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EFFECT OF SYSTEMATIC DESENSITIZATION TECHNIQUE ON SOCIAL ANXIETY DISORDER AMONG PUBLIC SECONDARY SCHOOL STUDENTS IN ANAMBRA STATE

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ABSTRACT

The study was on the effect of systematic desensitization 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 65 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 SD is effective in reducing SAD symptoms, demonstrating its suitability as intervention technique in school settings. However, the results revealed that SD was more effecteive in reducing SAD among female students compared to their male counterparts. The difference in effectiveness across gender was statistically significant indicating that females may be more responsive to behavioural interventions involving exposure. Based on the findings, recommendations were made. These include that the findings highlight the importance of adopting gender-sensitive approaches when designing anxiety intervention programmes, particularly by enhancing engagement strategies for male students who may be less likely to fully participate in therapeutic processes among others.

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

AJEMATES
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Introduction

Social Anxiety Disorder (SAD), also known as social phobia, is a pervasive and self-limiting condition characterized by an intense fear of social situations in which an individual may be scrutinized by others. This fear often leads to significant distress and impairment in social, academic, and occupational functioning. Among adolescents, especially secondary school students, the impact of SAD can be profound, affecting their academic performance, peer relationships, and overall quality of life. It is one of the most common anxiety disorders, with lifetime prevalence estimated at around 12% globally. In Anambra State, Nigeria, the prevalence of SAD among adolescents seemed significant, although specific statistics for regions like Awka South Local Government Area are sparse. Secondary school students are particularly vulnerable due to the developmental challenges associated with adolescence, such as identity formation, peer pressure, and the transition from childhood to adulthood.

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). 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 live.

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. Also reporting a higher incidence of social anxiety among younger persons, Leigh and Clerk (2018), suggested that moving from a reliance on the family to peer interactions, and the development of neurocognitive abilities including public self-consciousness are some of the things that make the adolescence a period of greater vulnerability to social anxiety.

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.

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.

Likewise, recent research has demonstrated that systematic desensitization and cognitive restructuring are effective interventions for anxiety-related problems. For instance, Anyamene, Nwokolo, and Azuji (2016) found that the systematic desensitization technique significantly reduced test anxiety among secondary school students. This method involves gradually exposing students to anxiety-provoking situations while teaching them relaxation techniques to manage their anxiety. The success of this intervention highlights its potential to help students cope with various forms of anxiety, including test anxiety. Similarly, Brant (2024) and Regina and Lezorgia (2017) investigated the effectiveness of systematic desensitization and cognitive restructuring in reducing anxiety related to mathematics. Their studies found that these techniques were beneficial in alleviating math-related anxiety among students. The aforementioned findings suggest that systematic desensitization can be applied beyond test anxiety and math anxiety to other areas where students experience anxiety.

Systematic desensitization is a behavioural therapy that combines relaxation techniques with gradual exposure to help individuals slowly overcome phobias or anxiety problems. Based on the principle of classical conditioning by Wolpe, this technique aims to replace a person's fear response with a relaxation response (Mcleod, 2024). Systematic desensitization, also known as graduated exposure, involves a therapist using counter-conditioning and gradual exposure to reduce the client's fear. Starting with the least fearful exposure, the individual progressively faces higher levels of fear in a controlled and relaxed environment. Thus, the goal of Systematic desensitization is to control or overcome

phobia by replacing the feelings of fear and anxiety with a state of calm (Raypole, 2019). It basically involves two major steps, namely, progressive relaxation and gradual exposure to the situations or objects of anxiety.

Several research studies have shown the therapeutic effect of systematic desensitization in the treatment of anxiety related problems. Anyamene, Nwokolo and Azuji (2016) conducted a study on effects of systematic desensitization (SD) on test anxiety among secondary school students in Anambra State. The aim of the study was to determine the effects of the technique of SD in reducing test anxiety among students. The study was a quasi-experimental research design, and employed 2x2 factorial design pre-test post-test experimental and control groups. The population of the study comprised all secondary schools in Anambra State, while a total of 73 students drawn from the three secondary schools made up the sample for the study. A standardized instrument, Test Anxiety Inventory was used to select the sample. The data was analyzed using mean scores and ANCOVA. The findings of the study showed that systematic desensitization technique was significantly effective in reducing test anxiety among secondary school students.

The findings further revealed that there was significant difference in the effects of SD in reducing text anxiety between male and female secondary school students. Based on the findings, the researchers recommended that systematic desensitization technique should be utilized by counsellors in reducing test anxiety among students in Anambra State and Nigeria at large. This study is related to the present study as they both have the same research design and both worked on the treatment of anxiety problem. However, the reviewed study is different from the current study based on the fact it specifically dwelt on text anxiety. while the present is on social anxiety. Likewise, the reviewed study employed only systematic desensitization in treating the anxiety problem, while the current study employs both systematic desensitization and cognitive restructuring in treating anxiety problem.

Bokanola (2014) carried out research on the effectiveness of systematic desensitization technique and meditation on test anxiety among secondary school students in Kastina Metropolis. The main purpose of the study is to find the effects of systematic desensitization technique and meditation on test anxiety among secondary school students. Four hypotheses were tested at 0.05 significance level. The research design for the study was pre-test post-test quasi-experimental design. The sample of the study was made up of 120 students selected from a population of 814 through purposive random sampling technique. Data were collected using Test Anxiety Scale (TAS) questionnaire. The reliability index for the instrument was 0.74. The data was analyzed

using a paired t-test and a post hoc analysis of covariance (ANCOVA). Findings from the study indicated that systematic desensitization was effective in reducing test anxiety.

The results also revealed that there was no significant difference in the effectiveness of treatment of systematic desensitization and meditation on test anxiety among secondary school students. It was also found that there was no significant difference in the effectiveness of systematic desensitization technique based on gender. The researcher, among other things, recommended that counsellors should make effective use of systematic desensitization and meditation in treating students with test anxiety. The study is related to the current study in that it used the same research design and was also carried out among secondary school students. Likewise, it used systematic desensitization to treat anxiety problem, just like the present study. However, while the reviewed study used systematic desensitization and meditation techniques to treat anxiety problem, the current study is using systematic desensitization technique to treat anxiety problem. Also, the reviewed study was conducted in a different location.

Obi (2017) conducted a study on the effects of systematic desensitization and self-instruction on generalized anxiety among adolescents in Enugu State. Six research questions and six hypotheses guided the study, and were tested at 0.05 level of significance. The research design was a quasi-experimental research design. The population of the study was made of 203 students with generalized anxiety in secondary schools. The sample was 91 secondary school students with generalized anxiety, from three schools, selected through purposive sampling technique. The data were collected using the Beck Anxiety Inventory (BAI), adapted for the study. The collected data were analyzed using mean scores and ANCOVA. The findings of the study showed that systematic desensitization was effective in reducing generalized anxiety in secondary school students. Likewise, self-instruction was found to be effective in reducing generalized anxiety in secondary school students. The results of the study also indicated that systematic desensitization and self-instruction techniques were retained twelve weeks after treatment.

The study further revealed that none of the two techniques was more effective than the other in reducing generalized anxiety of the students. Based on the findings, the researcher recommended, among other things, that guidance counsellors should make use of systematic desensitization as well as self-instruction in reducing generalized anxiety among students. In addition, workshops and seminars should be organized by counsellors for teachers to make them acquainted with the techniques of systematic desensitization and self-instruction as methods of modifying

behaviour problems such as generalized anxiety. The study is related to the present in number of ways including the following: both studies were on anxiety problem, they both have adopted quasi experimental research design and have the same target population – secondary school students. However, the studies have different areas of study, and while the reviewed used systematic desensitization together with self-instruction, the present study used systematic desensitization with in treating an anxiety problem.

Praise, Ebenuwa-Okoh and Ugorji (2024) in their research conducted an investigation on the effects of adopting systematic desensitization therapy on the social anxiety of senior secondary school adolescents in Delta State. Three research questions and three hypotheses guided the study. The study adopted a 2x2x2 factorial quasi-experimental and control research design. The population consisted of 29,409 senior secondary school 11 (SS2) students of Delta State. The sample for the study comprised 100 SS2 students selected from two Delta State secondary schools using multi-stage sampling techniques. The instrument for the study was a validated questionnaire titled the Social Anxiety Scale (SAS) and the Self-Concept Scale (SCS). The reliability of the instrument was determined using Cronbach Alpha, and reliability coefficient values of 0.94 and 0.93 were obtained the two instruments respectively. The study employed a descriptive statistical analysis to answer the research questions and ANCOVA was used to test the hypotheses at a significance level of 0.05.

The results of the study showed that there was a significant difference in the pretest and posttest social anxiety mean scores of the students treated with systematic desensitization therapy and those in the control group. Also, there was a significance difference in the social anxiety mean scores for male and female adolescents treated with systematic desensitization therapy. Furthermore, there was a significance difference in the social anxiety mean scores for high and low self-concept of adolescents treated with systematic desensitization therapy. Therefore, the researcher concluded that SD therapy significantly impacts social anxiety mean scores among students, and the effect varies across gender and self-concept levels. Thus, based on the findings, the researcher suggested that school authorities should consider incorporating systematic desensitization therapy in their mental health support services so as to help students manage anxiety as well as improve their overall wellbeing. The study is closely related to the present in that it also worked on social anxiety among students, and like the present study, it used systematic desensitization to handle social anxiety.

Similarly, Chen, Zhou, Gong, Wu, and Chen (2024) conducted a study in faraway China to determine the impact of systematic desensitization training on competitive

anxiety among Latin dance athletes. It was experimental research. The population for the study was 150 Latin dance athletes (75 male and 75 female), from which a sample of 48 participants (aged between 23 and 25 years) were selected, divided into two groups of 24 for the intervention (treatment) group and another 24 for the control group. The intervention group was treated with an 8-week psychological intervention by employing systematic desensitization training techniques (encompassing imagery desensitization and in vivo desensitization). The anxiety levels of the subjects were quantifying by employing the "Sport Competition Trait Anxiety Inventory" (CCTAIC) and the "Competitive State Anxiety Inventory" (CSAI-2) to scrutinize the efficacy of systematic desensitization training in regulating competitive anxiety levels among Latin dance athletes. The data collected were analyzed using mean scores and one-way ANOVA, tested at 0.05 level of significance.

The results of the study showed that, after applying the systematic desensitization training, the intervention (treatment) group displayed a remarkable reduction in sport cognitive trait anxiety. Specifically, there was a decrease of 29.37% in social evaluation anxiety, 20.31% in competition preparation anxiety, 16.98% in performance anxiety, 24.16% in failure anxiety, 34.47% in opponent's ability anxiety, and 25.16% in injury anxiety. Then, the state self-confidence increased by 14.42%. Conclusively, the results indicated that systematic desensitization training not only mitigates anxiety but also positively intervenes in sports related anxiety. It was suggested that psychological interventions like SD should be used to handle anxiety related problems such as performance anxiety or dance anxiety. The study is related to the present study in the sense that it used systematic desensitization to treat anxiety problem and adopted experimental research design. Also, the reviewed study worked on competitive anxiety, while the current study is working on social anxiety. Both studies also have different areas of study.

Although numerous studies have been conducted on social anxiety disorder in Nigeria, most have focused on its prevalence among secondary school students (Frank-Briggs and Alikor, 2010), 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 treatment effect of systematic desensitization technique on social anxiety disorder among students in Anambra State. This indicates a gap in knowledge that the current study aims to fill. Thus, this study determined the effect of systematic desensitization on social anxiety disorder among secondary school students in Awka South Local Government Area of Anambra State.

AJEMATES
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Purpose of the Study

The purpose of the study was to determine the effect of Systematic Desensitization 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 systematic desensitization on social anxiety disorder among secondary school students in Awka South LGA.
2. Effect of systematic desensitization on social anxiety disorder among male and female students in Awka South LGA.

Scope of the Study

The geographical scope of the study was delimited to public secondary school students in Awka South Local Government Area of Anambra State. The content scope was delimited to the effects of systematic desensitization technique (independent variable) on social anxiety disorder (dependent variable) among secondary school students. The study focused on public senior secondary students in SS2; other students were left out to avoid possible distraction or disruption of the entire school programme.

Research Questions

The following research questions guided the study

1. What is the effect of systematic desensitization 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 systematic desensitization 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 hypothesis were tested at 0.05 level of significance.

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

Method

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,

AJEMATES
African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.17 (2), January-April, 2026; https://ajemates.org

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, after which the two groups (experimental group and control group) were measured. The researchers then compared the pre-test and post-test scores of the two groups. The treatments used in the study were systematic desensitisation technique and conventional counselling. Participants in experimental group received the systematic desensitisation technique, those in 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 14,161, while the SSII students alone numbered 1,372 (Source: Post Primary School Service Commission, 2024). 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 65 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.

Instrument for Data Collection

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 with an African American sample by Beard et al. (2012). The researchers adopted it for use in this study without subjecting it to further validation.

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 instruments were administered to all Senior Secondary School Two (SSII) students in the selected schools. The researchers, assisted by two research assistants, handed out the instruments 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, the instruments 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 collected, 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 gender, 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 extraneous 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

AJEMATES
African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.17 (2), January-April, 2026; https://ajemates.org

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.

Research Question 1: What is the effect of systematic desensitization on social anxiety disorder among secondary school students when compared with those who received conventional counselling using their pre-test and post-test mean scores?

Results

Table 1: Pretest and Posttest mean scores on social anxiety disorder among secondary school students treated with systematic desensitization when compared with those treated with conventional counselling (Norm = 65)

Source of Variation	N	Pretest Mean	Posttest Mean	Lost Mean	Remark
Systematic desensitization	30	74.30	46.00	28.30	Effective
Conventional Couns. Tech.	35	77.74	71.43	6.31	

In table 1, it was observed that the secondary students treated with systematic desensitization on social anxiety disorder had pretest mean score of 74.30 and posttest mean score of 46.00 with lost mean 28.30 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 6.31. With posttest mean scores of 46.00 which is below the norm of 65, systematic desensitization technique is effective in reducing social anxiety disorder among secondary school students.

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

Table 2: ANCOVA on the effect of systematic desensitization 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	14330.067	2	7165			
Intercept	.720	1	.720			
Social_anxiety1	3884.792	1	3884.792			
Treatment_Methods	8102.863	1	8102.863	89.746	0.000	S
Error	5597.779	62	90.287			
Total	25134.000	65				
Corrected Total	19927.846	64				

Table 2 indicates that at 0.05 level of significance, 1df numerator and 64df denominator, the calculated F is 89.75 with P-value of 0.000 which is less than 0.05. Therefore, the first null hypothesis is not accepted. So, the effect of systematic desensitization on social anxiety disorder of secondary school students is significant.

The result of this study revealed that systematic desensitisation (SD) was effective in reducing social anxiety disorder (SAD) among secondary school students, and that the effect was statistically significant. This finding provides strong empirical support for the use of SD as a viable behavioural intervention for adolescents experiencing elevated levels of social anxiety. The statistically significant reduction in SAD symptoms among the participants can be explained by the theoretical underpinnings of systematic desensitisation, which is based on classical conditioning principles. Wolpe's counter conditioning model suggests that anxiety responses can be extinguished when feared stimuli are gradually paired with relaxation responses in a structured and controlled hierarchy (Mcleod, 2024). In the present study, students were systematically exposed to increasingly anxiety-provoking social situations while practising relaxation techniques, which likely resulted in extinction of the conditioned fear response and an overall reduction in physiological arousal. This mechanism is consistent with findings from Chen et al. (2024), who reported that SD training effectively reduced competitive anxiety among adolescents, and from Praise, Ebenuwa-Okoh, and Ugoji (2024), who found significant reductions in social anxiety among senior secondary students following SD intervention.

Furthermore, the results align with the broader literature on the efficacy of exposure-based interventions in treating social anxiety. Granbois, Lee, Donahue, and Langley (2018) conducted a systematic review and meta-analysis and concluded that SD is an effective treatment for youth with SAD and related phobias. Similarly, Anyamene, Nwokolo, and Azuji (2016) demonstrated that SD significantly reduced test anxiety among secondary school students, suggesting that this approach generalises well to other anxiety presentations within school populations. The current study corroborates these findings and emphasised the relevance of SD as a school-based mental health strategy.

The significant outcomes can also be attributed to the developmental appropriateness of SD for adolescents. Adolescence is a period marked by heightened sensitivity to social evaluation (Gross and Hen, 2004), and interventions that provide safe, scaffolded exposure to feared social situations are particularly effective. By enabling mastery experiences in controlled environments, SD likely enhanced the students' self-efficacy and diminished avoidance behaviours, key

AJEMATES
African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.17 (2), January-April, 2026; https://ajemates.org

maintaining factors in SAD (Leigh and Clark, 2018). This suggests that the intervention was not only symptom-reducing but also skill-building, which is important for long-term generalisation.

The present findings are also consistent with clinical guidelines, which recommend exposure-based interventions as a first-line treatment for SAD in young people (Reddy, Sudhir, Manjula, Arumugham and Narayanaswamy, 2020). The significant improvement observed in this study indicates that SD alone remains a potent standalone intervention, especially in resource-limited school settings. Thus, these findings reinforce the utility of systematic desensitisation as a cost-effective, practical, and evidence-based intervention for reducing SAD among secondary school students. They also suggest the importance of implementing SD protocols with fidelity, including the construction of a detailed anxiety hierarchy and the use of relaxation techniques to counter-condition fear responses.

Research Question 2: What is the effectiveness of systematic desensitization 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 mean scores on social anxiety disorder of male and female secondary school students treated with systematic desensitization (Norm = 65)

Source of Variation	N	Pretest Mean	Posttest Mean	Lost Mean	Remark
Male	9	74.56	53.22	21.34	
Female	21	74.19	42.91	31.28	More Effective

In table 3, it was observed that the male secondary students treated with systematic desensitization had pretest mean score of 74.56 and posttest mean score of 53.22 with lost mean 21.34 in their social anxiety disorder, while the female students treated with systematic desensitization had pretest mean score of 74.19 and posttest mean score of 42.91 with lost mean 31.28. With lost mean scores of 31.28 for female which is higher than the lost mean of 21.24 for male students, systematic desensitization technique is more effective in reducing social anxiety disorder among female secondary school students.

Null hypothesis 2: The effectiveness of systematic desensitization on social anxiety disorder of male and female secondary school students is not significant using their posttest mean scores.

AJEMATES
African Journal of Educational Management, Teaching and Entrepreneurship Studies
VOL.17 (2), January-April, 2026; https://ajemates.org

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

Source of Variation	SS	df	MS	Cal.f	Pvalue	P≤ 0.05
Corrected Model	833.399	2	416.699			
Intercept	117.928	1	117.928			
Social_anxiety1	162.764	1	162.764			
Gender	653.796	1	653.796	4.699	.039	S
Error	3756.601	27	139.133			
Total	68070.000	30				
Corrected Total	4590.000	29				

Table 4 indicates that at 0.05 level of significance, 1df numerator and 29df denominator, the calculated F is 4.67 with P-value of 0.039 which is less than 0.05. Therefore, the fourth null hypothesis is not accepted. So, the effectiveness of systematic desensitization on social anxiety disorder of male and female secondary school students is significant.

The results of the study revealed that female students recorded a higher lost mean score, than male students, following the application of systematic desensitisation (SD) technique. This indicates that SD was more effective in reducing social anxiety disorder (SAD) among female secondary school students. Statistical analysis further confirmed that the difference between male and female students' post-intervention mean scores was significant. This finding suggests that females benefited more from exposure-based interventions that employ gradual desensitisation and relaxation strategies than their male counterparts. Several factors may explain why female students responded more positively to SD. Firstly, previous literature suggests that adolescent females are more likely to acknowledge emotional distress and actively engage with therapeutic interventions (Bandelow and Michaelis, 2015). Systematic desensitisation, which operates through gradual exposure and reciprocal inhibition (Wolpe, as cited in Rachman, 2000), may have been more effective for females due to their greater willingness to confront anxiety-provoking stimuli when guided in a structured, supportive environment (Mcleod, 2024).

Moreover, studies indicate that females often report higher prevalence rates and intensity of SAD compared to males, meaning they may experience greater relief when effective interventions are implemented (Vidovic et al., 2017; Akinlade, 2012). This aligns with the present finding that females exhibited larger reductions in mean anxiety scores following SD, possibly because they had a higher baseline severity and thus more "room for improvement."The results are consistent with previous empirical research. Praise, Ebenuwa-Okoh, and Ugoji (2024) reported

significant reductions in social anxiety symptoms among adolescents treated with SD, with female participants benefiting more than males. Similarly, Anyamene, Nwokolo, and Azuji (2016) found that SD significantly reduced test anxiety among secondary school students, reinforcing the effectiveness of gradual exposure techniques in adolescent populations.

Gender differences in response to therapeutic interventions have also been documented in the literature. Jefferies and Ungar (2020) noted that female adolescents were more likely to seek social support and participate actively in anxiety reduction programmes. This greater engagement may partly explain the larger gains recorded by females in this study. Conversely, some studies suggest that males may underreport social anxiety due to stigma or perceived threats to masculinity (Brook and Schmidt, 2008), potentially leading to lower observable treatment gains. However, it is worth noting that while the findings of the present study align with the majority of empirical evidence, a few studies have reported no significant gender difference in the efficacy of SD. For instance, Chen et al. (2024) observed that both male and female athletes benefitted equally from SD training aimed at reducing competitive anxiety. These mixed findings highlight the potential role of cultural, developmental, and contextual factors in moderating treatment outcomes. This suggests that gender-sensitive approaches may be beneficial in designing and delivering school-based interventions, with additional motivational and engagement strategies potentially required to optimise outcomes for male students.

Conclusion

This study set out to examine the effectiveness of systematic desensitization technique (SDT) in the management of social anxiety disorder (SAD) among secondary school students. The findings provided compelling evidence that systematic desensitization technique is effective in significantly reducing SAD symptoms, demonstrating its suitability as intervention technique in school settings. Gender analysis further showed that SD produced greater mean reductions in SAD among female students compared to their male counterparts. This finding highlights the importance of adopting gender-sensitive approaches when designing anxiety intervention programmes, particularly by enhancing engagement strategies for male students who may be less likely to fully participate in therapeutic processes.

Recommendations

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

1. Systematic desensitization (SD) should be prioritized as the first-line intervention for students presenting with moderate to severe SAD, given its superior effectiveness. Schools should integrate SD into counselling

programmes, ensuring that trained personnel are available to deliver structured, gradual exposure sessions supported by relaxation techniques.

2. As findings indicated greater effectiveness of SD among female students, counsellors should consider tailoring interventions to enhance male participation. This may include psychoeducation that reduces stigma, peer support systems, and motivation-enhancing techniques to encourage male students to engage fully in treatment.
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.
4. Parents should be sensitised to recognise signs of social anxiety and support their children's participation in therapeutic programmes. Parent-focused workshops can help reinforce strategies learnt during intervention, creating a consistent support environment at home.

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