


Cognitive behaviour language therapy for speech anxiety among stuttering school adolescents

Journal of International Medical Research
2019, Vol. 47(7) 3109–3114
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DOI: 10.1177/0300060519853387
journals.sagepub.com/home/imr



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Abstract

Objective: To determine the effectiveness of a cognitive behaviour language therapy (CBLT) programme to reduce speech anxiety among stuttering school adolescents.

Methods: This was a group randomized clinical trial that enrolled stuttering school adolescents who had severe speech anxiety. The participants were randomized to either the treatment group or the control group. The Speech Anxiety Thoughts Inventory (SATI) score was recorded before and after a 12-week CBLT programme was delivered in 24 group sessions to the treatment group. The control group did not receive any therapy.

Results: A total of 92 stuttering school adolescents who met the inclusion criteria were randomized to the treatment group ($n = 46$; 22 males, 24 females; mean \pm SD age, 16.36 ± 2.20 years) or the control group ($n = 46$; 28 males, 18 females; mean \pm SD age, 15.45 ± 2.10 years). Results showed that the CBLT intervention significantly reduced speech anxiety among stuttering school adolescents compared with the control group (post-test SATI assessment, mean \pm SD 26.52 ± 1.67 versus 89.92 ± 3.17 , respectively).

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Conclusion: These findings suggest that speech educators and therapists in educational institutions and hospitals should follow the principles of CBLT when treating speech anxiety.

Keywords

Cognitive behaviour language therapy, speech anxiety, stuttering school adolescents

Date received: 22 January 2019; accepted: 7 May 2019

Introduction

Speech anxiety may be a consequence of severe stuttering because many adolescents who stutter find it difficult to communicate fluently in a public situation. There is evidence of a significant positive relationship between stuttering severity and communication anxiety.¹ Speech anxiety has been found to be significantly related to communication difficulty in daily situations among adolescents who stutter.² A randomized study found that individuals who stutter had a higher anxiety score.³ Another study observed that adolescents who stutter have a higher state of anxiety.⁴ Thus, there is a significant relationship between anxiety and stuttering.⁵⁻⁸ Previous research demonstrated that a clinical population of people who stutter has anxiety that is limited to the social sphere.⁹ Therefore, it is appropriate to help stuttering adolescents reduce their speech anxiety level in order to enable them function maximally.

Evidence shows that cognitive factors play a central role in the development and maintenance of speech anxiety.¹⁰ This could be because speech anxiety is found to be related to a perceived negative evaluation from others, negative self-evaluation and biased information processing.¹¹ To date, interventions targeting maladaptive cognitions related to social evaluative concerns have demonstrated clinical efficacy in several well-controlled clinical trials.^{12,13} Other previous studies showed that a change in the maladaptive cognitions may mediate

symptom reduction in speech anxiety.^{14,15} However, the current study focused on examining the efficacy of a cognitive behaviour language therapy (CBLT) for speech anxiety among stuttering school adolescents.

The CBLT, devised by the authors, was based on the principles of cognitive behaviour therapy (CBT).¹⁶⁻¹⁸ The difference between CBT and CBLT is that the latter focused on the treatment of language-speech related problems while the former is widely used for many psychological issues. However, CBLT is seen as an extension of CBT as CBT techniques are being combined with language techniques to solve language problems. The use of CBLT with adolescents who stutter was motivated by the fact that a behavioural speech programme showed the strongest evidence of success amongst stuttering treatments.¹⁹ Generally, CBT decreases the negative thinking that leads to anxiety.^{19,20} Therefore, adolescents who stutter should find it easy to adjust their anxiety level using a CBLT programme. However, there is controversy about whether CBT or CBLT (as in the current study) can effectively decrease anxiety and social avoidance, and increase engagement in everyday speaking situations.¹⁹ To this end, the objective of the current study was to determine the effectiveness of CBLT for the reduction in speech anxiety among stuttering school adolescents. The hypothesis that CBLT is effective at reducing speech

anxiety among stuttering school adolescents was tested at the 0.05 level of significance.

Patients and methods

Study participants

This group randomized trial was undertaken by the authors between October 2018 and January 2019. Two months prior to the commencement of the study, the authors advertised the CBLT intervention programme for speech anxiety in various secondary schools in Akwa Ibom State, Nigeria using flyers and announcements at the school assemblies. As the advertising campaign was going on, interested adolescents were given the opportunity to register and sign informed consent forms to participate in the study. Examples of previous studies were used as a guide to the required sample size.^{3,21,22} However, a GPower analysis demonstrated that 92 participants were needed when the effect size was 0.44, with an alpha of 0.05 and 0.80 power. In line with a previous study,²³ the participants met the following inclusion criteria: (i) adolescents (age range, 15–20 years); (ii) regarded by their parents as exhibiting a stuttering problem; (iii) regarded by two certified speech pathologists as exhibiting a stuttering problem; (iv) exhibiting at least three part- and single-syllable word repetitions and blocks/sound prolongations per 100 syllables; (v) no history of neurological disorders or abnormalities; (vi) having severe anxiety.

The study was registered with the UMIN Clinical Trials Registry (no. R000040359) in order to comply with ethical considerations for a clinical trial and it also conformed to the standards set by the Human Research and Ethics Committee of the Faculty of Education, University of Nigeria, Nsukka. The study also adhered to the research ethics outlined in the Declaration of Helsinki. All study

participants or their parents/legal guardians provided written informed consent.

Study procedures

The study participants were randomly assigned to one of two groups, the treatment group or the control group, using computer-generated random number allocation software at study entry.²⁴ Selection and expectation biases were avoided by ensuring that the research aides, therapists and data analysts were not exposed to the group assignment process. The therapists who delivered the CBLT had formal training as language pathologists, counsellors and psychologists, with expertise in the application of CBT. The participants in the two groups were subjected to a pre-intervention assessment, a post-intervention assessment and a follow-up-assessment. The participants in the treatment group were exposed to a 12-week CBLT programme for speech anxiety, while the adolescents in the control group were not given any therapy during the study period. The data collected during the three assessments were subjected to statistical analysis by experts who were blinded in the assessments and the therapy procedure, in line with a previous study.²⁵

Measure of speech anxiety

A modified version of the Speech Anxiety Thoughts Inventory (SATI) was used for the pre-intervention, post-intervention and follow-up-assessments. The SATI used in the study had 23 items developed from the original SATI.²⁶ The internal consistency of SATI in the previous study was 0.89,²⁶ while in the current study, the SATI had an internal consistency of 0.84 using Cronbach Alpha.

CBLT intervention for speech anxiety

The CBLT intervention for speech anxiety consisted of 24 group sessions (each session

lasting 2 h) undertaken over 12 weeks. There was a 3-week long follow-up period that occurred 2 months after the end of the 12-week intervention period. The participants in the intervention group were helped to identify and correct the maladaptive thoughts that generate speech anxiety. Following the methods used in a previous study,²¹ CBLT involved activities such as recognition of speech-related anxious feelings and somatic reactions to anxiety, simplified cognitive restructuring exercises, coping self-talk, exposure to feared stimuli and relapse prevention. The specific techniques used by the therapists included exposure, behavioural experiments and cognitive restructuring. Details of how the techniques were used have been presented previously.^{19,27} Details of the specific treatment procedure that was adapted in the current study have been reported previously.^{21,27,28}

Statistical analyses

All statistical analyses were performed using the SPSS[®] statistical package, version 22.0 (SPSS Inc., Chicago, IL, USA) for Windows[®]. Repeated measures analysis of variance was used to analyse data collected in the study. Details of the methods of data analysis are the same as in previous studies.^{22,29} A P -value ≤ 0.05 was considered statistically significant.

Results

This randomized study recruited 469 adolescents that had registered and signed informed consent forms. Of these 469 adolescents, 92 who met the study's inclusion criteria were selected and were randomized to the treatment group ($n = 46$; 22 males, 24 females; mean \pm SD age, 16.36 ± 2.20 years) or the control group ($n = 46$; 28 males, 18 females; mean \pm SD age, 15.45 ± 2.10 years). A total of 333 adolescents who did not meet the inclusion criteria and

44 adolescents who declined to participate in the study (as a result of undisclosed personal reasons) were excluded from the study.

The results showed that there was no significant difference in the pre-test assessment of speech anxiety between the treatment (mean \pm SD, 79.56 ± 2.90) and control (mean \pm SD, 80.67 ± 4.71) groups (F [1,91] = 0.250; $P = 0.618$; $\eta_p^2 = 0.003$; $R^2 = -0.008$). At the post-test assessment, there was a significant reduction in speech anxiety among stuttering school adolescents in the treatment group (mean \pm SD, 26.52 ± 1.67) when compared with the participants in the control group (mean \pm SD, 89.92 ± 3.17) ($P < 0.001$; F [1,91] = 484.41; $\eta_p^2 = 0.843$; $R^2 = 0.842$). At the follow-up assessment, there was still a significant reduction in speech anxiety among stuttering school adolescents in the treatment group (mean \pm SD, 25.60 ± 2.17) when compared with the participants in the control group (mean \pm SD, 81.34 ± 3.87) ($P < 0.001$; F [1,91] = 401.55; $\eta_p^2 = 0.819$; $R^2 = 0.815$).

Discussion

The results of the current study support the previous evidence that many stuttering adolescents are suffering from speech anxiety.^{3,4} Following the 12-week CBLT intervention, there was a significant reduction in speech anxiety in the treatment group compared with the untreated control group, which implies that the CBLT intervention was effective in reducing speech anxiety among stuttering adolescents. This finding supports previous research that showed cognitive factors play a central role in the development and maintenance of speech anxiety,²⁶ and that speech anxiety was related to a perceived negative evaluation.¹¹ These current findings also support previous well-controlled clinical trials that have shown that interventions that target

maladaptive cognitions related to social evaluative concerns have demonstrated clinical efficacy.^{26,30} The findings of the current study imply that language educators, medical professionals, psychologists and speech counsellors should adopt the principles of CBLT in their professional practices to help stuttering adolescents reduce their speech anxiety.

This current study had a number of limitations, including the small sample size, lack of a qualitative measure, lack of tables/figures for presentation of findings, use of one self-reported measure and lack of mediation analysis. Future research that addresses these limitations is required in order to improve the effectiveness of a CBLT intervention on speech anxiety reduction. Replication and additional studies are needed to further ascertain the effect of CBLT on speech anxiety.

In conclusion, this current study demonstrated that CBLT is effective for speech anxiety reduction among stuttering school adolescents. However, much emphasis was placed on the cognitive features of speech anxiety. Future research should endeavour to cover other features of speech anxiety so as to obtain more robust results. Speech educators and therapists in educational institutions and hospitals should follow the principles of CBLT in treating speech anxiety.


Declaration of conflicting interest

The authors declare that there are no conflicts of interest.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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