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# The Perception of Therapists' Tone of Voice

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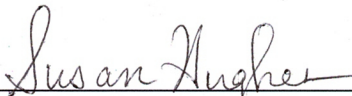
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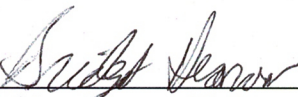
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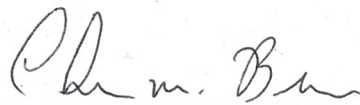
Submitted in partial fulfillment of the requirements for

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The Perception of Therapists' Tone of Voice

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## Abstract

This investigation utilized a two-study design to explore perceptions of therapists' voices among practicing clinicians and community participants. In study one, trained therapists were surveyed to document such information as how aware they were of the tone of their voice during therapy, if they believed tone of voice was important to being an effective therapist, how much formal training they received controlling the tone of their voice during therapy, and if they changed their tone of voice based on patient variables (e.g., patient, patients gender, age, emotional responsiveness, and when instructing patients). Overall, therapists were highly aware of their tone of voice, changed their tone depending on patient variables, yet had little formal training on how to control their voice tone during therapy. However, these findings differed depending upon the theoretical orientation and training background of the therapists. Study two examined how participants viewed voice samples of hypothetical male and female therapists who spoke using either a soft tone or a more direct tone of voice. Overall results showed that preferences for voices depended upon the diagnosis of the hypothetical patient, with general findings suggesting a preference for soft male voices and direct female voices. These findings provide a better understanding of an understudied topic within therapy and highlight the importance of a therapist's tone of voice.

## The Perception of Therapists' Tone of Voice

### **Tone of Voice**

The tone of a person's voice includes several aspects such as timbre, rhythm, loudness, breathiness, and hoarseness (Ambady et al., 2002). A person's tone of voice is one of the many forms of nonverbal communication and can express different characteristics about a person (Knowlton & Larkin, 2006). For instance, the sound of a person's voice can communicate mood, emotional state, abilities, and also personality (Laplante & Ambady, 2003). Laplante and Ambady (2003) had participants rate different voice clips on degree of politeness. These voice clips had speakers talk in either a positive or negative tone, reciting either negative phrases or positive phrases. They found that tone of voice affected politeness ratings; those with a positive tone were rated being more polite and likable than those with a negative tone.

Voice can also communicate physical attractiveness. Collins and Missing (2003) had men first rate the attractiveness of women's voices and then rate the attractiveness of the same women's pictures. The two ratings were then compared; it was found that attractiveness rating from voice was strongly correlated with attractiveness rating from picture. Women who had higher pitched voices were considered more attractive than women who had lower pitched voices.

The tone of voice can also communicate a person's abilities. Hecht and LaFrance (1995) examined how tone of voice can affect perceived job performance. Participants rated directory assistance operators for personality characteristics (i.e., enthusiastic/apathetic, sympathetic/unsympathetic, confident/hesitant, friendly/hostile) and for certain vocal characteristics of the voice samples (e.g., high/deep, soft/loud, fast/slow, etc.) after listening to clips of one of their phone calls with a patient. Participants' ratings of the assistance operators

were then compared to the operators' job performance (i.e., call duration). Those with higher job performance (i.e., shorter call times) were also rated to have a clearer pronunciation and used a more changing, non-monotonous voice. Operators whose voice was rated as higher in pitch, were considered more enthusiastic, sympathetic, and were rated high in friendliness and perceived positive attitude. Similarly, it was found that lower-pitched male and female voices were rated as sounding stronger, more competent, older, and more likely to be voted for than higher-pitched males and females (Klofstad, Anderson, & Nowicki, 2015). Researchers had participants listen to voice clips of government candidates, either all males or all females. In another study that examined voting behaviors based upon the voice of the candidate, participants rated the voice samples on scales of perceived strength, competence, age, and if they would vote for them. Voice clips that had a lower-pitch were rated as more strong, more competent, and older for both male and female candidates. Both male and female participants indicated they would be more likely to vote for a lower pitched voice more than a voice of a higher pitch. Taken together, these studies highlight the importance of vocal pitch in the perceptions of individuals.

### **Therapy Outcomes and Therapist Tone of Voice**

Given that therapy relies heavily on communication of verbal information in emotionally charged contexts, investigation of a therapist's tone of voice represents an interesting context to further explore the role of voice tone. Indeed, the tone of a therapist's voice, among other nonverbal factors, may play a role in the outcomes of therapy. Morris and Suckerman (1974) found that participants who were treated for snake-phobias and had a therapist who used a warm tone of voice showed greater desensitization to their fear than participants who had a therapist who used a cold tone of voice or the control group that received no treatment (i.e., only taking the snake avoidance test). Warm-toned voices were defined in this study as soft, melodic, and

pleasant, whereas cold-toned voices were harsh, impersonal, and business-like (Morris & Suckerman, 1974). Ryan and Moses (1979) similarly found that when patients were treated for anxiety, those who had therapists use a warm-toned voice showed less anxiety at the end of the treatment period and would more likely return to treatment if their anxiety ever returned.

Other vocal characteristics of a therapist have been examined with respect to therapy outcomes. Knowlton and Larkan (2006) examined vocal characteristics (e.g., pitch, quality, loudness, and rate) of therapist's voice during progressive relaxation training (PRT). Participants were asked to join PRT with a therapist that used a voice that was recommended by a manual written by Bernstein and Borkovec (i.e., using a voice with a decrease in tone, volume, and rate during the session). Participants also joined PRT with a therapist that used either a conversational voice (i.e., same tone, volume, and rate throughout session), or used self-relaxation talk (i.e., given brief instructions on what to relax and then allowed to relax on their own). Participants whose therapist used the recommended voice showed more improvement on self-reported measures of having less tension and anxiety as well as lower measured heart-rate than participants in the conversational tone group or the self-relaxation group. These results demonstrate how a therapists' voice can influence therapy outcomes, especially in this case of treating anxiety.

Other studies suggest that the tone of voice that therapists use when referring to particular patients mimics the tone of voice they use when speaking to that patient during therapy.

Rosenthal, Blanck, & Vannicelli (1984) asked therapists to discuss anything that came to mind about their patients or any experiences that led them to feel a certain way about their patients while being recorded. Judges rated the audio tapes for warmth, hostility, anxiety, dominance, professionalism and how much they liked the therapist. Judges listened to clips from actual



therapy sessions and of the therapist talking about the patient. It was found that therapists who spoke about their patients in a cold manner, also spoke to their patients in a cold/hostile tone during therapy, while therapists who talked about their patients in a warm caring way also talked to their patients in a warm/non-hostile way during therapy. A warm voice was described as not hostile, not anxious, not dominant, empathic, likable, and honest while a cold voice was described as sounding hostile, anxious, dominant, not empathic, not honest, and not likable. It can be concluded that the way a therapist talks about their patient will influence how they talk to their patient, expressing to the patient their feelings they have toward them.

### **Other Nonverbal Cues of Therapists**

Although examining how the tone of a therapist's voice during therapy may impact patient progress has not been widely studied, how other nonverbal behaviors of a therapist can impact the effectiveness of therapy has been investigated. Other forms of nonverbal communication such as facial expression, posture, and eye contact all seem to affect therapy outcomes and how therapists are perceived by their patients (Reiss & Kraft-Todd, 2014). Reiss and Kraft-Todd (2014) created an acronym of E.M.P.A.T.H.Y. (eye contact, facial expression muscles, posture, affect, tones of voice, hearing the whole patients, your response) to discuss how each component can be used in therapy sessions and physician-patient communication (i.e., during physical/bodily related treatment) to better understand the patient and increase positive outcomes. Each letter of the acronym was explained based upon findings from multiple studies. Reiss, Kelley, Baily, Dunn, & Phillips (2012) tested how the integration of E.M.P.A.T.H.Y. can change therapy outcomes. Researchers had patients rate physicians on empathy and relational skills before being trained in E.M.P.A.T.H.Y and after being trained. Physicians' who were trained in E.M.P.A.T.H.Y. showed greater changes in empathy and relational skill. Similarly,

Ambady, Koo, Rosenthal, and Winograd (2002) conducted two studies that evaluated the effects of facial expression on therapy outcomes. In the first study, physical therapy sessions were recorded and assessed by independent raters for nonverbal behaviors. The behavior of the therapist was rated for positive affect (e.g., warm, likable, empathic, supportive, etc.), professionalism (e.g., confident, competent, dominant, and professional), nervousness, and infantilizing (i.e., treating the patient as if they were a child). Each video was also coded for nonverbal behaviors such as smiles, frowns, nods, head shakes, shrugs, forward leans, looking away, and sitting positions. Clinicians' behaviors were then correlated to the patient's mobility, ability to carry out daily activities, and psychological functioning at admission, at discharge, and three months after discharge. It was found that distancing behavior of the therapists (i.e., not smiling and looking away from the patient) was correlated with a decrease in physical and psychological functioning of patients. In contrast, therapists who used more facial expressiveness (i.e., smiling, nodding, and frowning) related to patients' improvement in daily functioning. The second study focused primarily on the patients' reaction to facial expressiveness (smiling, nodding, and frowning), positive affect (smiling and nodding), and withdrawal (not smiling and looking away). Therapists who were rated higher on facial expressiveness and positive affect in video clips of physical therapy session were perceived as more positive than therapists who were rated higher on withdrawal.

The posture and level of eye contact of a therapist can also impact the outcomes of therapy and the patient relationship. Dowell and Berman (2013) studied the effects of eye contact and posture (i.e., trunk lean) on perceptions of therapist empathy, patient therapist relationship, and treatment credibility. Participants viewed four videos of therapy sessions and rated the session on therapeutic alliance (e.g., therapist understanding and empathy) and credibility of

treatment. In the recordings of therapy sessions, the therapist had a combination of either little eye contact (e.g., looking at notepad or looking away from the patient) or a lot of eye contact (e.g., looking in the patients' eyes) and either sat with an upright posture or leaning forward posture. It was found that therapists who displayed more eye contact and a forward-leaning posture were perceived as more empathetic, had a better patient relationship, and the treatment was perceived by the patient as being more credible.

Vocal cues other than tone of voice also seem to impact how effective a therapist is perceived. Ladany, Hill, Thompson, and O'Brien (2004) studied the use of periodic silence in therapy sessions. Therapists were interviewed and asked questions regarding their reasons for using brief moments of silence during therapy sessions, the influence of silence on the relationship with the patient, and what patient characteristics to consider when deciding to utilize silence during therapy. They found that therapists used silence to show empathy to patients, to facilitate reflection and expression of feelings, and to think about what to say in response to a patient. It was believed that the use of silence helped create trust, a stronger alliance, and allowed for patients to feel in control, as long as silence was used correctly. In contrast, Hardwood and Eyberg (2004) focused on the use of filler sounds when speaking to patients during therapy. It was found that therapists' who used multiple affirmative filler sounds (e.g., "okay", "yeah," "uh-huh") and little information seeking or questioning phrases (e.g., "When did you first notice these problems?") had fewer families drop out of counseling than therapists who had not used such filler words. Families were also less likely to discontinue counseling when the therapist used supportive statements (e.g., "It sounds like you have been dealing with a lot") than when not stating such statements. Collectively, these findings indicate that a higher success rates when a

therapist uses more filler sounds, less information seeking phrases, and multiple supportive statements.

### **Therapy and Voice**

Almost all forms of therapy involve some verbal communication between the therapist and a patient (Bady, 1985) and training for therapists typically involves instructions on *what* to say to patients during therapy sessions, depending on the therapeutic orientation (Riess & Kraft-Todd, 2014), rather than *how* to say it. For example, Carroll (1998) wrote a cognitive behavioral therapy manual that discusses the methods for using CBT to treat cocaine addiction, and the manual describes how to deliver each session, providing example activities and samples of what to say to patients. It emphasized that CBT clinicians are taught to pay attention to the language and terms used for treatment and what to say when using different CBT techniques. It appears that what to say to the patient during this session is strongly covered, but there is no mention of how to deliver the message with regards to the tone of voice used.

Other therapeutic orientations such as psychodynamic seem to place more emphasis in training therapists on the tonal qualities of the voice they use during therapy. Hatcher (2015) discussed the different aspects of psychotherapy and how its major focus includes interpersonal interaction between the therapist and the patient. In order to have a positive interaction with a patient, the therapist must show empathy toward the patient and try to build a strong therapeutic alliance with the patient. In order to do so, the therapist has to pay close attention to their tone of voice and how it reflects onto the patient. Reich, Berman, Dale, and Levitt (2014) examined if vocal pitch synchrony between a psychotherapist and their patients had an effect on therapy outcomes and therapist-patient relationship. Recordings of psychotherapy sessions were analyzed using a phonetics software to measure pitch synchrony between therapist and patient. After the

therapy sessions, patients completed a questionnaire that measured therapeutic alliance, symptom distress, depressive symptoms, and relationship outcome. It was found that the psychotherapy sessions that showed high levels of pitch synchrony between patient and therapist had lower ratings of therapeutic alliance when therapist initiated the pitch change. It was speculated that therapist-initiated pitch change resulted in lower therapeutic alliance because the patient may have felt misunderstood, resulting in poor therapy outcomes and higher patient distress. The patient also seemed to hold the belief that the therapist lacked confidence or knowledge of how to lead the session and this seemed to cause more emotional distress for the patient.

### **Current Study**

Throughout previous research it has been shown that therapist voice is considered important, but there are limited studies that address the topic, so more research is needed. Therefore, this study examined the perception of a therapist's tone of voice used during therapy. First, a sample of therapists/clinicians with different training and orientation backgrounds were surveyed to examine whether they had any formal training regarding controlling their tone of voice during therapy and to measure how aware they were of the sound of their voice during therapy. It was hypothesized that the clinicians are highly aware of the sound of their voice when speaking to their patients during therapy sessions despite having little or no formal training with regards to how the sound of their voice may affect patients' perceptions. We also suspected that those who are trained as psychodynamic orientation would show greater awareness of their voice than those trained in cognitive behavioral therapy, and other types of clinical orientations. We also predicted that therapists would report that they are likely to change the sound of their voice depending on their particular patient, and patients' gender, age, diagnosis, and emotional responses during therapy. It was also predicted that the older the therapist and the earlier they

received their degree the more aware of their tone of voice they would be and the more likely they are to change their voice depending on their particular patient, and patients' gender, age, diagnosis, and emotional responses during therapy.

The second study was an experimental task that examined how tone of voice and gender could impact the perception of therapists. Participants were asked to evaluate male and female voice samples that they were told were therapists. Participants heard only brief voice samples of hypothetical male and female therapists reciting a uniform statement where the therapist spoke using a more direct tone or soft tone of voice. We hypothesized that participants are more likely to prefer female voices than male voices as therapists and think women will be more effective therapists. It was also hypothesized that participants would believe that voices of females are more effective at treating anxiety and mood disorders while voices of males are more effective at treating psychotic disorders because more women than men are diagnosed with anxiety and mood disorders, while men are diagnosed with psychotic disorders more than women (Wittchen, 2002; Jonas, Brody, Roper, & Narrow, 2003; Perälä et al., 2007; Pikus and Heavey, 1996). Therefore, participants may assume therapists should be the same gender as most of the patients. Further, we predict that overall, participants will think that an effective therapist would use a softer tone of voice rather than a direct tone of voice because they may perceive softer tone voices as being more friendly, helpful, and nonaggressive. When it comes to treating certain types of disorders, we predicted that participants would prefer the soft tone of voice for treating anxiety disorders (e.g., PTSD, OCD, and Panic disorder) and mood disorders (e.g., Bipolar Disorder and Depression) similar to the results of previous literature and because it can be believed that a soft voice could be considered calming for a patient with an anxiety disorder or a mood disorder (Ryan and Moses, 1979). On the other hand, we do not feel tone of voice will be

important when treating patients with psychotic disorders (e.g., Schizophrenia and Psychosis) because patients with psychotic symptoms typically have a deficit with regard to inferring emotions from tone of voice (Kamtrowitz et al., 2011).

## Study 1

### Method

#### Participants

There were a total of 68 therapists (50 women and 18 men) that participated in this study. Participants were professionally trained therapists/clinicians solicited from online list servers and through email messages sent to colleagues by Psychology professors supervising this project. The mean age of respondents was 42.36 ( $SD = 14.47$ , range 25-74). The majority of the respondents reported being Caucasian (88.2%), followed by Hispanic/Latino (4.4%), Asian (2.9%), Black/African American (1.5%) and other ethnicities (2.9%). Most of the participants reported holding a Ph.D. (50%) as their highest degree obtained, followed by a Master's degree (35.3%), Psy.D. (7.4%), Bachelor's degree (2.9%), and other degrees (4.4%). Of the respondents, 52.9% indicated they were currently practicing professionals, 26.5% were still in training but had experience practicing with patients, 16.2% were professional but not practicing and seeing patients at the moment, 2.9% were retired or no longer seeing patients, and 1.5% reported other. Among the therapists, 32.4% had over 15 years of experience seeing patients, 10.3% had 11-15 years of experience, 35.3% reported having had 6-10 years of experience seeing patients, 16.2% had 3-5 years, while 2.9% of therapist had 1-2 years, and 2.9% had less than 6 months' experience.

The therapists were asked to indicate the primary theoretical orientation/treatment model of their graduate program; 60.3% indicated cognitive behavioral, 16.2% was

psychodynamic/psychoanalytic, and 23.6% chose another category. When asked to indicate which theoretical model they draw from most frequently when thinking of their current clinical practice, 8.9% stated psychoanalytic/psychodynamic, 64.7% cognitive behavioral, while 26.4% specified other. Most of the therapists (83.8%) indicated that they were currently practicing while 16.2% were not. There were 18% of the therapists who began their training as a therapist between the years of from 1969-1979, while 7.5% were 1980-1989, 6.0% 1990-1999, 46.5% were from 2000-2009, and 22% began their training between 2010-2016. When asked what year they obtained their highest degree related to clinical/counseling, 9% obtained their highest degree between 1969 and 1979, 4.5% between 1980 and 1989, 9% between 1990 and 1999, 21.2% between 2000 and 2009, and 56% obtained their highest degree between 2010 and 2016.

Participation in the study was completely voluntary, and respondents received no compensation for participation. All procedures were approved by the local Institutional Review Board.

### **Materials and Procedure**

This study was administered as an online, anonymous survey using the software program, *SurveyMonkey*. First, participants gave their informed consent. Then, participants were asked demographic questions concerning their gender, age, ethnicity, highest degree obtained, professional status, and years of experience seeing patients as a therapist, as reported above. Participants were also asked to indicate their primary theoretical model of their graduate training, the model they draw most frequently from in their current practice, if they are currently practicing, the year they first began training, and the year their highest degree related to therapy was obtained.



Participants then answered several questions using 10-point rating scales regarding how aware they were of the tone or sound of their voice during therapy sessions, and how much they felt their tone or sound of voice changed depending on the patient, patient's gender, patient's age, how emotionally responsive the patient is, and during moments when instructing or advising the patient. We also asked how much formal training they have had in regards to control of tone or sound of voice during therapy and how important they thought tone or sound of voice is with being an effective therapist using 10-point rating scales (1 = not at all, 10 = very). At the conclusion of the survey, participants were debriefed about the purpose of the study.

### Results

Several one sample *t*-tests were performed to see if mean answers on each of the questions regarding their voice control during therapy significantly diverged from the median score of 5.5 on the 10-point scales used. Overall how aware therapists were of the tone/sound of voice during therapy ( $M = 7.07, SD = 2.03$ ) was significantly higher than the median score,  $t(66) = 6.34, p < .001$ . How much therapists indicated they changed the tone/sound of their voice during therapy depending upon their patient ( $M = 6.90, SD = 2.12$ ) was also significantly higher than the median score,  $t(67) = 5.44, p < .001$ . How much therapists changed the tone of their voice during therapy depending upon patient gender ( $M = 4.77, SD = 2.52$ ) was significantly lower than the median score  $t(67) = -2.41, p = .019$ . How much therapists changed tone of voice during therapy depending upon how emotionally responsive the patient is ( $M = 8.44, SD = 1.81$ ) was significantly higher than the median score,  $t(67) = 13.42, p < .001$ . How much therapists changed tone of voice during moments of instructing the patient ( $M = 7.02, SD = 2.09$ ) was significantly higher than the median score,  $t(67) = 5.97, p < .001$ . However, how much formal training on tone/sound of voice ( $M = 3.38, SD = 2.21$ ) was significantly lower than the median

score,  $t(67) = -7.89, p < .001$ . How important therapists thought that their tone of voice was to being an effective therapist ( $M = 7.29, SD = 2.12$ ) also was significantly greater than the median score,  $t(67) = 6.97, p < .001$ .

Independent t-tests showed no significant sex differences in how aware therapists were of their voice during therapy,  $t(65) = -1.74, p = .086$ , how much they changed the sound of their voice depending upon their patient,  $t(66) = -1.42, p = .160$ , their patient's age,  $t(66) = -1.54, p = .128$ , their patient's gender,  $t(66) = -1.35, p = .183$ , how emotionally responsive their patient is,  $t(66) = -0.62, p = .541$ , or during moments of instructing the patient  $t(66) = -0.62, p = .538$ . We also found no sex differences in how much formal training therapists had in regards to controlling their tone of voice,  $t(66) = -1.52, p = .133$ , and how important they felt their tone of voice was with being an effective therapist,  $t(66) = -0.61, p = .546$ .

Table 1 lists correlations between therapists' age, the year therapists began training post baccalaureate, the year therapists obtained their highest degree related to counseling and each of the dependent measures taken that related to voice. The older the therapist was, the more aware they were of their voice during therapy sessions. Similarly, the more recent the year that a therapist began their training and the more recent the year they obtained their highest degree related to clinical/counseling, the less aware they indicated they were of their voice during therapy. The older a therapist was, the more they indicated changing their tone of voice depending on the patient, the patient's age, the patient's gender, and when instructing their patient. A therapists' age was positively correlated with how important they thought their tone of voice was with being an effective therapist, while the year they began their training post baccalaureate was negatively correlated with how important they felt tone of voice was during

therapy. The year the therapist began training was also negatively correlated with how much they changed their tone of voice depending on the patients' gender and when instructing a patient.

Because the majority of participants indicated that they primarily drew from a cognitive behavioral orientation in their current practice ( $n = 44$ ), we considered differences between this group versus all other therapists drawing primarily from other orientations ( $n = 24$ ). An independent t-test showed that therapists who drew mainly from cognitive behavioral orientation ( $M = 6.65$ ,  $SD = 2.03$ ) were significantly less aware of tone/sound of voice during therapy than therapists using other orientations ( $M = 7.83$ ,  $SD = 1.83$ ),  $t(65) = 2.36$ ,  $p = .021$ . Therapists who primarily drew from orientations other than cognitive behavioral therapy ( $M = 4.29$ ,  $SD = 2.22$ ) had significantly more training on how to control the tone/sound of their voice during therapy than those who drew mainly from cognitive behavioral ( $M = 2.89$ ,  $SD = 2.07$ ),  $t(66) = 2.61$ ,  $p = .011$ . Therapists who primarily drew from other orientations ( $M = 6.50$ ,  $SD = 2.25$ ) changed their tone of voice significantly less with patients than those who used cognitive behavioral therapy ( $M = 7.63$ ,  $SD = 1.64$ ),  $t(66) = -2.15$ ,  $p = .035$ . There was no significant differences found between therapists who had a cognitive behavioral orientation versus other orientations in how much they changed the sound of their voice depending upon their patient's gender,  $t(66) = -1.18$ ,  $p = .243$ , patient's age,  $t(66) = .443$ ,  $p = .659$ , how emotionally responsive their patient is,  $t(66) = -.617$ ,  $p = .540$ , when instructing/advising their patients during therapy,  $t(66) = -1.17$ ,  $p = .245$ , and for how important therapists thought their tone/sound of voice was in being an effective therapist,  $t(66) = -1.32$ ,  $p = .193$ .

Several independent measures, One-Way ANOVA's were conducted to compare responses of therapists who had different theoretical orientation models for their graduate training for each of the dependent voice measures. We considered therapists who indicated that

their graduate training was either in psychodynamic/psychoanalytic ( $n = 11$ ) and cognitive behavioral therapy ( $n = 40$ ), or of other orientations ( $n = 16$ ). A therapist's theoretical orientation model during graduate training had a significant effect on how much formal training the therapist received on voice,  $F(2,65) = 4.81, p = .011, \eta^2 = .129$ , whereby those who were trained in psychodynamic/psychoanalytic orientation ( $M = 4.91, SE = 0.63$ ) had significantly more formal training on how to control their voice during therapy than cognitive behavioral orientation ( $M = 2.81, SE = 0.33$ ), and those who were not trained in either psychodynamic/psychoanalytic and cognitive behavioral orientation ( $M = 3.81, SE = 0.52$ ).

One's theoretical orientation model during graduate training also had a significant effect how aware therapists were of tone/sound of voice during therapy sessions,  $F(2,64) = 4.45, p = .015, \eta^2 = .122$ , whereby those with graduate training in psychodynamic/psychoanalytic ( $M = 8.64, SE = 0.58$ ) were significantly more aware of tone/sound of voice during therapy sessions than both therapists trained in cognitive behavioral ( $M = 6.68, SE = 0.31$ ) and other orientations ( $M = 7.00, SE = 0.48$ ). A therapist's theoretical orientation model during graduate training had no effect on how important they thought tone of voice is with being an effective therapist,  $F(2,65) = 2.78, p = .069, \eta^2 = .079$ .

Therapists were asked to indicate whether they used different approaches in their current practice as an integrative/eclectic approach, and several independent t-tests were performed to examine differences in the voice measures between those who had and had not used each orientation (see Table 2). Therapists who indicated using psychodynamic approach in their therapy reported being significantly more aware of the tone of their voice in therapy, and thought tone of voice was more important to being an effective therapist than those who indicated not using the psychodynamic approach. Therapists who used a Humanistic approach during therapy

had significantly more formal training on how to control the tone of their voice during therapy than those who did not practice Humanistic techniques. Therapists who used some DBT techniques during therapy reported being significantly less aware of tone of their voice in therapy, had less formal training, and thought tone of voice was not as important to being an effective therapist than those who did not use DBT. Therapists who specified using some family/family systems approach in therapy were significantly more aware of their tone of voice in therapy, changed their voice more due to do patient, and thought tone of voice was more important to being an effective therapist than those who did not use family/family systems.

### **Discussion**

The results indicate that therapists are greatly aware of their tone/sound of voice, and believed that tone of voice was important for being an effective therapist, yet had little formal training in how to control the sound of their voice during therapy. Therapists also changed their tone more depending upon who their patient is, on how emotionally responsive their patient is during therapy, and during moments of instructing. There were no sex differences found in each of the dependent voice measures taken. Morris and Suckerman (1974) found that patients showed greater desensitization when their therapist used a warm tone when compared to patients who therapist used a cold tone. Therefore, perhaps therapists change their voice depending on patient variables because they are aware of how their tone of voice can affect therapy outcomes.

It was found that the older a therapist was, the more aware he/she was of their tone of voice during therapy, the more they indicated changing their tone of voice depending on the particular patient, the patient's age, the patient's gender, when instructing their patient, and the more important they thought their tone of voice was with being an effective therapist. Similarly, the more recent the year that a therapist began their training and recent the year they obtained

their highest degree related to clinical/counseling, the less they were aware of their voice during therapy. The more recent the year therapists reported beginning their training post-baccalaureate, the less important they felt tone of voice was during therapy, and they were less likely to change their tone of voice depending on the patients' gender and when instructing a patient. These data suggest that perhaps therapists received different training with regards to controlling their voice in the previous decades than now. Further, because in more recent years' therapists are trained in CBT or an integrative/eclectic orientation, while in past years' therapists were trained in psychodynamic and integrative/eclectic orientation (Norcross, Karpiak, & Santoro, 2005), their training may have involved less emphasis on controlling the tonal qualities of their voice during therapy. Therapists may also be aware of their voice as they age due to the many years of experience they have had; with time and experience, a therapist may have become more aware of how tone of voice can influence therapy outcomes and become more confident and self-aware of themselves as a therapist. Hill et al. (2015) found similar results when looking at doctoral psychology trainees over a period of 42 months. As the trainees worked with patients, had weekly individual supervision, and bi-weekly group intervention, they had an increase in their understanding/confidence of being a therapist, ability to use theory techniques, and built a stronger alliance with patients faster. These results demonstrate that beyond formal training, experience may change a therapist's practice and attitudes that they feel are effective.

Therapists who drew primarily from cognitive behavioral orientation indicated that they were less aware of tone/sound of voice during therapy sessions, had less formal training on how to control tone/sound of voice during therapy, and changed their tone of voice more depending on their particular patient in comparison to therapists who drew primarily from other orientations. These findings support Carroll (1998) that shows that training in CBT typically

does not involve instruction on controlling the tone of one's voice during therapy. Rather, training in CBT seems to focus more on the content of what is said to patients depending upon patient interaction rather than *how* it is said. Also, since CBT therapists are taught focus on content that is tailored to each patient. For example, a therapist may use more formal terminology when their patient is older (e.g., 70 years old) compared to using less formal terminology when the patient is younger (e.g., 20 years old). Cognitive-behavioral therapists may intuitively adjust the way they speak depending on patient characteristics.

We also found that the theoretical orientation of a therapist's graduate training affected the amount of formal training the therapist received on voice and how aware they were of tone of voice during therapy sessions. Therapists who were trained in psychodynamic/psychoanalytic orientation indicated that they had more training on how to control the sound of their voice during therapy, were more aware of tone of voice during therapy sessions, and thought tone of voice was more important to being an effective therapist than those trained in cognitive behavioral orientation and other orientations. These results may be due to psychodynamic/psychoanalytic orientation focusing on supporting the patient and showing acceptance of the patients' behaviors (Leichsenring, Hiller, Weissberg, & Leibing, 2006). It can be assumed that if the therapist speaks in a warm, understanding tone, it will make the patient feel more supported, and as a result, experience a greater degree of change with therapy.

Therapists who used humanistic approach during therapy had more formal training on voice than those who do not use humanistic approach. Perhaps these findings reflect the idea that therapists trained in humanistic approach are opposed to using counseling methods that direct or persuade their patients (Cain, 2002). Humanistic approach primarily focuses on the patient as an individual, by providing a nonjudgmental area and ensuring they have a good relationship with

their patient (Cain, 2002). It can be assumed that therapists trained in the humanistic approach have had more formal training on how to control the sound of their voice so that their tone does not express judgment toward the patient or lead the patient. It can also be assumed that if the therapist expresses a warm tone at times there will be a stronger patient therapist relationship, allowing for better therapy outcomes.

It was also found that therapists who used DBT were less aware of their tone of voice during therapy, changed their voice less depending on patient age, and had less formal training on how to control their voice during sessions than those who did not use DBT. Therapist who used DBT also thought tone of voice was less important to being an effective therapist than those not using DBT techniques. These results are expected considering that DBT therapists have more training on content of what to say instead of *how* to say it (Linehan, 2014). Although there is little training on *how* to say things, DBT therapists are told their tone of voice is very important when using scripts with patients and when demonstrating scanning body sensations (Linehan, 2014). In DBT therapists guide patients in distress tolerance, emotion regulation and mindfulness, helping patients reach peak functioning in society (Lynch, Trost, Salsman, & Linehan, 2007). It can be assumed that each of these task may require the therapist to have to control over their tone of voice, in order to guide the patient being as though speaking in a harsh tone may make reaching the goals of DBT more difficult, therefore it may benefit a DBT therapist to be trained in tone of voice.

Therapists who used Family/Family systems orientation during their current therapy sessions were more aware of their tone of voice during therapy, were more likely to change their voice due to particular patient, and thought tone of their voice was more important for being an effective therapist than those not using therapeutic techniques related to Family/Family systems.



Since Family systems therapists often run group therapy (i.e., where the entire family unit including the person that “brought” them to therapy), a therapist may be aware of their voice and change their tone as to not cause bias within the therapy sessions or make any persons’ feelings less important than the other persons (Phipps, 2014). One of the primary tasks of a therapist during family systems therapy is to guide the discussion and provide the family with observations about their interactions (Phipps, 2014). Perhaps therapists are particularly aware of their voice and change their tone depending on their patients in a group setting so as to not appear biased and give the perception that they are taking sides with a certain patients and not others in the group.

There were several limitations and potential confounds that could have affected these results. Our sample of therapists could have been more diverse. For instance, there was an unequal proportion of male and female respondents, most of the therapists indicated their primary training was in CBT, and the majority of the therapists had obtained their highest degree in more recent years. We also did not have therapists elaborate on *how* they use their tone of voice in therapy which would allow for a stronger understanding of the importance of a therapist’s tone of voice in therapy. Future studies examining the line of work could ask questions regarding *how* therapists use their tone of voice in therapy and what ways they change their tone of voice (i.e., if they change their tone to a warm tone if the patient is crying).

## **Study 2**

### **Method**

#### **Participants**

A separate set of 84 participants (54 women and 30 men) were obtained for the second study. Participants were undergraduate students solicited from the Psychology Department

Participant Pool at Albright College via email messages and class announcements. The mean age of participants was 19.67 ( $SD = 1.37$ , range 17-24). Of the participants, 34.5% indicated they were African American, 45.2% Caucasian, 8.3% Asian, 10.7% Hispanic/Latino, 1.2% other. There were 71.4% of participants who reported that they have never been in therapy while 28.6% reported having been in therapy in the past.

### **Materials and Procedure**

First, participants gave their informed consent. Then participants were asked to complete a brief demographic questionnaire concerning their gender, age, and ethnicity, and whether they had ever personally been in therapy as reported above.

The participants listened to a total of six voice samples. The voice samples were recorded by the investigator of three adult women and three adult men who were asked to recite a passage that the investigators felt would be something likely said by a therapist:

“With this type of treatment, we'll examine how your thoughts, feelings, and behaviors interact. Over time, we may be able to see thinking and behavioral patterns that help maintain your symptoms. Skills to address these patterns will include examining thoughts objectively, free from the influence of emotions, and behavioral activation.”

The speakers were each asked to recite the passage twice, one time using a soft tone of voice, and the other using a more direct/assertive tone of voice. Thus, a total of 12 voice samples were obtained by the six speakers. The participant raters either listened to only the six voice samples where the speakers used a direct tone of voice or to six voice samples where the speakers used a softer tone of voice, employing a between-subject factor for the tone of voice variable. However, participant raters were presented with both three male and three female voice samples employing a within-subject design for the variable of speaker gender.

After listening to each voice sample, participants were asked to make ratings using 7-point scales to assess how likely they wanted the person to be their therapist, how effective of a therapist they thought the person was, and how effective the therapist would be treating someone with a stress and anxiety disorder (e.g., PTSD, OCD, Panic disorder), a psychotic disorder (e.g., Schizophrenia, Psychosis), and a mood disorder (e.g., Bipolar, Depression).

At the conclusion of the study, participants were debriefed about the purpose of the study and were asked to complete information in order to gain extra credit for their classes.

### Results

To be sure participants could identify the gender of the speakers accurately, we first asked participants to indicate whether the voice they heard was a male or female. There was 100% accuracy identifying speaker gender for all voice samples presented.

Several Two-Way mixed model ANOVA's were conducted to compare the effects of voice tone and speaker gender on the five dependent measures taken. A 2(voice tone) X 2(speaker gender) mixed model ANOVA was used to see the effects of voice tone and speaker gender on how likely the participants wanted the speaker to be their therapist. There was no main effect for voice tone,  $F(1,82) = 0.05, p = .820, \eta^2 = .001$  and no main effect for gender,  $F(1,82) = 3.67, p = .060, \eta^2 = .043$ . However, there was a significant interaction between voice tone and speaker gender  $F(1,82) = 6.18, p = .015, \eta^2 = .070$  (see Figure 1). A post hoc paired sample t-test revealed that participants preferred male speakers who used a soft toned voice ( $M = 4.79, SD = 0.95$ ) as being their therapist more than female speakers who used a soft toned voice ( $M = 4.29, SD = 0.90$ ),  $t(42) = 2.98, p = .005$ . In contrast, participants did not show a significant difference in preferences for female speakers who used direct tone voice ( $M = 4.53, SD = 0.95$ ) and male speakers who used direct tone of voice ( $M = 4.47, SD = 0.92$ ),  $t(40) = -0.43, p = .670$ .

A 2(voice tone) X 2(speaker gender) mixed model ANOVA was used to see the effects of voice tone and speaker gender on perceptions of how effective of a therapist the speaker was. There was no main effect for voice tone,  $F(1,82) = 0.22, p = .641, \eta^2 = .003$ . Similarly, no main effect for speaker gender was found,  $F(1,82) = 2.98, p = .088, \eta^2 = .035$ . There was also no significant interaction between voice tone and speaker gender for how effective participants thought a speaker was,  $F(1,82) = 0.92, p = .340, \eta^2 = .011$ .

Another 2(voice tone) X 2(speaker gender) mixed model ANOVA was used to see the effects of voice tone and speaker gender on the perception of how effective a speaker was seen for treating stress and anxiety disorders. There was a main effect for voice condition,  $F(1,82) = 6.32, p = .014, \eta^2 = .072$ . Participants thought therapists using a soft voice ( $M = 4.54, SE = .118$ ) were more effective at treating anxiety and stress disorders than those using a direct tone of voice ( $M = 4.50, SE = 1.21$ ). There was no main effect of gender,  $F(1,82) = .123, p = .726, \eta^2 = .002$ . There was no significant interaction between voice tone and speaker gender for how effective participants thought the speaker was,  $F(1,82) = 3.03, p = .085, \eta^2 = .036$ .

A 2(voice tone) X 2(speaker gender) mixed model ANOVA was used to see the effects of voice tone and speaker gender on perceived effectiveness for treating psychotic disorders. There was no main effect for voice tone,  $F(1,82) = .346, p = .558, \eta^2 = .004$ , nor a main effect of gender of speaker,  $F(1,82) = 0.99, p = .323, \eta^2 = .012$ . There was also no significant interaction between voice tone and speaker gender for how effective participants thought a speaker was,  $F(1,82) = 3.55, p = .063, \eta^2 = .042$ .

A 2(voice tone) X 2(speaker gender) mixed model ANOVA was used to see the effects of voice tone and speaker gender on the perception of how effective a speaker was seen for treating mood disorders. There was no main effect for voice tone,  $F(1,82) = 0.25, p = .618, \eta^2 = .003$ .

There was also no main effect for gender,  $F(1,82) = 0.07, p = .793, \eta^2 = .001$ . However, there was a significant interaction between voice tone and speaker gender,  $F(1,82) = 6.97, p = .010, \eta^2 = .078$  (see Figure 2). Post hoc paired sample t-test revealed a trend towards participants thought female speakers who used a soft toned voice ( $M = 4.48, SD = .892$ ) would be less effective at treating patients with mood disorders than male speakers who used a soft toned voice ( $M = 4.81, SD = 1.00$ ),  $t(42) = 1.85, p = .072$ , although it did not reach statistical significance. On the other hand, participants thought female speakers who used a direct toned voice ( $M = 4.69, SD = .896$ ) were better at treating mood disorders than male speakers who used a direct toned voice ( $M = 4.43, SD = .949$ ),  $t(40) = -1.96, p = .057$ , also at a trend-level.

### Discussion

Our hypothesis that participants would prefer having a female voice as their therapist more than a male voice was not supported. We found that participants preferred a male speaker as their therapists only when using a soft toned voice. Because males naturally have more dominant sounding voices (Puts, Hodges, Cárdenas, & Gaulin, 2007), a male therapist using a direct voice may be considered too harsh and more threatening than if using a soft tone voice.

The voice tone of the therapists had no overall effect on perceptions of how effective a therapist was. Perhaps our stimuli did not portray a distinct differentiation between soft and direct tones for it to have an effect on perceptions. It is also possible that the voice samples participants listened to were not long enough for participants to get a clear understanding of the therapist's overall tone of voice. The results presented are not consistent with the findings of Laplante and Ambady (2003) who showed that participants preferred a positive tone of voice over a cold tone, when listening to voice samples that had both positive content (e.g., you passed the test) and negative content (e.g., you failed the test). These results did not parallel those found

by Ryan and Moses (1979) where participants who had a therapist with a warm toned voice rated the therapist as more effective, would more likely return to treatment, and were more satisfied than participants who had a harsh tones therapist.

The gender of the speaker also had no effect on perception of effectiveness of being a therapist. Our findings contradict those of Pikus and Heavey (1996) who found that female patients preferred female therapists over male therapists. Patients completed a questionnaire that assessed their preference for therapist gender and why such a preference. Patients showed preference for female therapists because they felt more comfortable talking to a woman, wanted a therapist with female characteristics (i.e., warm and understanding), and had a previous bad experience with a male therapist. Our findings may be different because the voice stimuli were not of actual therapists speaking, and the samples may not have been long enough to make this determination. Perhaps if a person was actually in therapy with a male or female therapist, their opinions about their voice may be different.

When it came to treating stress and anxiety disorders, participants thought speakers with a soft tone of voice would make for a more effective therapist than those speaking with a direct tone. This makes sense because one would expect a therapist should provide a calming atmosphere for a person experiencing heightened stress. Perhaps participants felt a soft tone was not only more relaxing, but could better keep patients calm and responsive while in therapy. These results are similar to those of Ryan and Moses (1979) who found that participants treated for anxiety showed greater improvement when the therapist had a warm or soft tone than those who had a therapist with a harsh tone.

Gender of speaker and tone of voice had no effect on how effective therapists were perceived for treating psychotic disorders. It can be speculated that tone of voice did not have an

influence on how effective the therapist was at treating psychotic disorders because of those with psychoticism may not understand or perceive differences in tone of voice. Kamtrowitz et al. (2011) found that persons with schizophrenia and schizoaffective disorder were not able to perform voice emotion recognition properly from tone of voice. Just as those with psychotic symptoms are not able to perform voice emotion recognition, they also do not show strong empathy nor are they able to take the perspectives of others. Perhaps the tone of voice of the therapist is not relevant to treating psychotic disorders, because the change in tone will not be noticed by the patient and therefore will not influence therapy outcomes.

When it came to perceptions of how effective a therapist would be for treating mood disorders, both the gender and tone of voice impacted perceptions. There was a trend toward male speakers speaking with a soft toned voice being seen as being more effective therapists for treating mood disorders than male speakers using a direct tone of voice. In contrast, there was a trend toward female speakers who used a more direct voice seen as being more effective as therapists for treating mood disorders than female speakers using a soft voice. It can be speculated that a female speaker was perceived as more effective because most people who are diagnosed with a mood disorder are woman (Jonas et al. 2003). Because more women than men are typically diagnosed with mood disorders, it can be speculated that they would want a female therapist because most women prefer a therapist that is of the same gender (Pikus & Heavey, 1996). Nevertheless, several studies showed that the gender of the therapist had not influenced therapy outcomes when treating major depression and panic disorder using CBT approach (Huppert et al., 2001; Zlotnick, Elkin, & Shea, 1998)

There were several limitations and confounds that could have affected these results. The sample was limited by the fact that all participants were of traditional college age and therefore

may not have had as much experience or knowledge about therapy. Also, there were a disproportionate amount of female raters to male raters in the study. Participants may have experienced fatigue having to listen to six voice samples that were of the same content and answer six questions regarding each similar questions about voice. The voice clips themselves may also be a potential confound. The statement read in the voice clip may have been too short for participants to assess the therapist and the statement that was spoken may also have been too general. For future studies, it may benefit researchers to have longer clips or to utilize vocal samples obtained from actual therapy sessions.

### **General Discussion**

These studies reveal that tone of voice is an important aspect of therapy that can influence perceptions of a therapist's potential effectiveness. Study one showed that overall therapists are highly aware of their tone of voice, yet had little formal training on how to control the sound of their voice, however this was dependent upon a therapist's orientation and training. Therapists also felt that their tone of voice during therapy was important for being an effective therapist, and changed their tone based upon certain patient variables (i.e., patient, how emotionally responsive the patient is during therapy, and during instructing). Similarly, the older the therapist was, the more aware of their voice they were, and the more they changed their tone based on patient variables such as patient, the patient's age, patient's gender, and when instructing the patient. Therapists who used psychodynamic/psychoanalytic orientation and humanistic approach had more formal training on how to control the tone of voice during therapy, while DBT, family/family systems, and CBT had little formal training and were less aware of their tone/sound of voice during therapy.



Study two showed that overall participants preferred that male therapists who used soft toned voices rather than direct tones. No preference for soft or direct tones was found and gender had no influence on perceived effectiveness. When treating stress and anxiety disorders a soft tone voice was preferred, while when treating psychotic disorders therapists' gender and tone of voice had no influence. It was also found that when treating mood disorders, there was a trend toward a preference for female therapists using a more direct tone and male therapists using a softer tone of voice when assessing how effective a therapist would be.

These results highlight the importance of a therapist's tone of voice during therapy and bring light to the fact that perhaps more therapists should have formal training on how to control the sound of their voice during therapy. These findings suggest that perception of a therapist's tone of voice is affected by both the gender of the speaker and by the type of disorder that the therapist is intending to treat. For example, we found that participants thought that a therapist who used a soft toned voice when treating a patient with a stress and anxiety disorder may be more effective than using a direct tone. These findings are important in helping us understand an understudied topic in the realm of therapy.

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Table 1

*Correlations between Each of the Voice Measures Taken and the Age of the Therapist Respondents, Year in Which Respondents Began Their Training, and Year Therapists Attained their Highest Degree*

	Age of Therapist Respondents	Year Therapist Began their Practitioner Training	Year Obtained Highest Degree Related to Clinical/Counseling
Awareness of voice during therapy	.390**	-.341**	-.271**
Change tone of voice depending on patient	.264*	-.226	-.139
Change tone of voice depending on patient gender	.310*	-.258*	-.206
Change tone of voice depending on patient age	.283*	-.217	-.183
Change tone depending on how emotionally responsive patient is	.061	-.022	.011
Change tone of voice when instructing patient	.285*	-.245*	-.186
How much formal training had on using tone of voice during therapy	.211	-.194	-.153
How important tone of voice is with being an effective therapist	.435**	-.284*	.200

Note. \* $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 2

*Differences between Therapists Who Use Different Orientations during Therapy Across the Voice Measures*

Orientation	Voice Measure	Use of Orientation Techniques in Practice				
		<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
<b>Psychodynamic</b>	Voice Awareness					
	Use	40	8.04	1.67	-3.56	.001***
	Do Not Use	28	6.39	2.01		
	Change Voice Due to Patient					
	Use	40	7.10	1.97	-.68	.498
	Do Not Use	28	6.75	2.23		
	Change Voice Due to Patient Age					
	Use	40	6.68	2.02	-1.58	.120
	Do Not Use	28	5.70	2.81		
	Change Voice Due to Patient Gender					
	Use	40	4.57	2.45	.53	.600
	Do Not Use	28	4.90	2.58		
	Change Voice Due to Patient Emotionality					
	Use	40	8.57	1.78	-.50	.623
	Do Not Use	28	8.35	1.85		
	Change Voice Due to Instructing					
Use	40	7.32	2.16	-1.01	.315	
Do Not Use	28	6.80	3.04			
Voice Training						
Use	40	3.68	2.64	-.92	.360	
Do Not Use	28	3.18	1.87			
Importance of Tone of Voice						
Use	40	7.89	2.08	-1.99	.051*	
Do Not Use	28	6.88	2.08			
<b>Humanist Approach</b>	Voice Awareness					
	Use	47	7.15	2.01	-7.97	.845
	Do Not Use	20	7.04	2.06		
	Change Voice Due to Patient					
	Use	48	6.85	2.21	.12	.907
	Do Not Use	20	6.92	2.10		
	Change Voice Due to Patient Age					
	Use	48	6.65	2.85	-1.5	.256
	Do Not Use	20	5.88	2.40		
	Change Voice Due to Patient Gender					



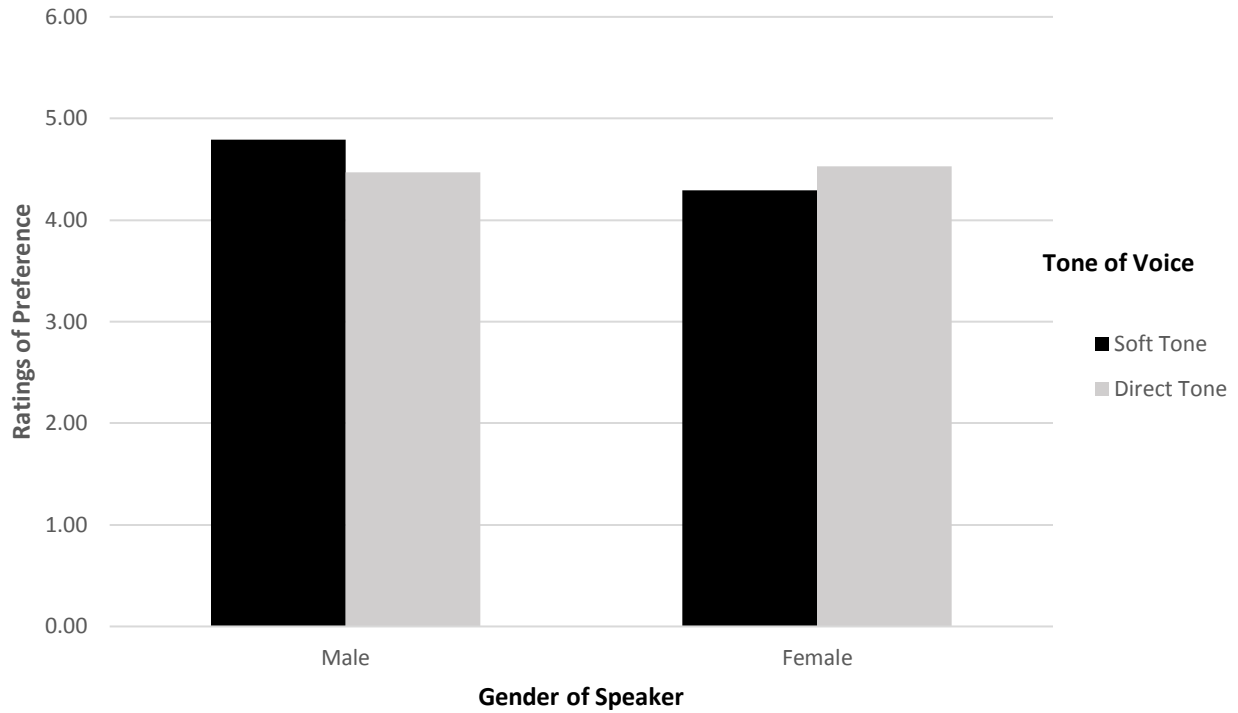
	Use	48	4.60	2.48	.35	.730
	Do Not Use	20	4.83	2.55		
Change Voice Due to Patient Emotionality						
	Use	48	8.10	1.97	1.05	.319
	Do Not Use	20	8.58	1.74		
Change Voice Due to Instructing						
	Use	48	6.75	1.89	.67	.505
	Do Not Use	20	7.13	2.18		
Voice Training						
	Use	48	4.55	2.78	-2.97	.004**
	Do Not Use	20	2.89	1.74		
Importance of Tone of Voice						
	Use	48	7.80	1.77	-1.27	.207
	Do Not Use	20	7.08	2.24		
<b>Dialectical Behavioral Therapy</b>						
Voice Awareness						
	Use	30	6.46	1.98	2.90	.005**
	Do Not Use	37	7.83	1.85		
Change Voice Due to Patient						
	Use	30	6.47	2.12	1.89	.063
	Do Not Use	38	7.43	2.03		
Change Voice Due to Patient Age						
	Use	30	5.50	2.68	2.26	.027*
	Do Not Use	38	6.87	2.18		
Change Voice Due to Patient Gender						
	Use	30	4.50	2.59	.98	.333
	Do Not Use	38	5.10	2.41		
Change Voice Due to Patient Emotionality						
	Use	30	8.29	1.84	.78	.440
	Do Not Use	38	8.63	1.77		
Change Voice Due to Instructing						
	Use	30	6.92	2.35	.41	.681
	Do Not Use	38	7.13	1.74		
Voice Training						
	Use	30	2.50	1.54	4.12	<.001***
	Do Not Use	38	4.50	2.45		
Importance of Tone of Voice						
	Use	30	6.74	2.18	2.53	.014**
	Do Not Use	38	8.00	1.86		
<b>Family/Family Systems</b>						
Voice Awareness						
	Use	47	7.86	1.96	2.19	.032*
	Do Not Use	21	6.72	1.99		
Change Voice Due to Patient						
	Use	47	7.67	2.19	-2.05	.044*
	Do Not Use	21	6.55	2.01		

Change Voice Due to Patient Age						
Use	47	6.90	2.51	-1.76	.083	
Do Not Use	21	5.74	2.51			
Change Voice Due to Patient Gender						
Use	47	5.14	2.37	-.83	.412	
Do Not Use	21	4.59	2.58			
Change Voice Due to Patient Emotionality						
Use	47	5.57	1.86	-.37	.694	
Do Not Use	21	8.38	1.80			
Change Voice Due to Instructing						
Use	47	7.62	1.72	-1.61	.112	
Do Not Use	21	6.75	2.20			
Voice Training						
Use	47	4.09	2.59	-1.81	.076	
Do Not Use	21	3.06	1.97			
Importance of Tone of Voice						
Use	47	8.14	2.08	-2.27	.026*	
Do Not Use	21	6.92	2.05			

### Acceptance and Commitment Therapy

Voice Awareness						
Use	34	6.71	2.05	1.52	.133	
Do Not Use	34	7.45	1.97			
Change Voice Due to Patient						
Use	34	6.59	2.31	1.21	.232	
Do Not Use	34	7.21	1.98			
Change Voice Due to Patient Age						
Use	34	5.79	2.74	1.00	.321	
Do Not Use	34	6.41	2.34			
Change Voice Due to Patient Gender						
Use	34	4.44	2.63	1.06	.292	
Do Not Use	34	5.08	2.39			
Change Voice Due to Patient Emotionality						
Use	34	8.50	1.94	-.27	.791	
Do Not Use	34	8.38	1.69			
Change Voice Due to Instructing						
Use	34	7.03	2.43	-.06	.954	
Do Not Use	34	7.00	1.72			
Voice Training						
Use	34	3.00	1.97	1.44	.156	
Do Not Use	34	3.76	2.40			
Importance of Tone of Voice						
Use	34	6.94	2.20	1.38	.172	
Do Not Use	34	7.65	2.01			

Note. \* $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$



*Figure 1.* Mean differences of ratings (on a 7 point scale) for how likely participants wanted the speaker to be their therapist depending the speaker's tone of voice and gender.

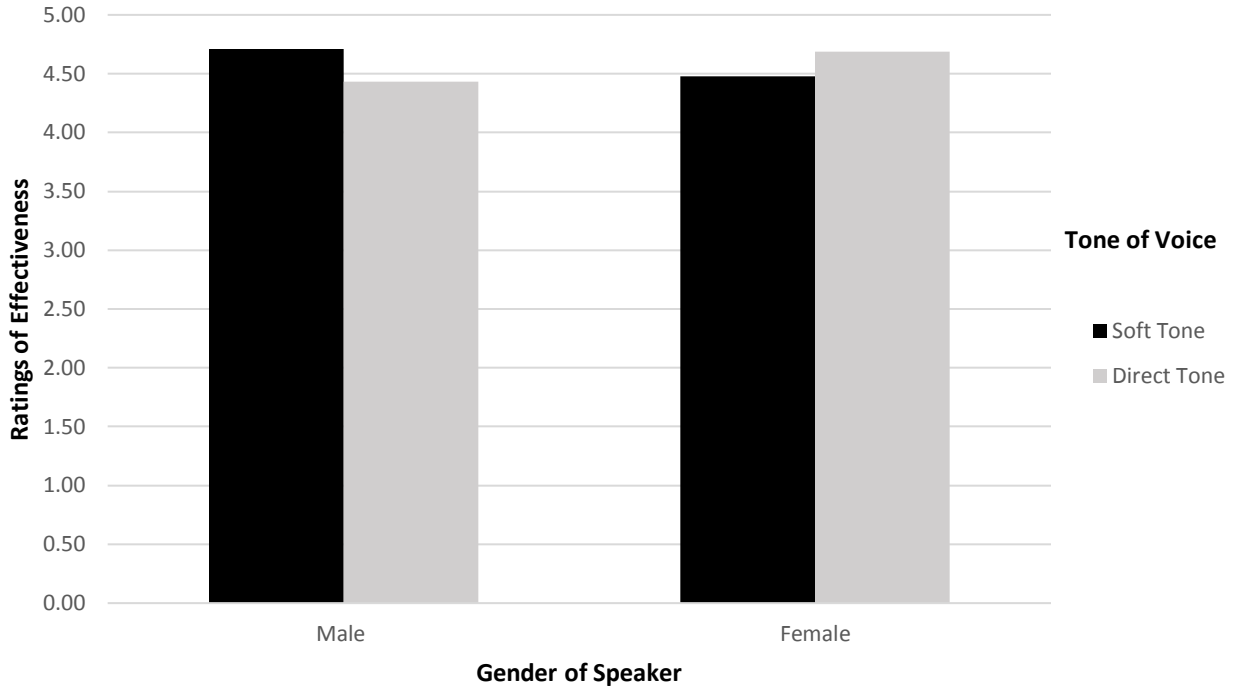


Figure 2. Mean differences in ratings (on 7- point scale) for how effective of a therapist the speaker was perceived as being for treating mood disorders depending upon the speaker’s tone of voice and gender.

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