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The Use of Video Self-Modeling to Treat Public Speaking Anxiety

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The Use of Video Self-Modeling to Treat Public Speaking Anxiety

By

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Abstract

The current thesis is *The Use of Video Self-Modeling to Treat Public Speaking Anxiety* by Alicia Kruger and is for partial fulfillment of a Master of Arts Degree in Clinical Psychology at Minnesota State University, Mankato in Mankato, Minnesota. The study was completed in May, 2013 and attempts to evaluate the effect of video self-modeling (VSM) on public speaking anxiety. VSM is a form of social learning where the individual serves as his own model for vicarious learning. The Personal Report of Confidence as a Speaker was administered to 101 psychology undergraduates to screen for public speaking anxiety. Eleven participants met inclusion criteria, and two elected to participate in the study. A multiple baseline across participants with generalization probes was implemented to study the use of VSM as a treatment for speech anxiety. Results indicate that VSM is not an effective treatment for public speaking anxiety because there were no robust changes in public speaking anxiety from baseline to treatment phase. The largest changes depicted in one participant utilized what may be a faulty direct observation system.

Introduction

Social phobia is a marked and persistent fear of at least one social situation (American Psychological Association [APA], 2000). Individuals with social phobia typically avoid social situations or endure them with great anxiety. Often, they are intensely afraid of criticism or of acting in a humiliating or embarrassing way. The fear causes extreme distress or significantly interferes with daily functioning (APA, 2000). Speech anxiety is a very common form of social anxiety, and many individuals with speech anxiety have subclinical social anxiety. Although 20% of people report an excessive fear of public speaking or performance, only two percent experience enough impairment or distress to meet criteria for social phobia (APA, 2000). Additionally, 21.4% of people have reported a lifetime social fear with social anxiety being the most common (Kessler et al., 2005). Current speech anxiety treatments include exposure therapy, cognitive restructuring, relaxation strategies, virtual reality exposure, and medication, but these treatments may be too intense, time-consuming, or costly to treat what is most likely a subclinical form of social anxiety (Magee, Erwin, & Heimberg, 2009).

In exposure therapy, the client progressively confronts anxiety-provoking stimuli or situations until those stimuli no longer elicit anxiety. Typically, the client ranks the stimuli or situations with guidance from the clinician to guide treatment (Magee et al., 2009). When treating speech anxiety, the situations or stimuli may include standing for a specified amount of time at the podium with no in vivo audience, standing at a podium imagining an audience is in vivo, standing for a specified amount of time at the podium

with an in vivo audience, and giving progressively longer speeches until the client is no longer anxious about delivering a speech.

Cognitive restructuring is a technique that challenges maladaptive beliefs to create a more realistic worldview and is typically combined with exposure therapy to treat speech anxiety. The progressive nature of exposure therapy as well as the reforming of an individual's thought processes in cognitive restructuring require an extended amount of time that may be not be appropriate for individuals with subclinical social anxiety. Additionally, exposure therapy needs to provoke excessive anxiety to be effective, and if this unneeded distress in a client can be avoided, it should be (Clark et al., 2009)

Relaxation strategies are another common treatment for speech anxiety. Currently, there are two that have been attempted in the treatment of public speaking anxiety: progressive muscle relaxation and applied relaxation. Progressive muscle relaxation involves tensing and relaxing muscle groups one at a time to achieve a more stress-free state overall, but progressive muscle relaxation alone has not been shown to be effective in treating speech anxiety (Al-Kubaisy et al., 1992). Applied relaxation is the combination of progressive muscle relaxation with exposure therapy to associate relaxation with the anxiety-provoking stimulus or situation. Although it has been shown to be somewhat effective when treating speech anxiety, it has not been shown to be as effective as cognitive therapy (Liebowitz, 1999). With such low efficacy, both relaxation techniques should not be used unless other more effective therapies have failed.

A recently researched therapy, virtual reality exposure, shows some promise. In virtual reality exposure, the client uses special equipment to simulate an in vivo audience. Virtual reality exposure may take less time than traditional exposure and would not

require confederates to act as the audience. In addition, it has been shown to be as

effective as cognitive therapy but with a lower dropout rate (Safir, Wallach, & Bar-Zvi,

2012). Though virtual reality has shown promise as a treatment, special equipment is

needed to perform the therapy. This equipment is expensive and not readily available,

making virtual reality exposure neither more convenient nor more cost-effective than

traditional exposure therapy.

A theory behind speech anxiety is that individuals with public speaking phobias

do not have the necessary skills to be successful speakers. Therefore, these individuals'

anxiety should be reduced after receiving speech skills training. However, speech skills

training alone has been found to be sufficient to reduce speech anxiety, suggesting that

speech skills training is a supplemental treatment rather than being a separate therapy on

its own (Worthington, 1984).

Another common avenue for treating anxiety of any sort is medication. Anti-

anxiety medications have been shown to be effective in the treatment of public speaking

anxiety, but they may not have lasting effects. Once the subject discontinues the

medication, the effects typically subside (Liebowitz, 1999).

Video self-modeling (VSM) is an intervention based on Bandura's social learning

which posits that individuals can learn vicariously through models (Bandura, 1969).

Bandura also hypothesized that an individual would learn better if the model were more

similar to him or her. For example, women would learn better from female models than

from male models. VSM is the observation of oneself behaving adaptively and at a

higher function than is currently possible. It has been shown to be effective in a variety

of different areas such as mild depression, anxiety, and sports skills (Dowrick & Jesdale,

1990; Franks & Malle, 1991). It has most commonly been implemented with individuals with autism, teaching them language and social skills, appropriate social interactions, and daily tasks as well as reducing off-task behavior (Gelbar et al., 2010).

Currently, only one study examining the effects of VSM on speech anxiety has been published (Rickards-Schlichting, Kehle, & Bray, 2008). This study demonstrated promising results but suffered from some limitations. The authors claimed they used a multiple-baseline design, but did not stagger treatment. Essentially, the study was a replicated A-B design, which can lead to poor experimental control as an outcome. An A-B design with a withdrawal or reversal would also not be an appropriate design to use with VSM because it is a form of learning, and withdrawal of something once learned is not practical and often not possible. In addition, they only collected data at baseline and follow-up, not during treatment, so they were unable to adjust the experiment as needed resulting in a quasi-experiment.

This study also used a sample of high school students. Other samples are needed to determine if VSM's efficacy with speech anxiety is generalizable. Compared to other treatments for public speaking anxiety, VSM may be a faster, easier, and more convenient way to treat a likely subclinical case of social phobia, and the purpose of the present study is to evaluate the treatment of speech anxiety with VSM.

Methods

Participants

The Personal Report of Confidence as a Speaker (PRCS) was administered online to 101 undergraduate psychology students. Three scores were omitted due to missing items. The mean score was 15.48 (SD=7.48). Because there is no agreed upon cutoff

score in the literature, a 90th percentile criterion (a score of 26 out of 30) was used to

ensure the individuals treated had public speaking anxiety (Phillips et al., 1997). Eleven

participants met this inclusion criterion (a score of 26 or higher), and out of those

individuals, two elected to participate. The two participants were both female

psychology undergraduates who identified as Caucasian. They were not prescribed any

psychiatric medications, taking any speech classes, or currently receiving any

psychological treatment, all of which could confound the results of treatment.

Measurements

The PRCS is a 30-item self-report scale measuring speech anxiety, and half of the

true-false items are negatively coded. The current form of the scale is an amended

version developed by Paul (1966) that uses the 30 most predictive items of the original

114-item scale. It has demonstrated adequate internal reliability ($\alpha=.91$) and convergent

validity ($r=.83$ - .85) (Daly, 1978). Sample questions include "I look forward to an

opportunity to speak in public," "I feel that I am in complete possession of myself while

speaking," and "I perspire and tremble just before getting up to speak."

A frequency within interval direct observation method was used to measure

speech anxiety during recorded speeches. Speech anxiety was defined by the following

behaviors, a quivering voice, speaking to quickly, speaking too softly, stammering,

hunting for words (i.e., searching notes or using uh, um, or like), clearing throat,

swallowing, lack of eye contact (i.e., breaking eye contact for more than 3 seconds), and

motionlessness (i.e., not moving or gesturing for more than 10 seconds). Thirty percent

of observations were rated by two observers, and inadequate interobserver agreement was

demonstrated using both kappa and point-by-point agreement ($\kappa = .12$, Point-by-Point

Agreement = 65.90%). Although point-by-point agreement is more common in the literature, kappa is more stringent because it accounts for chance agreement, so both measurements are given. Agreement this low indicates that the direct observation of behavior indicative of speech anxiety may not be a reliable assessment and calls the results of this assessment into question.

A Subjective Unit of Discomfort Scale (SUDS) was also implemented before and after each given speech to gain a self-report rating from the participants. SUDS ratings have demonstrated adequate convergent validity with Global Assessment of Functioning (GAF) scores (r = −0.439, p < .001) and the A scale and neurotic index of the Minnesota Multiphasic Personality Inventory (MMPI) (r = 0.351, p < .05 and r = 0.366, p < .01, respectively). Additionally, SUDS ratings have demonstrated sensitivity to treatment change with patients experiencing a significant decrease in SUDS ratings following three months of psychotherapy (t = 4.686, p < .001) (Tanner, 2012).

To assess client satisfaction with the treatment, a short self-report questionnaire was given at the end of treatment. This questionnaire included items aimed to measure client perceptions on the efficacy of treatment, the utility of treatment, and possible gains made due to treatment (see Appendix).

Design

I employed a multiple-baseline-across-participants design. VSM is a form of learning, so a withdrawal or reversal design would be inappropriate as there is no way to withdraw or reverse learning. For the baseline phase, participants delivered a 3 to 5 minute, videotaped speech. Speeches were recorded using a Polaroid DVG-720 HD digital video recorder. Participants were given 20 minutes to read a prepared speech and

make notes as needed, but they were not allowed to have the written speech in its entirety

while delivering the speech. Speeches were on various topics such as giving blood, the

importance of voting, tattoos, Alcatraz, and cyberbullying to prevent giving an advantage

to participants who had unique knowledge on one subject. Baseline phase speeches were

recorded in the classroom with only the researcher present. No in vivo audience was

used to reduce exposure effects as much as possible. The treatment was staggered in

groups of two to reduce exposure effects as well. The baseline phase was continued until

there was a stable baseline consisting of three data points within a 10% range.

     In the treatment phase, a six to seven minute speech was recorded, and speech

dysfluencies were edited out using the program CyberLink PowerDirector, a program that

is $99 to purchase. An interested-looking audience was edited in twice throughout the

speech, and an audience applauding was edited in at the end of the speech. The goal of

the editing was to make the speech look successful. The participants then watched the

tape of the successful speech one to two times per week. During these sessions, they also

gave small speeches identical to the baseline procedures to gather data during treatment.

At least one day was required between sessions, so the sessions were distributed

throughout the week. A follow-up session also identical to the baseline phase was

conducted two weeks after treatment ended to determine if maintenance had been

established.

     Additionally, a generalization probe with an in vivo audience was completed

before and after treatment to ensure the treatment process with only the researcher

present generalized to an in vivo audience setting. An in vivo audience was not utilized

for all sessions to minimize exposure effects, so generalization in front of an actual

audience needed to be demonstrated.

Results

VSM did not appear to reduce the subjective perception of public speaking

anxiety as there was not a robust change in participant SUDS scores from baseline to

treatment phase (see Figure 1). However, generalization probes with an in vivo audience

indicate that any effects from the treatment did generalize to speaking in the presence of

an audience. These effects were also maintained at a two-week follow-up. The absence

of a robust decrease between baseline and treatment phases suggests that the modest

decrease in anxiety was likely due to exposure effects and not VSM. A SUDS rating was

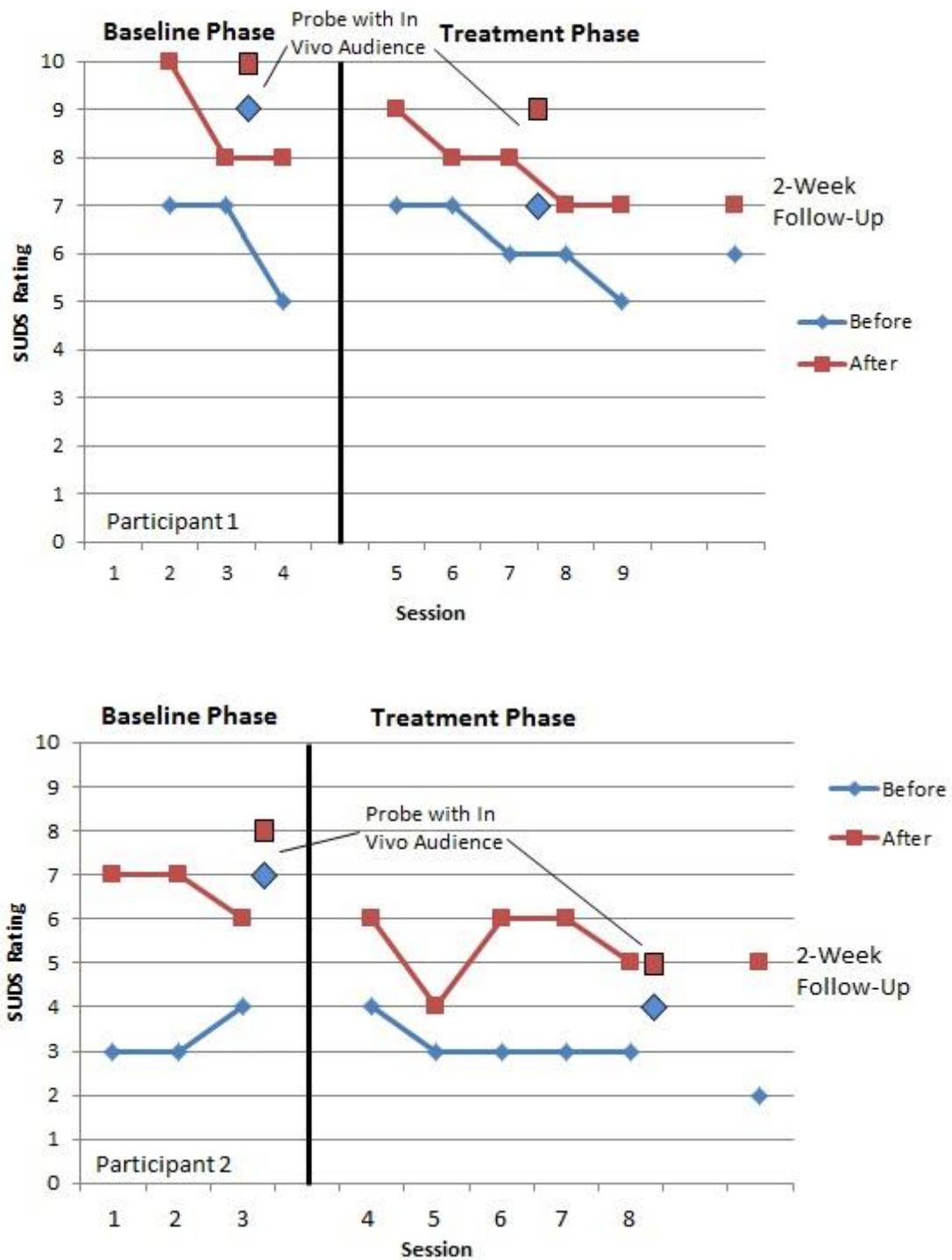not available for participant 1's first session.

Figure 1. SUDS ratings for each participant before and after giving a speech.

VSM did reduce behaviors indicative of anxiety during public speaking in participant 2 whose public speaking anxiety was moderate during baseline. However, VSM did not produce robust changes in behaviors indicative of anxiety during public speaking in the participant 2, who had more severe speech anxiety (see Figure 2). This result may be due to the difficulty of producing a video that demonstrates excellent public speaking ability when the individual has so few instances of public speaking behavior absent of anxiety. The participant for whom VSM did not reduce behaviors indicative of anxiety very rarely looked at the camera, resulting in anxiety-indicative behaviors in almost every interval.
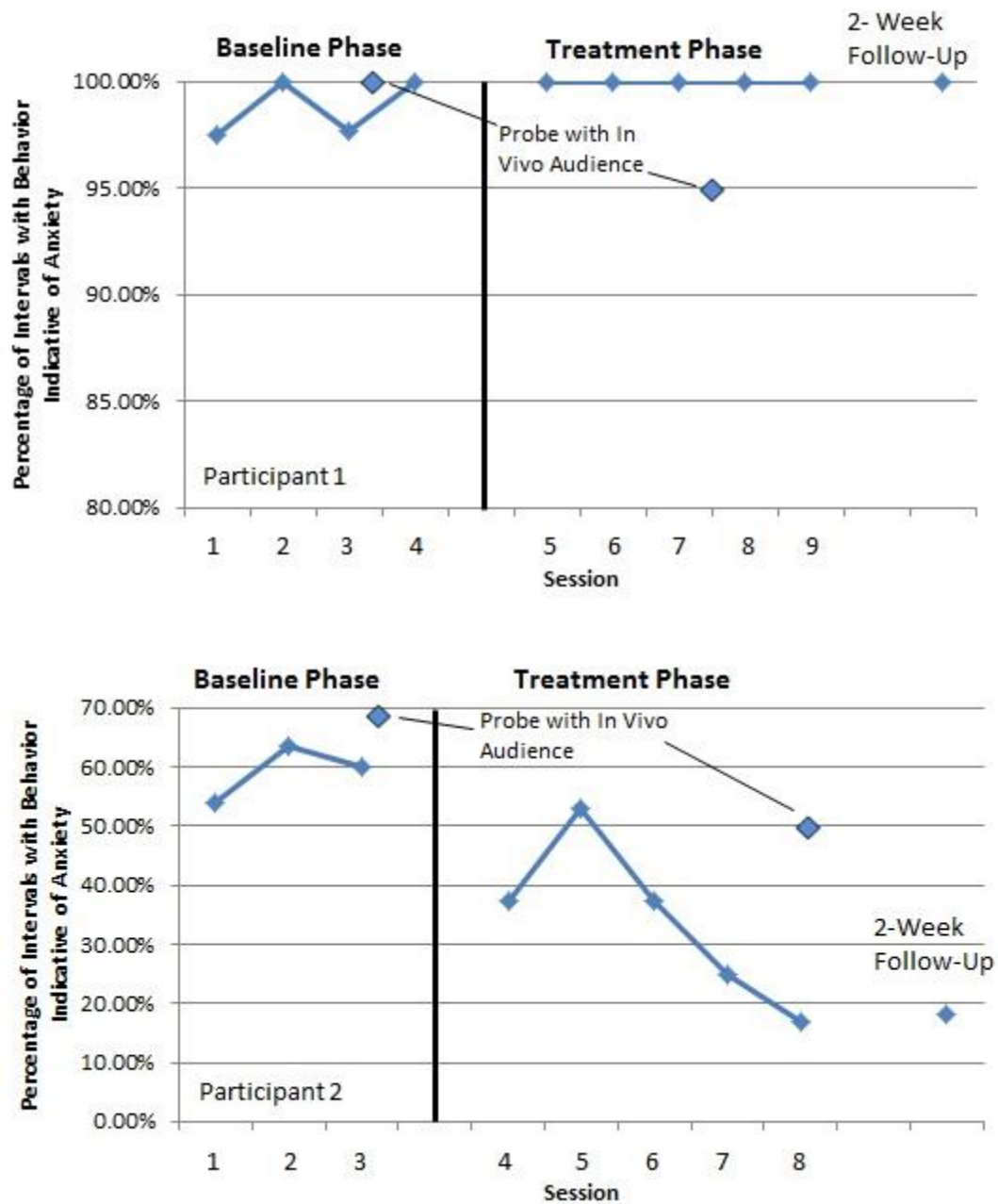
Figure 2. Direct observation of behaviors indicative of anxiety for both participants.

Participants completed the PRCS prior to treatment and after treatment.

Participant 2's score decreased from 26 before treatment to 22 after treatment, and

Participant 1's score decreased from 30 before treatment to 28 after treatment. However,

a dependent samples t-test indicated that there was not a significant difference in PRCS

scores pre- and post-treatment ($t(1) = 3$, $p = .21$).

Neither participant indicated that any improvement was due to the video self-

modeling on the satisfaction survey. Rather, they both indicated that any improvement

they had was likely due to exposure effects. Although I had hypothesized that VSM may

be a treatment for public speaking anxiety that limited the amount of individuals' distress

during treatment, this theory was proven false because both participants endorsed that it

was distressing to watch their VSM videos. Though there was limited improvement in

each individual's speech anxiety, both participants indicated that the treatment was

helpful, they felt more comfortable speaking in public, and they were satisfied with the

treatment process and outcome and would recommend the treatment to a friend.

However, one participant indicated that her public speaking anxiety had not been reduced

in the process.

Both participants also critiqued their performance in the video self-modeling

videos despite their anxious behaviors edited from the video, which suggests that VSM

may not appropriate for behaviors related to social phobia because individuals with these

behaviors are often more self-conscious and self-critical than those without symptoms of

social anxiety (Heinrichs & Hofman, 2001). For example, one participant noted that

while her voice did not shake as much as she thought it did, she noticed "fidgeting

habits" of which she was not previously aware.

Discussion

This study had several limitations. Only two participants enrolled in the study,

which is not ideal for a multiple baseline design because it indicates less experimental

control. Any replication of this study should include more than two participants to

demonstrate greater experimental control. Second, only a two-week follow-up was

implemented due to time constraints. A longer follow-up period would have

demonstrated longer lasting effects from treatment. There was also low interobserver

agreement for the direct observation measurement, which indicates that the assessment is

not reliable and calls the results of the assessment into question. More specific

operational definitions and more rigorous training for the second coder may have

improved interrater reliability. For example, stammering could have been more

specifically defined, and training could have included reliability checks to ensure coding

was implemented properly. Finally, there was no way to completely eliminate exposure

effects, making it difficult to surmise if improvements were due to VSM or exposure.

Future research may include comparing VSM to exposure therapy to determine if VSM

has any additional treatment effects when compared to exposure therapy.

   VSM alone does not appear to be a sufficient treatment for public speaking

anxiety, especially severe public speaking anxiety as editing together a coherent video

free from behaviors indicative of anxiety is very difficult. Although one participant

improved in the exhibition of behaviors indicative of anxiety while giving a speech,

neither participant demonstrated a robust decrease in their subjective experience of

anxiety after VSM was implemented as indicated by their SUDS ratings and PRCS

scores. Low interobserver agreement of behaviors indicative of speech anxiety indicates

that this measurement may not reliable and calls the results into question. The small

decrease shown in the SUDS ratings is likely due to exposure effects rather than VSM,

and this theory is supported by the fact that both participants indicated their

improvements were due to exposure rather than watching themselves successfully give a

speech. Additionally, VSM may not be appropriate for public speaking anxiety because

of speech anxiety's relation to social phobia. Socially anxious individuals are more self-

conscious and self-critical than those who are not socially anxious, so watching a video

of themselves complete a task that elicits anxiety may actually make socially phobic

individuals more anxious because they are more likely to critique themselves even with

anxious mannerisms edited out of the video (Heinrichs & Hofman, 2001). The

satisfaction survey supports this theory as both participants critiqued their own videos

despite behaviors indicative of anxiety being edited out and felt distress when watching

the VSM video.

Future research with VSM and public speaking anxiety should include a

comparison to exposure therapy because of exposure effects inherent in the VSM

process. Another option for future research regarding exposure effects could include a

group design rather than a single subject design. A group design would only necessitate

measurement before and after treatment rather than throughout treatment, reducing

exposure effects.   A different method of treatment delivery (e.g., allowing participants to

view videos on their own time or putting videos on a mobile device) may produce better

results because participants could observe the videos at their own leisure and more

frequently. Future researchers may also want to examine using VSM as a supplementary

treatment. The distressing nature of watching the videos indicates that VSM may serve

as a type of exposure and could be used as a segue into in vivo exposure therapy for

individuals with severe public speaking anxiety or when attrition is a concern. Clinically,

experts in speech skills training may find VSM helpful in aiding the education process,

and future research could explore the additive effects of including psychoeducation and

speech skills training with video self-modeling.

Appendix

I would like to better understand your feelings about the treatment. Your responses will be kept confidential, so please answer as truthfully as possible. Please answer the following questions with true (T) or false (F).

1. The treatment was helpful.	T / F
2. My public speaking anxiety has been reduced.	T / F
3. I feel more comfortable speaking in public.	T / F
4. The treatment was a waste of time.	T / F
5. I am satisfied with the treatment process.	T / F
6. I am satisfied with the treatment outcome.	T / F
7. I would recommend this treatment to a friend.	T / F
8. The gains I made in treatment were mostly due to video self-modeling.	T / F
9. The gains I made in treatment were mostly due to exposure (giving speeches over and over).	T / F
10. It was distressing to watch myself give a speech.	T / F

11. Is there anything else you have done during your time in treatment that has helped with your public speaking anxiety?

12. Please describe what it was like to watch yourself give a speech.

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