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Evaluating the Use of Behavioral Skills Training to Teach Assertiveness Skills to College Students

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Evaluating the Use of Behavioral Skills Training to Teach Assertiveness Skills to College
Students

by

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A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Science Degree in Applied Behavior Analysis
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College of Behavioral and Community Sciences
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ABSTRACT

Research on assertiveness skills has mostly involved the use of self-report measures. However, self-report has been noted to be highly inaccurate (Bernard et al., 1984). Only one unpublished study has explored a behavioral analytic perspective of assertiveness demonstrating behavioral skills training (BST) to be effective in teaching assertiveness skills. Thus, this study evaluated the effectiveness of BST to teach assertiveness skills to college students and whether the skills would generalize to novel therapist. Results of the study suggest BST was effective for teaching assertiveness skills to college students, the skills generalized to a novel therapist, and maintained at follow-up.

CHAPTER ONE:

INTRODUCTION

Assertiveness is a complex response class described as enabling a person to act in their own best interest, express their feelings without undue anxiety, and without denying the rights of others (Alberti & Emmons, 2017). Alberti and Emmons (2017) provide the most complete definition of assertiveness:

Assertive self-expression is direct, firm, positive – and, when necessary, persistent – action intended to promote equality in person-to-person relationships. Assertiveness enables us to act in our own best interests, to stand up for ourselves, without undue anxiety, to exercise personal rights without denying the rights of others, and to express our feelings and needs (affection, love, friendship, disappointment, annoyance, anger, regret, sorrow) honestly and comfortably (pg. 17).

Assertiveness may be viewed as a continuum of behavior. On one end of the continuum is non-assertive behavior. Alberti and Emmons (2017) defined non-assertiveness as a denial of self-expression and an inhibition for showing feelings. A person who displays non-assertiveness may experience anxiety due to others making decisions on their behalf. These individuals will rarely fulfill their own needs and goals. On the other end of the continuum, aggressive behavior can be self-enhancing and expressive, but goals are achieved at the expense of others. A person who display aggressiveness may choose for others and in turn, minimize the person's worth, leaving them hurt, defensive, and humiliated.

Suppose a parent of a client wants to give you, a behavior analyst, a gift in exchange for you to give more one-on-one time with their child. This is in direct violation of your certifying board's ethical code. A non-assertive response to the parent may be saying, "no thank you," but in a low voice with averted gaze. After the parent offers again, you may give in and accept the gift. An aggressive response may be waving your hands and raising your voice to the parent, stating, "I told you already that I couldn't accept gifts! Why don't you understand this?" An assertive response may be politely thanking the parent but explaining that due to your ethical code, accepting gifts is not possible. If the parent offers the gift again, you again calmly decline and explain that you will not be accepting any gifts from the client now or in the future, but thank them for the offer. These are examples of how non-assertive, aggressive, and assertive behavior can present in an everyday example.

Research on assertiveness has relied heavily on self-report measures such as surveys, questionnaires, and interviews to assess participants' assertiveness behavior. The Rathus Assertiveness Schedule (RAS; Rathus, 1973) self-report measure is the most commonly used questionnaire to assess assertiveness (Duckworth, 2009). This questionnaire includes 30 items with responses presented on a 6-point Likert scale. Another questionnaire that has been commonly used in assessing assertiveness skills is the Gambrill and Richey Assertion Inventory (Gambrill & Richey, 1975). This tool is similar in structure to the RAS in that it consists of 40 questions that are rated on a 5-point Likert scale. These two self-report measures have been used to evaluate the relation between anxiety and assertiveness in nursing and midwifery students (Larijani et al., 2010), the interaction between assertiveness and social support in undergraduate students (Elliott & Gramling, 1990), and the effect of assertiveness skills training on self-esteem and social anxiety in psychiatric patients (Lin et al., 2008). These studies have demonstrated that

individuals who report experiencing less anxiety and stress tend to engage in more assertive behavior.

Despite associations between assertiveness and anxiety, using a self-report measure may be highly inaccurate (Bernard et al., 1984) and not representative of a behavior that can be targeted for change. This is a limitation because respondents may not accurately recall their own behavior or may intentionally be deceitful. This is especially concerning when asking questions that may describe oneself negatively. Additionally, each self-report scale measures assertiveness differently. Therefore, even within assertiveness-based studies there may be weak validity of the measures.

Though much of the literature on teaching assertiveness relies heavily on self-report measures, there is a bank of research that blends self-report measures with behavioral assessments (Abed et al., 2015; Kim, 2003; Lee et al., 1979; Somlai et al., 1998). For example, Kim (2003) used role-play scenarios to assess assertive behavior in 26 adolescents with visual impairment. The study employed a pretest-posttest control-group experimental design. Participants were given three self-report measures prior to the role-play scenarios The Social Skills Rating System (SSRS; Gresham & Elliott, 1990), Modified RAS (MRAS; Vaal & McCullagh, 1977), and Cognitive Distortion Scales – Modified (CDS; Briere, 2000). The participants then engaged in the role-play test that consisted of one practice and eight test scenes. The participants were provided the opportunity to engage in naturalistic role-plays before observer's evaluated how assertive each participant performed during the role-plays. Participants' performance was rated using a Likert scale with 1 being very unassertive and 5 being very assertive. Coders rated the participants on nonverbal skills (e.g. posture), paralinguistic skills (e.g. voice volume), and verbal content (e.g. requests). The coders were told

to rate nonverbal and paralinguistic skills with their own judgment but use specific coding for the verbal content portion. The findings of the study showed that the role-play tests did not have a substantial effect on improving the adolescents' assertiveness skills.

Somlai et al. (1998) used role-play scenarios to assess sexual assertiveness skills in 114 severely mentally ill adults in inner-city community mental health clinics. Assessment of participants included a self-report interview regarding sexual behavior in the past 30 days. Researchers then assessed social skills during role-play scenarios. The participants engaged in four role-play scenarios involving risky or coercive sexual situations and were rated by researchers using a 4-point scale of effectiveness. The responses were averaged and a score of 2.5 or higher (on the 4-point scale) classified the participant as a highly skilled communicator. The authors reported individuals that performed effectively (e.g. above a 2.5 mean rating) in the scenarios requiring assertiveness and negotiation skills also self-reported fewer high-risk sexual behavior. The results also showed that participants engaged in higher levels of self-protection than individuals who performed poorly in the role-plays. These results suggested that a strong association exists between an individual's ability to engage in assertive behavior during sexual risk coercions and low levels of high-risk sexual behavior. The HEART program, which stands for Health Education and Relationship Training, has expanded this line of research by using an online modality to teach assertiveness skills to teenagers. One limitation of the HEART program is that the teenagers only respond to prompts on video without engaging with another person limiting conclusions about generalization (Bull, 2018; Kamke et al., 2020; Widman et al., 2018). Though each of these studies included role-plays to assess the degree of assertiveness behavior each participant engaged in while communicating, there was a failure to collect training data,

follow-up data, or evaluate generalizability outside of the role-play context. These limitations raise concerns about the clinical implications for the participants.

One approach to addressing these limitations is to incorporate Behavioral Skills Training (BST) with on-going data collection and programing and testing for generalization. BST includes four main components for correct implementation: instruction, modeling, rehearsal, and feedback (Miltenberger, 2016). Instructions clearly describe all information the learner needs regarding the skill being taught. During the modeling component the instructor demonstrates the correct behavior for the learner. Rehearsal allows the learner to engage in the target behavior through role-playing. During rehearsal an instructor will provide positive or corrective feedback following the role-play. These steps are repeated, or the learner remains in the rehearsal and feedback stage until the learner correctly displays the mastered skill.

To program for generalization, Miltenberger (2016) outlined four techniques to include with BST. First, the role-play should closely resemble the array of situations and populations the learner will encounter in real life. Second, the instructor should incorporate real-life situations or individuals within the role-play scenario. Third, the instructor should encourage the leaner to practice the skills being learned outside of the BST sessions. Lastly, the trainer should arrange for reinforcement to be available in the learner's natural environment to encourage the appropriate use of the learned skill.

Few studies have trained assertiveness skills using a BST framework and collected training data. As an exception, Bornstein et al. (1977) evaluated the effects of social-skills training (specifically assertion training) with four children who lacked assertiveness skills. The study used a multiple baseline across behaviors research design. The participants were given the Behavioral Assertiveness Test for Children (BAT-C; Eisler et al., 1973, 1975) three times.

Component areas rated low on the BAT-C were then chosen as target behaviors. The target behaviors selected for modification were ratio of eye contact to speech duration, loudness of speech, requests for new behavior, and overall assertiveness. A therapist first presented instructions related to the target behavior. Then the therapist presented prompts to the participant and modeled the correct response. Feedback was then provided in the form of praise or corrections. Rehearsal continued until the criterion had been reached for the target behavior. Results showed that social-skills training was effective in increasing overall assertiveness for all four children. Effects of training maintained over a one-month post-treatment period. This study suggests that a BST framework is effective for training and improving deficit components of assertiveness.

Frederiksen et al. (1976) utilized social-skills training to modify abusive verbal outbursts for two adult psychiatric patients. Frederiksen et al. (1976) did not explicitly target assertiveness skills in their research. However, the target behaviors in the study involved skills that historically correspond with assertiveness (e.g., eye contact and mands for behavior change). The study implemented social-skills training in a BST framework and evaluated the effects of the training within a multiple baseline across participants design. The training was conducted across two sessions. Following training a post-training probe was conducted to assess for generalization. The results of the study showed an increase in both participants' use of appropriate social skills.

Hersen and Bellack (1976) also evaluated the effects of social-skills training with two individuals diagnosed with schizophrenia. Target behaviors were identified using the Behavioral Assertiveness Test (BAT; Eisler et al., 1973) and the Behavioral Assertiveness Test-Revised (BAT-R; Eisler et al., 1975). The results of the BAT and BAT-R led to researchers identifying assertive target behavior based on low rates of occurrence during role-play scenarios derived

from the assessments. Target behavior varied slightly between the two patients, based on performance in baseline assessment. For Subject 1, target behaviors were ratio of eye contact to speech duration, speech duration, number of requests, and number of compliances. For Subject 2, target behaviors were ratio of eye contact to speech duration, ratio of speech disruptions to words spoken, number of appropriate smiles, number of compliances, and appropriate affect. Sessions consisted of 4-6 weeks of training and were conducted using a BST framework. Both individuals showed an increase in overall assertiveness skills following the training. Follow-up probes were conducted at 2, 4, 6, and 8 weeks after training and most effects were maintained at near-treatment levels. Results of the study suggest that a BST framework could be effective for training and maintaining assertiveness skills.

A comprehensive behavioral measure for assessing assertiveness skills was developed and is used at Project 12-Ways (Greene, 2020). The protocol has been used to teach assertive communication skills to mothers with a history of being victims of domestic violence, to teach teenage girls who were victims of sexual abuse, and as a package approach with conflict resolution and problem solving to increase positive interactions between teenagers and parents (Greene, 2020). Project 12-Ways measure includes 10 component behaviors, defined as non-assertive, assertive, or aggressive respectively referred to as the Assertiveness Checklist. This tool was used by Warrington (2015) to evaluate the use of BST to train assertiveness skills to college students. The dependent measures in this study were eye contact, facial expression, voice, posture, speech, calm, respectful, purpose stated, position maintenance, and conversation content. These measures were based on Alberti and Emmons (2009) descriptions of assertive behavior. Behavioral definitions were modified to evaluate non-assertive, assertive, and aggressive responses in a scale ranging from 0 to 2. For example, a rating of 0 for nonassertive

voice would indicate the participant was overly soft, slow, or said nothing. Conversely, a rating of 0 on the aggressive side indicates the participant was overly loud and rapid in their speech. A score of 2 would be assertive and indicate the participant's voice was audible and firm. During baseline participants engaged in role-plays with the researcher but were not given any feedback on their performance. During the intervention participants were trained using BST until they reached an 80% criterion. Generalization was also evaluated using three untrained scenarios during role-plays that were conducted by the original trainer. Response generalization occurred with all three participants, though one needed additional booster sessions to meet the 80% mastery criteria. A major limitation to this approach to evaluating generalization is the use of only one therapist.

Considering the importance of assertiveness skills, the limited amount of research evaluating BST for teaching assertiveness, and the success of BST for teaching a variety of skills across a number of populations, more research is called for to evaluate BST for teaching assertiveness skills. Thus, the purpose of the study was to replicate and extend Warrington (2015) and address limitations of the study. The current study involved three research questions.

Research Question 1: To what extent would BST effective when teaching assertiveness skills to college students?

Research Question 2: To what extent could assertiveness skills generalize to novel therapist?

Research Question 3: To what extent the assertiveness training would be acceptable by the participants?

CHAPTER TWO:

METHOD

Participants and Settings

Participants included three current college students enrolled at a university in the southeast of the United States. Participants were recruited via flyers posted throughout the university (see Appendix A) and disseminated to instructors advertising a study on increasing assertiveness. All participants scored below 60% on the Assertiveness Checklist (see Appendix B). Due to COVID-19 restrictions, all sessions were scheduled, conducted, and recorded virtually through Microsoft Teams©.

Demographic data can be found in Table 1. Insby was a 23-year-old, graduate level student. Insby reported that she had not received any assertiveness training in the past and expressed that she would like to learn how to be more comfortable engaging in assertive behavior as her goal for participating in the study. Senator was a 20-year-old undergraduate student. Senator also reported she had not previously received any assertiveness training. Her purpose and goal for participating in the study was to learn techniques to stay in control and maintain her position during interactions. Tipper was a 29-year-old, graduate level student. She also reported that she had not received any assertiveness training in the past while expressing her purpose for participating in the study was to better advocate for herself at work.

Table 1

Demographic Data

Age	Gender	Race	Education Level
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Table 1. (Continued)

Insby	23	Female	White	Graduate
Senator	20	Female	Black/African-American	Undergraduate
Tipper	29	Female	White	Graduate

Target Behavior

Assertiveness skills were based on the description by Alberti and Emmons (2017) which include: eye contact, body posture, distance/physical contact, gestures, facial expression, voice tone/inflection/volume, fluency, timing, listening, thoughts, persistence, and content. Each unit on the scale is categorized and operationally defined (see Appendix C). Each unit is defined in terms of extremely non-assertive, somewhat non-assertive, assertive, somewhat aggressive, and extremely aggressive. Each unit has a scale of 0-2, with total possible points being 20. A rating of “2” indicates an assertive response.

Data Collection and Inter-observer Agreement (IOA)

Sessions, which included one to four assessments, were video recorded and scored after each session. One assessment was defined as completion of each role-play per scenario. Sessions ranged from 1 to 6 weeks apart with a final 30 day follow-up. Data were collected using the Assertiveness Checklist (see Appendices B and C). A score of “0” indicates either “extremely non-assertive” or “extremely aggressive,” a score of “1” indicates “somewhat non-assertive” or “somewhat aggressive,” and a score of “2” indicates “assertive.” These behaviors were scored using a scale with a range of 0-2 on either side with five possible scores of 0, 1, 2, 1, 0 (see Appendix B). The total client points were added and then divided by total possible points, multiplied by 100. This resulted in a percentage of overall assertiveness.

IOA was collected for 42% of sessions across all phases. IOA was collected on 50% of Insby’s data, 40% of Senator’s data, and 36% of Tipper’s data. Line-by-line IOA was calculated

by scoring 100% if the data collectors agreed, 50% if the data collectors were only 1 number apart, and 0% if the data collectors were more than 1 number apart. For example, if one rater scored a “2” and the other rater scored a “1”, there was 50% agreement. If the first rated scored a “2” and the second rater scored a “0,” the pair has 0% agreement. This 0% agreement also occurred if one rater scored a “1” for “somewhat non-assertive” and the other rater scored a “1” for “somewhat aggressive” because they were more than one point away from agreement. The IOA data are summarized in Table 2. On one occasion, IOA fell below 80% agreement resulting in additional data collection training with the data collector.

Table 2

IOA Data

	Mean Per Participant	Mean Across All Participants and Phases			
		Baseline	Post-BST	Generalization	Follow-Up
Insby	88 (75-100)				
Senator	96 (90-100)	83 (75-90)	91 (80-100)	95 (90-100)	100
Tipper	87 (80-95)				

Treatment Fidelity

Treatment fidelity (Appendix D & E) was 100% and was calculated for a 39% of sessions during all phases of the study. The recorded sessions were reviewed and implementation steps were scored either correct or incorrect. Percentage of correct steps engaged in were calculated by taking the total number of “YES” answers, dividing it by the total number of “YES” and “NO” answers, and then multiplying by 100.

Social Validity

The social validity survey evaluated if the participants found the intervention beneficial and if they had an opportunity to use the assertiveness skills outside of experimental sessions.

The survey (Appendix F) consisted of 10 questions and each question was rated using a 5-point Likert scale (1 – Strongly Disagree, 2- Disagree, 3 – Somewhat Agree, 4 – Agree, 5 – Strongly Agree). This measure was adapted from Warrington (2015) and adjusted based on Wolf (1978). Results of the social validity survey showed an overall mean approval score of 4.97 (range = 4.9 – 5.0) across all ten items. Social validity survey results can be found in Table 3. All three participants reported a high level of satisfaction with the intervention’s social significance, appropriateness of procedures, and the effects of the intervention. Three open-ended questions were presented to the participant during their final session with the principal investigator. Qualitative responses to the questions can be found in Table 4.

Table 3

Social Validity Survey

Question	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Insby	5	5	5	5	5	5	4	5	5	5
Senator	5	5	5	5	5	5	5	5	5	5
Tipper	5	5	5	5	5	5	5	5	5	5

Table 4

Qualitative Social Validity

Participant	Questions and Answers
	What did you like most about this study?
Insby	I loved how you broke down assertiveness into behavior I understood. Being someone who isn’t assertive making a change can be intimidating. But working on things like eye contact, voice, smile made it so much less intimidating.

Table 4. (Continued)

Senator	Something I liked the most about this study is the beneficial aspects. This study has provided me with a greater way to communicate effectively with others. Which is a necessity within everyday life. Before participating in this study I never knew where I stood in Assertive skills. I know I am an active leader but, did not know if my approaches were hurting me or helping me prior to the training. As I reflect I realize they were not the best. Especially in speech and over explanations. Being able to control those two things as well as others helps me maintain firm in my position.
Tipper	I loved learning the components of assertive behavior and I loved that they were easy to retain and apply to my everyday life immediately.
<hr/>	
How would you improve the study?	
Insby	I definitely think being in person would've been interesting for this study, unfortunately COVID ruined that for everyone.
Senator	I would do nothing to improve this study. The scenarios were very realistic and relatable.
Tipper	To improve the study, you could put a bigger emphasis on the effectiveness of the assertiveness behaviors in different settings. For example, using these behaviors in a work setting has these specific outcomes etc.
<hr/>	
Additional Comments	
Insby	I really enjoyed being a part of this study and have already noticed how it's impacted my life. I also never knew I avoided eye contact!! So learning that in this study was very helpful.
Senator	I enjoyed every session with Kayla. Her study really helped me improve my life. She provided great instructions and feedback. I am really happy and satisfied with this study and I made the right decision to participate.

Design

A non-concurrent multiple baseline across participants design was used for this study. Phases were baseline, post-BST, generalization probes, and 30-day follow-up.

Procedure

Pre-experimental procedures

Consent forms were emailed to the participant prior to the session starting. Once the consent form was signed and returned, the participant completed the Rathus Assertiveness Schedule. The researcher and participant then met via Microsoft Teams© to discuss consent and allow the participant to ask any questions. Participants were informed that all sessions of the experiment would be recorded and viewed after sessions concluded. The participant had the opportunity to ask the researcher any questions prior to starting the first baseline session.

Role-play scenarios

The role-play scenarios were separated into four categories; peers, educational authority, vocational authority, and parental authority. All scenarios included opportunities for the participant to respond assertively to a situation or request that goes against the individual's preference. The peer role-play scenarios involved a peer or friend engaging in a behavior that the participant does not wish to engage in. The parental role-play scenarios involved a parent insisting on a behavior change from the participant that the participant does not wish to do. The educational and vocational authority scenarios included an educator (teacher, instructor, or professor) or work supervisor requesting something unreasonable from the participant. All scenarios began with the researcher reading the prompt (see Appendix G) and verifying the participant was clear on the scenario and the participants' position. The researcher then role-played the prompt and allowed the participant to respond in a natural way without a script. If the participant was engaging in any non-assertive or aggressive behavior, the researcher tried to change the participant's position until the 5 min elapsed. If the participant was not engaging in

non-assertive or aggressive behavior, the researcher would try to change the participant's position either until they were began to engage in non-assertive or aggressive behavior or until the 5 min elapsed. A visual depiction of this decision tree is found in Figure 2. Examples of role-play responses can be found in Appendix G. The participant was scored one time on their overall performance during the role play.

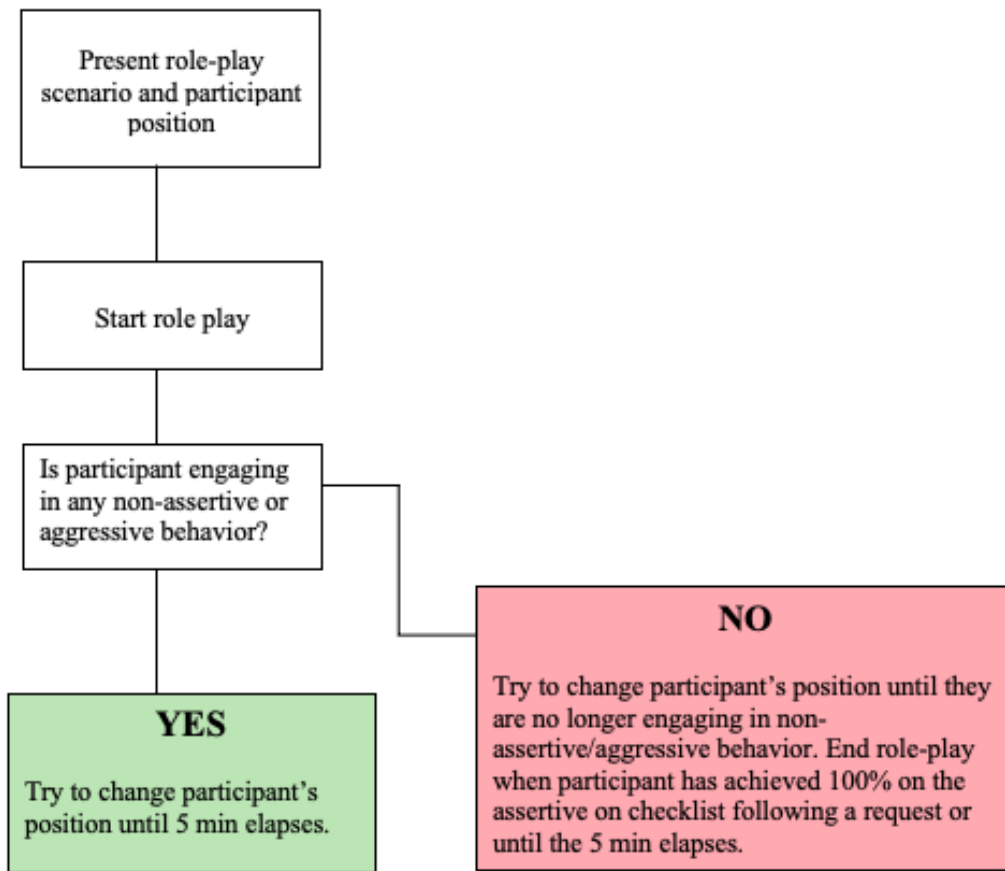


Figure 2

A role-play flow chart.

Baseline

The categories of scenarios were educational authority, vocational authority, parents, and peers (Appendix H) and were presented randomly within category. Sessions began with the researcher reading the scenario to the participant. The researcher then told the participant to

respond to the scenario as they typically would. The researcher did not provide any feedback on the role-play performance. Baseline sessions continued until data were stable, as determined through visual inspection of the graphical data.

Behavioral Skills Training (BST)

The participant received a training packet in advance with directions to review prior to the training session. Insby received the training packet 50-hours in advance to the training session. Senator received the training packet 18 days in advance, due to rescheduling. Tipper received the training packet 24-hours in advance to the training session. Each training packet included the definition of assertiveness in comparison to non-assertiveness and aggressive communication types and the 10 target behaviors. The researcher began training with a video explaining the definition of each target behavior. The video then modeled two trainers conducting three models including non-assertive, aggressive, and assertive examples of each behavior (see Appendix C). At the end of each model, the video was paused and the participant was asked to use the assertiveness checklist to label whether each model was non-assertive, aggressive, or assertive. Trainers then asked the participant to identify specific sections of the role-play that met each behavior category on the assertiveness checklist. For example, after a model of non-assertiveness behavior, the trainer asked the participant to identify the specific sections on the checklist that would be scored as non-assertive (e.g., eye contact, facial expressions, tone). After labeling each model, the participant was then be presented with one scenario and asked to respond using assertive behavior in a live role-play. After each role-play, the participant was asked to self-evaluate their performance. The researcher then modeled the correct behavior, asked the participant to rehearse the role-play, and then provided feedback to the participant. This iterative process continued until the participant responded to the training

role-play using assertive behavior with 100% accuracy across three role-plays. The 100% mastery criterion was measured by the participant reaching a score of “2 - assertive” for all categories on the Assertiveness Checklist.

Post-training

To evaluate whether the assertiveness training increased each participant’s overall assertiveness as reflected in the percentage achieved on the Assertiveness Checklist, assessment procedures identical to baseline phases were implemented. Mastery criterion was three consecutive sessions at 90% or higher with known therapist.

Generalization probes

A novel therapist role-played a novel scenario with the participant to evaluate whether assertiveness skills generalized outside of training sessions. Generalization probes were conducted similarly to baseline and post training phases. Sessions began with the researcher reading the scenario to the participant and verifying scenario and position. The researcher then told the participant to respond to the scenario as they typically would. The novel therapist then engaged in the role-play with the participant. The researcher did not provide any feedback when the role-play was completed.

30-day follow-up

A known therapist role-played a novel scenario with the participant to evaluate whether assertiveness skills maintained after 30-days. The 30-day follow-up probe was conducted similarly to generalization probes. Sessions began with the researcher reading the scenario to the participant, verifying the scenario, and confirming the participant’s position. The researcher then told the participant to respond to the scenario as they typically would. The known therapist then

engaged in the role-play with the participant. The researcher did not provide any feedback when the role-play was completed.

Post-experimental procedures

Participants completed the Rathus Assertiveness Schedule once intervention was complete as a posttest measure.

CHAPTER THREE:

RESULTS

Figure 1 displays results for all three participants. Insby scored an average of 33.33% across baseline assessments (range = 25% - 40%). During the post-BST assessments, Insby's assertiveness scores increased to an average of 95% (range = 90% - 100%). During both generalization probes and a 30-day follow up probe scored 100%. Overall, Insby demonstrated an average increase of approximately 62% from baseline to intervention and maintained an assertiveness score of 100% after a 30-day follow-up probe.

Senator scored an average of 52.50% across baseline assessments (range = 50% - 55%). During the post-BST assessments, Senator's assertiveness scores increased to an average of 93.33% (range = 90% - 95). During both generalization probes and a 30-day follow up probe, Senator scored 95%, 95%, and 90%, respectively. Overall, Senator demonstrated an increase of about 40% from baseline to intervention and maintained an assertiveness score of 90% after a 30-day follow-up probe.

Tipper scored an average of 25% across baseline assessments (range = 20% - 35%). During the post-BST assessments, Tipper's assertiveness scores increased to an average of 95% (range = 90% - 100%). During both generalization probes and a 30-day follow up probe, Tipper scored 100%, 95%, and 90%, respectively. Overall, Tipper demonstrated an increase of 70% from baseline to intervention and maintained an assertiveness score of 90% after a 30-day follow-up probe.

Table 5 displays the results of the Rathus Assertiveness Schedule (RAS) self-report measure. Based on the responses reported, the participants received the following scores on the RAS; Insby received a pre-intervention score of -64 (ranked below the <1st percentile) and a post-intervention score of 5 (ranked at the 50th percentile); Senator received a pre-intervention score of 24 (ranked between the 75th and 80th percentile) and a post-intervention score of 27 (ranked between the 80th and 85th percentile); and Tipper received a pre-intervention score of -71 (ranked below the <1st percentile) and a post-intervention score of 5 (ranked between the 40th and 45th percentile).

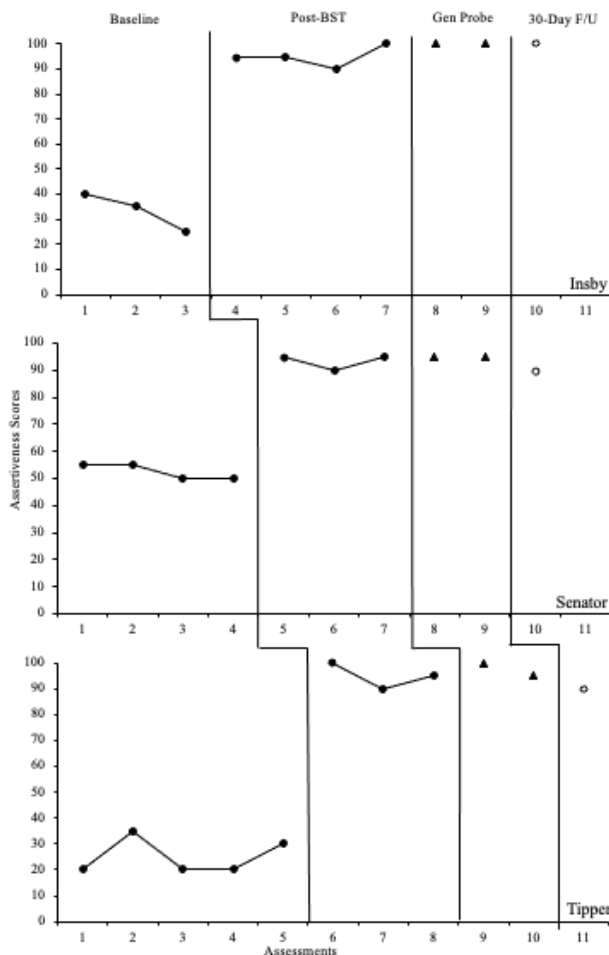


Figure 1

A non-concurrent multiple baseline across participants displaying assertiveness scores during baseline, post-behavioral skills training, generalization, and follow-up.

Table 5*Rathus Assertiveness Schedule (RAS)*

Participant	Pre-Score	Percentile Range	Post-Score	Percentile Range
Insby	-64	<1 st	8	50 th
Senator	24	75 th – 80 th	27	80 th – 85 th
Tipper	-71	<1 st	5	40 th – 45 th

CHAPTER FOUR:

DISCUSSION

The results of this study are consistent with previous findings demonstrating BST was an efficacious intervention for teaching assertiveness skills to college students. Findings from this study extend the previous literature by demonstrating the assertiveness skills could be generalized to novel therapist across novel scenarios. Each participant maintained their skills across varying temporal session gaps and at follow-up. Though it appears Tipper is on a decreasing trend across the generalization and follow-up phases, we do not believe this is a function of time due to the 4-6 week gaps in sessions where she maintained during the post-BST phase. A final important extension of the literature is the level of acceptance of the intervention by each participant. Overall, participants find the intervention to be valuable and important to their growth using assertiveness communication skills.

The participants all scored below withdrawal criteria during baseline. Following BST training, all three participants consistently scored above the mastery criteria of 90%. The results of the RAS showed that Insby and Tipper had the biggest increase in self-reported level of assertiveness. Insby and Tipper self-rated their level of assertiveness well below the 1st percentile on the RAS in pre-intervention. Following intervention, Insby and Tipper rated their level of assertiveness at or near the 50th percentile. Senator self-rated her assertiveness skills between the 75th and 80th percentile in pre-intervention, and between the 80th to 85th percentiles in post-intervention. Senator was the only participant that engaged in both non-assertive and aggressive

behavior in baseline. Insby and Tipper only engaged in extremely non-assertive behavior in baseline.

One finding that differed from the broader BST literature was that our participants did not require booster sessions post-BST. Because it is uncommon for participants to not require booster training sessions we recommend conservative generalization about our study's findings. Our participants may be among the small sample of individuals that do not require booster training thus future researchers should continue to evaluate which demographics of participants may or may not require booster training. Though we did find positive results for generalization, our participants were aware that they were being observed thus limiting an overall conclusion about their ability to use the skills in real-life situations. Previous research has shown some individuals require in-situ or in-vivo feedback to generalize their skills to real-life situations (Hassan et al., 2018). Our findings present a level of confidence that the assertiveness skills can generalize to novel situations but we are limited in our conclusions due to the lack of in-situ or in-vivo assessments.

Although Warrington (2015) found wider ranges in IOA, our IOA remained high throughout phases. IOA did fall below the 80% criterion for one session and required a booster training session. Being that the target behavior included 10 behaviors on a 5-point scale, having the sessions recorded allowed for the PI and RA's to review the sessions multiple times and specifically identify the agreements and disagreements for the booster training. Without the sessions being recorded, tracking and accurately rating all 10 behaviors at once could prove challenging for IOA and IOA training.

Although an overall strength of the study was the ability to train and assess assertiveness skills with high fidelity and social validity via telehealth, we did identify a few limitations

attributed to the virtual aspect of the study. Due to this modality, generalization was difficult to assess. Future research should look at conducting generalization probes in live naturalistic settings. Another limitation tied to the modality of sessions, were the authenticity of the role-plays. Being that the participant was separated by a computer screen, the therapists were limited in their ability to engage in certain coercive interaction styles. An example of this would be if the role-play was a peer asking the participant to borrow their car, there is no threat of the peer taking the keys once the participant says no. The virtual sessions limited the therapist to verbal coercion to try to convince the participant to change their position on a topic.

Another limitation caused by the pandemic was the spacing of sessions. Throughout the study, all three participants experienced difficulties in scheduling and technical difficulties that culminated in an average of 4-6 weeks between phase changes for each participant. One participant was diagnosed with COVID-19 during the study which forced the PI to push another participant's sessions back a few weeks. One additional limitation identified in the study was that all participants were female gender. Future research should evaluate the efficacy of BST to train assertiveness skills with individuals of varying genders.

Future research should evaluate training assertiveness skills to individuals across different ages, genders, and/or socioeconomic statuses. The results of this study show that BST is an effective intervention for training assertiveness skills. These strategies can be useful in programs addressing prevention strategies within bullying and abusive relationships. Future research may also evaluate adapting the intervention for individuals with intellectual or developmental disabilities. Lastly, future research could attempt to quantify the parameters of each of the 10 assertive behaviors.

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APPENDIX A: RECRUITING FLYER



IRBPROTOCOL
Study#001495

Participants Needed:

Improve Your Assertiveness Communication Skills!

How can I start?

- If you are between the ages of 18 and 30, you may be able to participate!
- Each session will last approximately 30 to 90 minutes.
- Sessions will be scheduled around your availability through virtual meetings!

What are some potential benefits?

- Improve your level of assertiveness.
- Learn skills that you can use in your personal life with bosses, parents, and peers!

The first 3 applicants will be enrolled immediately. All others will be placed on a waitlist.

If you are interested contact:

Kayla Rogover

krogover@usf.edu | Text: 954-802-2791

Rocky Haynes, Ph.D., BCBA-D

rdhaynes@usf.edu



USF /

COLLEGE OF BEHAVIORAL
& COMMUNITY SCIENCES
CHILD & FAMILY STUDIES

APPENDIX B: ASSERTIVENESS CHECKLIST DATA SHEET

Client (Pseudonym): _____

Date: _____

Observer: _____

Phase:

BL	Tx	Gen	TRN	4wFU
----	----	-----	-----	------

Role-Play Number: _____

Body Language	Extremely non-assertive	1	Assertive	2	1	Extremely aggressive	N/A
1. Eye Contact – comfortably direct throughout conversation	0	1	2	1	0	N/A	
2. Facial Expression – open and relaxed	0	1	2	1	0	N/A	
3. Voice – audible, firm	0	1	2	1	0	N/A	
4. Posture – body erect and relaxed	0	1	2	1	0	N/A	
Communication							
5. Speech – clear, emphasizing key words, expressive	0	1	2	1	0	N/A	
6. Calm – remains in control during conversation, firm in position	0	1	2	1	0	N/A	
7. Respectful – doesn't belittle or cut off other during conversation			2	1	0	N/A	
8. Purpose Stated – position direct and to the point	0	1	2			N/A	
9. Position Maintenance – maintains position throughout conversation	0	1	2			N/A	
10. Conversation Content – to the point, not evasive or over explanatory	0	1	2			N/A	
Total Points							
Percentage Total							

*Total client points/total possible points (Max 20pts)

APPENDIX C: TARGET BEHAVIOR (PROJECT 12-WAYS, 2007)

1. Eye Contact

- 0 Does not look at person while speaking; looks down or away
- 1 Most of the time a relaxed steady gaze, looks down or away more than at other person
- 2 Relaxed, steady gaze occasionally looking away
- 1 Most of the time relaxed steady gaze, occasionally glares or stares into space
- 0 Glares at other person during interaction or stares into space showing lack of interest in interaction, stares directly at the other person throughout entire interaction

2. Facial Expression

- 0 Constant smiling or laughing, biting or wetting lips, swallowing or clearing throat excessively, or tensing and wrinkling face
- 1 Open and relaxed during most of interaction, occasionally emits behaviors as noted above
- 2 Remains relaxed, appears comfortable and attentive matches what the messages says
- 1 Open and relaxed during most of interaction, occasionally emits behaviors as noted below
- 0 Clenching teeth, flaring nostrils, jutting jaws, or pursed, tight-lipped mouth

3. Posture

- 0 Covers mouth or face with hand, excessive head nodding, fidgets with objects or self, constant shifting of weight, shoulders not symmetrical with body, or rubbing hands
- 1 Erect and relaxed during most of interaction, occasionally emits behaviors as noted above
- 2 Body erect and relaxed, appears well-balanced
- 1 Erect and relaxed during most of interaction, occasionally emits behaviors as noted below
- 0 Pounding fists, stiff and rigid, finger or hand waving or pointing, shaking head to express disapproval, or hands on hips

4. Voice

- 0 Overly soft, slow, or says nothing
- 1 Firm and audible most of interaction, occasionally overly soft, slow or says nothing
- 2 Firm and audible
- 1 Firm and audible most of interaction, occasionally overly loud or rapid
- 0 Overly loud and rapid

5. Speech

- 0 Whiny, monotonous affect, mumbles or is hesitant
- 1 Clear and expressive during most of interaction, occasionally emits behaviors as noted above
- 2 Expressive, clear, emphasizes key words
- 1 Clear and expressive during most of interaction, occasionally emits behaviors as noted below
- 0 Sarcastic or condescending

6. Calm

- 0 Does not take control of situation, reacts excessively calmly
- 1 Attempts to take control of situation, but eventually lets other person control the interaction
- 2 Firm and in control of the situation/interaction
- 1 Intermittently out of control, but eventually acts rationally
- 0 Yells, argues, becomes hostile or out of control during interaction

7. Respectful

- 2 Listens intently to other person during interaction
- 1 Belittles or cuts off other person, but eventually apologizes or attempts to make amends
- 0 Belittles other person or cuts person off during interaction

8. Statement of Purpose

- 0 Does not take a position
- 1 Expresses position, but not explicitly stated
- 2 Position direct and to the point, explicitly stated

9. Position Maintenance

- 0 Does not attempt to maintain position
- 1 Attempts to hold own position, but eventually gives in
- 2 Maintains position throughout the conversation

10. Conversation Content

- 0 Ambiguous, interacts evasively thus avoiding conflict
- 1 Clear content but overly explanatory during interactions, makes justifications
- 2 Firm and to the point not evasive nor overly explanatory

**APPENDIX D: TREATMENT FIDELITY CHECKLIST – BASELINE, POST-
TRAINING, GENERALIZATION PROBE, FOLLOW-UP PROBE (ADAPTED FROM
WARRINGTON, 2015)**

Client (Pseudonym): _____

Date: _____

Observer: _____

Phase:

BL	PT	GEN	F/U
----	----	-----	-----

Role-Play Number: _____

Training scenario is read	YES	NO	N/A
Primary researcher engages in role-play	YES	NO	N/A
No feedback is given	YES	NO	N/A
Role-play does not exceed 5 mins	YES	NO	N/A
During post training if the response is less than 90% the scenario is read a second time.	YES	NO	N/A
If response is still less than 90% a booster training is implemented.	YES	NO	N/A
Total:			
Percentage:			

*Percentage is calculate by adding total number of “YES” and dividing by “YES + NO”

**APPENDIX E: TREATMENT FIDELITY CHECKLIST – BST TRAINING (ADAPTED
FROM WARRINGTON, 2015)**

Client (Pseudonym): _____
 Observer: _____
 Role-Play Number: _____

Date: _____
 Phase: TRAIN

In the first training session benefits of assertiveness are discussed (video).	YES	NO	N/A
The participant is presented with the assertiveness definitions (video).	YES	NO	N/A
The participant is given the opportunity to ask questions and receive clarification.	YES	NO	N/A
The researchers role plays nonassertive (video).	YES	NO	N/A
The researchers role plays aggressive (video).	YES	NO	N/A
The researchers role plays assertive (video).	YES	NO	N/A
Participant is asked to verbally label each model as non-assertive, assertive, or aggressive.	YES	NO	N/A
Participant is asked to identify specific sections of role-play that met the behavior category.	YES	NO	N/A
A scenario is read aloud and the participant is asked to respond in an assertive manner.	YES	NO	N/A
The participant is asked to self-evaluate.	YES	NO	N/A

Feedback is provided.	YES	NO	N/A
Additional modeling, rehearsal, and feedback are provided as needed until 100% mastery is achieved.	YES	NO	N/A
Total:			
Percentage:			

*Percentage is calculate by adding total number of “YES” and dividing by “YES + NO”

**APPENDIX F: SOCIAL VALIDITY SURVEY (ADAPTED FROM WARRINGTON,
2015 AND WOLF, 1978)**

I feel that assertiveness skills are important.				
Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
I feel this training was helpful in learning to be assertive.				
Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
I liked the procedures used in this training.				
Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
I would suggest this training to others.				
Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
Overall, I feel that this training was beneficial for me.				
Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
I have had the opportunity to use the skills from training in my everyday life. <i>(Continue only if answer is yes)</i>				
Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
I have become more assertive in social interactions with my peers since starting this training.				

Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
I have become more assertive in interactions with my professors, boss or other individuals of authority since starting this training.				
Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
I have been able to apply my assertiveness skills in new settings or with new individuals.				
Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
I am more likely to stand up for my rights and opinions since starting this training.				
Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5

APPENDIX G: ROLE PLAY TRANSCRIPTION EXAMPLES

Partial example of non-assertive responses:

[Scenario is read to participant. The PI confirms that participant understands the scenario and position within the scenario. Participant is asked if they have any questions prior to starting.]

PI: *How's is going today?*

Participant: *Hi, I'm great.*

PI: *Are you ready for class? Did you finish all of the readings?*

Participant: *I did. I finished really late last night.*

PI: *Yeah, I got through some of them but I think I am just going to skip out on class today. Do you want to join us?*

Participant: *Oh no, I actually want to learn what is going on in this lecture.*

PI: *Oh, so it sounds like you're going to class today. Can you do me a really big favor? I need someone to sign me in today, I can't miss anymore classes.*

Participant: *Um, I feel like if you can't miss anymore classes then you should come. And I encourage you to come because I do not feel comfortable signing you in.*

PI: *Oh, come on, come on, please. I'll do it for you in the future. It's just this one time.*

Participant: *I don't know, I don't really feel comfortable because that could get me in trouble if the professor finds out.*

Partial example of assertive responses:

[Scenario is read to participant. The PI confirms that participant understands the scenario and position within the scenario. Participant is asked if they have any questions prior to starting.]

PI: *Hi [name]. How are you?*

Participant: *I'm good, how are you?*

PI: *I'm good. Well, actually, I'm in a little bit of a bind and I was hoping that you could help me because you've helped me so much in the past.*

Participant: *What do you need help with?*

PI: *Well, there is this concert I want to go to this weekend and I've been saving money – you know how much I have been working to save up – and I'm just a few dollars short of the cost of the ticket. I really want to go and I'm only short \$20. Could you lend me that and I'll pay you back next Friday when I get paid?*

Participant: *I'm sorry, I can't lend you any money.*

PI: *But you've lent me money in the past, right?*

Participant: *Yes, but I will not be lending you money this time.*

PI: *What if I pay you back with interest? You lend me the \$20 and I'll pay you back \$25 next week. Or what about just \$10? And I will still pay you back interest.*

Participant: *No, I will not lend you any money.*

APPENDIX H: ROLE PLAYS

Peers (P)

P-1. Your friend wants you to go to a party and drink with her but you have an exam at 8am.

P-2. Your classmate wants to sit close to you during an exam to look at your answers but you do not want to.

P-3. You're writing a paper and your friend asks to copy a few sections of your essay so they can get done faster.

P-4. Your peer asks you to sign in on the attendance sheet for them when they are absent from class but you're afraid you'll get in trouble if you're caught.

P-6. Your friend asks you to borrow money from you and assure you that they will pay you back. You've lent money to this friend before and they never paid you back. You do not want to lose money again.

Educational Authority (EA)

EA-2. Your professor asks you to help grade papers because they are very busy. You know that both of you can get in trouble for this.

EA-4. Your academic advisor is recommending you do a minor sequence but you do not want to do it.

EA-5. Your professor asks you to get involved in a research project, but you do not want to.

Vocational Authority (VA)

VA-1. Your boss asks if you can cover a shift from 5pm-11pm for someone, but you have a lot of homework due tonight at midnight that you have not started.

VA-4. Your boss asks you to sign paperwork and backdate it for a month ago so they don't get in trouble for late billing. You do not feel comfortable forging documents.

VA-5. You were involved in an incident at work that requires documentation. Your boss has asked you to omit details from the situation to "cover you both."

Parental Authority (PA)

PA-1. Your mom really wants you to join the Honors College next year but you do not want to.

PA-7. Your mom is critical of your appearance and tells you to wear nicer clothes/makeup when you leave the house but you do not want to.

PA-8. Your parent would like to join your meeting with your professor to discuss your grades but you prefer your parent does not attend.

PA-9. You want to change majors. Your parent has asked you to stick with your current major although you are not happy and your GPA is dropping.

Role-Play Order for Participant

Insby		Senator		Tipper	
Phase/Data Point	Role-Play Code	Phase/Data Point	Role-Play Code	Phase/Data Point	Role-Play Code
BL1	P-4	BL1	P-4	BL1	P-4
BL2	VA-1	BL2	VA-1	BL2	VA-1
BL3	P-2	BL3	P-2	BL3	P-2
BL4	-	BL4	PA-7	BL4	PA-7
BL5	-	BL5	-	BL5	EA-2
BST1	P-3	BST1	P-3	BST1	P-3
BST2	VA-4	BST2	VA-4	BST2	VA-4
BST3	PA-1	BST3	PA-1	BST3	PA-1
PT1	PA-8	PT1	PA-8	PT1	PA-8
PT2	EA-4	PT2	EA-4	PT2	EA-4
PT3	VA-5	PT3	VA-5	PT3	VA-5
PT4	P-1	PT4	-	PT4	-
GP1	EA-5	GP1	EA-5	GP1	EA-5
GP2	PA-9	GP2	PA-9	GP2	PA-9
30-Day	P-6	30-Day	P-6	30-Day	P-6

APPENDIX I: IRB



APPROVAL

September 11, 2020

Kayla Rogover
1729 CYPRESS PRESERVE DR
#208
Lutz, FL 33549

Dear Ms. Rogover:

On 9/10/2020, the IRB reviewed and approved the following protocol:

Application Type:	Initial Study
IRB ID:	STUDY001495
Review Type:	Expedited 6 and 7
Title:	Evaluating the Use of Behavioral Skills Training to Teach Assertiveness Skills to College Students.
Funding:	None
IND, IDE, or HDE:	None
Approved Protocol and Consent(s)/Assent(s):	<ul style="list-style-type: none">• Protocol Version #1 09/03/2020;• Student Consent Version #1 09/08/2020; <p>Approved study documents can be found under the 'Documents' tab in the main study workspace. Use the stamped consent found under the 'Last Finalized' column under the 'Documents' tab.</p>

Within 30 days of the anniversary date of study approval, confirm your research is ongoing by clicking Confirm Ongoing Research in BullsIRB, or if your research is complete, submit a study closure request in BullsIRB by clicking Create Modification/CR.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

Various Menzel
IRB Research Compliance Administrator

Institutional Review Boards / Research Integrity & Compliance

FWA No. 00001669

University of South Florida / 3702 Spectrum Blvd., Suite 165 / Tampa, FL 33612 / 813-974-5638

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