Video self-modeling as a post-treatment fluency recovery strategy for adults

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ABSTRACT

Purpose: This multiple-baseline across subjects study investigated the effectiveness of video self-modeling (VSM) in reducing stuttering and bringing about improvements in associated self-report measures. Participants' viewing practices and perceptions of the utility of VSM also were explored.

Methods: Three adult males who had previously completed speech restructuring treatment viewed VSM recordings twice per week for 6 weeks. Weekly speech data, treatment viewing logs, and pre- and post-treatment self-report measures were obtained. An exit interview also was conducted.

Results: Two participants showed a decreasing trend in stuttering frequency. All participants appeared to engage in fewer avoidance behaviors and had less expectations to stutter. All participants perceived that, in different ways, the VSM treatment had benefited them and all participants had unique viewing practices.

Conclusion: Given the increasing availability and ease in using portable audio-visual technology, VSM appears to offer an economical and clinically useful tool for clients who are motivated to use the technology to recover fluency.

Educational Objectives: Readers will be able to describe: (a) the tenets of video-self modeling; (b) the main components of video-self modeling as a fluency recovery treatment as used in this study; and (c) speech and self-report outcomes.

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1. Introduction

Empirical support is growing for the use of video self-modeling (VSM) as a fluency maintenance and recovery tool for children who stutter (Bray & Kehle, 1996, 1998, 2001). Its use as a recovery tool for adults who stutter has also been demonstrated (Cream, O'Brian, Onslow, Packman, & Menzies, 2009; Webber, Packman, & Onslow, 2004). However, the effectiveness of VSM as a maintenance tool in the treatment of adults who stutter has yet to be established (i.e., Cream et al., 2010). Given the availability of portable audio-visual technology, VSM offers an economical, potentially efficient, and increasingly feasible fluency recovery or maintenance tool.

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1.1. Social cognitive learning theory

According to social cognitive learning theory, self-modeling enhances skill performance by demonstrating how best to carry out a behavior and all related processes involved in imitating a behavior. Self-modeling reinforces one's belief in being capable of producing the desired behavior, thereby enhancing self-efficacy. With increased self-efficacy, performance improves because individuals are more likely to devote their energy to behavior needed to succeed and less likely to foster obstructive self-doubts (Bandura, 1997). Self-efficacy has been identified as an important factor in relapse prevention, particularly in conditions treated with cognitive behavioral skills (Granvold & Wodarski, 1994). Indeed, it has been argued that improvements in self-efficacy are the most clinically relevant treatment outcomes (Merhag & Woltersdorf, 1990) and that increased self-efficacy is the mechanism that results in improved performance (Bandura, 1997). However, recent evidence suggests that self-efficacy is not an explanatory mechanism for self-modeling effects (Ste-Marie, Vertes, Rymal, & Martini, 2011); rather, self-efficacy is thought to be a co-occurring process or a mediator of self-modeling effects (Dowrick, 2012).

Video self-modeling is the viewing of oneself engaged in a desirable behavior. As Bray and Kehle (2012) indicate, VSM is a time and resource friendly treatment option (Bray & Kehle, 2012). Factors critical to the success of self-modeling include: (a) paying attention to the model, (b) being motivated to produce the behavior, and (c) having the capability to perform the modeled behavior (Bandura, 1986, 1997).

1.2. Video self-modeling as a fluency recovery and maintenance tool

Video self-modeling has been successfully used as a fluency recovery and maintenance tool with children (Bray & Kehle, 1996, 1998, 2001). However, most relevant to the current study are the findings with adults that have reported inconsistent results and revealed methodological shortcomings that are addressed in this study.

In 1976, Hosford, Moss, and Morrell (1976) used self-modeling in combination with systematic desensitization and relaxation techniques in treating an adult inmate who stuttered. The participant was instructed to listen to an edited audio speech sample of his fluent speech and practice speaking the way he did on the audiotape. Hosford and colleagues reported that the individual's stuttering rate decreased from 8.7 times per minute to 0.8 times per minute and that fluency was maintained at 3 months follow up.

In 2004, using a single subject withdrawal design, Webber et al. examined the short-term effects of VSM with 3 adults. There were two treatment phases. In the first phase participants were asked to watch their videos only. In the second phase, participants were asked to watch their video and then try to speak like they did in the video. Only one participant demonstrated a treatment effect evidenced by a reduction in stuttering frequency; effects were most evident when the participant was asked to speak as he did on the video. In addition to the importance of instructing clients to try to speak as they did in the video, Weber et al. suggested that prior successful treatment with speech restructuring strategies (i.e., fluency shaping techniques) may be a prerequisite for success with VSM.

In a pre-post group study with 10 adults, Cream et al. (2009) investigated the use of VSM as a fluency recovery tool with participants who had previously received intensive speech-restructuring treatment. The VSM videos were created at the onset of the study during a 1-h in-clinic session. Participants were asked to practice the speech-restructuring skills that they were taught in their initial treatment programs in monolog until they were able to maintain fluent speech for 5 min. For those who could not achieve fluent speech on their own, the first author (i.e., Cream) provided participants with a model of speech restructuring techniques to emulate. When participants stuttered, the first author also provided specific instructions to repeat the stuttered word fluently. The VSM video was then edited to remove any residual stuttering and any models or requests to repeat a stuttered word. Thus, the VSM videos showed participants speaking without stuttering (i.e., the target behavior was fluent speech). Participants were asked to view their VSM tapes twice a day for 4 weeks. Cream and colleagues measured percent syllables stuttered (%SS) in four conversational speech samples (two pre-treatment and two at the end of the 4th week of treatment). They also had participants provide pre- and post-treatment severity ratings of their stuttering in 5 self-selected speaking situations. Severity ratings were made using a 9 point scale in which 1 = *no stuttering* and 9 = *extreme stuttering*. Mean percent syllables stuttered (%SS) for the group decreased by 5.4% with 9 of 10 participants achieving reductions in stuttering. Mean self-reported severity ratings decreased by 1.7. The effect sizes for reductions in both %SS and stuttering severity ratings were large. The authors reported that some of the participants disliked their use of speech restructuring techniques; for example, one participant criticized 11 productions of/d/in his video. Some participants also did not like their general appearance in their VSM videos. In view of the feedback provided by the participants, the authors suggested that collaborating with participants in producing the VSM videos in future research might improve outcomes.

In a randomized control trial with 89 adolescents and adults, Cream et al. (2010) explored the utility of VSM as a strategy to improve maintenance immediately following a 5-day intensive speech-restructuring treatment. Videos were constructed on the 4th day of the intensive program. Following participation in a speech-restructuring program (using either the La Trobe Smooth Speech Program or the Camperdown Program), participants were randomly assigned to a control or treatment group. The control group received the standard maintenance program which consisted of 7 individual and small group sessions in the clinic. The treatment group received VSM in addition to the standard maintenance program. In contrast to Cream et al. (2009), no significant differences between the treatment and control groups were found for %SS; however, the VSM group had significantly reduced total impact scores on the Overall Assessment of the Speaker's Experience of Stuttering used for