

Critical Review: The Effects of Education Regarding Stuttering on the Attitudes of Individuals Towards People Who Stutter

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This critical review examines the existing evidence to determine whether exposure to education about stuttering and the effects of stuttering will yield a measurable change in the attitudes of individuals towards people who stutter. The research includes 3 single group studies and a randomized controlled trial. Overall, the examined research provides no evidence that providing education about stuttering alters individuals' perceptions of people who stutter in a positive direction. The limited scope of this research and weaknesses in design severely limit the clinical application and generalizability of the results.

Introduction

According to Guitar (2006), stuttering is prevalent worldwide, in every culture and race. Bloodstein (1987) defines stuttering as a disorder in which the fluency or "rhythm" of speech is disrupted by blockages or interruptions. However, to a person who stutters, stuttering is much more than disfluency. In addition to their speech, stuttering individuals also deal with secondary behaviours, emotions, such as shame and guilt, attitudes, and fears about speaking (Williams, 2006).

According to Williams (2006), stereotyping is a misclassification scheme that is applied to individuals. Research has shown that many populations present with negative stereotypes towards people who stutter (Williams, 2006). These stereotypes include the viewpoint that people who stutter are generally quiet, guarded, avoiding, fearful, unpleasant, nervous, and shy among others (Leahy, 1994; McGee, Kalinowsky, & Stuart, 1996). A variety of stakeholders have been found to report such stereotypes, including speech-language pathologists and speech-language pathology students (Cooper & Rustin, 1985; Leahy, 1994; Snyder, 2000), parents (Crowe & Cooper, 1977), teachers (Crowe & Cooper, 1977), employers (Hurst & Cooper, 1983), the general public (Kalinowski, Armson, Stuart, & Lerman, 1993), as well as people who stutter themselves (Kalinowski, Lerman, & Watt, 1987). Negative stereotypes are extremely resistant to change, and have many harmful implications in the lives of people who stutter (Snyder, 2001). According to Williams (2006), many people who stutter feel that their speech often has a negative impact on performance evaluations, and leads to inaccurate judgements of their abilities. Some even reported that they were told it was the reason they were not hired for a job. Hurst and Cooper (1983) confirm this speculation by stating

that many employers agree that job opportunities are limited for those that stutter. In addition, negative stereotypes increase self-consciousness and worry within social situations, and cause people who stutter to avoid situations in which society expects them to fail (MacKinnon, Hall, & MacIntyre, 2007). These negative stereotypes affect children as well. Children who stutter are often kept from being placed in leadership positions in the classroom, are viewed negatively by their teachers, and are prohibited to speak as often as their peers within the classroom (Williams, 2006). This may in turn affect academic progress and result in teasing within the school environment. Evidence also reveals that individuals who stutter often experience feelings of inadequacy, powerlessness, helplessness, hopelessness, and failure (Leahy, 1994). Although these feelings may be a result of their inability to speak fluently, there is reason to believe that these feelings may be related to being placed in a category that is viewed as undesirable (Leahy, 1994). In addition, people who stutter often report that the reactions and attitudes of their listeners influence the severity of their stuttering (Klassen, 2002).

Seeing as this negative stereotype has resulted in numerous harmful effects for individuals who stutter, it is important to address the important question: What can be done about it? There is very limited research examining techniques that may help to alter this negative view of individuals who stutter. It is believed that both education about the stereotyped group and exposure to individuals belonging to that group may help alter the existing stereotypes in a positive direction (Williams, 2006). Individuals who stutter, researchers, family members, speech-language pathologists and others can aid in this process. Information can be presented through numerous means, such as conversations, workshops, videos, and formal presentations (Williams, 2006). It is also necessary to explore precisely how much time

and effort is required in order to alter individuals' perceptions towards people who stutter. According to Williams (2006), the more exposure to individuals in a stereotyped group, the more variability is revealed. As a result, negative classification schemes are more difficult to justify and keep. The content of the presentation is also important to consider, as Williams (2006) states that classification schemes may be expanded by focusing on the various abilities of people who stutter, including their accomplishments in various contexts. In addition, it may be also that if individuals who stutter present themselves as confident and competent, others will have a harder time accepting the existing negative stereotypes (Williams, 2006).

Objectives

The primary objective of this paper is to critically evaluate the existing literature to determine whether exposure to education regarding stuttering and the effects of stuttering will yield a measurable change in the attitudes of individuals towards people who stutter.

Methods

Search Strategy

Computerized databases, such as PsychINFO, PubMed, ComDis Dome, and Google Scholar were used to search for articles, using the following key terms:

((altering) OR (changing)) AND (stuttering stereotype) OR ((stereotype modification) AND (stuttering)) OR ((attitudes) AND (modification) AND (stuttering))

The PsychINFO and ComDis Dome databases were used to obtain articles specific to the research question. PubMed and Google Scholar, along with the other databases were useful in obtaining articles that provided background information for the literature review. The reference lists of the articles found were also searched for related studies. There were no limits placed on the search, other than the articles had to be written in English.

Selection Criteria

Studies were included if they investigated a change in the attitudes of individuals towards people who stutter following exposure to education about stuttering and the effects of stuttering.

Data Collection

The search results presented the following types of articles: Three single group studies (2 of which incorporated 2-single groups) and a randomized controlled trial. Three of these articles directly related to the research question and were critically reviewed. The randomized controlled trial was partially related to the research question, as it examined the effects of self-disclosure of stuttering on listeners' perceptions of a person who stutters. This article was also included as it is thought to provide useful information in regards to modifying the listeners' negative stereotypes towards individuals who stutter.

Results

For a brief outline of each article, refer to Appendix A.

Single-Group Studies

Snyder (2001) investigated a change in the attitudes of graduate student clinicians towards stuttering after viewing brief video documentaries, either emotional (n=21) or factual (n=34) in content. The study is considered to be a single-group design with two consecutive samples of convenience (participants were limited to individuals in the stuttering class at the time), occurring over a two-year span. Attitudes at pre and post video viewing were measured using the "Clinicians' Attitudes Toward Stuttering" (CATS) scale, which employs a 5-point strength of agreement scale over 50 items. Data were analyzed for each item on the CATS scale using a Wilcoxon signed ranks test, which is an appropriate nonparametric test for within group comparisons. The alpha level was adjusted due to the number of comparisons. Results indicated that each group showed a minimal change in 1 to 3 items on the CATS scale. Moreover, any significant changes that were found, related to beliefs about items such as therapy effectiveness, but no significant changes in the attitudes of graduate student clinicians towards individuals that stutter were found.

In 1996, McGee, Kalinowski and Stuart conducted a study to determine whether the perceptions of 36 high school students towards individuals who stutter would change after viewing a documentary videotape (*Voices to Remember*). A 25-item seven-point bipolar scale (Likert Scale) was used to measure pre and post attitudes of high school students towards a hypothetical normal high school male, and a hypothetical high school male that stutters. Data analysis, using a parametric procedure, multiple paired t-tests for dependent samples,

revealed that participants viewed the hypothetical high school male as being more withdrawn, self-derogatory, inflexible, fearful, and reticent after viewing the documentary videotape. A Bonferroni correction was undertaken for this and subsequent analyses to reduce Type 1 error. These findings suggest that the videotape alone was not sufficient in altering the high school students' negative perception of individuals who stutter. Following the viewing of the documentary, the participant's negative attitudes not only persisted, but became increasingly negative.

Leahy, in 1994, sought to determine whether there would be a measurable change in the attitudes of student therapists after a re-organization of the fluency course taught to these individuals, by conducting a pre-post study design. The fluency course was altered in order to "favourably modify" the student's attitudes towards people who stutter. This was done by including classes that explored personal attitudes towards stuttering, information regarding past research done in stuttering, pseudo-stuttering exercises, as well as opportunities to be directly involved in therapy with stuttering individuals. A 7-point semantic differential scale composed of 11 constructs was used to measure the student clinicians' attitudes. No statistical findings were reported. Descriptively, results showed that attempts at reducing the negative stereotype towards people who stutter were not successful, as student clinicians involved in therapy experiences regarded people who stutter to be even more nervous, tense, and reticent than before.

Randomized Controlled Trial

Healey, Gabel, Daniels, and Kawai (2007) recently completed a study which examined the listener's perceptions of a person who stutters (PWS) who did or did not disclose his stuttering. Ninety adults were randomly divided into one of three equal groups that viewed a videotape of a PWS who disclosed his stuttering either before the monologue (group 1), at the end of the monologue (group 2), or did not disclose his stuttering at all (group 3). The participants were then asked to rate the individual who stutters based on six Likert scale statements and answer three open-ended questions. The Likert ratings from each listener were analyzed using a multivariate analysis of variance (MANOVA), and results were compared among the participants. Results showed that an adult male who disclosed his stuttering was viewed as being friendlier than a PWS who did not reveal his stuttering. In addition, the listeners indicated that if a PWS discloses his stuttering, it is more effective to do so at the beginning of the communicative interaction. Because participants rated people who stutter that disclosed

their stuttering as friendlier than those who did not, clinicians may want to encourage their clients to do so during communicative interactions.

Discussion

Single-Group Studies

While the studies provide some evidence, the experimental design, measurement tools, subject selection, and statistical analysis introduce a bias on several grounds. None of the studies incorporated a control group, which allows for the possibility that an unknown factor may be influencing the dependent variable. Secondly, all three studies lacked randomization, contributing to the selection bias, and did not state whether there was blinding in the experimental design. Finally, the studies conducted by Snyder (2001) and Leahy (1994) may have also been affected by exclusion bias, as two participants withdrew from each study, possibly altering the overall results. In addition, although the scales used to measure the attitudes of participants in studies by Snyder (2001) and McGee, Kalinowski and Stuart (1996) assess a wide range of beliefs associated with stuttering and have been employed in other similar studies, they have not been tested for reliability. Furthermore, the scale descriptions are limited, and no examples are provided. This could lead to potential variability in how the terms and questions were interpreted, influencing the responses of the participants, which may affect the overall results of the study. The studies by Snyder (2001) and McGee, Kalinowski and Stuart (1996) also yielded a high number of comparisons, increasing the probability of finding an effect. This may explain why the outcomes of the study by McGee, Kalinowski and Stuart (1996) indicated an increasingly negative perception of a high school male that stutters following the videotape. However, attempts at corrections were made for the number of effects that were found. Each study is further evaluated in the subsequent paragraphs.

In the study by Snyder (2001), the data was collected over the span of two years. The first group was evaluated during the first year of data collection, whereas the second group was evaluated during the second year. This prevented the comparison of statistical results between the two groups, as it may have led to further systematic bias, since the participants between the two groups would likely not have been similar at the start. The use of nonparametric tests was adopted with little justification. The Wilcoxon signed ranks test, which was used to statistically analyze the results, is a nonparametric procedure, which has less power when compared to parametric tests as it discards

important information and only focuses on the ranks of the data. In addition, due to the number of comparisons, the alpha level was adjusted in order to reduce Type 1 errors.

One of the major flaws of the study by McGee, Kalinowski and Stuart (1996) is its lack of randomization, as previously stated. Not only does this contribute to systematic bias, but it may also have altered the results of the multiple paired t-test for dependent samples, seeing as the t-test yields most accurate data if the samples are randomly chosen. The t-test is a parametric analysis, which exhibits strong statistical power and can be applied to a relatively small sample, which is appropriate for this study. In addition, a Bonferroni correction was employed in order to reduce Type 1 errors. However, if this test is used incorrectly, it may in fact, increase the probability of Type 2 error, leading to a misinterpretation of the results. The authors suggested that several comments expressed on the videotape had negative connotations associated with them. This may have biased the participants' scores on the Likert scale and reinforced the negative stereotype. Therefore, the video may need to be more carefully selected or screened in order to avoid such statements. Moreover, the participants of the study were not a homogenous group, as a large number of the participants had exposure to individuals who stutter, which may have affected the overall results. The study did not state any limitations that were placed on selecting participants.

The most obvious flaw of Leahy's (1994) study is its lack of statistical analysis, which limits the validity and reliability of the results. According to the researcher, statistical analysis was not possible due to the need to protect the anonymity of the participants. However, the participants' anonymity may have been preserved using techniques employed in previous studies. Due to the lack of statistical analysis, only general comparisons could be made based on the mean scores, which may make it difficult to establish causal links between variables. The sample size of the study was small, reducing power, and no level of statistical significance could be reached in the data. A semantic differential scale was used in order to measure a change in attitudes. Although this scale may have several drawbacks, it is considered to be reliable and has been validated in several contexts (Leahy, 1994). Overall, this study lacks sufficient detail in pre and post measures, and was poorly organized, making it difficult to evaluate.

Randomized Controlled Trial

Analysis revealed that the study by Healey, Gabel, Daniels, and Kawai (2007) was relatively well designed. It was a randomized controlled study

with inherent strengths in validity. The study consisted of a large sample size and none of the participants had any exposure to people who stutter or have had a communication disorder in the past, increasing the homogeneity of the sample. In addition, the researchers ensured that each videotape contained a similar degree of stuttering frequency and severity by performing an analysis of variance and Pearson *r*. The study was single-blinded in that the participants did not know prior to the task that they would be viewing a person who stutters. Although this study does not directly relate to the main research question, it is a well-designed study that provides valuable information regarding the effects of self-disclosure and non self-disclosure of stuttering for people who stutter and those working with these individuals.

Recommendations

Based on the critical review of the available literature on this topic, evidence suggests that providing education about the stereotyped group in a variety of forms or exposure to individuals who stutter, whether brief or extended, does not seem to alter individuals' perceptions of people who stutter in a positive direction. The available research, however, is exceptionally limited and numerous flaws inundate research that does exist. Concerns were found in areas including experimental design, measurement tools/outcome measures, subject selection, and statistical analysis. As a result, the validity and reliability of the studies examined were not compelling. For this reason, the present results have limited, or no generalizability to clinical practice and should not affect present practices. Instead, clinicians must continue to explore alternate ways that may prove to be more successful in altering negative stereotypes, which affect the lives of people who stutter in radical ways.

Given the results of this critical review, further research is necessary in this area in order to reinforce or refute the current findings. According to Snyder (2001), it seems highly unlikely that future studies using similar measurement tools and stimuli would generate significantly different results from those already found. Therefore, future research must attempt to employ different stimuli and measurement instruments. The measurement instruments that have been used thus far may not have been sensitive enough to record subtle changes in the attitudes of individuals towards people who stutter, or the stimuli used (e.g. education exposure) may not have an effect on the stuttering stereotype (Snyder, 2001). McGee, Kalinowski, Stuart (1996) and Williams (2006) suggested that it may be beneficial to present a videotape to the participants that depicts a person

who stutters of similar age and status to the participants. This may encourage them to develop an emotional attachment with the person who stutters, and therefore, aid in altering the negative stereotype. In addition, more precise methods of data collection and factor analysis are expected to yield more useful information (Leahy, 1994).

Furthermore, critical analysis of several papers on the subject suggest that researchers in this area incorporate larger, randomized samples, blinding of participants, separate control groups, measurement tools that are reliable and validated, and use more experimental study designs yielding statistical analysis. In addition, if using videotapes, researchers are encouraged to ensure that the content in the video does not depict stuttering as negative. It would also be useful to provide important information regarding the inclusion and exclusion criteria for participants, recruitment procedures and additional detail on pre and post measures to promote a better understanding of the study. It is also recommended that researchers further examine the relationship between the length of exposure to stuttering and education about stuttering and the changes in attitudes towards individuals who stutter.

Conclusions

The negative stereotypes in the field of stuttering are very resistant to change and affect individuals who stutter in detrimental ways. For this reason, negative stereotypes need to be altered. The present literature suggests that exposure to education regarding stuttering and the effects of stuttering does not yield a positive change in the attitudes of individuals towards people who stutter. In fact, McGee, Kalinowsky, and Stuart (1996) found that following the exposure of a videotape documentary of a person who stutters, participants' attitudes towards stuttering became increasingly negative, suggesting that brief exposures may be even more detrimental for listeners. Based on these results, clinicians must be cautious when promoting public awareness of stuttering. Other studies found either a very limited change in attitudes or no change at all. However, the evidence is considered weak due to the major flaws found in the experimental design, subject selection, measurement tools, and statistical analysis of the studies. Additional research is required in order to develop a stronger conclusion regarding this important topic. One interesting finding based on the results of a study examining self-disclosure of stuttering reported that clinicians are encouraged to promote self-disclosure in their clients' communicative interactions as it appears to present significant advantages for the client.

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Appendix A – A Summary of Articles

Reference	Purpose of Study	Participants	Outcome Measure	Data Analysis	Results
<i>Snyder (2001)</i>	To determine if brief video documentaries, either emotional or factual in content, can change graduate clinicians' perceptions of stuttering	<ul style="list-style-type: none"> - 55 first year speech-language pathology graduate student clinicians - mean age 25.3 years (ranged from 23 to 51) 	<ul style="list-style-type: none"> - CATS (Clinicians' Attitudes Toward Stuttering) Scale - contains 50 statements representing a wide range of beliefs regarding stuttering - 5 point strength of agreement scale 	<ul style="list-style-type: none"> - Nonparametric procedure, the Wilcoxon signed ranks test on a question-by-question basis 	<ul style="list-style-type: none"> - No significant results were found regarding the participants' perceptions of people who stutter
<i>McGee, Kalinowsky, and Stuart (1996)</i>	To determine if the presentation of the videotape "Voices to Remember" has a positive impact on participants' attitudes towards stuttering	<ul style="list-style-type: none"> - 36 high school students - 18 males and 18 females - mean age 18.2 (ranged from 16-21) 	<ul style="list-style-type: none"> - 25 item seven-point bipolar scale containing adjectives used to describe individuals who stutter and antonym counterparts (Likert Scale) 	<ul style="list-style-type: none"> - Parametric procedure, a multiple paired t-test for dependent samples - Benferroni correction to reduce Type 1 error 	<ul style="list-style-type: none"> - Participants' attitudes not only persisted, but became more negative after viewing the video
<i>Leahy (1994)</i>	To determine if there will be a measurable change in attitude towards people who stutter following the re-organization of the fluency course taught to 3 rd and 4 th year students	<ul style="list-style-type: none"> - 13 3rd and 4th year students - 5 students worked with adult stuttering clients - 8 students participated in student tutorials & observed client group sessions 	<ul style="list-style-type: none"> - 11 item seven-point bipolar scale 	<ul style="list-style-type: none"> - Statistical analysis was not possible - Does not provide empirical findings 	<ul style="list-style-type: none"> - Attempts at reducing the negative stereotype were not successful - Student clinicians regarded people who stutter to be even more nervous, tense, and reticent than before
<i>Healey, Gabel, Daniels, and Kawai (2007)</i>	To determine the effects of self-disclosure and non self-disclosure of stuttering on a listeners' perception of a person who stutters	<ul style="list-style-type: none"> - 90 adults (32 males, 58 females) - mean age 28.9 (ranged from 18-54) 	<ul style="list-style-type: none"> - 6 item seven-point Likert Scale - 3 open-ended questions 	<ul style="list-style-type: none"> - Each Likert rating was analyzed using multivariate analysis of variance (MANOVA) 	<ul style="list-style-type: none"> - Speaker who disclosed stuttering at beginning of monologue received more positive comments - People who shared about their stuttering with the listener were perceived as being more friendly