Exploratory research in the measurement and modification of attitudes toward stuttering

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Abstract

Past studies attempting to both measure and change stuttering stereotypes using semantic differential scales have indicated that clinicians' attitudes toward stuttering have been negative, robust, and resistant to change. This study measured changes in clinicians' attitudes after viewing either a factual video depicting the fluency-evoking effects of altered auditory feedback or an emotionally insightful video depicting the negative social consequences of stuttering. Two groups of graduate speech-language pathology clinicians took part in this ABA study design measuring participant responses to the two videos. Twenty-one participants completed surveys before and after viewing an emotional documentary depicting the life of a young girl who stutters. Another group of 34 graduate clinicians completed surveys before and after viewing a brief factual video exhibiting the immediate amelioration of stuttering behaviors at both normal and fast speaking rates while under the effects of altered auditory feedback. While post-testing results indicated that both of these documentaries were associated with a few changes in perceptions of stuttering, such changes were subtle. Moreover, the few significant perceptual changes found cannot be considered a noteworthy success in modifying graduate clinicians' perceptions of stuttering so that they better resemble the stuttering population described by prior psychological and stuttering research. Future research, along with the fate of current and past methodologies attempting to change the negative stuttering stereotype, is discussed. *Educational objectives:* (1) Readers will become familiarized with the negative stereotypes of persons who stutter; (2) readers will become familiarized with research attempting to modify negative perceptions of people who stutter; and (3) readers will

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become familiarized with possible explanations for the persistence of negative stuttering stereotypes. © 2001 Elsevier Science Inc. All rights reserved.

1. Introduction

Research has shown that many populations hold negative stereotypes toward persons who stutter. These stereotypes include the belief that people who stutter are generally quiet, reticent, guarded, avoiding, introverted, passive, self-derogatory, anxious, tense, nervous, and afraid (Crow & Cooper, 1977; Fowlie & Cooper, 1978; Woods & Williams, 1976). These stereotyped beliefs are held by speech-language pathologists and speech-language pathology students (Cooper & Cooper, 1982, 1985; Cooper & Rustin, 1985; Kalinowski, Armson, Stuart, & Lerman, 1993; Lass et al., 1989; Leahy, 1994; St. Louis & Lass, 1981; Turnbaugh, Guitar, & Hoffman, 1979; Woods & Williams, 1971; Yairi & Williams, 1970), teachers and special educators (Crow & Walton, 1981; Lass et al., 1992, 1994; Ruscello, Lass, Schmitt, & Pannbacker, 1994; Silverman & Marik, 1993; Yeakle & Cooper, 1986), parents (Crow & Cooper, 1977; Fowlie & Cooper, 1978; Woods & Williams, 1976), employers and vocational counselors (Craig & Calver, 1991; Just & Cooper, 1983; Silverman & Paynter, 1990), and people who stutter themselves (Kalinowski, Lerman, & Watt, 1987; Lass et al., 1995).

While negative stereotypes of people who stutter are both common and accepted, psychological data do not support the presence of distinctive or common negative personality traits found within the stuttering population. An expansive literature review including psychological research and personal evaluations of the stuttering population concluded that people who stutter are not "distinctly neurotic or severely maladjusted," do not seem to carry common "character structure or broad set of basic personality traits," and appear to fall within normal ranges of personal adjustment (Bloodstein, 1995, p. 236). While an intuitive argument could be made that people who stutter are less socially adjusted than fluent speakers, or that people who stutter have common distinct personality traits, results from an assortment of psychological studies remain inconclusive (Bloodstein, 1995, p. 237). Despite the lack of empirical data supporting the commonly held negative perceptions of the stuttering population, these notions persist and are pervasive in our culture, with no substantive successes in making the stuttering stereotype more congruent with the psychological research literature.

Past research suggests that negative stereotypes of people who stutter remain intact regardless of personal exposure or family relationship to stuttering (Doody, Kalinowski, Armson, & Stuart, 1993; Leahy, 1994; McGee, Kalinowski, & Stuart, 1996). Doody et al. (1993) surveyed 106 members in three small, rural communities in Newfoundland, Canada using a 25-item semantic differential scale (Woods & Williams, 1976). Those surveyed were asked to rate both "a

hypothetical adult male stutterer'' and ''a hypothetical adult male nonstutterer.'' Results indicated that negative stereotypes of people who stutter were present even though 85% of those surveyed reported knowing at least one person who stutters, and 39% of the studied participants reported a familial relation with a person who stutters. These results suggest that those negative stereotypes and perceptions of persons who stutter are both stable and persistent despite personal exposure or familial relation to stuttering behaviors and to people who stutter.

In another study measuring perceptions of people who stutter, Leahy (1994) found that negative perceptions held toward persons who stutter were relatively immutable despite education and exposure to stuttering. Students enrolled in a speech-language pathology graduate program took part in a pre/post-test study design using a semantic differential scale composed of 11 constructs which examined perceived character traits of persons who stutter. The academic work was designed to favorably modify the clinicians' perceptions toward people who stutter through a comprehensive educational itinerary, including classes and lectures dealing with stuttering, information regarding stuttering research, and direct involvement in clinical experiences and therapy (i.e., both group and individual). Upon completion of this trial, student clinicians involved in group therapy experiences considered people who stutter to be even more nervous, tense, and reticent than before. Results of this study indicated that perceptions of people who stutter became more negative after a year of deliberate conditions manipulating both educational and personal interactions with people who stutter; thus, attempts to change graduate clinicians' perceptions failed to show congruence with the psychological data from the stuttering population.

McGee et al. (1996) used a 25-item semantic differential scale (Woods & Williams, 1976) to measure participating high school students' perceptions toward people who stutter before and after viewing the documentary *Voices to Remember* (Bondarenko, 1992a, 1992b). The purpose of the study was to determine if the video, a poignant and emotional documentary, was effective in changing a group of high school students' perceptions of ''a hypothetical male stutterer'' to become more congruent with the psychological data from the stuttering population. However, the participants' existing negative perceptions of the ''hypothetical male stutterer'' became more negative after viewing the documentary. Specifically, participants believed that people who stutter are more self-derogatory, fearful, inflexible, withdrawn, and reticent after viewing *Voices to Remember*. This study suggests that this documentary alone was insufficient in promoting the participants' perceptual changes, as measured by a 25-item semantic differential scale (Woods & Williams, 1976), to better resemble psychological data representing the stuttering population.

Researches by Doody et al. (1993), Leahy (1994), and McGee et al. (1996) have examined the perceived character traits of people who stutter. These studies indicated that the perceptions of people who stutter are generally negative and not easily changed; if these negative stereotypes are altered, they become more negative than before. Results from these studies suggest that personal exposure,

family relations, factual information, and emotional information may be insufficient in changing the commonly held negative perceptions and stereotypes of people who stutter to better reflect the lives and personalities of people who stutter as compiled by Bloodstein (1995).

This study differs from the previously mentioned research with the use of the measurement instrument, ''Clinicians' Attitudes Toward Stuttering'' (CATS; Cooper, 1975), which is considered to assess a broad scope of insights pertaining to the stuttering disorder, rather than a semantic differential scale that solely measures perceived personality characteristics. By using the CATS as the measurement instrument, it is predicted that different perceptual changes of stuttering will be discovered when compared to results from other semantic differential scales. This research also differs from past studies as two types of stimuli are used to modify student clinicians' attitudes toward stuttering. The video documentaries, *Speaking of Courage* (Bondarenko, 1992a, 1992b) and *Effects of Altered Auditory Feedback at Fast and Normal Speaking Rates* (AAF; Keith & Kuhn, 1996), differ in their portrayal of stuttering; *Speaking of Courage* has emotional content, while the video documentary *Effects of Altered Auditory Feedback at Fast and Normal Speaking Rates* merely shows the results of altered auditory feedback on persons who stutter. The purpose of this research is to determine if brief video documentaries, either emotional or factual in content, can change graduate student clinicians' perceptions of stuttering as measured by the CATS.

2. Methods

2.1. Participants

Fifty-five first year speech-language pathology graduate student clinicians, enrolled in a semester-long stuttering class, volunteered for this research. Data for this study were recorded over the span of 2 years; the first year consisted of 21 participants, leaving 34 participants during the second year of data collection. All, but one, of the participants were female. The mean age was 25.3 years, with a standard deviation of 4.7 years; the median and mode student age was 24 years. Ages of the participants ranged from 23 to 51 years. Participants' anonymity and confidentiality were maintained by assigning study participants with numbers, which also corresponded to their pre- and post-video questionnaires for later statistical analysis. Over the entire span of data collection, two graduate clinicians enrolled in the stuttering class opted not to complete this research.

2.2. Materials

The CATS inventory (Cooper, 1975) measures attitudes toward stuttering, and has been incorporated in previously published research (Cooper, 1975; Cooper & Cooper, 1982, 1985; Cooper & Rustin, 1985). What makes the CATS inventory unique is that it contains 50 statements representing a wide range of beliefs

regarding stuttering. Topics measured include the etiology of stuttering, early therapeutic intervention, the efficacy of stuttering therapy, attitudes regarding various therapy techniques, reactions to stuttering, people who stutter and their personalities, and attitudes regarding clinicians, teachers, and counselors. Participants can best approximate their beliefs regarding each CATS item through a five-point strength-of-agreement scale ranging from "strongly agree" through "undecided" to "strongly disagree." Ordinal number values were assigned to the CATS' strength of agreement scale to allow the nonparametric analysis (5 = strongly agree, 4 = agree, 3 = undecided, 2 = disagree, 1 = strongly disagree). Operational definitions of all terms and concepts in the CATS inventory were left to each participant's personal discretion. While the CATS has been published in peer-reviewed journals, it has not been formally tested for reliability.

2.3. Procedure

The graduate clinicians participating during the first year of data collection viewed excerpts from the documentary *Speaking of Courage* (Bondarenko, 1992a, 1992b); the researcher edited this 60-min video down to slightly under 20 min so that only narration and scenes dealing with the main character (a young girl dealing with her own stuttering and stuttering therapy) remained. The modifications to the documentary were made so the two videos used in this study would be the same approximate length. *Speaking of Courage* (Bondarenko, 1992a, 1992b) has both emotional and informative content. A different group of student clinicians (during the second year of data collection) viewed a narrated version of the video *Effects of Altered Audio Feedback on Stuttering Frequency at Normal and Fast Speaking Rates* (Keith & Kuhn, 1996), which shows people who stutter speaking with and without altered auditory feedback. Narration, provided by a professional narrator, was introduced in the latter video to describe and clarify the speaking trials within the video; no inferential or persuasive comments were made. These videos were shown using a standard VHS videocassette recorder (JVC, model HR-D180U) and a 27-in. television (Zenith, model F2500 W).

Before each group of graduate clinicians viewed their assigned documentary, participants completed the CATS inventory to provide baseline data. Immediately after the initial completion of the CATS, participants viewed either a shortened version of the documentary *Speaking of Courage* (Bondarenko, 1992a, 1992b) or *Effects of Altered Auditory Feedback on both Fast and Normal Speaking Rates* (Keith & Kuhn, 1996). Both these videos were shown to the two different participant groups in the same university classroom, and at approximately the same time of day. All participants reported unobstructed vision of the television screen, with the volume at a comfortable listening level. All participants also reported normal or corrected hearing and vision. After viewing the video documentaries, the participants were asked to complete the CATS inventory a second time, so that attitudinal changes could be measured. Participants were asked to wait approximately 24 h before

completing the post-video CATS, and to return the completed post-video survey within 72 h of viewing the documentary. This time requirement was designed to enhance objective reflection on the documentaries, while still keeping the videos' content novel and mentally accessible.

Results from the video *Speaking of Courage* (Bondarenko, 1992a, 1992b) and *Effects of Altered Auditory Feedback on both Fast and Normal Speaking Rates* (Keith & Kuhn, 1996) were analyzed separately. Data points from both the pre- and post-video CATS inventories were entered into a database, and then statistically analyzed using a nonparametric procedure, the Wilcoxon signed ranks test, on a question-by-question basis. While this study design measures each groups' attitudinal changes as instigated by their corresponding video documentaries, it does not allow statistical results to be compared between the two videos or groups. Since each video analysis consisted of 50 different comparisons (the number of CATS items), the α level was lowered to .01 to lessen the possibility of Type 1 errors.

3. Results

3.1. Speaking of Courage

The edited version of Bondarenko's (1992a, 1992b) *Speaking of Courage* resulted in one CATS item showing a significant change in perception (see Table 1). Prior to viewing the video, the median participant response was "undecided" when given the statement, "Operant programs for stutterers have been found to be effective." However, after viewing *Speaking of Courage*, the median response changed to "moderately agree" (pre-video mean = 3.1, post-video mean = 4; $P = .009$, $z = -2.623$).

3.2. Effects of altered auditory feedback on both fast and normal speaking rates

Three significant perceptual changes were found after viewing *Effects of Altered Auditory Feedback on Stuttering Frequency at Normal and Fast Speak-*

Table 1
Significant changes in clinicians' attitudes toward stuttering after viewing *Speaking of Courage* (Bondarenko, 1992a, 1992b)

CATS item	Pre-video median response	Post-video median response	z score*	Probability of error
Operant programs for stutterers have been found to be effective	Undecided	Moderately agree	−2.6230	.009

* Based on the Wilcoxon signed rank test.

Table 2
Significant changes in clinicians' attitudes toward stuttering after viewing *Effects of Altered Auditory Feedback on Stuttering Frequency at Normal and Fast Speaking Rates* (Keith & Kuhn, 1996)

CATS item	Pre-video median response	Post-video median response	z score *	Probability of error
Stuttering behaviors are relatively easy to modify.	Undecided	Moderately agree	− 2.8040	.005
Chances are that most stuttering is the result of multiple coexisting factors.	Moderately agree	Undecided	− 2.5830	.010
There is no such thing as "primary stutterer" (a stutterer who stutters but is unaware of it).	Undecided	Moderately disagree	2.5730	.010

   * Based on the Wilcoxon signed rank test.

ing Rates (Keith & Kuhn, 1996) as measured by the CATS (see Table 2). An "undecided" median response regarding the statement, "Stuttering behaviors are relatively easy to modify," changed to "moderately agree" after viewing the video documentary (pre-video mean = 3.2, post-video mean = 4; $P = .005$, $z = -2.804$). Participants' median response of "moderately agree" prior to viewing the video in response to the CATS statement, "Chances are that most stuttering is the result of multiple coexisting factors," shifted to "undecided" after viewing the AAF video (pre-video mean = 3.9, post-video mean = 3; $P = .01$, $z = -2.583$). Although the pre-documentary median response was "undecided" for the CATS statement, "There is no such thing as a 'primary stutterer' (a stutterer who stutters but is unaware of it)," the median response changed to "moderately disagree" after viewing the AAF video (pre-video mean = 2.8, post-video mean = 1.9; $P = .01$, $z = -2.573$).

4. Discussion

4.1. Speaking of Courage

After viewing *Speaking of Courage* (Bondarenko, 1992a, 1992b), study participants reported a strengthened belief in the efficacy of "operant therapy" (the definition of "operant therapy" was left to the discretion of each study participant). This finding may have been a natural derivative of the documentary *Speaking of Courage*, as the edited video thematically portrays a "personal success story" and depicts stuttering therapy as being effective. However, the emotional content of the video may not be congruent with the experiences of the central character (which is a young girl dealing with stuttering and stuttering therapy). Even though her treatment is depicted as being successful, the central

character continued to stutter severely throughout the entire documentary. Why participating student clinicians were susceptible to the portrayal of successful stuttering therapy, despite the lack of significant changes in the stuttering of the central character, seems peculiar. One possible explanation may be the documentary's portrayal of the central character's triumph over her reticence toward speech in general. Nonetheless, the emotional portrayal of therapeutic success via the central character's decreased reticence of speaking seemed to overpower the failure of stuttering therapy to provide a significant reduction of stuttering behaviors throughout the video documentary *Speaking of Courage*.

4.2. Effects of Altered Auditory Feedback on Stuttering Frequency at Normal and Fast Speaking Rates

The video *Effects of Altered Auditory Feedback on Stuttering Frequency at Normal and Fast Speaking Rates* (Keith & Kuhn, 1996) depicted the phenomenon of AAF that immediately ameliorates most stuttering behaviors during reading passages at both normal and fast reading rates. Two of the perceptual changes instigated by the AAF documentary may be natural reactions to observing the evoked fluency. One perceptual change was strengthened agreement in the belief that "stuttering behaviors are relatively easy to modify," a perpetual shift that seems intuitively obvious after viewing severe stuttering reduced to perceived fluency with no instruction, practice, or apparent cognitive effort. The other perceptual change, a decreased belief that "stuttering is the result of multiple coexisting factors," suggests that participants may have been influenced by the AAF video depicting stuttering as a simple "on" and "off" phenomenon with the use of altered auditory feedback.

The other significant perceptual shift was to the statement, "There is no such thing as a 'primary stutterer' (a stutterer who stutters but is unaware of it)." Why the altered auditory feedback phenomenon might instigate such a perceptual change is uncertain; however, the dichotomous emotional reaction of viewing salient and vivid stuttering behaviors instantly converted to perceived fluent speech may have influenced such a change. Similar notions have been discussed in previous research, as White and Collins (1984) cite evidence suggesting that failures to change negative stuttering stereotypes may result from the emotional inferences that people make when introduced to the socially deviant speech behaviors of stuttering and not from the personalities of the people who stutter themselves. More specifically, White and Collins hypothesized that the genesis of the stuttering stereotype begins when listeners extrapolate and infer their own negative feelings about stuttered speech, then apply those feelings to the persons who stutter. Doody et al. (1993) furthered this perspective by suggesting that negative perceptions of stuttering develop from the veracity of salient (distinctiveness of behaviors) and vivid (emotional interest, concreteness, and imaginability of the data) stuttering behaviors, and not from common personality differences of persons who stutter (Nisbett & Ross, 1980). Study participants

who watched a person who stutters provide natural sounding and apparently effortless fluent speech and then saw the same person speak with struggle-filled, stuttered speech may have found it difficult to believe that someone can stutter and be unaware of it.

5. Conclusions

This study showed that perceptual changes regarding stuttering are possible, but the few perceptual changes found were all subtle. In fact, it could be argued that the significant differences that were found are actually artifacts of the measurement instrument's reliability and not reliable perceptual changes at all. Regardless, this research does support previous findings that persons' perceptions of stuttering are relatively stable and resistant to change. Although numerous studies using different stimuli, methodologies, and measurement instruments have been completed, none has provided changes in perceptions that better resemble stuttering and the stuttering population.

Why have such attempts at modifying perceptions of stuttering and the stuttering population been unsuccessful? Perhaps, measurement instruments have not been sufficiently sensitive to record subtle modifications in the stuttering stereotype, or perhaps the stimuli used (education, exposure, emotional information, and factual information) do not affect the stuttering stereotype. At this point, it seems highly unlikely that future studies using similar methodologies, measurement instruments, and stimuli will produce significantly different results than those already found. Instead of continuing a line of research that has yet to produce significant improvements in negative perceptions of stuttering, future research should consider using different stimuli and measurement instruments.

Future research may want to test the notions of White and Collins (1984) by measuring listeners' visceral reactions to stuttering behaviors by monitoring their psychophysiological responses. A research paradigm that quantifies subjects' physical reactions to stuttering behaviors could bypass the inherent problems of surveys, perceptual measurements, and stimulus content altogether. Such a perspective might lead to studying the correlation of psychophysiological responses to stuttering and perceptual measurements, the measurement of psychophysiological responses when exposed to different stuttering severities and situations, or the measurement of psychophysiological responses when persons who stutter acknowledge their stuttering behaviors (Collins & Blood, 1990).

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CONTINUING EDUCATION

Exploratory research in the measurement and modification of attitudes towards stuttering

QUESTIONS

(1) Research has shown that many populations hold negative stereotypes toward stuttering and persons who stutter. These populations include:
    (a) Speech-language pathologists and speech-language pathology students
    (b) Teachers and special educators
    (c) Parents of children who stutter
    (d) Employers and vocational counselors
    (e) All of the above

(2) Even though negative stereotypes of people who stutter are common and accepted, they are not supported by stuttering research or psychological data because study findings indicate that:
    (a) People who stutter are not distinctly neurotic or severely maladjusted
    (b) People who stutter do not seem to carry common character structures or a broad set of basic personality traits
    (c) People who stutter appear to fall within the normal ranges of personal adjustment

(d) None of the above
(e) All of the above

(3) Research indicates that negative stuttering stereotypes can be changed with:
    (a) Personal exposure to stuttering
    (b) Familial relationship to a person who stutters
    (c) Factual education about stuttering and people who stutter
    (d) Emotional education about stuttering and people who stutter
    (e) Nothing has been found to significantly improve the negative stuttering stereotypes

(4) In general, people's perceptions of stuttering are:
    (a) Relatively stable
    (b) Resistant to change
    (c) Fluctuate depending on the person
    (d) A and B
    (e) B and C

(5) One theory suggests that the etiology of the negative stuttering stereotype stems from:
    (a) Listener's emotional inferences based on stuttering behaviors
    (b) The vividness of stuttering behaviors
    (c) The salience of stuttering behaviors
    (d) None of the above
    (e) All of the above