comparison between Cognitive Behavioural Therapy and Supportive Counselling. *Journal of Consulting and Clinical Psychology*, 7 (2), 103-112.
- Lambert, M. (2019). *Practical research methods in education*. USA: Routledge Taylor and Francis.
- Lufi, D., Okasha, S. & Cohen, A. (2018). Test anxiety and its effects on the personality of students with learning disabilities. *Learning Disability Quarterly*, 27: 176-184.
- Lukman (2022). Effect of cognitive restructuring and testwiseness training on test anxiety among newly admitted undergraduate students of Federal University Gusau, Zamfara State. *Journal of Educational Research in Developing Areas*, 3 (1), 80 – 89.
- Marszal-Wisniewska, R. A., Gorynska, N. & Strelau, J. (2011). *Help your child overcome test-anxiety and achieve higher test scores*. College Station, TX: VBW.
- Marrison, D. (2000). *Essentials of psychology: exploration and application*. New York: Wadsworth/Thompson Learning
- Mbakwe, U. F. & Enwere, C. A. (2022). Effect of cognitive restructuring on self-esteem among adolescents in Anambra State. *International Journal of Innovative Psychology & Social Development* 9 (2), 33-53.
- Oguzie, A. E. & Nwokolo, C. N. (2019). Effect of cognitive behavioural therapy on shyness among secondary school students in Aboh-Mbaise local government area of Imo state. *International Journal of Management, Social Sciences, Peace and Conflict Studies(IJMSSPCS)*, 2 (2) 1-9.
- Oguzie, A. E., Obi, J.S. C. & Nnadi, G. C. (2019). Effect of self-management technique on shyness among secondary school students in Imo State, Nigeria. *International Journal of Education and Research*, 7 (5), 241-252.
- Onyia, E.O. (2010). Effect of cognitive restructuring and shaping technique in handling lateness to school among secondary student. *Unpublished Master Thesis*, NnamdiAzikiwe University, Awka, Anambra State.
- Owen-Sogobo, O., Osunde, I. D. & Osunde, G. O. (2024). Impact of gender on the effectiveness of cognitive restructuring technique in the reduction of test anxiety among senior secondary school students in benin metropolis, Edo state. *International Journal of Psychology and Behavioural Sciences*, 2 (4), 112-121.
- Putwain, D. W., Woods, K. A. & Symes, W. (2019). Personal and situational predictors of examination anxiety of students in post-compulsory education. *British Journal of Educational Psychology*, 80(1): 137-160.
- Ray, W. J. (2000). *Methods: Towards a science of behaviour and experience*. (6<sup>th</sup> Ed.) C.A: Bellmont, Wadsworth Printers.
- Revina, A. N., Gregory, M., Gregory, F. & Sheeba, C. J. (2022). Test anxiety levels of board exam going students in Tamil Nadu, India. *Biomed Research International*, 2014: 1-9.

- Robinson, D. (2021). *Evaluation (test) anxiety, the gale group*. Retrieved from education.com.htm on 30 January 2021).
- Spielberger, C. D., Farooqi, N. Y. & Ghani, R. (2017). Gender differences in test anxiety and academic performance of medical students. *International Journal of Psychology and Behavioural Sciences*, 2 (4), 38-43.
- Vasa, R., Roberson-Nay, R., Klein, R. G., Mannuzza, S., Moulton, J. L. & Guardin, M. (2017). Memory deficits in children with and at risk for anxiety disorders. *Journal of Depression and Anxiety*, 24: 85-94.
- Yahaya, I. & Tambuwa, N. A (2023). Effect of Cognitive-Restructuring counselling techniques in managing chemistry anxiety among Senior Secondary School in Tambuwal Local Government Area of Sokoto State. *Kashere Journal of Education*, 4(1), 62-71.
- Zakariyah, A. A., Ali, K. & Kolawale, O. (2023). Effect of cognitive restructuring counselling technique on self-concept of secondary school underachievers in Ilorin Metropolis, Nigeria. *Journal of the Social Sciences and Humanities*. Vol. 6 (2), 97-112.