

Critical Review:
Effectiveness of cognitive approaches in improving outcomes for individuals who stutter.

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The current paper is a critical review of four studies that outline the effects of cognitive approaches on persons who stutter (PWS). These approaches include desensitization and elements of cognitive-behaviour therapy including, but not restricted to, cognitive restructuring. Study designs include: between groups, case study, expert opinion and randomized clinical trial. The evidence suggests there is no significant effect on percentage of syllables stuttered (%SS) but that the effect lies in changing the person as a whole. These effects include reduced negative self-appraisals and reduced negative thoughts and fears resulting in the PWS becoming more actively involved in their everyday life. The current research results for this outcome is compelling, although further research is required in this area.

Introduction

Stuttering, as defined by Van Riper (1971) “occurs when the forward flow of speech is interrupted abnormally by repetitions or prolongations of a sound, syllable, or articulatory posture, or by avoidance or struggle reactions.” There are thought to be three main components of stuttering; core behaviours, secondary behaviours and feelings and attitudes (Guitar, 2006). Core behaviours include the above mentioned abnormal interruptions in speech whereas secondary behaviours refer to the strategies PWS have independently developed to avoid or escape an anticipated stutter. The focus of this paper is on the third component of stuttering, feelings and attitudes. These may become pervasive beliefs that PWS feel about themselves which may affect their quality of life. For example, “If I stutter in front of them, they will think I am stupid” (Guitar, 2006).

Although the standard of treatment that has been used over the years for stuttering has involved a cognitive aspect, this component has only been a small one completed alongside primarily speech restructuring dominated procedures. Only recently have the realms of speech pathology and psychology crossed over to encompass and treat these negative feelings and attitudes. Research in this area is of importance because numerous studies including Blood, Blood, Bennett, Simpson and Susman, (1994), Craig (1990), Kraaimaat, Vanryckeghem and Van Dam-Baggen (2002), Menzies, Onslow, Packman and Menzies (2004) and Stein, Baird and Walker (1996) have shown evidence of a significant relationship between stuttering and anxiety. Menzies, Onslow, Packman and O’Brian (in press) found that 50% of adults who stutter (AWS) have social anxiety in a range similar

to that of those diagnosed as “highly socially anxious”. Due to the hypothesized reciprocal relationship between stuttering and anxiety (each may make the other worse) it is vital to explore the effects of cognitive behavioural approaches when used in a more central way in therapy.

Objectives

The primary objective of this review is to provide a critical evaluation of the existing research regarding the outcomes that result from cognitive approaches for people who stutter. The secondary objective is to provide clinicians with evidence-based information to help guide their future clinical decisions related to stuttering intervention practices.

Methods

Search Strategy

Articles related to the topic of interest were found by searching internet databases including PubMed, SCOPUS and Google Scholar. Keywords used for the databases were as follows: ((stuttering) OR (fluency)) AND ((treatment) OR (cognitive)) AND ((anxiety) OR (stress)).

The reference lists were also reviewed for other related articles. The only limitation placed on the searches was that the resulting articles be written in English.

Selection Criteria

The studies that were included in this critical analysis were required to investigate the outcomes associated with a cognitive approach to stuttering. No

limitations were placed on the demographics of research participants, research design or outcome measures.

Data Collection

Literature search results yielded four articles congruent with the aforementioned selection criteria. These articles include an expert opinion, a randomized control trial, a case study and a between groups design.

Results

Between Groups Design

Boudreau and Jeffrey (1973) studied 12 men aged 16-22 years of age to determine the efficacy of systematic desensitization in treating stuttering. Four of the participants were randomly assigned to the control group. The remaining 8 participant's treatment period consisted of 12 sessions spanning 2-3 months and addressed relaxation techniques as well as systematic desensitization. Pre- and post-treatment assessments of percent words stuttered (%WS) consisted of reading and spontaneous speech both alone and in the company of one person.

Individualized results revealed 5 of the 8 participants in the experimental group having marked improvements in %WS while those in the control were unchanged. An appropriate analysis of variance (ANOVA, group X time) revealed that the treatment group had a significant reduction of %WS following treatment whereas the control group was unchanged.

Although this study demonstrated changes in stuttering, the study did have some weaknesses. No information was provided regarding participant selection or participant demographics. These are seen to be problematic as they preclude replication and possibly its ability to be generalized. A strength of the study was that the methods were described in detail and the outcome measure was clinically valid. Overall, this study provides preliminary suggestive evidence that systematic desensitization can lead to improved fluency.

Expert Opinion

Menzies, Onslow, Packman and O'Brian (in press) used a comprehensive overview of previous research from the past 3 decades to examine the relationship that anxiety has with stuttering and its management. The general findings of this overview were that 50% of AWS have social discomfort scores that place them in a similar range to psychiatric patients that are "highly socially anxious".

Also, cognitive behaviour therapy (CBT) was found to have positive effects on stuttering but the majority of the articles were unable to distinguish if the CBT was the actual source of the change or if it was working in conjunction with another approach completed.

Although generally expert opinion may yield subjective results and this is a preliminary report needing more research, this report is considered to be a comprehensive review as it spans 30 years of research. The authors also provide objective critical analysis of each study clearly outlining strengths and limitations. The authors of this study are also recognized professionals in the field of fluency therefore providing more support as to why this study is considered to provide highly suggestive evidence.

Randomized Clinical Trial

Menzies, O'Brian, Onslow, Packman, St. Clare and Block (2008) conducted research aiming to find: if speech restructuring effects speech related social anxiety, what the effects of a CBT package would have on stuttering and if CBT alone or along with speech restructuring reduces stuttering severity in those with social phobia. Thirty-two participants over the age of 16 from wide socioeconomic backgrounds who had a %SS of 2% or greater were recruited and randomly divided into equal groups, one who received CBT followed by speech restructuring (experimental) and the control group who received speech restructuring only. Two participants did not reach the second assessment. Eighteen of the 30 participants had a diagnosis of social phobia.

Outcomes were measured for both groups at four different times and involved a psychological evaluation, a battery of 6 self-report psychological measures and a clinical assessment of social anxiety.

Data were analyzed with appropriate statistics including t-tests and an analysis of covariance (ANCOVA) controlling for baseline performance for continuous data, and chi-square and Fisher's exact test for categorical data. The primary analysis of the data found that speech restructuring has no effect on speech related anxiety and the CBT package provides no more benefit to %SS than speech restructuring. Also, none of the experimental group members retained their social phobia diagnosis whereas

the control group maintained their levels social phobia.

A pitfall of this study was the deteriorating number of participants at each assessment point with no intention to treat data reported. Strengths of this study include the detail provided on inclusion and exclusion criteria for participants, the overall design including the descriptions of treatments and outcome measures and lastly, the authors' ability to recognize downfalls of their data and suggest areas of further research. Overall, these results provide compelling evidence to support the use of CBT to effect change in the person as a whole.

Case Study

Murphy, Yaruss and Quesal (2007) evaluated the effects of desensitization and cognitive restructuring on reducing negative affect in school-aged children who stutter. A 9 year old boy who had stuttered since he was 3 participated in this study. For this reason, the results ability to be generalized to the population of stutterers is considered to be reduced. His pre-treatment evaluation of stuttering and negative attitudes involved observation, interviews, and formal and informal testing. Results revealed a moderate-severe stuttering problem in addition to numerous avoidance behaviours and strongly negative communication attitudes. Desensitization, cognitive restructuring and purposeful disclosure were the techniques chosen for therapy.

After 9 months of weekly therapy, the student was re-evaluated using the same tools used in his pre-treatment evaluation. This is fitting as it allows for change to be seen through different mediums and direct comparisons can be made to previous data. Following treatment the student was found to no longer use avoidance behaviours, have a stuttering severity within normal limits and have communication attitudes within a range of persons who do not stutter. At a year follow up, the student reported that he was still confident with his speech and was able to successfully manage his stuttering. The techniques used to reduce negative reactions to stuttering were described in great detail allowing further research to be completed to support the efficacy of cognitive approaches. In summary, the results provide suggestive evidence and supply a foundation for further evidence-based research.

Discussion

At present, the body of research on this topic is limited as, typically, the main goal of stuttering treatment is to enhance fluency. For this reason, social anxiety has rarely been considered the main issue. The relationship between stuttering and stress has been highly researched and a link has been found, but it is still unknown whether stuttering increases stress or stress increases stuttering. Since the positive effects of speech restructuring techniques are highly supported, it is difficult for clinicians to make anxiety the primary focus of treatment when its relationship to stuttering is still unknown.

Although limited, the results of the studies examined provide emerging suggestive evidence to support the use of more cognitive based approaches to fluency. The results are inconclusive in regards to CBT changing %SS, but Menzies et al. (in press) and Murphy et al. (2007) provide compelling evidence illustrating CBT's ability to change the person as a whole. Individuals who participated in CBT were found to engage more in everyday life, use less avoidance techniques and have less fear and anxiety about speaking situations. These can have a large impact on an individual's quality of life, an aspect that is considered by some to be just as important as reducing %SS. Also, a study done by Iverach, Jones, O'Brian, Block, Lincoln, Harrison, Hewat, Cream, Menzies, Packman and Onslow (2009) suggests that clients with treated or no mental health disorders maintain benefits of speech restructuring for a longer period of time. This is important information as the risk of relapse in fluency is great.

It must be acknowledged that research addressing treatment effectiveness is challenging. In order to objectively evaluate the effects of treatment, some participants either do not receive treatment or do not receive their usual treatment. In the case of stuttering, where speech restructuring is highly effective, asking participants to 'opt out' of this treatment to participate in a CBT program raises ethical concerns. One innovative example of a design that unites both a randomized trial with standard treatment for all is Menzies et al. (2008) study in the present review. Their study design provided speech restructuring therapy following a CBT program with an assessment completed after each type of intervention. This design allows for the benefits of CBT to be examined while still being ethically responsible and providing the participants with a widely supported fluency

therapy. This design will hopefully provide an outline for future research to be completed in this area.

Clinical Implications

- The research from the above studies presents emerging suggestive evidence to support the further integration of cognitive aspects into traditional speech restructuring therapy methods.
- Though the evidence is not strong enough to suggest that CBT be a sole treatment approach for stuttering, clinicians with appropriate training should feel confident in incorporating CBT elements into therapy.
- Evidence suggests the use of cognitive approaches to ameliorate mental health disorders, such as anxiety, help to extend the maintenance period for PWS.

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