

Effect of Group Cognitive Behavioral Therapy (GCBT) on Social Anxiety Disorder (SAD) Among Visually Impaired Students in Rural Communities in South-East, Nigeria

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Abstract

Social anxiety disorder is one of the most common psychological problems associated with visually impaired students in rural communities. The visually impaired students in rural communities are predisposed to Social Anxiety (SA). Therefore, the study examined a group GCBT's effectiveness in reducing SAD. The participants were divided into treatment (n=32) and control (n=32) groups. The measure was the Liebowitz Social Anxiousness Scale (LSAS) with a 24-item scale that provides distinct scores for social nervousness and performance concern throughout the previous week. At time 1, both group participants did not significantly differ in their SAD. The result showed that group cognitive behavioral therapy led to a reduction in the mean scores on social anxiety disorder. The findings further revealed a statistically significant main impact of treatment condition on social anxiety disorder ($F(1,33) = 44.586, p \leq .001, \eta^2 = .46$), suggesting that, in stark contrast to the control group, treatment condition led to a considerable reduction in social anxiety disorder symptoms. The outcome similarly showed a significant main impact of time (before treatment vs. post treatment). However, after the intervention, a significant difference was reported. In particular, there was a reduction in SAD in the treatment group but those of the control group did not significantly change. Therefore, the researchers concluded that GCBT is effective and significant in the reduction of SAD among visually impaired students in rural communities.

Keywords: Behavior, Cognitive Therapy, Disorder, Social Anxiety, Undergraduates, Visual Impairment.

Introduction

Social anxiety as an integral aspect and determinant of social functions and responsibilities is necessary for the regulation of interaction but becomes a problem when it develops into a disorder. Therefore, social anxiety can translate to social anxiety disorder (SAD) when it is very distressing or interferes with work, school, or other activities (1). SAD is one of the most common psychiatric disorders because of its high prevalence rate characterized by unjustifiable strong and persistent fear of social intimidation, embarrassment, or humiliation (2, 3). Also, it was reported that SAD is the third most common psychiatric disorder behind major depression and alcohol abuse among the blind in schools in rural communities (4). Studies reveal that SAD is becoming a prominent and significant mental

concern in the world (5-10). In Nigeria, studies indicated that there is a high prevalence of SAD among young adults specifically the visually impaired (2, 11). Furthermore, it was submitted that SAD is among the most common mental and behavioural problems many visually impaired students suffer today in rural locations (12-15). The visually impaired in rural communities demonstrate high social and personal dysfunctions (4, 16). In the same vein, visually impaired students in rural areas with SAD experience consistent irrational fear of humiliation or embarrassment by others (2, 13, 17). More worrisome is the fact that visually impaired students with SAD in rural schools exhibit irritable levels of anxiety and escapism in any public function (18-20). More excruciatingly, visually

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impaired students with SAD who are residents in rural communities, exhibit symptoms of panic disorder, nervousness, irritability, seclusion, constant sweating, depression, shaky voice, low self-esteem, shyness, and drug abuse (2, 21-24). As postulated, youths with SAD are involved with limited extracurricular activities, find it difficult to make friends, may indulge in truancy in school, and may not be performing well academically (25). In line with the above assertion, SAD is linked to early school dropout and is a prevalent cause of school rejection in young children (26). It was that some of the individuals who live with this disorder are never identified and do not receive treatment and in the absence of therapy, SAD typically has a persistent, chronic course (4, 7, 26). This social problem usually manifests in the early teens, with a mean onset of 15.5 years (27, 28). When it comes to public speaking, worrying that they will offend someone, avoiding situations where they might be the center of attention, excessive fear of situations in which one may be watched and judged by others, fear of being introduced to others, being ridiculed or criticized, being scrutinized or observed as they do something, meeting people in power, noticing insecure and out of place in social situations, eating in a restaurant, taking a test in front of others, using public restrooms, attending a social engagement alone, interacting with strangers (7, 13). SAD development could contribute to both heredity and the environment (29). Toddlers who exhibit shyness and an inhibited temperament are more likely to develop social anxiety disorder (SAD) by the time they are teenagers, according to past researchers (26). A study reported that SAD has been associated with over-protective and hypercritical parenting, stating that the extent to which such parenting is a contributing cause, as compared with a response to a child with SAD is unclear (30). An individual is considered to be educationally blind when he/she has a severe visual loss that makes it impossible to read printed material and necessitates using alternative forms of communication such as Braille (31). Similarly, screening and careful assessment are the keys to the detection and evaluation of social anxiety disorders (32). Pharmacotherapy and cognitive behavioral therapy are two well-established therapies for social anxiety disorder (33). However, bringing social anxiety down to a bearable level is the main objective of therapy for

SAD. Nigerian university students have a comparable rate of social anxiety to other global populations. More people need to be aware of this illness and how it is linked to depression to help those who are affected as soon as possible to avoid permanent impairment. There is a theoretical connection between social anxiety and cognitive behavioral intervention (CBT). Theoretically, cognitive-behavioral models of social anxiety disorder by Clark and Wells 1995 as well that of Rapee and Heimberg 1997 stipulated that anxiety arises from inaccurate dysfunctional beliefs about intending dangers, thoughts and behaviors arising from social circumstances, its associated negative predictions which CBT aims to address focusing on disputation of social anxiety by helping individuals develop coping skills and techniques that can form positive thought patterns. The theoretical rationale of CBT opined that an individual's social experience is a function of interpretation of the events and circumstances surrounding such an awkward experience. Therefore, the stipulations of cognitive interventions focused on enhancing adaptive thinking through cognitive and behavioural repositions are essential in the reduction of SAD. This is even more applicable because Cognitive restructuring focuses fundamentally on the disputation irrational beliefs and promotion on the use of adaptive and realistic interpretative approaches associated with school and life events.

Group Therapy

Group therapy can consist of five to twelve participants, while six to eight is ideal. Group meetings last between 60 and 90 minutes and occur once or twice weekly. Groups might be closed or open. The objective should be clearly stated in the first meeting of a closed group. The goals should be revisited in open groups at the start of a new member's first session. Patients are chosen following a thorough mental health assessment and history collection. A crucial component is choosing debate topics. The conversation topic that is chosen should align with the objective. Ideally, a patient opens the session by bringing up an acceptable topic, after which other participants link it to their circumstances and begin to share coping mechanisms (34). Usually, they get together to talk about their emotions and worries. To guide the conversations, there ought to be one or two therapists present.

Members' participation in the group conversation has a major impact on the group's performance. Members share their personal opinions regarding what others say or do. Through social engagement, the group may experiment with different behaviours and get greater insight into how they relate to others. People typically relive the problems that led them to seek therapy in the first place when they enter a group and engage freely with other participants. The group can provide alternatives, gently confront the individual, or provide support under the expert guidance of a group therapist. This process helps the person acquire new habits, find a solution to the problem, and establish new interpersonal relationships. Additionally, people realize they are not alone when they attend group therapy. Many people believe that troubles make them special, and knowing that others have comparable challenges may be comforting. People may care for and support one another freely in the trusting environment that the group fosters. Group therapy is a crucial component of hospitalized patients' rehabilitative experiences (35). In a ward, groups can be set up in a variety of ways. While each group has different objectives, they all aim to enhance patients' interpersonal social skills, lessen isolation, and raise patients' self-awareness through contact with other group members who offer feedback on their conduct.

Group Cognitive Behavioural Therapy (GCBT)

Aaron Beck and associates originally described the field of cognitive behavioral therapy (36). Studies have shown that cognitive behavioural therapy (CBT) has been seen as an effective and more efficient treatment option for people with SAD (33, 37-40). Using CBT to treat SAD may address the vicious cycle of anticipating negative phobia of 'I will be laughed at by the audience if my voice shakes while speaking in public', and worry about embarrassment or humiliation which may lead to increased situational anxiety and mal-adaptive behaviour (e.g., social isolation) and assessment of oneself negatively (e.g. 'Oh my God I felt so insecure and out of place in the social gathering' and so on)(40). Also, it has historically been believed that the relationships between group members are less important as an "active ingredient" than the cognitive-behavioural model presented to the group (37). Conventional CBT

usually entails taking 14–16 weeks of appropriate medication, and it takes 6–12 months of consistent practice to show results (41). The authors claim that as the number of needed sessions increases, so does the associated expense. CBT has been examined in individual and group settings and usually entails 12–16 weekly sessions, each lasting 60–90 minutes (40). It is pertinent to note that the CBT model incorporates an educational ethos (40). This makes it very conducive to group or class settings, as CBT are time-limited, collaborative, and organized. But group cognitive behavioural therapy (CBT) cannot be limited to taught skills, like individual (one-on-one) CBT, these non-specific factors have not received as much research attention as the underlying theoretical models of cognitive-behavioral therapy (CBT), which outline the underlying beliefs and behaviors that are crucial to treating various disorders (42). Group psychotherapy, on the other hand, has concentrated on interpersonal relationships and associated mechanisms of transformation, which strongly opposes this (42). Research has shown that short CBT sessions, lasting four to eight weeks, are beneficial in treating a variety of SAD symptoms. These include post-traumatic stress disorder (PTSD) (43); depression (44); panic disorder (45, 46); and general anxiety disorder (47). The administration of CBT to the patient helps them realize that, despite their trembling voice, others might not notice or care and still convey the information (36). Techniques for substituting positive behavioral objectives (e.g., "I'll start two conversations at the party") with harmful expectations are taught to patients. In role-playing exercises with a therapist and homework assignments, they get practice applying these techniques in circumstances when they might be afraid. This approach, as opposed to no treatment, educational support groups, and placebo, has been demonstrated in numerous open and controlled trials involving patients with generalized or performance-type social anxiety disorder (48, 49). Thus, the purpose of the current study is to use the knowledge base about the efficacy and effectiveness of group CBT to treat blind people with school anxiety disorder at the University of Nigeria, Nsukka, since research has shown that CBT is effective in the treatment of SAD for people without blindness. The objective of this study was to ascertain the effect of behavioral

therapy on social anxiety disorder among students with blindness. It was hypothesized that blind students exposed to behavioral therapy on social anxiety disorder are more likely to report low social anxiety disorder than those not exposed to the treatment.

Methodology

The population of the study was 64 blind undergraduates in the University of Nigeria Nsukka. The researchers used a self-designed identification instrument titled social anxiety disorder inventory with 10 items structured to elicit information on social anxiety. The measure was able to identify 64 blind undergraduate students who displayed different degrees of social anxiety such as in ability to initiate social relationships, leaving in seclusion, avoidance of peers and inability to confine to fellow student. There was no sampling as the population was used as the sample size. The sample size was simple randomly distributed by balloting with replacement in such a way that 32 undergraduates were assigned to the control group while the other 32 undergraduates were assigned to the experiment group respectively. In each of the group, the male and female undergraduates are 16 for each respectively in the control and experimental groups. The respondents in the intervention group ranged in age from 17 to 23 years old, with a mean age of 20. The sample's mean age in the control group ranged from 18 to 24 years. The intervention participants were divided into three ethnic groups: 16 (25%) Igbo, 10 (16%) Yoruba, and 6 (9%) Hausa. There were 12 (19%) Igbo, 11 (17%) Yoruba, and 9 (14%) Hausa in the control group. As noted earlier, all the participants were undergraduates. Concerning time of onset, 10 (16%) of the participants from the intervention group became blind before birth while the remaining 22 (34%) became blind after birth. In the control group, 12 (19%) of the participants became blind before birth while 20 (31%) lost their sight after birth. All the participants were single. Also, all of them were unemployed and could not move unassisted. The study used the Liebowitz Social Anxiousness Scale (LSAS) is a 24-item measure that provides distinct scores for social nervousness and performance concern throughout the previous week. The LSAS-CA has good sensitivity to treatment effects,

substantial correlations with social anxiety measures, and weaker associations with depression measures (50). It also has high internal consistency. "Fear or anxiety of telephoning in public," "Engaging in small groups," "Drinking in public places," "eating with others in public places," "Performing, performance or giving a talk in front of an audience," "Going to a party," and many more are among the 24 items of LSAS. The instrument Liebowitz Social Anxiousness Scale (LSAS) was subjected to validity through the use of confirmatory factor analysis in order to make it culturally friendly in the Nigerian context. The 24 items in the LSAS were selected to be factorial fit because they are above 3.0 using the Eigen value in factor analysis. Some of the items were reconstructed in order to fit with the Nigerian context. Some of the modifications are that I am fearful answering my phone in the public because I cannot see the students around me. Because of marginalization, I find it difficult to engaging in any social organization in the school, I hardly trust my school and therefore do not participate in drinking and eating in public places. I avoid engaging in public talk show that involves the audience of my school mates. A therapist's guide to brief cognitive behavioral therapy Developed by Clerk in 2006 was used for intervention by the researchers to assist the patients in overcoming dysfunctional thoughts of anxiety, social isolation, and specific phobia (51). This intervention enabled university undergraduates with blindness to be able to cope well with social isolation and specific phobia and symptoms related to anxiety. The main objective of this intervention was to assist the patients in reducing fear when faced with the challenge of feared social situations and avoidance of these situations. The instrument was administered with the help of three trained research assistants who have Masters and Ph.D in Social Works and Guidance and Counselling in the University of Nigeria, Nsukka. The research assistants were properly briefed on the modus operandi on the application of Group Cognitive Behavioral Therapy (GCBT) on Social Anxiety especially to the visually impaired students. The three research assistants administered the Liebowitz Social Anxiousness Scale (LSAS) at the pretest and post-test interval to the participants during and after the treatment sections. Behavioral activation, goal-setting, homework, recognizing maladaptive ideas and

beliefs, problem-solving, relaxing, terminating treatment, and maintaining improvements are a few of these intervention tasks for the patients. To determine the difference between the control and treatment groups' mean scores, the researcher employed the t-test throughout the data analysis for this study. The Levene's test for assumption violation was also performed by the researchers,

and the results showed that all of the assumptions were satisfied because the test result was not significant [$F(1,61) = 28, p = .55$]. In addition to doing the statistical analysis, the researchers also performed screening to identify any missing values. There were no missing values discovered. Using SPSS version 22, the analysis was carried out.

Results

Table 1: Shows the Mean and T-Test Scores for Each Participant's Baseline (Time 1) Social Anxiety Disorder Score Based on Group

Groups	Measure	N	Mean	SD	Df	T	Sig	95% CI
Treatment	SAD	32	3.2	1.3				
Control group		32	3.4	1.7	58	.74	.46	-1.03343

CI, SD, standard deviation, and t-test statistics

Table 2: Scores on the Degree of Anxiety Disorder among Research Participants Both after Treatment and at Follow-Up

Time	Treatment group	Control group	Df	F	Sig.	95% CI	η^2
Time 2	3.1	2.1	62	44.586	<.001	3.1191	.46
Time 3	3.4	1.6	63	75.523	<.001	3.6746	.56

Note: M represent mean, CI represent confidence interval, SD represent standard deviation, η^2 represent eta squared, and N represent number of participants Time 2 (assessment following therapy) Time 3 (review).

The main purpose of Table 1 above was to determine the sample's baseline (Time 1) for social anxiety disorder. The outcome demonstrated that there was no statistically significant difference between the treatment group's (32 ± 1.3) and control group's (32 ± 1.4) social disorder symptoms ($t(58)=74, p=.46, 95\% CI=-1.03343$). Consequently, in the pre-treatment stage, there was no discernible difference between the social disorder scores of the two groups. As shown in Table 2, the researchers looked at the mean impact of the treatment condition, the major effect of time, and the Time \times Group interaction effect using a 2×3 within \times between-subjects' ANOVA with repeated measurements.

We performed a 2×3 within \times between-subjects' ANOVA with repeated measurements in Table 2 above to investigate the time \times group interaction effect, the mean impact of treatment condition, and the major effect of time. The findings showed a statistically significant main impact of treatment condition on social anxiety disorder ($F(1,33)=44.586, p \leq .001, \eta^2=.46$), suggesting that, in stark contrast to the control group, treatment condition led to a considerable reduction in social anxiety

disorder symptoms. The outcome similarly showed that there was a significant main impact of time (before treatment vs. post treatment) $F(1,33)=41.586, p \leq .001, \eta^2=.44$. Consequently, the results of the paired t-test shown that, in the treatment group, social anxiety disorder ratings varied substantially over time at Time 1 and Time 2, $t(32)=6.65, p \leq .001, \eta^2=.46, CI=12.45.31$, and at Time 2 and Time 3, $t(32)=4.43, p=.002, 95\% CI 1.216$. The finding of this study has shown that SAD level of visually impaired students reduced significantly compared to their counterparts who were in the control group. The Time \times Group interaction impact for social anxiety disorder symptoms was significant, according to the ANOVA results. $F(1,33)=22.03, \eta^2=.54, p \leq .001$. At the third follow-up examination (Time 3), individuals in the treatment group showed significantly lower ratings for social anxiety disorder than those in the control group ($F(1,33)=56.77, p \leq .001, \eta^2=.67$). Furthermore, the results of the paired t-test demonstrated that, for the control group, the social anxiety disorder scores at Time 1 and Time 2, $t(30)=165, p=.88, \eta^2=.46, CI=5.355$, and at Time 2 and Time 3, $t(30)=.23, p=.82, 95\% CI 3.80, 4.33$, did

not change substantially over time. The findings of this study provide credence to the hypothesis of the impact of group cognitive behavioral therapy

on the decrease in social anxiety disorder in blind pupils.

Table 3: Post Hoc Investigation of the Significant Impact Using the Group-Specific Bonferroni-Holm Adjustments for the P-Value

Groups 1	Group2	Mean difference	SD	Sig.*	95% CI for Difference*
Treatment	control group	17.04*	2.41	<.001	11.22,21.88
Control group	Treatment group	17.04*	2.42	<.001	-21.88,-11.21

Using projected marginal means as a basis

* At the 0.05 level, the mean difference is significant. Multiple comparison adjustment: Holm-Bonferroni

Table 4: Bonferroni-Holm Adjustments for Post Hoc Analysis of Significant Impact and P-Value According to Time

(I)Time	(J)Time	Mean Difference	SD	Sig.*	95% CI for Difference
Time 1	2	9.76*	3.01	<.001	5.71,13.90
	3	11.34*	3.02	<.001	7.91,13.91
Time 2	1	-7.44*	3.22	<.001	-13.66,-5.71
	3	1.58	1.01	.15	-66,395
Time 3	1	-12.54*	3.22	<.001	-17.61,-7.91
	2	-1.57	1.01	.15	4.95,2.77

Using projected marginal means as a basis

* At the 0.05 level, the mean difference is significant.

The result of the table 3 above showed that group cognitive behavioral therapy led to a reduction in the mean scores on social anxiety disorder. Multiple comparison adjustment: Holm-Bonferroni is shown in the table 4. The study has established that there exist significant mean differences at the three phases of treatments which are at Time 1, Time 2 and Time 3 respectively. This showed that the anxiety levels of visually impaired at Time 1, Time 2 and Time 3 differed significantly along the three groups.

Discussion

This study looked at how group cognitive behavioral therapy affected blind students' social anxiety disorder in universities in south-East Nigeria. It was discovered that at the pre-intervention stage, there was no significant difference in the social anxiety disorder scores between the treatment and control groups. That is, all the participants had similar scores on their level of social anxiety before the treatment was administered. However, after the intervention, a difference in the mean scores of both groups on their social anxiety disorder level was found. In particular, participants in the treatment group reported a decreased level of symptoms of social

anxiety disorder than their counterparts in the control group. That is to say that the social anxiety disorder scores of participants in the control group who did not receive the intervention on combating social anxiety disorder did not significantly change. This means that the group cognitive therapy was effective in reducing social anxiety disorder among students with blindness. Therefore, it can be inferred that the effectiveness of group cognitive therapy can be said to be sustainable for over a 2-week follow-up time frame. Our findings indicated no statistically significant variations in the control group's ratings from the pre-treatment, post-treatment, and follow-up evaluations. The result of this study is similar to that of previous studies that have found group cognitive therapy as an effective treatment for social anxiety disorder (33, 37, 39, 40). Social anxiety disorder is a serious problem deserving of urgent attention regarding how to combat it. This finding has shown that SAD which is associated with distorted cognitive perceptions of visually impaired students can be addressed using the theoretical rational of CBT. The theoretical rational of CBT opined that an individual's social experience is a function of interpretation of the events and circumstances surrounding such an awkward experience (52, 53).

Therefore, the stipulations of cognitive interventions focused on enhancing adaptive thinking through cognitive and behavioural repositions are essential in the reduction of SAD. This is even more applicable because Cognitive restructuring focuses fundamentally on the disputation irrational beliefs and promotion on the use of adaptive and realistic interpretative approaches associated with school and life events. This is because people who experience SAD can hardly contribute to social discussion and other activities. They may also be less creative for fear of laughing at them. Regrettably, evidence in the literature suggests that SAD is increasing. The situation with blind students may be more challenging because they cannot see non-verbal cues in human interactions (5, 7-9). The finding corroborates that the fact inability of people with blindness to recognize responses or assessments within them makes their issue very complicated (8). What this means is that SAD among people with blindness is more challenging than those who are fully sighted. As can be seen in the current study, group cognitive therapy is beneficial for reducing social anxiety disorder. This makes a case for campus cognitive therapy centres to cater to the needs of students with blindness. This is very important because, at the time of this study, there was no arrangement for cognitive therapy services to undergraduates in general and students with blindness in particular. While it is true that population growth in the number of students admitted into universities could make cognitive therapy services challenging, the number of undergraduates with blindness is not too much and could be managed. Therefore, the researcher recommends that undergraduates with blindness should be exposed to group cognitive therapy at regular intervals to enable them to manage social anxiety disorder symptoms. To achieve this, experts are also required and such experts should be trained and retrained to allow them to render effective and professional services to undergraduates with blindness. Also important is the need for awareness creation. There is a need for students with blindness to know the importance of group cognitive behavioural therapy so that they can make themselves available. This is important because poor awareness on the part of affected students could

lead to low participation on the part of concerned students and the overall objective will be defeated.

Conclusion

Based on the results of this study, the researcher concludes that a group cognitive behavioral therapy intervention of 12 weeks with 2 weeks of follow-up meetings led to a significant reduction in social disorder symptoms. Therefore, the researcher concludes that an effective group cognitive behavioral therapy could lead to a significant reduction in social anxiety disorder symptoms. The current study has provided evidence-based understanding regarding the effect of group cognitive behavioral therapy on the reduction of social anxiety disorder symptoms among undergraduates with blindness. This could be considered strength of the study because students with blindness are disadvantaged and need to be assisted regarding how they could improve their self-esteem and become useful members of society. Therefore, the study has succeeded in providing empirical evidence on how the social anxiety disorder of visually impaired students could be addressed. The study has also succeeded in showing how the effect of time may significantly affect the treatment group but not the control group. This again points to the fact that the social anxiety disorder of students with blindness cannot be reduced without treatment even as time passes by. In other words, SAD symptoms can only be reduced through treatment not time. Although this study has provided evidence regarding the effect of an intervention on the reduction of social anxiety disorder, it has some limitations. In the first instance, the sample involved only university students with blindness. There is the possibility that other undergraduates who are disadvantaged in another area may also suffer from SAD. Such disadvantages may include undergraduates from broken homes, and orphans, among others. Another study limitation is that the researchers could not examine the influence of biographic information like age and gender on the sample responses. It is possible that when gender and age are verified, new perspectives may come up. Finally, the researchers did not ascertain if social anxiety disorder significantly affects the academic performance of the sample. This perspective is also important because it could provide insights into the effect of social anxiety disorder on learners in

general and students with blindness in particular. Based on the limitations of this study, the researchers suggest that further studies should expand the sample to include students in other disadvantaged positions apart from blindness. This will provide a balanced perspective regarding the effect of group cognitive behavioral therapy. Also, further researchers should ascertain if students with blindness think they need group cognitive behavioral therapy to combat social anxiety disorder. This information could be useful in educating students with blindness on the need to make them available for group cognitive behavioral therapy. It is equally suggested that further researchers should also consider the respondents' demographics in investigating the effect of group cognitive behavioral therapy.

Abbreviations

GCBT: Group Cognitive Behavioural Therapy, SAD: Social Anxiety Disorder.

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Author Contributions

Eze Fidelis Amaeze, Eke Kalu Oyeoku, and Godwin Ayodeji Nwogu conceptualized and developed the manuscript. The reviews were done by Franca Ginikachi Adieme, Toyin Olanike Adaramoye, and Eke N. Ukpai. Data was collected by Olujide Akinwumi Afolabi and Ilesanmi Olusola Olajide. Analyses were conducted by Jude Daniel Amakaino Utoware and Babatunde Nurudeen Balogun.

Conflict of Interest

Regarding the research, writing, and publishing of this paper, the authors declare that they have no conflicts of interest.

Ethics Approval

The present study was approved ethically by the Department Research Ethics Committee, Department of Education Foundations, University of Nigeria, Nsukka, Nigeria (REC/EDF/18/0009). The researchers also adhered to the American Psychological Association's ethical guidelines while using human participants in their research. Further consideration was vested on the Helsinki

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