

# Impact of cognitive behavioural play therapy on social anxiety among school children with stuttering deficit

## A cluster randomised trial with three months follow-up

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### Abstract

**Background:** Stuttering is a speech deficit which is characterized by obstruction of speech eloquence and verbal expression in addition to involuntary flow of air during communication. School children with communication deficit often experience social anxiety in their immediate environment. Currently, reports show that a good number of children with communication deficits are prone to social maladjustment due to their being socially inept. And this has significantly affected their thought pattern, social behaviours and emotional responses. In view of this, we examined the impact of cognitive behavioural play therapy in reducing social anxiety among school children with stuttering.

**Method:** This is a pretest-posttest randomized control group design. Participants were 178 school children in inclusive schools in South east Nigeria. Participants in the intervention group were treated using cognitive behavioural play therapy programme (CBPT). Participants in the waitlist control group were only assessed at three points of assessment. Data analyses were completed using repeated measures ANOVA.

**Results:** The results show that cognitive behavioural play therapy is beneficial in decreasing school children's social anxiety scores. The intervention equally showed the considerable impacts on the children when exposed to cognitive behavioural play programme at different times of assessment compared to waitlisted control group.

**Conclusion:** It is concluded that CBPT is a long-term psychotherapeutic programme that has significant impacts in reducing social anxiety among children with stuttering. This study makes a leading contribution on the limited scholarship focusing on the impact of CBPT on social anxiety of special population with stuttering deficits in developing countries.

**Abbreviations:**  $\eta^2$  = effect size,  $\chi^2$  = Chi-square, ATG = among treatment group, CBPT = cognitive-behavioral play therapy, CBT = cognitive behavior therapy,  $d$  = Cohen's  $d$ , LSAS-CA-SR = Liebowitz Social Anxiety Scale for Children and Adolescents, self-report version, sig = Associated probability, SMGAD-C = severity Measure for Generalized Anxiety Disorder—Child Age 11–17.

**Keywords:** children with stuttering, cognitive-behavioral play therapy, schooling children, social anxiety, social anxiety symptoms

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The authors have no conflicts of interest to disclose.

The datasets generated during and/or analyzed during the current study are not publicly available, but are available from the corresponding author on reasonable request.

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## 1. Introduction

In social settings, children love to connect with their peers to share ideas, beliefs, and feelings. Each child brings their unique character(s) to such interactions that may be acceptable or unacceptable to other children. However, some of them are unable to cope with and participate in their peer group social settings. This may be due to problems such as impaired sight, impaired physical features, and communication problem. Children with speech deficiency, especially stutterers, face serious impediments in social situations. Stutterers feel bad and inadequate as the aim of expression and sharing mental ideas is defeated.<sup>[1]</sup> In essence, maintaining healthy interpersonal relationships with their counterparts is a social challenge for child stutterers. Stuttering is a speech deficit which obstructs the eloquence of verbal expression characterized by involuntary flow of air during communication.<sup>[2]</sup> A good number of empirical studies have established a relationship between stuttering and symptom of anxiety.<sup>[e.g. 3]</sup>

Anxiety is an emotional state characterized by consistent fear, tensed mood, unstable state of thoughts, and increase in blood pressure and body chemistry.<sup>[4]</sup> It includes perceived cognitive,

behavioural, physical, and social aspects of emotion. If it becomes a specific perceived and consistent fear associated with social performance, then, one could refer to it as social anxiety disorder. Social anxiety is an extreme, irrational fear and avoidance of social activities, often with the thought that other people will judge one's social performances.<sup>[5]</sup> Social anxiety disorder (SAD) is one of the most frequent mental health disorders,<sup>[6]</sup> that begins at early childhood.<sup>[7,8]</sup>

Social anxiety has been associated with communication difficulty in social situations.<sup>[9]</sup> Blumgart et al<sup>[10]</sup> showed that children with stuttering experience stressful situations accompanied by social anxiety in social environments. By indication, a child who stutters could feel unsafe and may find it difficult to adjust to outdoor activities due to inability to communicate effectively. This is compounded by negative evaluation received from peers, an occurrence reported in academic literature<sup>[11]</sup> These children experience bullying from their peers, being walked away from, disregarded, interrupted, and mocked at.<sup>[12]</sup> Researchers have further argued that stuttering children are rated as less popular, and are alleged to become victims of bullies who often are their peers.<sup>[13]</sup> Consequently, their speech deficiency and social anxiety affect their cognition and social behaviours.

Avoidance is one of the dimensions of social anxiety<sup>[14]</sup> characterized by avoidant behaviours<sup>[15]</sup> and social competence deficits. Children with social competence deficits avoid outdoor activities that require social interactions and public functioning because they are less socially integrated.<sup>[15]</sup> Thus, the avoidance may result to poor educational achievement,<sup>[16,17]</sup> social skills,<sup>[18,19]</sup> and lower socioeconomic status.<sup>[15]</sup> School children with stuttering deficiencies experience obstruction in their communication.<sup>[20]</sup> Previous studies have revealed that school children with speech deficits experiences ugly situations such as shame and stigmatization.<sup>[21–23]</sup> This affects cognitive, behavioural, psychological and emotional reactions. In most cases, how they react to issues related to social gathering shows that they have poor self-esteem and higher anxiety levels.<sup>[24–28]</sup>

Research evidence have indicated a higher anxiety score among children who stutter much more than normal children.<sup>[29,30]</sup> Consequently, there is a significant correlation between higher anxiety and stuttering.<sup>[10,31–33]</sup> High anxiety level can negatively affect the wellbeing of school children.<sup>[34]</sup> Like avoidance, social anxiety is one of the classes of anxiety.<sup>[14]</sup> Social anxiety disorder is a common mental disorder, with a lifetime prevalence of 8–13%.<sup>[35]</sup> Empirical literature reported that American schoolchildren experiencing anxiety disorders are nearly 20% of the entire population of children.<sup>[36]</sup> In the same vein, another study showed a high rate social anxiety among children with speech deficits.<sup>[37]</sup> In Australia, social anxiety disorders barely occurred in schoolchildren who stutter.<sup>[38]</sup> Like other countries, studies from Nigeria revealed the prevalence of social anxiety to be high among schoolchildren.<sup>[39,40]</sup> Imagine where such a high number of children with higher anxiety disorders experiences poor academic performance and emotional distress,<sup>[41,42,36]</sup> their career opportunities could be grossly affected.<sup>[43–46]</sup> It is a disorder that affects several life domains such as relationships, vocations, education, social functioning,<sup>[47]</sup> and suicidal ideation of school children.<sup>[48]</sup> The presence of social anxiety could lead to absenteeism at school, withdrawal from peers and social gathering, to drug addiction.<sup>[40,49]</sup> In Nigeria, stuttering children tend to exhibit anger, bullying, constant fighting, and withdrawal from social activities. However, there is a limited number of

studies that have looked at the impacts of social anxiety among schoolchildren in Nigeria.

Consequently, we considered cognitive and behavioural strategy important as an intervention to help schoolchildren with stuttering deficit. It was hypothesized that using cognitive and behavioural techniques to reduce the social anxiety disorders could be beneficial. We argue that if the perceived and persistent fear about self, future and social setting is changed, the children will achieve sound and adaptive social competence. If an individual holds wrong and dysfunctional thoughts about a social situation, a psychotherapeutic intervention could be adopted in challenging the distorted thoughts.<sup>[50]</sup> Hence, populations with stuttering deficiency need psychological treatments such cognitive behavioural play therapy that targets the improvement of not only the emotional and attitudes but also speech fluency.<sup>[51,52]</sup>

Cognitive behavioural play therapy (CBPT) pioneered by Knell<sup>[53]</sup> is a part of cognitive behavioural approaches aimed to dislodge and deactivate maladaptive social behaviours and phobia credited to dysfunctional thoughts and replace them with better ones. The parent cognitive behavioural therapy was developed by Beck.<sup>[54]</sup> Hence, CBPT belongs to the family of cognitive and behavioural interventions and adapts the practice and principles of cognitive behavior therapy (CBT). Like CBT, CBPT aims to change dysfunctional thoughts that people share and hold about themselves, future and the world. However, CBPT adds the play method to maintain, enhance, and improve the social wellbeing of children. Through play methods, cognitive change is indirectly communicated, hope in children is restored and more adaptive behaviours are introduced.<sup>[53]</sup> The basic assumption here is that if a child has wrong assumptions, the reality will be difficult to achieve, thereby resulting to social anxiety disorder.<sup>[55]</sup> Knell projected assumptions that guide CBPT sessions. The author believes that CBPT-counselling activities involve the kid and play method. Cognitive-behavioural disposition, feelings, fantasies, and atmosphere of kids are addressed in CBPT sessions. The CBPT-counsellor provides the approach for getting and enhancing a lot of reconciling thoughts and behaviours. The approach or strategy is often task-based, structured, directive, and goal-oriented, instead of open ended.

The psychological responses of children with speech deficiencies reflect in the individual's social activities which may negative affect their social personality especially if it is erroneously perceived. Therefore, once the perception is negatively interpreted, individuals that have realistic social worth may find it tough to realize life goals. However, if is negatively conceived, it results in increase in social anxiety level of college youngsters with stuttering. Cognitive-based play activity has been suggested for college students with social problems.<sup>[56]</sup> Play could as a form of therapy since it helps to manage specific behaviours and emotional issues that interfere with children's normal social behaviour.<sup>[56]</sup> Substantial proof has shown that psychotherapy does not only decrease withdrawal and fear,<sup>[57]</sup> but it reduces anxiety and depression in stutterers.<sup>[58,59]</sup> previous studies have shown that play as a form of social interaction could be an important factor for children's emotional growth and adjustment.<sup>[60]</sup> Social-based psychotherapy improves students' social understanding of their behaviours which results in social skills deficits and social anxiety.<sup>[59]</sup> The therapy helps them to cultivate new social skills, discover that they're capable of winning peer acceptance, build self-control skills, and self-acceptance.<sup>[60,61]</sup> In addition, Akos and Milsom<sup>[62]</sup> posit that CBPT approach is

significantly impactful as it permits play group members to having a sense of belonging, share common problems, provide support, facilitate new learning, ease internal and external pressures, and provide hope and models for change. On the other hand, a neglect of psychotherapy might result in depression, rejection and poor performance in school.<sup>[59]</sup> Given the importance, exposing schoolchildren with speech deficiency to each indoor and outdoor play routine could improve psychological, cognitive, and behavioural activity competence, make them less vulnerable to social anxiety characterised by withdrawal, low self-esteem, and suicide thought and assist them in mastering tough tasks geared toward realizing their life goals.<sup>[59,63,59]</sup> Despite play therapy functioning as a vehicle that allows school children with stuttering cope with social anxiety, there exists a scarcity of scholarly evidence on the impact of psychotherapy on social anxiety among these schoolchildren in developing countries like Nigeria. Only a small number of interventions exist with regards to how social anxiety in school children with language problem<sup>[64]</sup> can be reduced. Among the studies that utilized CBT approach, none adopted CBPT. In addition, some of the studies used small participants.<sup>[65]</sup> The change in the maladaptive cognitions may mediate symptom reduction in speech anxiety.<sup>[66,67]</sup> That said, the psychosocial processes of people who stutter are associated with their speech production behaviour.<sup>[68]</sup>

Based on the foregoing, the current study focuses on examining the impact of cognitive behavioural play therapy on social anxiety among schoolchildren with stuttering deficiency in South east state, Nigeria. In this study, the researchers hypothesized that social anxiety among schoolchildren who stutter will be significantly enhanced and managed at post-treatment and follow-up when exposed to cognitive behaviour play therapy.

## 2. Method

### 2.1. Ethical approval

The research and ethics committee of the Faculty of Education, University of Nigeria, Nsukka approved this study. To comply with American Psychological Association (APA) established ethical principles and standards, we sought for consent from parents of the schoolchildren and school heads who gave their permission and authorization for us to conduct the study using their wards/pupils.

### 2.2. Design

The study adopted a pretest-posttest randomized control group design.

### 2.3. Participants and power analysis

The participants were 178 schoolchildren who stutter, with social anxiety issues, in South East Nigeria. The power of the sample size was determined using GPower 3.1 software<sup>[69]</sup> which indicated that participants were roughly adequate. Table 1 below describes the socio-demographic and psychological characteristics of the participants.

### 2.4. Socio-demographic characteristics of the participants

Table 1 shows that the CBPT group comprised 41 males (46.1%) and 48 (53.9%) females; and the control group comprised 44 males (49.4%) and 45 (50.6%) females. From the analyses of

**Table 1**  
Demographic characteristics of the participants based on groups.

	CBPT Group n (%)	Control group n (%)	Statistic	Sig
			$\chi^2$	
Gender				
Male	41 (46.1)	44 (49.4)	0.203	0.653
Female	48 (53.9)	45 (50.6)		
Age				
6–9	39 (43.8)	40 (44.9)	0.023	0.880
10–12	50 (56.2)	49 (55.1)		
State of origin				
Enugu	18 (20.2)	17 (19.1)	0.733	0.981
Imo	20 (22.5)	21 (23.6)		
Cross River	13 (14.6)	12 (13.5)		
Kogi	13 (14.6)	11 (12.4)		
Anambra	8 (9.0)	11 (12.4)		
Others	17 (19.1)	17 (19.1)		
Family type				
Nuclear family	27 (30.3)	31 (34.8)	0.417	0.812
Extended family	38 (42.7)	36 (40.4)		
Separated	24 (27.0)	22 (24.7)		
Location of school				
Urban	47 (52.8)	46 (51.7)	0.023	0.881
Rural	42 (47.2)	43 (48.3)		
Psychological characteristics				
Reasons for anxiety				
Accident	24 (27.0)	22 (24.7)	1.030	0.905
Death of relative	17 (19.1)	17 (19.1)		
Abuse	15 (16.9)	12 (13.5)		
Self-image	15 (16.9)	15 (16.9)		
Imagery creature	18 (20.2)	23 (25.8)		
Onset of the Condition				
Childhood onset-fluency disorder	42 (47.2)	32 (36.0)	2.812	0.245
By peer influence	28 (31.5)	30 (33.7)		
By sickness	19 (21.3)	27 (30.3)		

% = Percentage,  $\chi^2$  = Chi-square, CBPT = cognitive based play therapy, n = number of participant, sig = Associated probability.

results, it can be seen that no significant gender difference was observed among the study participants (Chi-square  $[\chi^2] = 0.203$ ,  $P = .653$ ). In the CBPT group, 39 participants (43.8%) were within the age of 6 to 9 years, and 50 (56.2%) were within the age of 10 to 12 years. In the control group, 40 participants (44.9%) were within the age of 6 to 9 years, and 49 (55.1%) were within the age of 10 to 12 years. No significant age difference was observed among the age of participants ( $\chi^2 = 0.023$ ,  $P = .880$ ). Concerning state of origin, in the CBPT group, 18 participants (20.2%) were from Enugu state, 20 (22.5%) were from Imo state, 13 (14.6%) were from Cross River, 13 (14.6%) were from Kogi, 8 (9.0%) were from Anambra state and 17 (19.1%) were from other states. In the control group, 17 participants (19.1%) were from Enugu state, 21 (23.6%) were from Imo state, 12 (13.5%) were from Cross River, 11 (12.4%) were from Kogi, 11 (12.4%) were from Anambra state and 17 (19.1%) were from other states. No significant difference in state of origin was observed among the participants ( $\chi^2 = 0.733$ ,  $P = .981$ ). Regarding family type, in the CBPT group, 27 participants (30.3%) were from nuclear family, 38 (42.7%) were from extended family, and 24 (27.0%) were from separated family. In the control group, 31 participants (34.8%) were from nuclear family, 36 (40.4%) were from extended family, and 22 (24.7%) were from separated family. No significant religious affiliation difference was observed among the

participants ( $\chi^2=0.417$ ,  $P=.812$ ). Concerning location of school, in the CBPT group, 47 participants (52.8%) were from schools in urban area, and 42 (47.2%) were from in rural area. In the control group, 46 participants (51.7%) were from schools in urban area, and 43 (48.3%) were from in rural area. No significant difference in location of school was observed among the participants ( $\chi^2=0.023$ ,  $P=.881$ ).

### 2.5. Psychological characteristics of the participants

Regarding reasons for anxiety, in the CBPT group, 24 participants (27.0%) were due to accident, 17 (19.1%) were due to death, 15 (16.9%) were due to abuse, 15 (16.9%) were due to self-image, and 18 (20.2%) were due to imagery creature. In the control group, 22 participants (24.7%) were due to accident, 17 (19.1%) were due to death, 12 (13.5%) were due to abuse, 15 (16.9%) were due to self-image, and 23 (25.8%) were due to imagery creature. No significant difference in reasons for anxiety was observed among the participants ( $\chi^2=1.030$ ,  $P=.905$ ). Concerning onset of the condition, in the CBPT group, 42 participants (47.2%) were due to childhood onset-fluency disorder, 28 (31.5%) were due to peer influence, and 19 (21.3%) were due to sickness. In the control group, 32 participants (36.0%) were due to childhood onset-fluency disorder, 30 (33.7%) were due to peer influence, and 27 (30.3%) were due to sickness. No significant difference in onset of the condition was observed among the participants ( $\chi^2=2.812$ ,  $P=.245$ ).

## 3. Measures

### 3.1. Severity measure for generalized anxiety disorder for children aged 11–17

The severity Measure for Generalized Anxiety Disorder—Child Age 11–17 (SMGAD-C) is a self-report scale created by Craske et al.<sup>[70]</sup> SMGAD-C has 10 items that assess the severity of generalized anxiety disorder in children during the last seven days.<sup>[70]</sup> The SMGAD-C has five point Likert scale options as follows: 0 = never; 1 = occasionally; 2 = Half of the time; 3 = Most of the time, and 4 = All of the time. The total score can range from 0–40, with higher scores indicating greater severity of generalized anxiety disorder. In this study, the internal consistency for this measure in Nigeria was 0.82 Alpha.

### 3.2. Liebowitz Social anxiety scale for children and adolescents, Self-Report Version

The Liebowitz Social Anxiety Scale for Children and Adolescents, self-report version (LSAS-CA-SR)<sup>[14]</sup> is a 24-item scale that measures social anxiety disorder in children and adolescents. The scale has two main subscales, anxiety and avoidance. The items of LSAS-CA-SR is designed on 4-point rating scale as follows: fear (0 = none, 1 = mild, 2 = moderate, 3 = severe and avoidance (0 = never, 1 = occasionally, 2 = often 3 = usually) with high scores representing more fear and/or avoidance. A total score can also be obtained by summing up the total subscales for fear and total avoidance, which can range from 0 to 72. The reliability and validity of the LSAS-CA-SR have been reported in past studies.<sup>[14,71,72]</sup> The internal consistency for the fear subscale in Nigeria was 0.92, and for the avoidance subscale, it was 0.89. Overall internal consistency for the LSAS-CA-SR was 0.90 as indicated in this study.

### 3.3. Intervention

Cognitive behavioural play therapy (CBPT) is a psychological approach adapted from cognitive behavioural principles to assist schoolchildren living with social anxiety disorders. Psychological techniques in CBPT target the improvement of cognitive behavioural skills and techniques of children in managing anxiety related problems such as phobia, fear, etc. The CBPT is psycho-educational based programme that demonstrate the need to explore CBT approaches in altering illogical and dysfunctional thoughts associated with negative self-worth, rejection, social withdrawal, and phobia among schoolchildren. The therapy manual is basically designed to last for 12 weeks culminating in 12 sessions. Each session was held once a week and lasted for one hour. The play therapy sessions were conducted with different thematic activities like behavioural exercises,<sup>[73]</sup> work for a longer time,<sup>[74]</sup> relaxation techniques,<sup>[75]</sup> and play-dough game.<sup>[76]</sup> CBPT techniques applied were identifying and modification of maladaptive social skills, modeling, behavioural rehearsal, bibliotherapy, coping self-statement, relapse prevention, behavioural contingencies, motivational enhancement, motivational interviewing etc.

### 3.4. Therapists

Experts in cognitive behavioural therapy with over 10 years of experience implemented the CBPT-programme. They have been in cognitive behavioural practice (that is psycho-educational practice), assisting people with cognitive errors, social problems, and behavioural problems. They specialized in childhood and counseling psychology rooted in cognitive behavioural therapy where they had their major trainings. The therapists were four female therapists, aged 45 to 50 years. English language was utilized in delivering the intervention as the instruments for the study were only available in English language.

### 3.5. Treatment integrity

During the implementation of the treatment programme manual, we considered that integrity of CBPT practice is very important; hence, two external observers were selected among the research team. The external observers were instructed to strictly work towards the realization of the treatment goals by the research team. They ensured that integrity check is maintained by closely monitoring the therapists' commitment and questioning the skills adopted as the case may be. This reduced mix-up, overlaps, and ensured compliance with every aspect of the manual. Each observer was given treatment integrity report sheet and treatment monitoring report sheet crafted by the researchers. A treatment monitoring report sheet was designed to checkmate the implementation process by the therapists. The treatment integrity report sheet aimed at reporting the activities of the children. The observers recorded the level of participation of the therapists and participants. This also ensured that everyone arrived at the time slated for each session. The record sheet contained the number of sessions each participant attended the sessions.

### 3.6. Experimental procedure

The research team visited special schools in South east state Nigeria to obtain permission from the school authorities. Then, the aim of the study was explained to the school authorities in a

letter prepared by the researchers. The requests were approved by the school authorities. Shortly after this, we pasted posters, distributed handbills, met the school children during morning assemblies, asked for voluntary participation of stutters with social anxiety disorders. The caregivers including the teachers and other school principal officers through our channel (emails and phone numbers) sent names of some potential schoolchildren to us while others were identified using screening tools (SMGAD-C and LSAS-CA-SR). The screening exercise (April- June 2019) was facilitated by the class teachers, who closely guided the schoolchildren during completion of SMGAD-C and LSAS-CA-SR. The data obtained gave us the baseline information of the condition (social anxiety disorder). Some criteria or conditions were met by each participant before they were recruited into the study. They were: 1) identified by an experienced clinician in International Classification of Diseases-10 diagnostic criteria for social anxiety disorders; 2) between 6 to 16 years; 3) having speech deficiency from childhood; 4) rate of stuttering must not be as much as 4% of spoken words during communication; and 5) presence of social anxiety disorder during the last five academic

years, from 2014 to 2019 academic sessions. However, some schoolchildren were excluded based on 1) intensity of the condition that requires intensive care; 2) presence of comorbid communication disorders; and 3) actively receiving treatment from psychotherapists on social anxiety reduction. A total of 203 school children were screened for eligibility, and in the end, a total of 176 school children were identified as participants. After the recruitment, copies of the letter were addressed to parents of the children seeking for their approval and consents.

To assign the eligible participants to different groups, we crafted paper cards with inscription “ among treatment group (ATG)” and “Not Among Treatment Group” deposited in a green carton. The eligible participants were asked to pick a paper card from the green carton (see Saghaei).<sup>[77]</sup> Those who picked ATG paper cards were assigned randomly to CBPT-group (n= 88) whereas that that picked not ATG were assigned to the waitlist control group (n=88). For more information on the randomization process see Figure 1. No intervention was given to participants in the waitlist control group meanwhile they were only assessed at first, second and third points of assessment. We

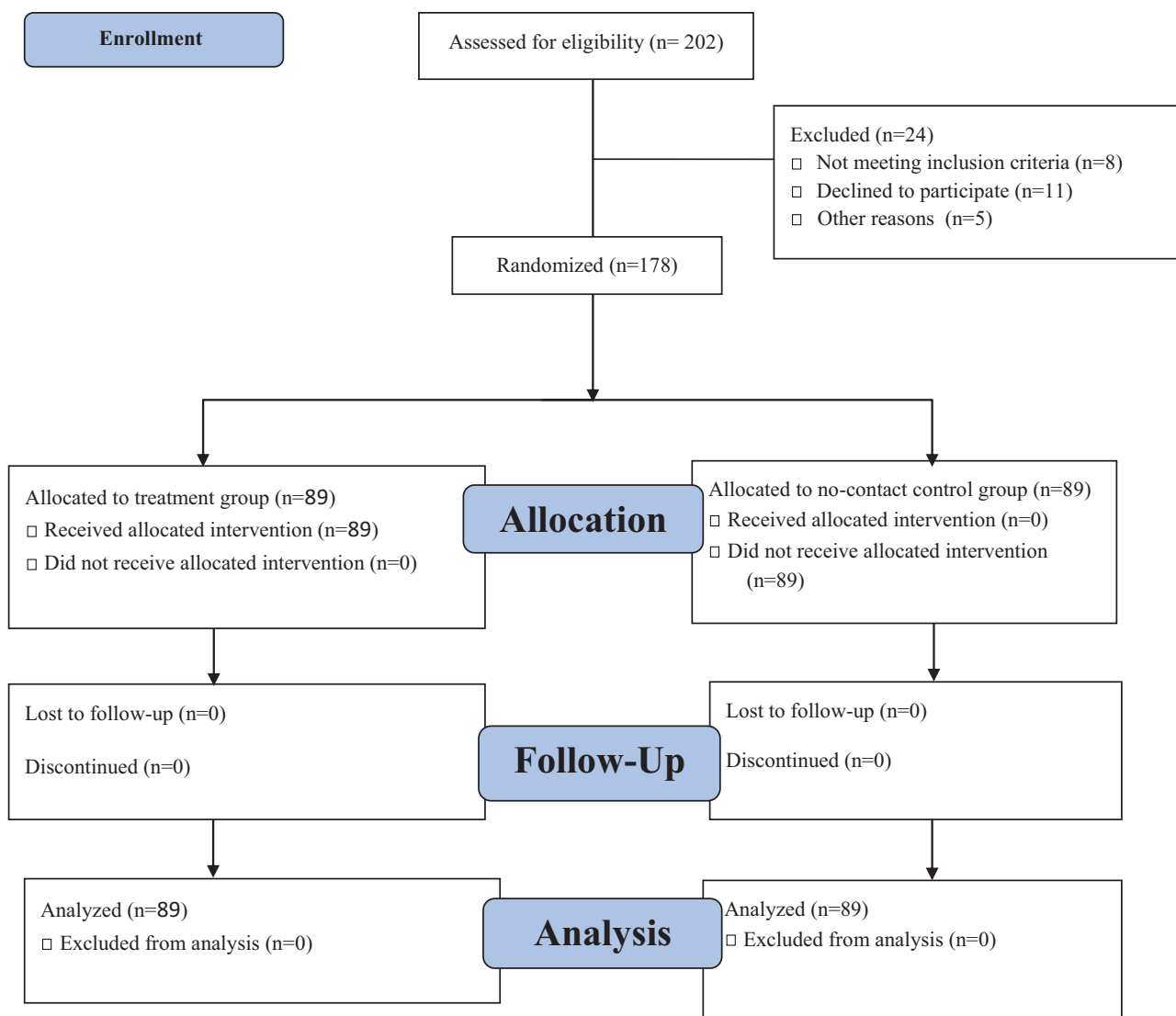


Figure 1. Participants flow diagram.

acknowledged that waitlisted control group participants deserve to be given the intervention but they were not given such opportunity<sup>[78]</sup> is a limitation to this study. The participants were not exposed to the intervention because of limited resources and rigorous process involved in working with children's cognition and behaviours.<sup>[79]</sup> On the other hand, the eligible participants were treated using CBPT-programme and implemented by experts in cognitive behavioural approaches. The CBPT-group members were subdivided into four groups. Each subgroup consisted of 22 members and was actively engaged with play method, storytelling, modeling, behavioural incidences, and managing self-statements.

The treatment was a 12-therapeutic session that lasted from July to October, 2019. Each session was conducted once per week. The session activities are highlighted below:

Sessions one and two=Building of rapport among the group participants. Establishment of rules and regulations that guided participants' conducts. Assuring the participants that trust and confidentiality would not be compromised.

Sessions three=Learning to identify and express feelings through play. The therapists assisted the children to learn how to recognize maladaptive beliefs and behaviours in social settings. The children were coached on how to identify illogical ideas and beliefs through games and through the process of self-reflection.

Sessions four, five and six=The children were engaged in group discussions, learning how to use appropriate social language. Also, how to make adaptive social self-statements was discussed. The children were taught how to verbalize problem-solving skills that are comparable to social difficulties they were facing. They were actively engaged in practice exercises, learning verbalization of solutions to social problems.

Session seven = Review on the previous work. Identifying abilities and skills of each child and incorporating them into play. They were encouraged not to engage in highly complex cognitive exercise and verbal intervention in social setting. Training on relaxation, dancing, and sports training to determine cooperation and to cope with social order were discussed.

Sessions eight = This examined various techniques to confront communication challenge with others in the group. Also, how to replace the challenged social beliefs with the new solutions and accept their weaknesses and strengths was discussed.

Sessions nine = The techniques of replacing negative self-defeating behaviours by utilizing coping self-statements and presenting a positive self-image.

Session ten = Building self-esteem, creating a positive self-image and self-statements so as to change the negative thinking to positive behaviours.

Sessions eleven = How to manage anger in social environment was emphasized. The role of anger management in enhancing group relationship was addressed. Home exercise was given on video clips focused on anger management.

Sessions twelve =Reviewing previous studies, during the play therapy sessions. Children's self-awareness, self-perception, and

self-control skills were increased through cognitive interventions as self-education and termination.

We did not record any dropout in any of the sessions. The reason for this could be due to the presence of external observers who assisted in monitoring the programme activities. The participants were also made to feel comfortable and cared for throughout the programme. Also, there were no reports of adverse effect of the treatment on the behaviour of participants. Upon completion of the sessions, the participants in both groups were measured for the second time (post-test). Thereafter, participants were reminded to converge in the next three months. This was to continue with the follow-up exercise. The follow-up lasted for one month, followed by post treatment assessment. The data analysts and participants were blinded to enhance concealment and control possible selection bias of the participants during recruitment exercise and data analyses.

### 3.7. Data analysis

The data for this study was subjected to statistical analysis using SPSS version 18. Repeated measures analysis of variance (ANOVA) was used. Repeated ANOVA was used by the researchers because the dependent measures were continuous and determined at three different time interval. Partial Eta squared ( $\eta_p^2$ ) was used to report the effect size of the intervention on the dependent measure. The assumption of the sphericity of the test statistic was tested using the Mauchly test of sphericity which was not significant for SMGAD (Mauchly  $W=0.974, \chi^2=4.662, p=0.097$ ), and LSAS (Mauchly  $W=0.993, \chi^2=1.191, p=0.551$ ) see Table 1. These results indicated that the assumption was not violated for both SMGAD and LSAS data respectively. Thus, the variances or the differences between all combinations of the related measures are equal.

## 4. Results

In Table 2, Epsilon ( $\epsilon$ )=0.974 > 0.75, therefore Huynh-Feldt values were used in interpreting tests of within-subjects effects for the intervention groups. Thus, Table 3 shows that there was a significant effect of intervention on participants' social anxiety scores as measured by SMGAD,  $F(1, 176)=827.051, p < 0.05, \eta_p^2=.825$ . This result means that participants' social anxiety scores (SMGAD) in the intervention groups were significantly different at post-treatment and follow-up measures.

In Table 2, Epsilon ( $\epsilon$ )=0.993 > 0.75, therefore Huynh-Feldt values were used in interpreting tests of within-subjects effects for the intervention groups. Thus, Table 4 shows that there was a significant effect of intervention on participants' social anxiety scores as measured by LSAS,  $F(1, 176)=1414.150, p < 0.05, \eta_p^2=.889$ . This result means that participants' social anxiety scores (LSAS) in the intervention groups were significantly different at post-treatment and follow-up measures. Further analysis were conducted and presented in Tables 5, 6 and 7.

**Table 2**  
Mauchl test of Sphericity for SMGAD and LSAS.

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon <sup>a</sup>		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
SMGAD	.974	4.662	2	.097	.974	.991	.500
LSAS	.993	1.191	2	.551	.993	1.000	.500

LSAS=Liebowitz Social anxiety scale for children and adolescents, Self-Report, SMGAD=severity measure for generalized anxiety disorder.

**Table 3**  
**Tests of within-subjects effects for the intervention group for (SMGAD).**

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Sphericity Assumed	18633.330	2	9316.665	827.051	.000	.825
	Greenhouse-Geisser	18633.330	1.949	9561.559	827.051	.000	.825
	Huynh-Feldt	18633.330	1.981	9403.662	827.051	.000	.825
	Lower-bound	18633.330	1.000	18633.330	827.051	.000	.825
Time * Groups	Sphericity Assumed	372.753	2	186.376	16.545	.000	.086
	Greenhouse-Geisser	372.753	1.949	191.275	16.545	.000	.086
	Huynh-Feldt	372.753	1.981	188.117	16.545	.000	.086
	Lower-bound	372.753	1.000	372.753	16.545	.000	.086
Error (Time)	Sphericity Assumed	3965.251	352	11.265			
	Greenhouse-Geisser	3965.251	342.984	11.561			
	Huynh-Feldt	3965.251	348.744	11.370			
	Lower-bound	3965.251	176.000	22.530			

**Table 4**  
**Tests of within-subjects effects for the intervention group for (LSAS).**

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Sphericity Assumed	58602.858	2	29301.429	1414.150	.000	.889
	Greenhouse-Geisser	58602.858	1.987	29500.138	1414.150	.000	.889
	Huynh-Feldt	58602.858	2.000	29301.429	1414.150	.000	.889
	Lower-bound	58602.858	1.000	58602.858	1414.150	.000	.889
Time * Groups	Sphericity Assumed	623.644	2	311.822	15.049	.000	.079
	Greenhouse-Geisser	623.644	1.987	313.937	15.049	.000	.079
	Huynh-Feldt	623.644	2.000	311.822	15.049	.000	.079
	Lower-bound	623.644	1.000	623.644	15.049	.000	.079
Error (Time)	Sphericity Assumed	7293.498	352	20.720			
	Greenhouse-Geisser	7293.498	349.629	20.861			
	Huynh-Feldt	7293.498	352.000	20.720			
	Lower-bound	7293.498	176.000	41.440			

Table 5 reveals the study outcomes for the participants in the treatment group (cognitive behavioural play therapy) compared to the control group (CG) over the three periods. Before the treatment, the result in Table 5 shows that there was no significant difference among the treatments and control groups at initial time. Social anxiety of participants with stuttering deficit as measured by SMGAD,  $F(1, 176) = 0.520, p = 0.472, \eta_p^2 = 0.003$ .

At the post-treatment level (time 2), intervention had a significant effect on the social anxiety of participants with stuttering deficit as measured by SMGAD,  $F(1, 176) = 23.84, p = .001, \eta_p^2 = 0.120$ ; and after the post-treatment, a follow-up (time 3) result still shows that intervention had a significant effect on the social anxiety of participants with stuttering deficit as measured by SMGAD,  $F(1, 176) = 25.602, p = .001, \eta_p^2 = 0.128$ . The effect size

**Table 5**  
**Repeated analysis of variance for the Impact of cognitive behavioural play therapy on social anxiety among school children with stuttering deficit.**

Measures	Time	Group	Mean (SD)	F	P	$\eta_p^2$	$\Delta R^2$	95%CI
SMGAD	Time 1	CBPT	31.58 (2.95)	0.520	.472	0.003	0.039	30.95–31.78
		Control	31.21 (2.79)					
	Time 2	CBPT	20.74 (3.99)	23.837	.001	0.120	0.106	21.64–22.88
		Control	23.78 (4.31)					
	Time 3	CBPT	15.47 (3.40)	25.602	.001	0.128	0.115	16.46–17.75
		Control	18.75 (4.93)					
LSAS	Time 1	CBPT	56.85 (4.87)	0.351	.554	0.002	0.013	55.90–57.39
		Control	56.43 (5.13)					
	Time 2	CBPT	45.86 (4.28)	19.865	.001	0.102	0.118	46.62–47.99
		Control	58.84 (5.07)					
	Time 3	CBPT	28.89 (4.07)	60.417	.001	0.258	0.255	30.69–31.90
		Control	33.67 (4.09)					

$\eta_p^2$  = Partial Eta squared (effect size), LSAS = Liebowitz Social anxiety scale, Mean (SD) = Mean (Standard Deviation),  $p$  = probability value, SMGAD = Severity measure for generalized anxiety disorder.

of the independent variable at time 2 for the dependent measure (SMGAD) was 0.120. This value indicates that treatment variable accounted for low effect in decreasing social anxiety scores of participants with stuttering deficit.

Table 5 also shows that there was no significant difference among the treatments and control groups at initial (time 1). Social anxiety of participants with stuttering deficit as measured by LSAS before the treatment,  $F(1, 176) = 0.351$ ,  $p = 0.554$ ,  $\eta_p^2 = 0.002$ . At the post-treatment level (time 2), intervention had a significant effect on the social anxiety of participants with stuttering deficit as measured by LSAS,  $F(1, 176) = 19.86$ ,  $p = .001$ ,  $\eta_p^2 = 0.102$ ; and after the post-treatment, a follow-up (time 3) result still shows that intervention had a significant effect on the social anxiety of participants with stuttering deficit as measured by LSAS,  $F(1, 176) = 60.42$ ,  $p = .001$ ,  $\eta_p^2 = 0.258$ . The effect size of the independent variable at time 2 for the dependent measure (LSAS) was 0.102. This value indicates that treatment variable accounted for low effect in decreasing social anxiety scores of participants with stuttering deficit as measured by LSAS.

Table 6 shows the significant differences between the individual time points. It shows that there were significant differences in the social anxiety scores of participants with stuttering deficit as measured by SMGAD between post-treatment and pre-treatment ( $\bar{X}_{diff} = 9.129$ ,  $p = 0.000$ ), pre-treatment and follow-up ( $\bar{X}_{diff} = 14.287$ ,  $p = 0.000$ ) and between post-treatment and follow-up ( $\bar{X}_{diff} = 5.157$ ,  $p = 0.000$ ). This result equally indicates that the social anxiety scores of participants with stuttering deficit as measured by SMGAD decreased after the intervention programme with cognitive behavioural play therapy.

Table 7 shows the significant differences between the individual time points. It shows that there were significant differences in the social anxiety scores of participants with stuttering deficit as measured by LSAS between post-treatment and pre-treatment ( $\bar{X}_{diff} = 9.287$ ,  $p = 0.000$ ), pre-treatment and follow-up ( $\bar{X}_{diff} = 25.360$ ,  $p = 0.000$ ) and between post-treatment and follow-up ( $\bar{X}_{diff} = 16.073$ ,  $p = 0.000$ ). This result equally indicates that the social anxiety scores of participants with stuttering deficit as measured by LSAS decreased after the intervention programme with cognitive behavioural play therapy. The mean difference in the reduction of social anxiety is prominent at all levels of comparison.

## 5. Discussion

The focus of the current study was to test the impact of cognitive behavioural play therapy on social anxiety among schoolchildren with stuttering deficiency. It was found that cognitive behavioural play therapy significantly decreased the high level of social

**Table 7**

**Post hoc test for the significant effect of time based on observed means difference using Bonferroni's pairwise comparisons.**

(I) Time	(J) Time	Mean Difference (I-J)	Std. Error	Sig.
Time 1	Time 2	9.287*	.480	.000
	Time 3	25.360*	.500	.000
Time 2	Time 1	-9.287*	.480	.000
	Time 3	16.073*	.466	.000
Time 3	Time 1	-25.360*	.500	.000
	Time 2	-16.073*	.466	.000

\*The mean difference is significant at the .05 level.

anxiety among individuals who stutter. Also, the result of the intervention equally showed the considerable impacts among the children when exposed to cognitive behavioural play programme at different times of assessment compared to waitlisted group. The result of the current study is in consistency with the findings from previous studies which suggested that play-based cognitive therapy is significantly beneficial in improving cognitive and behavioral efficiency and functioning of students. The result of this study is consistent also with a previous study<sup>[74]</sup> that indicated the promising effect of play therapy in decreasing the psychological symptoms of anxiety among individual with myriad disability. Hence, the therapeutic relevance of play therapy in children with ADHD symptoms is well recognized. The significance effect of play therapy among children as shown in<sup>[74]</sup> is an indication that the participants of the play therapy group statistically vary compared to the control groups. This indicates that play therapy is very much effective. Also, the present study validates the efficacy of play therapy as a psycho-based approach in reducing the symptoms of ADHD. A previous study has shown that play therapy led some children to spend their energy during activity sessions, thereby leading to reduction in the level of hyperactivity symptom.<sup>[74]</sup>

In the same vein, the current study corroborates previous studies by highlighting the effectiveness of cognitive behavioural play therapy in cushioning social anxiety among school children with stuttering deficiency.<sup>[80,81]</sup> The outcome of the study conducted by Ezegbe, et al<sup>[50]</sup> indicated that rational emotive digital storytelling strategy is a strong therapeutic approach which uses social platform and building adaptive social skills. That is to say, cognitive therapy changes dysfunctionality, low self-tolerance, and poor perceptions. It is possible therefore, that the existence of dysfunctionality and low self-tolerance are the cognitive and emotional factors that lead stutterers to perceive themselves as incompetent. The CBPT-programme is an action-based therapy.<sup>[84]</sup> Validating the above statement, Pearson<sup>[85]</sup> has noted that CBPT is highly promising and powerful in decreasing social skills deficiency and promoting social adjustment and hope among schoolchildren. From all indication, if an individual holds unhealthy belief concerning the future, the reality may likely be difficult to achieve, hence, negative psychological thought is observed, and social anxiety is experienced.<sup>[55]</sup> In this case, active based cognitive therapy, like this study has shown, is deemed necessary and required. Evidence from previous studies has shown the effectiveness of play therapy in decreasing anger among children.<sup>[86]</sup>

Like the findings of this current study, psychotherapy is a behavioural-driven programme aimed to decrease speech anxiety among school children who are stutters.<sup>[64]</sup> Similarly, cognitive behavioural therapy has shown to be very efficacious in

**Table 6**

**Post hoc test for the significant effect of time based on observed means difference using Bonferroni's pairwise comparisons.**

(I) Time	(J) Time	Mean Difference (I-J)	Std. Error	Sig.
Time 1	Time 2	9.129*	.348	.000
	Time 3	14.287*	.383	.000
Time 2	Time 1	-9.129*	.348	.000
	Time 3	5.157*	.335	.000
Time 3	Time 1	-14.287*	.383	.000
	Time 2	-5.157*	.335	.000

\*The mean difference is significant at the .05 level.



decreasing the severity of stuttering and psychosomatic problems among children.<sup>[11]</sup> Thus, the overall goal of CBT is to help participants to decrease symptoms, minimize psychological disorder and improve functioning through teaching new information-processing skills and coping mechanisms to individuals with mental health problem caused by irrational or erroneous beliefs.<sup>[87,88]</sup>

CBT is evidence-based psycho intervention found to be effective and promising in increasing the social and emotional wellness of children.<sup>[59]</sup> Studies have further noted the efficacy of cognitive behavioural approach as an active psychological construct in decreasing irrational belief capable of leading individual to unwholesome behavior.<sup>[89,90]</sup> Previous research has shown that psychological interventions on a significant number of mental health conditions associated with anxiety is effective.<sup>[91,92]</sup> Evidence of mental health related development can be apparent in line with findings of the current study using CBPT on samples of adults with anxiety and other mental disorders. A clear example could be seen in the agreement between previous studies and the findings of the current study which justifies the worth of CBPT as the utmost technique for the treatment of children with diverse psychological and emotional disorder like traumatic disorder.<sup>[93,94]</sup> Consequently, the outcome of the study by Ezegebe et al<sup>[50]</sup> on randomized controlled evaluation of the effectiveness of music therapy on social anxiety symptoms validates the significant decrease in social anxiety disorder for the participants in intervention group at follow-up assessment after 3 months.

### 5.1. Implications

School children with stuttering deficit have been experiencing difficulties in their social relationships, especially with their peers, such as withdrawal, low self-esteem and bullying. This has not only subjected them to psychological trauma but also led them to experience social dilemma like social anxiety disorder. Thus, cognitive behavioural play therapy as an action-based psychological intervention was implemented by the researchers for the purpose of changing an erroneous and irrational belief affecting the social well-being of school children with stuttering deficiency. The result of the current study has validated the hypothesis on the impact of cognitive behavioural play therapy on social anxiety among schoolchildren with stuttering deficiency. In essence, to decrease social anxiety disorder among schoolchildren, CBPT could be needful for practitioners like school counselors, psychotherapists, special education trained teachers and language therapists. Therapists should be experts in the application of play therapy and cognitive behavioural therapy and must have practiced for a good number of years. In essence, with the alliance of the aforementioned teams, they could serve as referrals and consultants in addressing the fundamental issues related to negative beliefs and erroneous behaviours like depression, withdrawal, low self-esteem, social anxiety as well as other mental related problems affecting students' well-being.

The study recommends action-based intervention as the most valuable instrument in cushioning social anxiety disorder among schoolchildren with stuttering deficiency. In view of this, it is suggested that future researchers on CBT could further re-examine the consequences of social anxiety disorder among illiterate adults in a sample study area. On the contrary, if information concerning the population with social anxiety disorder is not professionally handled, the aftermath could be regrettable.<sup>[96,48]</sup>

### 5.2. Strengths of the study

The current study recorded some significant impacts such as 1) fair randomization of the participants into treatment and waitlist control groups, 2) proper recruitment of external observers who formed part of the research team, 3) executions of integrity checklist content, 4) parents and teachers' role during time 1 assessment also added value and strength to the study. Given the difficulty in assessing the psychological misrepresentation of stuttering children with social anxiety disorder when compared to adults, therefore, the assistance of parents and teachers were employed. Equally, since the participants could not differentiate logical and illogical thoughts, non-verbal communication techniques were majorly adopted. In view of this, the primary aim of the study which is assessing the impact of cognitive behavioural play therapy on social anxiety among school children with stuttering deficit were accomplished.

### 5.3. Limitations of the study

Though the current study validated the efficacy of CBPT among populations with social anxiety disorder, some limitations were recorded. First, the study excluded participants with insufficient knowledge of English language skills. Second, the number of men that participated in the study seems insignificant. Third, we acknowledge the non-inclusion of other children with speech deficiencies and who were affected by social anxiety disorder outside special schools. Hence, we recommend that future researchers should use population in an inclusive educational setting. Fourthly, the use of quantitative measures for evaluation, neglecting qualitative assessments, is another major limitation. In view of this, it is suggested that other measures like observation, interviews and focus group discussions be used to provide qualitative data that would help to strengthen the quantitative measures.

## 6. Conclusion

The results of the present study indicated that CBPT is highly promising in decreasing social anxiety disorder among schoolchildren with stuttering deficiency. CBPT is a non-clinical therapy found to be promising among the population with social anxiety deficiency. Following the objective of the study, the impact and significance of CBPT among the school children with social anxiety deficit were achieved at different time intervals.

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