Critical Review: Is Group Therapy an Effective Intervention Method for Improving Fluency in School-Aged Children and Adolescents who Stutter?

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This critical review examined the evidence concerning the effectiveness of group therapy for improving fluency in school-aged children and adolescents who stutter. One repeated measures single-subject experimental design, two qualitative studies, one case study, and two expert opinion papers were included in this review. Overall, the collected evidence suggests that group fluency therapy is an effective intervention method for school-aged children and adolescents who stutter, as improvements in stuttering severity were seen in both quantitative and qualitative measures between pre- and post-intervention. As several of the studies only provided suggestive or equivocal evidence, recommendations for clinical practice and future research are provided.

Introduction

Disorders of fluency are recognized as one of the conditions that fall under the broad range of communication disorders (McKinnon, McLeod, & Reilly, 2007). Due to the fact that verbal communication is an essential component of everyday life (O'Brian, Jones, Packman, Menzies, & Onslow, 2011), stuttering has a significant impact on an individual's day-to-day function. In a recent study, McKinnon et al. (2007) reported stuttering prevalence rates at 1.4-1.44 percent for children and 0.53 percent for adolescents, as well as incidence rates at 3.4 percent for children, representing a significant portion of the child and adolescent population.

Complete spontaneous recovery of stuttering is less likely if stuttering has persisted for more than one year, or if the individual is over six years of age (Laiho & Klippi, 2007). Many individuals begin stuttering between approximately two and four years of age, so school-aged children and adolescents have already stuttered for several years, thereby reducing the likelihood of spontaneous recovery. This is of particular concern because stuttering has been found to have a negative impact on an individual's social, academic, and vocational achievement (O'Brian et al., 2011; Yaruss, 2010). Intervention has been found to reduce the adverse effects of stuttering (Ramig & Bennett, 1995), therefore providing fluency therapy for school-aged children and adolescents is crucial.

Fluency disorders are multi-dimensional, commonly including a sense of isolation, and negative thoughts and feelings (Liddle, James, & Hardman, 2011). Group therapy has certain qualities that can help address these aspects of the disorder. In particular, group therapy provides an opportunity for peer support which has been found to reduce victimization and anxiety around bullying, increase self-confidence, and reduce feelings of isolation, the latter of which has been found to help address negative thoughts and feelings (Hearne, Packman, Onslow, & Quine, 2008; Liddle et al., 2011; Murphy, Yaruss, & Quesal, 2007). In addition, Williams and Dugan (2002) suggest that a child in a group setting is motivated by his/her peers' success, and becomes empowered by the peer support.

While fluency disorders are multi-dimensional, Ramig and Bennett (1995) also stress the fact that stuttering is very individualized, in terms of severity, as well as individual feelings and attitudes. This raises the question of whether all needs can be met in group therapy, as well as the need to consider a range of outcomes in group therapy. It is important to consider the available evidence pertaining to group therapy outcomes.

Objectives

The primary objective of this paper is to critically evaluate existing literature regarding the effectiveness of fluency intervention in a group setting for school-aged children and adolescents who stutter. The secondary objective is to provide recommendations for both speech-language pathologists (SLPs) in terms of the use of group fluency therapy, and future research.

Methods

Search Strategy

The following computerized databases were used to find articles related to the topic of interest: PubMed, CINAHL, and Google Scholar. Keywords for the databases included:

[(stuttering) OR (fluency disorders) AND (group therapy) OR (group treatment) OR (group intervention) OR (individual intervention) AND (children) OR (adolescents)]

The reference lists of the relevant articles were manually searched for additional related studies.

Selection Criteria

The studies selected for inclusion in this critical review were required to investigate the effectiveness of group therapy for school-aged children and/or adolescents who stutter. Only the studies meeting this criteria were included in this review; however, no limitations were set on the geographical location of participants, participant gender, type of fluency intervention provided, study design, or outcome measures. It is important to note that research studies directly comparing group to individual fluency therapy were not found during the search of these databases.

Data Collection

The literature search resulted in six articles that aligned with the above selection criteria. These articles consisted of one repeated measures single-subject experimental design, two qualitative studies, one case study, and two expert opinion papers.

The levels of evidence scale, adapted from the Oxford Centre for Evidence-based Medicine (OCEBM, 2009), was used to rate the level of evidence in each study.

Results

Study # 1: Repeated Measures Single-Subject Experimental Design

Fry, Botterill, and Pring (2009) examined the treatment effects of an intensive group therapy program for adolescents who stutter using a repeated measures single-subject experimental design. This study design is often used to examine the therapeutic effects of fluency therapy and other communication disorders (Fry et al., 2009). One main limitation to single-subject designs is that generalizations to the population as a whole cannot be made. However, Fry et al. (2009) justified their design choice by stating that stuttering is highly individualized, so often group findings cannot be applied to each individual who stutters. Therefore, in this area of study, single-subject designs have high internal validity as they provide detailed insight into an individual's treatment response, capturing individual variability and allowing for flexibility in the treatment process.

Fry et al. (2009) recruited participants between the ages of 16 and 19 years old who had been identified as a person who stutters by two separate SLPs, received a 'mild' score on the Stuttering Severity Instrument-3 (SSI-3), and based on these criteria had been recommended for intensive group intervention at the Michael Palin Centre in London, England. Only two of the eight individuals invited to participate did so, and this study reported on the first individual.

The group therapy program consisted of ten clients, and was facilitated by two SLPs from the Michael Palin Centre and four SLP students. The study design involved four phases. Phase A was a five week baseline period, during which therapy was not provided. Phase B was a two week intensive therapy block, which consisted of five hours of therapy per day. Therapy tasks included: group discussions, reflections on personal stuttering behaviours, use of visual feedback to practice describing stuttering moments, stuttering modification to reduce tension, voluntary stuttering, and fluency shaping tools such as rate reduction, light contacts and continuous speech. Phase C was a five week consolidation phase, during which therapy was self-managed. Phase D was a ten month maintenance phase, which included four follow-up days of therapy at one, three, six and ten months from the completion of Phase C. Follow-up days were primarily client-led, and generally involved reviewing fluency skills, practicing presentations, and making telephone calls.

Data regarding the percent syllables stuttered (%SS), and the average duration of stuttered syllables was collected through the analysis and transcription of 35 five-minute video recordings recorded in the client's home setting throughout all four phases. Three self-report measures commonly used in the field were administered to measure confidence in various speaking situations, perceived overt and covert stuttering behaviours, and the degree to which an individual sees him/herself as an active agent in stuttering management. These measures were completed at the start of Phase A, at the beginning and end of Phase B, the last day of Phase C, and at months three, six and ten of Phase D.

Statistical analysis of the %SS, and the mean duration of stuttered syllables was performed using a suitable simplified time-series analysis for individual subject data. The researchers justified the use of the simplified analysis as due to the unequal spacing

between data points and the fact that the phases were different lengths. The *C* statistic was used appropriately to compare the baseline phase to the subsequent phases, allowing interpretation of the treatment effect. Overall, results of the study indicated a statistically significant trend of reduced severity, in terms of both %SS and mean duration of stuttered syllables across the phases; this pattern of results indicated that the positive response was associated with the intensive group therapy. Improvements were also seen in the self-report measures, in terms of perceived positive changes in self-efficacy for fluent speech, and overall reduced stuttering severity.

Overall, this repeated measures single-subject experimental design was performed well. In particular, the video samples were evaluated by an experienced SLP who was not involved in the treatment program. Additionally, the video samples were coded and randomized so that the evaluator did not know when each recording was made. Furthermore, in order to ensure inter-rater reliability, three video transcriptions in each phase were randomly selected for a blind analysis by a second rater, with a mean inter-rater reliability reported at 98.6. The researchers also acknowledged the limitations of single-subject designs and justified their use of this design as discussed above.

The results gained from this study can be interpreted with considerable confidence, due to the strong study design and data analysis outlined above. Overall, this level 1 evidence, together with the study's compelling validity, provides strong support for the use of group therapy in clinical practice.

Study #2: Mixed Quantitative and Qualitative Survey Research

Liddle et al. (2011) described the benefits of group therapy for children who stutter, and reported findings from a postal survey investigating the current practices of SLPs in the United Kingdom, in terms of the provision and aims of group fluency therapy, the barriers to providing group therapy, as well as respondent and service characteristics.

The questionnaire, which had been developed and piloted, consisted of both open and closed questions in a mixed format. It was sent to all 205 SLP paediatric departments in the UK, with a response rate of 70 percent. One limitation to this study that Liddle et al. (2011) acknowledged is that those departments providing group therapy may have been more inclined to respond to the survey than those who do not provide group therapy.

The data were analyzed with both appropriate descriptive and inferential statistics (e.g., Chi Square analysis). Results indicated that 70 percent of the respondents provided group therapy for school-aged children who stutter. Overall, urban and fluency 'specialists' were more likely to provide group therapy than rural and 'non-specialists' respectively. Several aims of group therapy were found, including increased confidence, fluency skills, improved attitude toward stuttering, and peer support. The main barrier hindering group therapy provision included an insufficient number of clients to offer group programs. The authors concluded that it is important to either overcome barriers affecting the provision of group therapy, or to investigate other methods to achieve the benefits group therapy offers.

Overall, the aim of this study was not to provide evidence regarding the effectiveness of group therapy, but to determine if clinicians offer it and the related goals/barriers, which may provide some indirect evidence for its clinical usefulness. Despite the appropriate study design for the researchers' purpose, interpretation of questionnaire data is inherently limited. As a result, this level 4 evidence must be considered suggestive, although the clinical importance is deemed compelling.

Study #3: Qualitative Focus Group/Interview Research

Hearne et al. (2008) conducted a qualitative study consisting of two focus groups and seven individual semi-structured interviews in order to investigate the experiences of 13 adolescents who stutter from across Australia. The two areas of focus included awareness of stuttering and experiences of treatment. Data analysis consisted of an appropriate transcription and analysis of the focus group and interview recordings. Statements relevant to the topic areas were highlighted, and related topics were further grouped under broader headings. Of relevance to the present review, findings indicated that there was a preference for group therapy among these participants for several reasons. In particular, the participants reported feelings of camaraderie, that it was an advantage to learn from other people of the same age, it was more representative of the 'real world', and that it was highly beneficial to know they were not the only ones who struggled to speak fluently.

This qualitative research was performed well. The authors justified the use of focus groups/interviews based on practical reasons, and for its validity in the exploratory phase of a research study. Although the sample size was relatively small, the authors

controlled for bias across several aspects of the study. In particular, they recruited the participants from different areas of Australia, they described the interviewer/facilitator's active measures to avoid researcher bias, and performed member checking, a process by which the facilitator summarizes the information obtained with the participants to ensure the appropriateness and relevance of the findings. The authors also reported on ethical issues, and stated that consent was obtained from participants and their parents. However, there are a few limitations to this study. The first is that the methods used to recruit the participants meant individuals who had never pursued therapy for stuttering were not included. As well, Hearne et al. (2008) stated that the views of the individuals who participated may not be representative of all adolescents who stutter, although the findings do align with existing literature.

Overall, this level 4 evidence has a suggestive study design, however, the clinical importance is considered compelling for the use of group therapy.

Study #4: Case Study
Murphy et al. (2007) provided a single case study report. They described both the different treatment strategies that SLPs can use to help children who stutter overcome the negative affective and cognitive reactions common in children who stutter, as well as the successful use of these strategies by applying them to a single case example.

Of the several treatment strategies discussed as beneficial for children who stutter and implemented with the individual in this case study, the following are relevant to the topic of group therapy: learning about other people who stutter, having a stuttering 'pen pal', and group interactions. The description of how these strategies were implemented, and the subsequent data analysis were vague, and the authors simply reported that findings indicated that these group-related strategies contributed to helping this individual overcome some of his stuttering-related fears, and reducing both his rating on the SSI and his %SS post-therapy. The lack of information regarding the implementation of the strategies, and the subsequent data analysis is a limitation to this study. Another limitation to this study is that the researchers stated that the individual's therapy involved more than just those strategies outlined in the article. Murphy et al. (2008) concluded that while not all children who stutter experience negative affective and cognitive reactions, children who do can benefit from a multidimensional intervention approach as described in this study.

Overall, because group therapy was only one of many strategies used with this individual, it is not possible to determine to what extent the group components may have contributed to the outcomes. Combined with the lack of information regarding the implementation of the strategies, which weaken its validity, this level 4 evidence is considered equivocal, and should be interpreted with caution.

Study #5: Expert Opinion
Ramig and Bennett (1995), two well-recognized individuals in the field, provided an expert opinion paper with a comprehensive review of the literature. They outlined the importance of stuttering treatment during the early elementary school years, and discussed several areas of the assessment and therapy continuum. Relevant to this critical review, they recommended grouping children with similar stuttering behaviours and attitudes, particularly because providing therapy in the school setting is challenging. In order to keep therapy individualized in mixed severity groups, the authors recommended varying the tasks required of each child. Additionally, they mentioned that individual sessions may be necessary to address particular concerns of each child.

The effectiveness of group therapy was only a small focus of the article and was discussed more in terms of efficiency for clinician caseload purposes rather than improving fluency. As such, this level 5 evidence is considered equivocal, and the information should be interpreted with caution.

Study #6: Expert Opinion
In this expert opinion article, Williams and Dugan (2002), two well-recognized individuals in the field, described clinical fluency techniques and provided some review of the literature. In particular, they included group therapy, with a discussion of how to adapt techniques to school environments.

The authors concluded that it is appropriate for SLPs to take advantage of the school setting to target stuttering in groups. In doing so, Williams and Dugan (2002) stated that SLPs will be better able to address not only the speech of children who stutter, but also their fears, emotions and secondary behaviours. They discussed that in a group setting children are motivated by peer success, and experience both supportive listener reactions and general support from peers.

Overall, Williams and Dugan (2002) make minimal reference to existing literature, therefore, this level 5 evidence is more open to the possibility of bias, is

considered equivocal, and should be interpreted with caution.

Discussion

Overall, the majority of the studies included in this review suggest that fluency can be improved in school-aged children and adolescents who stutter through the use of group therapy. In particular, Fry et al. (2009) found that stuttering severity was significantly reduced in response to intensive group therapy. Additionally, Hearne et al. (2008) discovered that participants preferred group therapy for many reasons, including that it helped them to realize they were not the only ones who stuttered.

While there is some evidence in favour of group therapy as seen in this critical review, none of the available research has provided a comparison between individual and group therapy. As a result, it is not possible to determine whether positive effects of group therapy are the same, either in quantity or in type, as individual therapy. There are also some other limitations in this area of study, including the fact that most of the research examined was of a qualitative or non-experimental design which is considered an inherently weaker study design (OCEBM, 2009). However, it is important to note that the purpose of non-experimental and experimental research is different, with the former providing richer and more individualized information. Due to the different purposes of these research designs, the level of evidence should be evaluated on a different scale. Additionally, as discussed above, although repeated measures single-subject experimental designs are considered the highest form of evidence (OCEBM, 2009), are frequently used in this area of study and are considered to have high internal validity, generalizations to the population as a whole are limited (Fry et al., 2009). Secondly, the studies were mainly based on relatively small sample sizes, further reducing the ability to generalize findings to the population as a whole. As well, some of the studies varied in their treatment approach (e.g., fluency modification, and/or shaping), length of treatment time, and implementation of group therapy. Furthermore, in all the studies, the participants were selected from those individuals who had previously sought therapy, effectively eliminating anyone who had not sought fluency services.

Although the above limitations weaken the overall validity of the results, there were many findings that should be considered for further research on this topic. For example, Liddle et al. (2011) discovered that one of the largest barriers to providing group therapy was an insufficient number of clients to form a group. Additionally, Murphy et al. (2007) provided different strategies to gain the benefits that group therapy has to offer, not only including group interactions, but also the use of stuttering 'pen pals', and learning about others who stutter.

Conclusion

Due to the limited research in this area, a conclusive statement regarding the effectiveness of group therapy in improving fluency in school-aged children and adolescents who stutter, as a treatment method on its own or as an adjunct to individual therapy, cannot be made. However, there has been an increased understanding regarding the importance of intervention with school-aged children and adolescents, the social, academic and vocational implications of stuttering, and the benefits that group fluency therapy offers. At this time, more research is needed to support the use and effectiveness of group therapy for school-aged children and adolescents who stutter.

Clinical Implications

Spoken communication is an important component of everyday life (O'Brian et al., 2011). Due to the negative implications that stuttering can have on an individual's social, academic and vocational success (O'Brian et al., 2011; Yaruss, 2010), and the fact that spontaneous recovery is unlikely to occur for both school-aged children and adolescents (Laiho & Klippi, 2007), providing intervention for this population is critical. Group therapy is one intervention method that may be used to target stuttering. Despite some limitations to the individual studies, research has shown some suggestive evidence to support the effectiveness of group fluency intervention with school-aged children and adolescents. At the same time, however, it is important to keep therapy personalized (Ramig & Bennett, 1995) due to the individualized nature of stuttering. Based on the previously mentioned limitations of the current research, it is recommended that further research be conducted and incorporate:

1. Comparison of the effectiveness of individual and group fluency intervention.
2. Larger sample sizes.
3. Inclusion of individuals who have not previously sought fluency intervention.

In conclusion, despite the limited research in the area of group fluency therapy for school-aged children and adolescents who stutter, the current research

provides compelling evidence-based therapeutic techniques for improving stuttering severity in a group setting. The increased use and availability of technology (e.g., video conferencing) may further facilitate group therapy in this field, and lead to more research regarding the effectiveness of group intervention.

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