UNIJERPS
Unizik Journal of Educational Research and Policy Studies VOL.21 (1);
January-June, 2026 https://unijerps.org
2023 Impact Factor: **6.834;** 2022 ***Impact Factor***: 5.156; ***2021 Impact Factor: 5.641;***
2020 Impact Factor: 5.355. *Indexing and Impact Factor URL: http://sjifactor.com/passport.php?id=21363*

EFFECT OF COGNITIVE RESTRUCTURING TECHNIQUE ON SOCIAL ANXIETY DISORDER AMONG PUBLIC SECONDARY SCHOOL STUDENTS IN ANAMBRA STATE

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ABSTRACT

The cases of anxiety disorders are in increase among secondary school students in Anambra State and there is need to look at how the victims could be assisted. Therefore, the study investigated the effect of cognitive restructuring technique on social anxiety among secondary students in Anambra State. Two research questions guided the study, and two null hypotheses were tested at 0.05 level of significance. Quasi-experimental research design was adopted for the study. The population of the study comprised 425 senior secondary students (SSII) from all the coeducational public secondary schools in Awka South Local Government Area. The sample for this study was made up of 67 SS2 students identified in the two selected schools with the highest number of the student with high Social Anxiety Disorder (SAD). The instrument for data collection was Social Anxiety Scale, adopted from Liebowitz Social Anxiety Scale for Children and Adolescents (LSAC-CA) with reliability coefficient alpha of 0.90. Statistical mean and Analyses of Covariance (ANCOVA) analysis were used for data analysis. Results obtained from the study showed that CR is significantly effective in reducing SAD among secondary school students. Also, the results indicated that CR produced greater mean reduction in SAD among female students compared to their male counterparts. The difference in effectiveness across gender was not statistically significant and as such CR appears equally beneficial for both genders when systematically applied. Based on the findings, recommendations were made among them are: Cognitive restructuring (CR) remains a highly effective intervention, particularly for students who may be reluctant to engage in exposure-based therapy. School counsellors are encouraged to make use of CR in managing the behavioural and cognitive dimensions of SAD. Professional development programmes should be organised to equip school counsellors and teachers with the skills to make use of CR technique. This will enable early detection, referral, and management of social anxiety, improving overall student wellbeing and academic engagement.

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Keywords*:* Effect, Systematic Desensitization Technique, Social Anxiety Disorder, Public Secondary Schools, Students

Introduction

It is normal for human beings to experience anxiety for various reasons and at different times. Anxiety is a part of the typical human experience and can be beneficial in certain situations, such as when it heightens awareness of danger and prepares individuals for potential challenges. However, anxiety becomes problematic when it interferes with one's daily activities, expectations, and routines. When this interference occurs, psychologists and counsellors classify it as a disorder requiring psychological intervention (Mejia, 2023; Keller, 2003). While anxiety is a natural response to stress, an anxiety disorder involves excessive fear that significantly impairs normal life functioning. Anxiety disorders are the most common type of psychiatric disorder, with a lifetime prevalence of up to 33% worldwide (Bandelow and Michaelis, 2015), affecting nearly 30% of adults at some point in their lives (American Psychiatric Association, APA 2024).

Anxiety disorders encompass several types, including generalized anxiety disorder, panic disorder, agoraphobia, social anxiety disorder, and separation anxiety disorder (Reddy, Sudhir, Manjula, Arumugham, and Narayanaswamy, 2020). However, Social Anxiety Disorder, also known as social phobia seemed particularly prevalent. As Zakri (2015) noted, social anxiety disorder is arguably the most common mental health issue encountered in primary care, second only to depression. Similarly, the National Institute of Mental Health (NIMH, 2020) identifies social anxiety disorder as one of the most common mental health disorders worldwide, affecting millions globally each year. SAD has a relatively high lifetime prevalence, ranging from 3% to 13% (Brook and Schmidt, 2008; Jefferies and Ungar, 2020; Reddy et al., 2020).

Social anxiety disorder is defined by American Psychiatric Association (2013) as a mental health condition characterized by an intense fear of social situations and interactions, often leading to avoidance of social situations. It is an anxiety disorder in which an individual experiences extreme fear in social situations, such as speaking in public, making eye contact, or interacting with unfamiliar people (NIMH, 2020). People with social anxiety disorder have an irrational fear of being judged or embarrassed in front of others, which can lead to feelings of panic, distress, and low self-esteem (Nakie, Melkam, Desalegn and Zeleke, 2022). In this study, social anxiety disorder refers to a mental health condition in which an individual experiences excessive anxiety in social situations, causing intense self-consciousness, fear, and avoidance of social interactions. For many individuals, this disorder can significantly affect their ability to function in social settings, leading to significant disruption in their daily lives. According to Reddy, et al

(2020), SAD is marked by persistent fear of social or performance situations, with fear of being embarrassed, scrutinized, or negatively evaluated. Hence, people with SAD often report being shy, but it is actually more than normal shyness, as it involves functional impairment; it tends to disrupt one's daily activities.

Some researchers believe that SAD usually starts during teenage and adolescence years and is more prevalent among women (Reddy et al, 2020). For instance, Jefferies and Ungar, (2020), in their studies indicated that younger individuals are disproportionately affected by social anxiety, with prevalence rate at around 10% at the end of adolescence, and with very high rates by the age of 23.

It is estimated that 10–15% of secondary school students in Nigeria suffer from Social Anxiety Disorder (SAD) (Ibrahim and Rufai, 2016). This disorder can significantly impact their quality of life, limiting their ability to form meaningful relationships and develop necessary skills for success in school and future careers (Nzeakah, DadeMatthews, Onofa, Dade Matthews and Ogundare, 2022). The high prevalence of SAD among these students is particularly concerning, as it can severely affect their academic performance, social relationships, and overall well-being.

Research by Vidovic et al. (2017) consistently shows that the prevalence of SAD among secondary school students is higher than in the general population. A meta-analysis of 53 studies conducted between 2000 and 2014 found that the average prevalence rate of SAD among secondary school students was 12.3%. Furthermore, the prevalence of SAD increases with age, with the highest rate among adolescents (ages 13-18) at 13.5%.

SAD can significantly impact the lives of affected individuals, limiting their participation in social activities and their ability to make friends and meet new people. For example, students with this disorder may be afraid of the school environment, avoid asking questions in class, and fear answering questions even when they know the answer. These students may experience difficulties in school, such as poor academic performance, difficulty concentrating, and trouble interacting with peers. They may also experience anxiety, depression, and social withdrawal, which can further affect their academic performance and ability to develop social skills and other talents (NIMH, 2020).

Concerned about the significant impacts of social anxiety disorder (SAD) among adolescents, many scholars and researchers have developed various interventions for its treatment. Researchers like Mejia (2023), Reddy et al. (2020), and Smith and Segal (2023) have identified cognitive behavioural therapy (CBT) as the most common treatment for SAD. Other commonly used interventions include prescription medication and behavioural therapy. Some researchers believe that both cognitive behavioural therapy and medications are effective for treating SAD (NIMH, 2022;

Palissolo, Kassm and Delhay, 2019; Zakri, 2015). These studies indicate that the primary treatment methods for SAD involve psychological interventions like CBT, talking therapy, and pharmacological interventions, mainly the use of medications.

Some researchers have done some works with regard to the effects of cognitive restructuring (CR) in handling anxiety problems. For instance, Anyamene and Ogugua (2019) carried out a research work on the effectiveness of CR on test anxiety among students in Delta State. The purpose of the study was to determine the effectiveness of CR in reducing test anxiety among secondary school students. Two research questions and two hypotheses, tested at 0.5 level of significance, guided the study. The study adopted a quasi-experimental research design. The population of the study was made of 1224 students, which comprised all the junior secondary school students in Oshimili South LGA of Delta State. While the sample consisted of 120 JSS 2 students with high level of mathematics test anxiety, selected by purposive sampling technique. The instrument used for the study was Maths Anxiety Rating Scale. The data collected from the study were analyzed using mean and ANCOVA. The findings of the study indicated that cognitive restructuring therapy was effective in reducing mathematics test anxiety of students. The study further showed that cognitive restructuring therapy was more effective in female students test anxiety than their male counterparts. Based on the findings, the researchers recommended, among other things, that guidance counsellors should be empowered to make good use of CR to help students who have anxiety problems. The study is related to the present for the fact that it involved cognitive restructuring in treating anxiety related problem, and it also adopted a quasi-experimental research design.

Yahanna (2017) also conducted research in Kaduna State to find out the effects of cognitive restructuring on students' attitude towards school. The study specifically wanted to determine the effects of CR on attitude towards school and academic performance of students of National Certificate of Education (NCE). A pre-test post-test quasi-experimental design as well as eight sessions of cognitive restructuring therapy was adopted for the study. Three research questions and two hypotheses were raised to guide the study. A population of 3815 NCE students were used for the study, out of which a sample of 50 was selected using stratified sampling technique. Anderson Attitude Towards School Instrument Adapted (AATSIA) was used for data collection, while descriptive statistics, PPMC and t-test were employed for the analyses of data. The results of the study showed that CR has significant effect on students' attitude towards school (t=6.276, p=0.000). Also, there was no difference in the attitude towards school between male and female students with (t=1.714, p=0.563). The researcher therefore recommended that educational institutions should provide counselling psychologists who will make use of CR package to work

on students' attitude towards learning for overall improvement in the teaching and learning activities. This study is related to the present study in the following ways: it used cognitive restricting technique, it adopted quasi-experimental research design.

Nia, Tahmasebiam and kakabaraee (2014) conducted a study on the effectiveness of methods of mind training and cognitive restructuring in reducing anxiety among university students in Iran. The purpose of the study was to determine the effectiveness of mind training method and cognitive restructuring technique in reducing students' anxiety when compared with other methods. The population of the study comprised all the students that came for counselling in the year 2010-2011, out of which a sample of 30 was selected with the instrument, Exams Anxiety Questionnaire. This was further randomly assigned into three groups (control, mind training, and cognitive restructuring groups). The study adopted a quasi-experimental design. The data from the study was analyzed using mean scores and ANOVA. The findings of the study indicated that both experimental groups, compared with control, showed significant decrease in anxiety level. The reduction remained significant after two months of follow-up with the participants. The researchers concluded that cognitive restructuring help students to focus on the task as well as self-response. Thus, they can easily become aware of thoughts that caused anxiety and learn to express their feeling appropriately. Hence, they suggested that counselling psychologists should make use of CR alongside other counselling techniques to help students handle their anxiety problems. The study is related to the present study in the areas of adopting the same research design, using CR to treat anxiety problem. But the two studies are different in the sense that they have different locations, the reviewed study employed CR and mind training skills, while the current study is usd CR in treating anxiety; the reviewed study was done among university study, but the present study is among secondary school students.

Bassey, Peter and Omazagba (2014) in their research investigated the effectiveness of mentoring and cognitive restructuring in the modification of adolescent test anxiety among some Senior Secondary School students in Lagos State. Four research questions and four hypotheses were tested at 0.05 level of significance. The research design for the study was quasi-experimental pre-test post-test. The population of the study was made up of 420 adolescents. The Sample of the study was comprised of 94 adolescents, selected through purposive sampling technique. The data were collected using questionnaire. Data collected by the researcher were analyzed using Analysis of Covariance (ANCOVA). The findings revealed that mentoring was more efficacious than cognitive restructuring in the modification of adolescent test anxiety. Since Mentoring has been found to be more efficacious in the modification of adolescent test anxiety more than Cognitive Restructuring, they suggested that the benefits of Mentoring could be obtained by

including it in the school curriculum. Education on the process of Mentoring, how it works and skills associated with it could be part of the curriculum for skill acquisition classes. The study reviewed above is related to the present study as it is a quasi-experimental study involving cognitive restructuring and an anxiety problem. However, it differs from this study as it involved mentoring and was carried out in a different location.

Hassan (2021) conducted a study on the effect of cognitive restructuring and social skills training on social phobia among secondary school students in Kaduna State. Seven research questions were set to guide the study and seven null hypotheses were formulated and tested at 0.05 level of significance. A quasi-experimental research design involving pre-test and post-test on two experimental groups was used. The population of the study was made up of 1742 students who exhibited symptoms of social phobia in Kaduna metropolis. A sample size of 40 students was selected through purposive sampling technique. The instrument for the data collection was the Social Phobia Inventory (SPIN). Mean, standard deviation and t-test statistics were used to analyze the collected data. The findings of the study revealed that students exposed to cognitive restructuring had a reduced excessive fear of social interactions (p=0.000), that students exposed to social skills training also had a reduced excessive fear of social interactions (p=0.000), students exposed to cognitive restructuring had a reduced physiological manifestations of social phobia (p=0.003), students exposed to social skills training had a reduced physiological manifestation (0.000), students exposed to cognitive restructuring had a reduced avoidance of social interactions (p=0.000), students exposed to social skills training had a reduced avoidance of social interactions (p=0.000), and that there was a significant differential effect of cognitive restructuring and social skills training (p=0.009) on social phobia among secondary school students.

The researcher therefore concluded that cognitive restructuring and social skills training are effective in reducing social phobia among secondary school students. Based on the findings, the researcher recommended, among other things, that psychologists and counsellors should be encouraged to use cognitive restructuring (CR) and social skills training (SST) in handling social phobia among secondary school students so as to improve their social interactions as well as competency in learning. The study is related to the present study in the sense that it employed CR on social phobia (social anxiety) and adopted quasi experimental research design. But it is different in that it also involved social skill training, and was conducted in different location.

Cognitive restructuring is a core technique of Cognitive Behavioural Therapy (CBT). It is a structured therapeutic approach where individuals learn to identify, evaluate, and modify faulty thoughts and beliefs that contribute to their psychological

disturbances (Clark, 2013). According to Marasigan (2019), negative thought patterns significantly contribute to the development and worsening of depression and anxiety. Aaron Beck (1976) proposed that changing an individual's thought patterns can help modify their abnormal behaviour. Cognitive restructuring involves disproving irrational ideas and replacing them with rational ones. Researchers such as Razaeisharit, Karimi, and Nacim (2021) have found cognitive restructuring effective in improving irrational beliefs and reducing hopelessness in people with maladaptive behaviour.

Cognitive restructuring has been established as effective intervention for managing maladaptive behaviours, particularly anxiety-related problems (Granbois, Lee, Donahue, and Langley, 2018). However, concerning the treatment of social anxiety disorder (SAD), there appears to be a significant gap in research regarding the use of the technique, especially in the context of Nigeria and Anambra State in particular.

Although numerous studies have been conducted on social anxiety disorder in Nigeria, most have focused on the causes of SAD among students (Adisa, Aminu, Yahaya, and Bello, 2023), and the impacts of SAD on academic achievements (Meroua and NoureIhouda, 2023). Despite these studies, there is a notable lack of research on the effect of cognitive restructuring technique on social anxiety disorder among secondary school students in Anambra State. This indicates a gap in knowledge that the current study aims to fill. Hence, the study on social anxiety disorder among secondary school students in Awka South Local Government Area of Anambra State.

Purpose of the Study

The purpose of the study was to determine the effect of Cognitive Restructuring Technique on Social Anxiety Disorder among secondary school students in Awka South Local Government Area of Anambra State. Specifically, the study sought to find out:

1. Effect of cognitive restructuring on social anxiety disorder among secondary school students in Awka South LGA.
2. Effects of cognitive restructuring on social anxiety disorder among male and female secondary students in Awka South LGA.

Research Questions

The following research questions guided the study

1. What is the effect of cognitive restructuring technique on social anxiety disorder among secondary school students when compared to those in the control group using their pre-test and post-test mean scores?
2. What is the effect of cognitive restructuring technique on social anxiety disorder among male and female secondary school students when compared using their pre-test and post-test mean scores?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance.

1. There is no significant difference in the effect of cognitive restructuring technique on social anxiety disorder among secondary school students when compared to those in the control group using their post-test mean scores.
2. There is no significant difference in the effect of cognitive restructuring technique on social anxiety disorder of male and female secondary school students when compared using their post-test mean scores.

Methods

Research Design

The study was conducted using a quasi-experimental pre-test, post-test control group design. A quasi-experimental design is a type of experimental study that determine the effect of a treatment paradigm on a non-randomised sample (Nworgu, 2015). According to Asgari and Nunes (2011), a quasi-experimental design is conducted in a natural setting rather than in a laboratory. However, in this study, the variables were isolated, manipulated, and controlled. Thus, treatments were introduced to both the experimental and control group participants. The researchers then compared the pre-test and post-test scores of the two groups. The treatments used in the study were cognitive restructuring technique, and conventional counselling. Participants in experimental group received the cognitive restructuring technique, while the control group received conventional counselling.

Population of the Study

The population of the study consisted of 425 Senior Secondary II (SSII) students from all the co-educational public secondary schools in Awka South Local Government Area who were identified with social anxiety disorder. The choice of senior secondary students was based on the fact that they are mainly teenagers and adolescents, and according to research, this age group is mostly affected by the problem of social anxiety.

There are nineteen (19) public secondary schools in Awka South Local Government Area—fifteen (15) co-educational and four (4) single-sex schools—with a total student population of 16,128, while the SSII students alone numbered 2,579 (Source: Post Primary School Service Commission, 2025). To ensure a good representation of both male and female students, the population was drawn only from the co-educational schools.

Sampling and Sampling Technique

The sample for the study was made up of 67 students. This comprised SSII students identified with Social Anxiety Disorder (SAD) across two co-educational secondary schools in Awka South Local Government Area. The selection of these schools was carried out using a purposive sampling technique, meaning that the researchers purposely selected the schools with the highest number of students identified with social anxiety.

The instrument used for data collection was the Social Anxiety Scale, adopted from the Liebowitz Social Anxiety Scale for Children and Adolescents (LSAS-CA). The LSAS-CA was originally developed in 1987 by Michael Liebowitz to measure the severity of social anxiety symptoms and treatment outcomes. It was designed to assess how social anxiety affects a person's life across different social situations. The LSAS-CA consists of 24 social situations that are each rated for level of fear and avoidance. In essence, it contains 24 items, with each item asking two questions about a situation, first, how anxious or fearful the respondent feels about the situation, and second, how often the respondent avoids the situation. The instrument has a pair of four response options for the 24 items. The first question has the following response options: None, Mild, Moderate, and Severe, while the second question has the options: Never, Occasionally, Often, and Usually. The scoring scale for the instrument (LSAS-CA) is as follows:

0–29: not suffering from social anxiety
30–49: mild social anxiety
50–64: moderate social anxiety
65–79: marked social anxiety
80–94: severe social anxiety
95–100: very severe social anxiety.

Based on the LSAS-CA scoring scale, students who scored 65 and above were considered to have social anxiety disorder (SAD) and were selected for the study.

Validation of Instrument

The instrument (LSAS-CA) was a standardized psychological test developed by Liebowitz and had been revalidated by different researchers in various countries (Santos, Loureiro, Crippa, and Osorio, 2013), including a study conducted among Africans (Beard et al., 2012). It was judged to be a globally acceptable instrument for measuring social anxiety symptoms. In addition to the original English version, the LSAS-CA had been translated and validated into four other languages—French, Spanish, Hebrew, and Turkish and all versions demonstrated excellent psychometric properties (Santos, Loureiro, Crippa, and Osorio, 2013). Similarly, the instrument was revalidated by three experts: two from Counselling Psychology and one from Measurement and evaluation in Faculty of Education, Nnamdi Azikiwe University Awka. The validators did not recommend any serious change in the instrument. The researchers adopted it for use in this study based on that.

Reliability of the Instrument

The questionnaire was trial-tested on a representative sample of 30 SSII students in public secondary schools. The students were randomly selected from two public co-educational secondary schools in Enugu State. Enugu State was chosen for the test because its people shared a similar language and cultural characteristics with those of Anambra State, and both states had similar educational systems. The researchers administered the instrument to SSII students to determine their level of social anxiety.

Their responses were collected and statistically analysed to establish the internal consistency of the items in the instrument. Using the Cronbach Alpha method, a reliability coefficient of 0.90 was obtained for the instrument.

Method of Data Collection

The instrument was administered to all Senior Secondary School Two (SSII) students in the selected schools. The researchers, assisted by two research assistants, handed out the instrument and guided the students on how to answer the questions correctly. Clear instructions were provided, explaining how to complete the questionnaire, its purpose, and how responses should be given. After the students completed the questionnaire, they were collected. This stage was referred to as the pre-test. The responses were scored using the LSAS-CA scoring system to identify students with Social Anxiety Disorder (SAD). The scores obtained from this first administration formed the basis of the pre-test results. After eight weeks of experimental treatment for the experimental group and conventional group counselling for the control group, the same instrument was administered again. This was referred to as the post-test. The students' responses were collated, scored, and analysed.

Experimental Procedure

The experimental procedure outlined the steps the researcher took to ensure the successful execution of the treatment programme. Before commencing the research, the researchers sought consent from the principals of the participating schools by providing them with formal letters requesting their approval. Since the experimental training was conducted within the schools, the researchers coordinated with the school authorities to allow use counselling periods in the school timetable for the sessions. The participants in the two selected schools sampled into treatment and control groups. The experimental programme consisted of eight sessions for both the treatment and control groups, spread over a period of eight weeks. Each session lasted approximately 40 minutes. Those in the experimental group underwent systematic desensitization technique, while those in the control group received conventional counselling. The sessions were held once a week for eight consecutive weeks across the two schools.

Control of Extraneous Variables

The researchers, being aware of the possible effects of extraneous variables such as location, method, and time of day that might have affected the study and possibly distorted the results if not controlled, made efforts to prevent such negative effects. In view of this, the following measures were taken by the researchers:

i. Controlling therapist factor: This was achieved by ensuring that all treatments were administered by the research assistants to the same groups at a specific venue and time. The treatment procedures were carefully outlined, clearly spelt out, and strictly followed by the research assistants who assisted the researchers.

ii. Interaction among students in different groups: To avoid this, two different schools were used for the study. one school served as the experimental group, while one school served as the control group.

iii. Experimental mortality: This could have occurred as a result of illness, student transfer, or absenteeism on treatment days. Such occurrences were minimised through the use of reinforcement to encourage regular attendance throughout the treatment period.

iv. Experimental bias: Research bias, also known as experimenter bias, occurs when a researcher unintentionally influences the results to produce a desired outcome. To control this, while the experimental groups were exposed to the treatment packages, the control group was exposed to conventional counselling. The treatment sessions were administered by the same researcher. In addition, both the experimental and control groups participated in the same pre-test and post-test exercises.

v. Hawthorne Effect: The Hawthorne Effect refers to a situation where participants may exhibit unusually high levels of performance simply because they are aware of being studied, resulting in behavioural changes linked to the special attention or treatment received. The researcher controlled this effect by:

- Using different schools for the study.
- Ensuring that all emphasis was placed solely on the study variables.
- Providing all participants in both the treatment and control groups with the same form of encouragement, a 20-leaf exercise book and a pen.
- Ensuring that only students who participated in the pre-test (experimental group training and control group conventional counselling sessions) also participated in the post-test. Both experimental and control group participants were treated equally, and the testing conditions were kept the same, except that the treatment contents differed for Experimental Group while the control group received conventional counselling.
- Use of ANCOVA for the analysis cleared the initial differences and other hidden extranous variables.

Method of Data Analysis

The completed instruments were scored according to the guidelines provided in the Liebowitz Social Anxiety Scale for Children and Adolescents (LSAS-CA) manual. The scoring system followed the structure outlined in the manual. For the severity of anxiety, scores were assigned as follows: Severe = 3, Moderate = 2, Mild = 1, and None = 0. For the frequency of social avoidance, the scores were: Usually = 3, Often = 2, Occasionally = 1, and Never = 0. For the data analysis, responses to the research questions were analysed using mean scores. When the post-test mean score of any group was less than 65.0, it was

considered to be effective. Any treatment package that recorded a lower mean score was regarded as more effective than the others. Data related to the null hypotheses were analysed using Analysis of Covariance (ANCOVA). The decision rule for the study was based on comparing the pre-test and post-test mean scores. For the null hypotheses, the effect of the technique was considered statistically significant if the *p*-value was less than 0.05, which was the set level of significance. In such a case, the null hypothesis (which suggested no significant difference between the groups) was rejected, indicating that the technique had a meaningful impact. However, if the *p*-value was greater than 0.05, the null hypothesis was not rejected, meaning that the effect of the technique was not considered significant and that the difference between the groups could have occurred by chance.

Results

Research Question 1: What is the effect of cognitive restructuring technique on social anxiety disorder of secondary school students when compared to those exposed to conventional counselling technique using their pre- test and post- test mean scores?

Table 1: Pretest and Posttest social anxiety disorder mean scores of secondary students treated with cognitive restructuring technique and those treated with conventional counselling (Norm = 65)

Source of Variation	N	Pretest Mean	Posttest Mean	Lost Mean	Remark
Cognitive restructuring Tech.	32	73.69	53.34	20.35	Effective
Conventional Couns. Tech.	35	77.74	71.43	6.28	

Table 1 showed that the secondary students treated with cognitive restructuring technique had pretest mean score of 73.69 and posttest mean score of 53.34 with lost mean 20.35 in their social anxiety disorder, while those in the control group who received conventional counselling had pretest mean score of 77.74 and posttest mean score of 71.43 with lost mean 6.24. With posttest mean scores of 53.34 which is below the norm of 65.00 cognitive restructuring technique is effective in reducing social anxiety disorder among secondary school students.

Null hypothesis 1: The effect of cognitive restructuring technique on social anxiety disorder of secondary school students is not significant when compared with those treated with conventional counselling using their posttest mean scores.

Table 2: ANCOVA on the effect of cognitive restructuring technique on social anxiety disorder of students when compared with those who received conventional counselling

Source of Variation	SS	df	MS	Cal.f	Pvalue	P≤ 0.05
Corrected Model	8554.104	2	4277052			
Intercept	442.219	1	442.219			
Social_anxiety1	3086.819	1	3086.819			
Treatment_Methods	3978.024	1	3978.024	86.863	0.000	S
Error	2930.971	64	45.796			
Total	275647.000	67				
Corrected Total	11485.075	66				

Table 2 revealed that at 0.05 level of significance, 1df numerator and 66df denominator, the calculated F is 86.86 with P-value of 0.000 which is less than 0.05. Therefore, the second null hypothesis is not accepted. So, the effect of cognitive restructuring technique on the social anxiety disorder of secondary school students is significant.

The findings of the present study revealed that the application of cognitive restructuring (CR) was effective in reducing social anxiety disorder (SAD) among secondary school students. The statistical analysis demonstrated that the reduction in symptoms was significant, suggesting that CR is not only theoretically sound but practically effective in addressing maladaptive thought patterns that maintain social anxiety. These findings are consistent with the cognitive model proposed by Beck (1976) and further refined by Beck and Fleming (2012), which posits that dysfunctional cognitions contribute to anxiety disorders by distorting perception and reinforcing avoidance behaviours. One plausible explanation for this outcome is that CR helps students identify, challenge, and replace irrational beliefs with more adaptive thoughts, thereby decreasing their anticipatory anxiety and avoidance behaviours (Clark, 2013; Vallejo, 2023). Adolescents with SAD often overestimate the likelihood of negative evaluation in social situations (Leigh and Clark, 2018), and CR directly targets this cognitive distortion, helping to reduce catastrophic thinking patterns. By reframing maladaptive thoughts, students are better equipped to engage in social interactions with reduced fear and avoidance. This mechanism of change aligns with Hofmann's (2007) comprehensive model of cognitive factors in SAD, which highlights the role of negative self-focused attention and safety behaviours in maintaining anxiety.

The present findings corroborate previous research indicating that cognitive restructuring is a robust therapeutic tool in the management of anxiety-related disorders among adolescents. For instance, Anyamene and Ogugua (2019) reported a significant reduction in test anxiety among junior secondary school students who underwent

CR intervention. Similarly, Regina and Lezorgia (2017) observed improved attitudes towards mathematics and reduced anxiety symptoms among students exposed to CR and systematic desensitisation. These findings suggest that CR is not limited to a specific type of anxiety but can generalise across different anxiety contexts, including academic and social domains. In addition, the results are in agreement with the work of Nia et al. (2014), who compared cognitive restructuring techniques with other anxiety reduction methods and concluded that CR produced a meaningful decline in students' overall anxiety levels. Hassan (2021) also demonstrated that CR, when combined with social skills training, significantly reduced social phobia symptoms in secondary school students within the Nigerian context. These converging findings reinforce the external validity of the present study and underscore the adaptability of CR across cultural and educational settings.

The efficacy of CR observed in this study might also be attributed to its structured and skill-based nature, which empowers students to become active participants in their own psychological well-being (Beck, 2012). This is particularly important in adolescence, a developmental stage characterised by heightened self-consciousness and peer sensitivity. By equipping students with cognitive tools to regulate their thoughts, CR promotes long-term resilience rather than temporary symptom relief (Shurick et al., 2012).

However, these findings do not exist in isolation. Some studies, such as those by Aydin et al. (2010), have shown that cognitive behavioural therapy (CBT) programmes, of which CR is a core component, require sufficient duration and adherence to achieve optimal outcomes. This suggests that while CR is effective, its impact may vary depending on implementation fidelity, duration, and students' level of engagement. Nonetheless, the present study affirms that CR remains a promising intervention for reducing SAD among secondary school students and should be integrated into school-based mental health programmes. Thus, the findings provide strong empirical support for the application of cognitive restructuring as an evidence-based intervention for SAD. The significance of the results highlights the potential of CR to improve students' social functioning, reduce academic impairment, and enhance psychological well-being.

Research Question 2: What is the effectiveness of cognitive restructuring technique on social anxiety disorder of male and female secondary school students using their pre-test and post-test mean scores?

Table 3: Pretest and Posttest social anxiety disorder mean scores of male and female secondary students treated with cognitive restructuring technique (Norm = 65)

Source of Variation	N	Pretest Mean	Posttest Mean	Lost Mean	Remark
Male	13	73.62	55.54	18.08	
Female	19	73.74	51.84	21.9	More Effective

Table 3 showed that the male secondary students treated with cognitive restructuring technique had pretest mean score of 73.62 and posttest mean score of 55.54 with lost mean 18.08 in their social anxiety disorder, while their female counterparts had pretest mean score of 73.74 and posttest mean score of 51.84 with lost mean 21.9. With lost mean scores of 21.9 for female which is higher than the lost mean of 18.08 cognitive restructuring technique is more effective in reducing social anxiety disorder among female secondary school students.

Null hypothesis 2: The effectiveness of cognitive restructuring technique on social anxiety disorder of male and female secondary school students is not significant

Table 4: ANCOVA on the effectiveness of cognitive restructuring technique on social anxiety disorder of male and female students

Source of Variation	SS	df	MS	Cal.f	Pvalue	P≤ 0.05
Corrected Model	243.179	2	121.589			
Intercept	1039.572	1	1039.572			
Social_anxiety1	137.717	1	137.717			
Gender	106.800	1	106.800	3.51	0.71	NS
Error	882.040	29	30.415			
Total	92183.000	32				
Corrected Total	1125.219	31				

Table 4 revealed that at 0.05 level of significance, 1df numerator and 31df denominator, the calculated F is 3.51 with P-value of 0.071 which is greater than 0.05. Therefore, the fifth null hypothesis is accepted. So, the effectiveness of cognitive restructuring technique on the social anxiety disorder of male and female secondary school students is not significant.

The findings of this study revealed that cognitive restructuring (CR) was more effective in reducing social anxiety disorder (SAD) among female secondary school students than male students. However, the difference between male and female students' outcomes was not statistically significant, leading to the acceptance of the fifth null hypothesis. This result suggests that CR is an effective intervention for reducing SAD for both genders, but its differential effect across gender is not strong enough to be considered significant. One likely explanation for the higher mean loss scores among female students is that females tend to report higher levels of internalising disorders such as anxiety and are often more willing to engage with therapeutic processes than their male counterparts (Bandelow and Michaelis, 2015; Brook and Schmidt, 2008). Female adolescents have been observed to be more open to cognitive restructuring processes such as self-reflection, cognitive reframing, and challenging irrational beliefs (Beck, 2012; Vallejo, 2023). This openness could lead to better therapeutic outcomes, as CR relies heavily on cognitive engagement

and the ability to recognise and modify maladaptive thoughts (Clark, 2013).

Despite this numerical difference, the non-significant result suggests that gender may not be a major determinant of the efficacy of CR for SAD in this context. This finding aligns with the work of Muotevalli et al. (2022), who reported that cognitive restructuring significantly reduced test anxiety among university students without significant gender differences. Similarly, Nia, Tahmasebiam, and Kakabaraee (2014) found that both male and female students benefited comparably from cognitive restructuring, suggesting that the technique is robust across gender groups when applied systematically. However, this finding partially diverges from some studies that have reported gender differences in the prevalence and severity of SAD, as well as in treatment responsiveness. For example, Akinlade (2012) and Nakie et al. (2022) reported that females generally present with higher prevalence rates of SAD, which may imply that they have more room for therapeutic improvement. Similarly, Hassan (2021) found that CR and social skills training significantly improved outcomes for female students with social phobia, with females benefiting slightly more than males. The present study's finding of a higher mean reduction for females, though not statistically significant, is therefore consistent with this trend, suggesting a practical, though not statistically robust, and gender effect.

Another possible reason for the non-significant difference is that cognitive restructuring is designed to target universal maladaptive cognitive patterns rather than gender-specific experiences (Beck and Fleming, 2012; Braz, 2008). Unlike behavioural exposure-based methods, which might interact differently with gender-related socialisation patterns, CR operates through cognitive change that is equally accessible to both male and female students when adequately facilitated (Shurick et al., 2012). This might explain why both groups showed substantial reduction in SAD with no statistically significant difference. However, the non-significant gender difference observed suggests that while female students may show slightly better mean outcomes, CR should be promoted as a universal strategy for all students struggling with social anxiety.

Conclusion

This study set out to examine the effect cognitive restructuring (CR) techniques in the management of social anxiety disorder (SAD) among secondary school students. The findings provide compelling evidence that CR is effective in significantly reducing SAD symptoms, demonstrating their suitability as intervention strategies in school settings. Gender analysis further showed that CR produced greater mean reductions in SAD among female students compared to their male counterparts. The difference in effectiveness across gender was not statistically significant for CR, indicating that CR appears equally beneficial for both genders applied. These findings highlight the importance of adopting gender-sensitive approaches when

designing anxiety intervention programmes, particularly by enhancing engagement strategies for male and female.

Recommendations

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

1. Cognitive restructuring (CR) remains a highly effective intervention, particularly for students who may be reluctant to engage in exposure-based therapy. School counsellors are encouraged to make use of CR in managing the behavioural and cognitive dimensions of SAD.
2. Professional development programmes should be organised to equip school counsellors and teachers with the skills to make use of CR technique. This will enable early detection, referral, and management of social anxiety, improving overall student wellbeing and academic engagement.
3. School administrators should adopt policies that make anxiety intervention programmes part of the pastoral care system. Regular screening for SAD and inclusion of mental health education in the curriculum can promote awareness, reduce stigma, and encourage help-seeking behaviour among students.

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