

Critical Review:
How do speech-language pathologists provide therapy to school-aged children who stutter and have a concomitant speech or language disorders?

Grass, V.
M.Cl.Sc (SLP) Candidate
School of Communication Sciences and Disorders, U.W.O.

This critical review examines the options when providing therapy to school-aged children (ages 5-12) who stutter and have a concomitant speech or language disorder. The research includes one experimental treatment program, survey research, and information articles. Based on this review, there is tentative evidence to suggest that the best therapeutic intervention is to address both the fluency disorder and concomitant disorder simultaneously. The results of the present review should be interpreted with consideration of the inherent limitations of the methodology used in the reviewed studies.

Introduction

Stuttering is a communication disorder in which the cause is still unknown. It is believed that genetics, child development, neurophysiology, and family dynamics all contribute to the predisposition or precipitation of stuttering (Guitar, 2006). The prevalence of stuttering is about 1% in school-aged children and occurs in more males than females at a ratio of 4:1 (Guitar, 2006). Although there is no cure for stuttering, research reports that 20%-80% of children do spontaneously recover without treatment (Guitar, 2006). For those children who do receive therapy, the goals are to make talking easier and to develop more positive feelings and attitudes about talking. In most therapy approaches, techniques are taught that require an understanding of instructions and an ability to incorporate the task into everyday speech.

Researchers began studying concomitant speech and language disorders in children who stutter in the 1920s. The concomitant disorders seen in the research include: articulation or phonological impairment, syntactic and/or morphological delay or disorder, word-finding difficulty, and voice problems (Nippold, 1990). Since the 1920s, numerous studies have been published investigating these concomitant disorders, the effect they have on children who stutter, and the effect they have on the treatment of these children.

In a 2004 study, Nippold concluded that studies that survey SLPs about their caseloads may overestimate the rate of concomitant disorders in children who stutter because these children are more likely to be on the SLP's caseload. When evaluating the literature, it is important to be mindful of the fact that the frequency rates of children who stutter and

have a concomitant speech or language disorder may differ between clinical studies and the real world.

In order to keep the interest of the child in mind (e.g., addressing fluency needs, language needs, or both), the SLP should have an evidence-based method of providing therapy to those children who stutter and have a concomitant disorder.

Objectives

The objective of this review is to critically examine the literature to determine how SLPs provide therapy to school-aged children (ages 5-12) who stutter and have a concomitant speech or language disorder. Recommendations regarding the preferred therapy approach will be provided based on the reviewed literature.

Methods

Search Strategy

Computerized databases, including CINAHL, PubMed, MedLine, Google Scholar, and PSYCHINFO were searched using the following search strategy:

((fluency disorders) OR (stuttering)) AND
((language disorders) OR (articulation
disorder) OR (phonology disorder))

There were no limits placed on the search due to the small number of articles that were available.

Selection Criteria

Studies selected for inclusion in this critical review paper were required to examine an appropriate and effective therapy approach for school-aged children who stutter and have a concomitant articulation/phonology or language disorder. Articles that were heavily referenced in

those articles found in the search were manually sought out.

Data Collection

Results of the literature search yielded the following types of articles congruent with the aforementioned selection criteria: experimental treatment program (1), objective survey (2), and informational article (2).

Results

Intervention Program

Conture, Luko, and Edwards (1993) designed an experimental treatment program to simultaneously treat stuttering and disordered phonology in young children. They compared the changes in stuttering behaviour and disordered phonology as a result of the treatment, to changes in stuttering behaviour obtained in a similar treatment program designed to treat stuttering in children without disordered phonology. Eight monolingual, English-speaking children were divided into two matched groups of similar age, stuttering and disordered phonology (SP), and stuttering only (S), with four children in each group. There was no random allocation to groups due to the certain criteria that had to be met, but the group membership did not change throughout the duration of the intervention. Both treatment groups met weekly in 45-minute group treatment sessions for one calendar year. The goal of the SP group was to develop age-appropriate phonology within the context of increasing speech fluency. A modified cycle framework (i.e., concurrent intervention) was used with the SP group. Due to the small sample size, this study did not employ any statistical measures, and was therefore unable to state whether the data found was statistically significant. The results of this study were expressed as mean percent change in stuttering frequency and mean percent change in the number of phonological processes. Both the SP group and S group showed a decrease in the overall stuttering frequency from the beginning to the end of the treatment period. All four children in the SP group exhibited an average decrease of 25% or more across all targeted phonological processes. The preliminary findings of this study suggest that simultaneously treating stuttering and disordered phonology is both feasible and effective. A follow-up of the eight children was not completed.

As indicated above, this study had methodological strengths and weaknesses. The preliminary findings suggest however, that the therapy does have a positive effect, paving the way for future research to determine what the most appropriate and effective treatment is for treating

stuttering and disordered phonology when they co-occur in young children.

Survey research

Survey research has been the most common way of investigating the treatment for children who stutter and have concomitant speech or language disorders (Arndt and Healey, 2001; Blood, Ridenour, Qualls, and Hammer, 2003), in addition to answering questions pertaining to the percentage and frequencies of male and female children who stutter with co-occurring non-speech disorders, speech disorders, and language disorders (Blood et al., 2003), and the number of children who stutter and have a suspected, unverified concomitant disorder (Arndt and Healey, 2001). Statistical measures were not employed to analyze the treatment approaches utilized by SLPs. Descriptive measures however, were employed, with intervention being expressed as either percentages (Arndt and Healey, 2001) or time spent treating each disorder (Blood et al., 2003). The general findings of the two studies that employed surveys is that the majority of clinicians used a blended approach (i.e., addressing both problems simultaneously) when treating a fluency disorder and concomitant phonological and/or language disorder (Arndt and Healey, 2001). More time is typically spent addressing stuttering (mean of approximately 23 minutes of treatment, two times a week with a mean of approximately 12.6 minutes focused on stuttering) than the co-occurring problem (Blood et al., 2003).

Overall, survey research is an indirect and weaker approach used to gather information. A mail-home survey takes much longer to carry out because of the response rate of those being surveyed. The gathered information in these studies is a compilation of expert knowledge which may show an increase in bias. Although there are disadvantages to survey research, it seemed to be the most convenient and efficient way to gather the desired information.

The studies by Arndt and Healey (2001) and Blood et al. (2003) are good examples of survey research because they had numerous methodological strengths. Both studies employed random sampling of a sufficient number of subjects. In Arndt and Healey (2001) 500 school-based SLPs from 10 states meeting certain criteria (e.g., similar state verification criteria for fluency, articulation/phonology, and language disorders) were surveyed. In Blood et al. (2003), 2000 practicing SLPs employed in public schools in the United States were randomly surveyed. Both studies piloted a draft version of their questionnaire amongst SLPs to gather feedback regarding questions being asked, wording, and format. Both studies had an acceptable

questionnaire-return response rate. 241 SLPs responded to the Arndt and Healey (2001) questionnaire (response rate of 48.2%) and 1184 SLPs responded to the Blood et al. (2003) questionnaire (response rate of 59.2%).

The treatment approach designed by Conture, Luko, and Edwards (1993) clinically supports the data collected from SLPs via questionnaires, concluding that treating both problems at the same time is more effective.

Informational Articles

Informational articles are a way to provide guidelines and suggestions for treating children who stutter and have a concomitant speech or language disorder (Bernstein Ratner, 1995; Logan and LaSalle, 2003), through reviewing information from previous studies and providing insight, but without doing so systematically or critically.

Bernstein Ratner's (1995) informational article discussed diagnostic considerations when identifying concomitant communication disorders and how to differentiate between stuttering and secondary fluency disorders related to language formulation. A number of options for structuring therapy for coexisting problems were evaluated, including blended, lagged, and cycled approaches, which are referenced in the articles written by Arndt and Healey (2001) and Logan and LaSalle (2001) as treatment options. Some information cited in this article came from valid and reputable sources (e.g., Conture, Luko, and Edwards' (1993) study was used as an example of a concurrent intervention approach). Bernstein Ratner (1995) acknowledged both advantages and drawbacks to the approaches discussed.

Logan and LaSalle (2003) offered a framework for designing intervention programs for school-aged children who stutter and present concomitant impairments in articulation or language. They discussed the need to first identify intervention priorities and provided four questions for the clinician to ask: (1) how severe are the impairments, (2) how do the impairments affect daily activities, (3) how do others react to the impairments, and (4) how likely are the impairments to resolve without treatment? Next, various options were discussed based on the intervention priorities when developing an intervention program (e.g., when stuttering is the main priority, when both stuttering and the concomitant impairment are main priorities, and when stuttering is not the main priority).

The information gathered by the authors provided insight and options for clinicians when trying to determine which therapy approach to use when treating children who stutter and have

concomitant disorders. The approaches discussed compliment the empirical evidence from available studies.

Recommendations

The above section summarizes the current available research regarding how SLPs provide therapy to school-aged children who stutter and have a concomitant speech or language disorder. Since the evidence is limited primarily to survey studies, the quality of the research is therefore weak.

It is recommended that when providing therapy to school-aged children (ages 5-12) who stutter and have a concomitant speech or language disorder, a "blended" (i.e., concurrent) therapy approach be used, targeting both problems simultaneously. Three of the five articles concluded that using a blended approach was feasible, effective, and utilized by the majority of surveyed practicing SLPs (Conture et al., 1993; Arndt and Healey, 2001; Blood et al., 2003). The common practice among SLPs is to address both disordered areas and to address those areas using a blended approach. These results, however, should be considered with caution due to the methodological weaknesses. The two other articles discussed in this critical review were informational in nature and did not state a preference toward one therapy methodology (Bernstein Ratner, 1995; Logan and LaSalle, 2003).

While a preference among SLPs has been investigated, concluding whether one therapy approach is statistically better than another has not yet been determined. Due to the varying intervention priorities and specific needs of each child, ascertaining a specific therapy approach appropriate for all children may be difficult.

Directions for Future Research

The evidence presented in this critical review provides a basis for future research. Ideas for future research may include:

1. Empirical studies involving groups of children who stutter and have a concomitant disorder receiving different types of therapy.
2. A population-based assessment of the occurrence of stuttering with a concomitant disorder as opposed to survey research.

References

- Arndt, Jennifer, & Healey, E. Charles (2001). Concomitant disorders in children who stutter. *Language, Speech, and Hearing Services in Schools*, Vol. 32, 68-78.

- Bernstein Ratner, Nan (1995). Treating the child who stutters with concomitant language or phonological impairment. *Language, Speech, and Hearing Services in Schools*, Vol. 26, 180-186.
- Blood, Gordon W., Ridenour Jr., Victor J., Qualls, Constance Dean, & Hammer, Carol Scheffner (2003). Co-occurring disorders in children who stutter. *Journal of Communication Disorders*, 36, 427-448.
- Conture, Edward G., & Luko, Linda J. (1993). Simultaneously treating stuttering and phonology in children: experimental treatment, preliminary findings. *American Journal of Speech-Language Pathology*, 2(3), 72-81.
- Guitar, B. (2006). *Stuttering: An Integrated Approach to Its Nature and Treatment*. Baltimore: Lippincott Williams & Wilkins.
- Logan, Kenneth J., & LaSalle, Lisa R. (2003). Developing intervention programs in children with stuttering and concomitant impairments. *Seminars in Speech and Language*, 24(1), 13-19.
- Nippold, Marilyn A. (1990). Concomitant speech and language disorders in stuttering children: a critique of the literature. *Journal of Speech and Hearing Disorders*, Vol. 55, 51-60.
- Nippold, Marilyn A. (2004). Phonological and language disorders in children who stutter: impact on treatment recommendations. *Clinical Linguistics & Phonetics*, Vol. 18, No. 2, 145-159.