EXPANDING OUR CLINIC's TREATMENT OPTIONS TO INCLUDE ACCEPTANCE COMMITMENT THERAPY TECHNIQUES

by

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As members of the Audiology Doctoral Project Committee, we certify that we have read the project prepared by Anne Bliss, titled EXPANDING OUR CLINIC's TREATMENT OPTIONS TO INCLUDE ACCEPTANCE COMMITMENT THERAPY TECHNIQUES and recommend that it be accepted as fulfilling the Audiology Doctoral Project requirement for the Degree of Doctor of Audiology.

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Introduction

There is currently no clinically proven medical cure for the vast majority of chronic tinnitus cases, including tinnitus caused by presbycusis and noise-induced hearing loss (Henry, Roberts, Caspary, Theodoroff, & Salvi, 2014). Therefore, the goal of tinnitus management is not to cure tinnitus, but rather to manage the effects of tinnitus. Tinnitus management refers to various approaches designed to reduce the annoyance and distress associated with tinnitus, allowing the patient to improve their overall quality of life. Effective tinnitus management will target anxiety, depression, stress, social isolation, communication difficulties, and sound aversion. (Baguley, Andersson, McFerran, & McKenna, 2013). Cognitive Behavioral Therapy (CBT), which aims to alter detrimental patterns of thought, has long been the gold standard of behavioral tinnitus management. However, in recent years, Acceptance and Commitment Therapy (ACT) has grown in popularity for the treatment of various psychological disorders and chronic health conditions, such as tinnitus (Martinez-Devesa, Perera, Theodoulou, & Waddell, 2010; Westin, et al., 2011). ACT is a type of behavioral therapy based on mindfulness; the aim of ACT in an audiologic clinical setting is to reduce experiential avoidance of tinnitus. Tinnitus sufferers learn how to mindfully experience and accept their perception of tinnitus, as well as the negative emotions associated with it, in a non-judgmental manner (Westin, et al., 2011).

The intent of this project is to expand the University of Arizona Speech & Hearing Clinic's tinnitus treatment options to include ACT methods or techniques that are within the scope of the treating audiologist when appropriate for the client. Currently, the University of Arizona Clinic Tinnitus Protocol contains recommendations for education and counseling methods, internet-based and local resources, various sound therapies (table-top and ear-level), as well as basic CBT and relaxation strategies. The purpose of this project is to: a) obtain a basic

understanding of ACT origins, theory, and techniques, b) complete a literature review on the application of ACT for tinnitus management and efficacy, c) review how ACT has been used to treat other behavioral or mental health disorders (e.g., chronic pain, depression, anxiety) and the efficacy of ACT for treating these disorders and d) determine the feasibility of implementing similar methods in an audiology clinic for tinnitus management. This project involves writing a portion of the clinic manual that includes practical information for audiologists and graduate student clinicians to use (See Appendix A).

At present, CBT and Tinnitus Retraining Therapy (TRT) are two of the most well-known tinnitus treatment options and both have been studied extensively (Cima, et al., 2009; Baguley et al., 2013). TRT is a therapy that combines directive counseling and sound therapy; both of which are structured in a precisely regimented schedule (Phillips, & McFerran, 2010). The evidence for the efficacy of TRT is mixed, and the success that certain individuals attain may be more dependent on the intervention of psychological features rather than technological aspects related to the presentation of the sound therapy (Phillips & McFerran, 2010; Westin et al., 2011). Research shows that CBT is an effective management tool for some individuals at reducing the perceived burden of tinnitus and the results can be long-lasting (Thompson, Hall, Walker, & Hoare, 2016; Hesser, Weise, Westin, & Andersson, 2011). However, Martinez-Devesa et al. (2010) described, in their review of the literature, several CBT studies which have shown no significant difference in the reduction of depression associated with tinnitus when compared to control groups that used an alternative intervention such as yoga or education. There is a great deal of variability in patient outcomes with the use of both TRT and CBT. In some studies, a substantial number of tinnitus sufferers choose to discontinue these treatments, others do not see an improvement that is clinically significant, and some even regressed (Phillips & McFerran,

2010; Martinez-Devesa et al., 2010; Hesser, Weise, Westin, & Andersson, 2011).

Because some individuals will not benefit from CBT or TRT, offering a variety of treatment options is imperative for clinical audiologists. Moreover, meta-analyses have contradicted the effectiveness of specific CBT components for treating chronic conditions. For example, the inclusion of somatic regulatory retraining (e.g., breathing strategies) with exposure therapy did not improve outcomes measures compared to the exclusive use of exposure therapy (Norton & Price, 2007). Therefore, techniques that target directly controlling internal states may be unhelpful or counterproductive for certain individuals.

Given the documented success of behavioral therapies in tinnitus management, it is worth exploring whether ACT, a mindfulness-based therapy, can be more beneficial for patients or produce more long-term effects than other established treatments. Around 75% of people with mental health issues or addiction problems flow through the health care system without ever seeing a mental health professional (Narrow, Reiger, Rae, Manderscheid, & Locke, 1993). This may perhaps suggest that many tinnitus sufferers, with co-occurring mental health issues, will seek out an audiologist before considering psychological treatment. Ergo, it is almost certainly advantageous for clinical audiologists to expand their knowledge of various evidence-based behavioral therapies and their effectiveness.

ACT has been shown to be successful in helping patients manage a variety of chronic illnesses, such as such as HIV, cancer, and epilepsy (Hofmann et al., 2010; Hayes et al., 1999; Hayes et al., 2011). Recently ACT has been applied to tinnitus management; however, there have only been a handful of studies comparing the benefits of ACT to other tinnitus management strategies (Baguley et al., 2013). Nonetheless, these studies have yielded encouraging results,

suggesting an improvement in tinnitus management if this approach becomes better understood and established among clinical audiologists (Westin et al., 2011; Hesser et al., 2012).

According to ASHA's (2018) Preferred Practice Patterns for the profession of audiology, it is within the scope of practice for clinicians to engage in "management of symptoms and sequela of disorders of the auditory system such as tinnitus, hyperacusis, misophonia, and other auditory perceptual disorders." (p.6) Clinical service delivery of behaviorally-based tinnitus treatment is appropriate for audiologists because, unlike typical mental healthcare professionals, audiologists have extensive background knowledge in the pathophysiology of tinnitus, aural rehabilitation, health literacy, and the International Classification of Functioning, Disability and Health (ASHA, 2018). This knowledge likely enables clinical audiologists to help their patients develop realistic goals, expectations, and engage in tinnitus management planning.
It is also recommended that outcome measures to evaluate the success of intervention be performed. Audiologists must know when to refer their patients to experienced mental health care providers, especially if there is any reason to suspect that the patient is suicidal. Clinical audiologists should never use ACT to treat general anxiety and depression, as this is out of the scope of practice.

Best practices for tinnitus management have not been clearly defined in the University of Arizona Hearing Clinic because these best practices are hard to define. Sweetow et al (2000) and the American Academy of Audiology developed the Audiologic Guidelines for the Diagnosis & Management of Tinnitus Patients. Within this document they compiled a list of management strategies that audiologists can perform. The list included counseling, CBT, Habituation/TRT, amplification, maskers, stress management, and support groups (Sweetow et al., 2000). Some of these current treatment strategies are expensive and all of them have a wide

variability of success (Baguley et al., 2013). This is why a practical ACT guide for tinnitus may be a valuable resource for audiologists. Ideally this project could contribute to a better consensus in best practice for the management of tinnitus.

History of Acceptance & Commitment Therapy

Since 1986, approximately 210 studies on the effectiveness of ACT have been published (Hayes, 2018). While not necessarily a "new" intervention, ACT most certainly has increased in popularity in the last decade (Ost, 2008). The Society of Clinical Psychology (2018) evaluates the evidence for various behavioral treatments of psychological disorders & health conditions. They reported in 1998 that ACT has strong research support for managing chronic pain and modest research support for managing obsessive-compulsive disorder (OCD), depression, mixed anxiety disorders, and psychosis (Society of Clinical Psychology, 2018; Hayes, 2006; Blackledge, Ciarrochi, & Deane, 2009). Although most of the published research on ACT interventions is relatively new, the first ACT treatment manual came out in 1999 (Ost, 2008).

Core Principles & Characteristics of Modern ACT

ACT is based on Relational Frame Theory (RFT), the idea that human language can be used as building blocks to shape 'higher cognition' by 'relating' or creating links between things (Hayes, Wilson, & Strosahl, 1999). Proponents of RFT argue that we experience distress because we allow our mental states to direct our choices and behaviors and most efforts to avoid or control all unwanted mental experiences generally result in feeling out of control (Zettle, 2007). ACT is unique in that it is a positive health model rather than a disease model (Hayes et al., 1999). "For one, ACT does not view human suffering as abnormal or out of the pale of daily experience, making it a far less stigmatizing approach" (Blackledge et al., 2009, p. 5). ACT is focused on the present and does not try to directly change the content of experience, but rather

alter the client or patient's relationships to their internal experiences, such as thoughts, feelings, and perceptions. In ACT, the patient or client can learn how to accept what is out of their control, and commit to what can be changed in order to live a more value-centered life (Hayes et al., 1999). This could allow interventions for certain chronic conditions, such as tinnitus or chronic pain, to be framed more positively and reduce the stigma associated with them.

ACT emphasizes 'psychological flexibility', or one's ability to experience the present moment more fully and to alter their behavior in order to live according to their values through 6 key processes (see table 1 below) (Hayes, 2016).

The Six Core Processes	**Example of Psychological Flexibility**	**Example of Psychological Inflexibility**
Acceptance	Actively opening up to our experiences without judgment.	Experiential avoidance of sensations, feelings, thoughts, or memories (escapism, substance use).
Cognitive diffusion	Seeing our thoughts as products of the mind. Content will always be there, but it does not have to control behavior.	Cognitive fusion or listening to negative thoughts and ignoring out experience (anxiety & depression).
Values-based action	How the patient wants to live their life, and what they want it to be about.	Lack of values and clarity (not using values as a guide in life.
Contact with the present moment	Being in the moment, mindful, and engaged with the present	Dominance of conceptualization or being overly preoccupied with the past or future (worry & fear)
Observer self/self as context	Allowing for a transcendent sense of self. We are not merely our thoughts, feelings, and emotions.	Self as content or obsessing over negative identity descriptions (you are sick, you are not worthy).
Committed action	Moving towards what is most important.	Inactivity, disorganized activity, impulsivity or avoidance (combative, lacking direction).

Figure 1. The Six Core Processes. Adapted from "Acceptance and commitment therapy: Contemporary theory research and practice," by Blackledge, J. T., Ciarrochi, J., & Deane, F. P., 2009, *Bowen Hills, Old*: Australian Academic Press. P. 13.

Comparing and Contrasting CBT & ACT

CBT and ACT are similar in that they both encourage the patient to identify their own goals and problem-solving techniques for emotional regulation. Both approaches encourage patients to remove themselves from their thoughts with the intention of interpreting their internal reactions objectively. Given that negative thought patterns can be regulated either by changing the assessment of the individual's emotional cues or by adjusting the emotional response, it is possible that employing both ACT and CBT techniques may yield successful treatment outcomes (Hofmann & Asmundson, 2008).

CBT promotes symptom reduction or the prevention of negative thought patterns through adaptive emotional regulation. Such techniques can include, "situation modification, attention deployment, and cognitive reframing of a situation" (Hofmann & Asmundson, 2008, p. 11). Whereas ACT aims to rescind maladaptive emotional regulation strategies (e.g., avoidance, suppression, or denial). ACT; however, encourages people to accept and embrace their internal reactions, even if they are destructive or counterproductive, and instead focus on promoting valued actions and beliefs (Hofmann & Asmundson, 2008).

The theoretical foundations and the application of CBT and ACT are fairly discrepant. Some even argue that the term 'cognition' has a different meaning in ACT than it does in CBT. The theory behind CBT emphasizes the difference between 1) actions/behaviors, 2) subjective emotional experiences, and 3) cognitions. Instead, ACT incorporates cognitive processes as a discreet behavior rather than as a distinct thought process. Furthermore, the theoretical foundation of ACT assumes that human thought patterns, or cognitions, are not easily modified. Therefore, ACT techniques aim to alter the function of cognitions, rather than the cognitive content itself (Hofmann & Asmundson, 2008).

Despite ACT's unique theoretical framework, some critics have pointed out that it only contributes minor variations when compared with traditional cognitive behavioral therapy (CBT) and is consequently undeserving of the contemporary widespread clinical and research attention that it has been receiving (Gaudiano, 2009). It is the author's point of view, however, that this does not have to imply a fault in either treatment and that much can be gained by evaluating the research findings of both therapies.

The Evidence for CBT as a Tinnitus Treatment

Hesser, Weise, Westin, & Anderson (2011) conducted a meta-analysis of randomized controlled trials (RCTs) that examined cognitive behavioral therapy (CBT) and its effect on tinnitus distress. The elements of CBT include, "applied relaxation, positive imagery, cognitive restructuring of negative beliefs about tinnitus, exposure to the sounds, behavioral activation, and mindfulness/attention exercises" (Hesser et al., 2010, p.546). The review evaluated 15 studies with a total of 1091 participants. They found that CBT, compared with passive (e.g., waiting list) and active controls (e.g., placebo or alternative treatment), is an effective treatment for managing tinnitus impact. In addition to relieving the tinnitus-related symptoms, CBT also reduces anxiety and depression associated with tinnitus (Hesser et al., 2010).

Hesser et al. (2010) argued that there is a need for better reviews of CBT. At the time of writing, they reported that only one other review limited the inclusion of efficacy studies to RCTs, and this study only included 285 participants. It also used tinnitus loudness as the primary measure, which is problematic because audiometric loudness matching has been shown to have little relation to tinnitus impact (Hesser et al., 2010). The researchers analyzed the characteristics of the studies to see if they were related to the benefits of CBT and they assessed and quantified the methodological quality of the studies. Another strength of this review was the

inclusion of follow-up data to assess the long-term benefit of CBT on tinnitus management (Hesser et al., 2010).

The findings show that CBT is an effective intervention for reducing annoyance and distress associated with tinnitus and the improvements were maintained after six months. There was, however, a smaller effect size after a more extended period. The meta-analysis examined control conditions and determined that these results were in fact due to CBT treatment, and not patient expectation or therapist contact. Secondary outcomes, such as anxiety and depression, were shown to be alleviated with CBT. The authors emphasized, however, that not all patients will benefit from CBT and some may even deteriorate. They also admitted that the mechanisms of how precisely the treatment works remain unclear. The review embraced a broad scope of CBT treatments, some of which included mindfulness-based approaches, relaxation techniques, or sound enrichment devices as a supplement. It also emphasized the need for further research determine which processes or mechanisms are the most and least compelling parts of treatment (Hesser et al., 2010).

The Evidence for Using ACT to Treat Anxiety & Depression

Swain, Hancock, Hainsworth, & Bowman (2013) conducted a meta-analysis in which they examined 38 studies that looked at outcome measures for ACT interventions targeting various types of anxiety. The research showed that approximately 92.11% of the studies reported a significant improvement in most of the anxiety outcome measures in both clinical and nonclinical populations. Even though the studies contained methodology limitations and stipulations, the preliminary evidence for ACT to treat anxiety is quite promising. More research is needed to compare the effectiveness of ACT interventions for children and older adults. The data from the ACT interventions for mixed anxiety problems and social anxiety disorder showed

the most persuasive evidence. To summarize, 1) ACT is a better option than doing nothing at all and 2) its outcomes are comparable to other psychotherapeutic interventions such as CBT (Swain et al., 2013).

Twohig & Levin's (2017) systematic review evaluated 36 randomized controlled trials (RCTs) on the effectiveness of using ACT to treat depression and anxiety disorders. They also concluded that ACT produced superior outcomes when compared with patients in control groups (e.g., waitlisted conditions) and that ACT is probably just as effective as CBT. Reported outcomes in this review included improvements in quality of life (QoL) and psychological flexibility. More research is needed to elucidate the differential impact of ACT outcomes relative to CBT outcomes. (Twohig & Levin, 2017).

The Evidence for Using ACT for Sufferers of Chronic Diseases

Graham, Gouick, Krahe, & Gillanders (2016) conducted a systematic review of randomized control trials that used ACT as an intervention for dealing with and accepting chronic diseases and long-term health conditions. Graham et al., (2016) reported that the evidence was weak because of non-specific therapy factors, placebo effects, or too small of a sample size. More than half of the studies evaluated consisted of only 5 or fewer ACT sessions. The delivery of the interventions was also inconsistent; formats included providing ACT by phone, internet, or in large groups. Although ACT has not been well-established in terms of treating chronic diseases/long-term conditions, the limited data they found was hopeful. Specifically it supported ACT as being associated with improved outcomes across a wide range of applications (e.g., improving QoL, symptom control, and assuaging distress) and across many diseases or conditions such as HIV, cancer, and epilepsy. More research is needed to determine if ACT can consistently improve lifestyle, disease self-management, symptom control, and QoL

for sufferers of chronic diseases because currently the evidence is currently weak (Graham et al., 2016).

The Evidence for Using ACT for Sufferers of Chronic Pain

Cognitive-behavior therapy (CBT) is the most popular and well-established psychological treatment for chronic pain; however, the effects are limited and vary from patient to patient. Reviews and meta-analyses have shown only small and medium effect sizes when comparing CBT to controls or placebos. Additionally, these effects were not usually maintained after treatment (Hughes, Clark, Colclough, Dale, & McMillan, 2017).

There is some evidence that suggests attempting to eliminate or control pain can be counterproductive (Hughes, Clark, Colclough, Dale, & McMillan, 2017; Simpson, Mars, & Esteves, 2017). Theoretically, ACT may be a helpful alternative treatment to increase acceptance of some of the aspects of chronic pain that may be difficult to alter. Patients with chronic pain can use ACT to increase valued action and make behavioral changes to improve functioning in the presence of pain. ACT may have an advantage over CBT because rather than trying to reduce the experience of pain, it focuses on more realistic outcomes such as valued actions and goals to modify behaviors (Simpson, Mars, & Esteves, 2017).

Simpson et al.'s (2017) review of the evidence suggested that ACT had a significant effect in, “reducing subjective pain, pain avoidance, sick leave, medical utilization, affective distress, and kinesiophobia” (p. 25). Hughes et al., (2017) identified 11 trials in their review and found small to substantial effects on ACT outcomes when compared with control groups. Nonetheless, they found insufficient evidence of improvement in QoL measures and pain intensity (Hughes et al., 2017). It is also crucial to note that some participants receiving ACT reported a dramatic increase in anxiety and depression after the treatment as they became more

aware of those experiences (Simpson, Mars, & Esteves, 2017). Cases of regression should be thoroughly examined and analyzed by researchers and clinicians in order to make better predictions in selecting which patients would be the most appropriate for this management approach.

Measures to Evaluate and Quantify Chronic Pain and Tinnitus

Westin, Hayes, and Andersson (2008) examined the construct of psychological acceptance among individuals with tinnitus and developed the Tinnitus Acceptance Questionnaire (TAQ), which was based on the Chronic Pain Acceptance Questionnaire. TAQ has demonstrated good internal consistency (Westin, Hayes, and Andersson, 2008). The authors of the study noted many commonalities between tinnitus suffers and individuals that suffer from chronic pain. In both cases eliminating the cause of their distress is an unrealistic goal. Therefore, successful outcomes have been defined as accepting their chronic health condition, scheduling fewer health care visits, increased participation, increased adjustment, and lower levels of depression or anxiety (Westin, Hayes, and Andersson, 2008).

Previous research suggests that individuals who try to eliminate 'unwanted private experiences,' rather than accept them, are more likely to experience depression, anxiety, substance abuse, or other mental health problems. The two major components the authors looked at were *activity engagement* and *tinnitus suppression* among 47 participants. The longitudinal study measured the role of acceptance and its relationship to tinnitus distress at a baseline and followed up with the participants after seven months to measure tinnitus distress, anxiety, life quality, and depression. The results suggested that the acceptance factor can act as a mediator to explain the relationship between depression and QoL at follow-up. Acceptance is also a partial mediator of tinnitus distress. All together these findings emphasize the significance of

acceptance for the welfare of patients suffering from tinnitus (Westin, Hayes, and Andersson, 2008).

The Evidence for ACT as a Tinnitus Treatment

Westin et al. (2011) evaluated the effectiveness of ACT by comparing the outcomes with a group receiving Tinnitus Retraining Therapy (TRT) and a control group on a waiting list in a randomized control trial. In the ACT group the participants talked about current coping strategies, costs and benefits, mindfulness, goal-oriented behaviors and patterns, values, life goals, psychoeducation regarding tinnitus, experimental exercises, metaphors, and addressing problems such as insomnia or hyperacusis. TRT entailed a 2 ½ hour consultation in which the participants received wearable sound generator for both ears along with retraining counseling and education on the physiology of tinnitus (Westin et al., 2011).

Inclusion criteria consisted of being at least 18 years of age or older and having: bothersome untreated tinnitus, a score higher than 30 on the Tinnitus Handicap Inventory (THI), good mental health, and good physical health. The primary outcome measure given was the THI; a 25 item self-report questionnaire that evaluates how tinnitus affects emotional responses, daily activities, and catastrophizing. Secondary outcome measures included the Insomnia Severity Index (ISI), the Quality of Life Inventory (QoLI), the Hospital Anxiety and Depression Scale (HADS), and the Clinical Global Impression-Improvement (CGI-I). For a process measure specific to ACT, the researchers used the Tinnitus Acceptance Questionnaire (TAQ), which examines an individual's avoidance and acceptance of their tinnitus (Westin et al., 2011).

The results suggest that ACT is more effective than TRT, or being waitlisted, at reducing the symptoms associated with tinnitus; 54.5% of ACT patients saw statistically significant

improvements compared with 20% of TRT patients. ACT provided immediate benefits in primary and secondary measures (anxiety and insomnia); furthermore, these results were generally sustained after eighteen months. One of the biggest strengths of this study is that the authors measured deterioration; one patient deteriorated in the ACT group compared with 2 patients in the TRT group. (Westin et al., 2011).

Hesser et al. (2012) performed a randomized controlled trial to investigate effects of tinnitus using Internet-delivered psychological treatments in a guided self-help format. They recruited three groups of 'moderately to severely distressed' participants with tinnitus and assigned them to one of the following groups: ACT (n=35), CBT (n=32), or the control condition (monitored Internet discussion forum; n=32). Self-report questionnaires to measure progress were administered at eight weeks and one year post-intervention. These measures included the THI, the HADS, the QoLI, the Perceived Stress Scale, and the TAQ (Hesser et al., 2012).

Hesser et al. (2012) reported that participants in both CBT and ACT groups showed significant improvements in THI compared with the control group. ACT had substantial effects on outcomes measuring depression and stress. In conclusion, CBT and ACT treatment demonstrated clinically significant improvements. These results suggest that both interventions are correspondingly effective and they result in sustained effects after a one-year follow-up (Hesser et al., 2012). More research is needed to determine if ACT is superior to CBT in terms of cost effectiveness. For example, training health care professionals to use ACT may require less background knowledge in psychology and a shorter training period than it would for CBT. Additionally, using ACT instead of CBT for tinnitus patients might require fewer follow-up appointments. lastly, the effectiveness of ACT may vary according to patient lifestyle or other environmental factors.

Teaching ACT to Audiologists and Other Health Care Professionals

When teaching ACT to clinicians with no educational background in psychology, psychiatry, or counseling, Blackledge et al. (2009) recommends avoiding discussion of the Six Key Processes and simplifying ACT principles into 'soundbites' that only take a few minutes to deliver. This approach assumes that many health care providers do not have (or do not want) to take the time to learn the highly complex theoretical aspects behind ACT. Blackledge et al. (2009) argue that bringing ACT to patients is possible, helpful, and can be achieved by following a simplified approach which has been modified by the author to address the specific concerns of tinnitus sufferers.

1. Thoroughly analyze a difficult patient's patterns, behaviors, and previous reactions to treatment and/or counseling. See Figure 2 below.
2. Evaluate their ability to accept and reject their thought patterns, sensations, and emotions associated with their tinnitus. See Figure 3 below.
3. Inquire about their commitment to a purpose-driven life. What are their goals (e.g., to enjoy reading in quiet despite constant tinnitus)? Are they impulsive? Do they operate on autopilot and always respond in the same way to their tinnitus? See Figure 3 below.
4. Gauge the patient's ability to problem solve. Do they take an active role in customizing their treatment goals? Do they rationally consider the various tinnitus treatment options and how it would fit with their lifestyle? Or do they retreat to avoidance behavior (e.g., social isolation)? See Figure 3 below.

5. Emphasize to the patient that human suffering originates not from biomedical diseases or conditions, but rather from culturally supported endeavors to escape or avoid experiencing negative sensations, such as tinnitus.

ACT Short- and Long-Term Results Worksheet for Helping Professionals

Column I: Choose a challenging human to use as the focus of this exercise. Think of someone that you are trying to help, but haven't really been able to. Make a few notes to describe this person (age, gender) and several specific examples of behavior s/he demonstrates that you find challenging.

Column 2: How do you currently respond? What exactly do you do when the behavior occurs? Write your answers in column 2.

Column 3: What results are you getting? Write out both short-term and long-term results that you are seeing with your current responses.

I. Challenging Human	2. Your current response	3. Results (short-term and long-term)	
Tinnitus patient with moderate to severe hearing loss		Short-term	Long-term
He comes and demands that I increase the volume of the tinnitus masker on his hearing aids.	*I tell him that if I increase the volume of the masker, then he will not be able to hear conversational speech.*	*He calms down and then starts talking about how everything is hopeless, and there's no point in trying to engage with others because his hearing loss is so severe.*	*Every appointment feels like a waste of time for both of us. He looks more anxious and moody every time I see him.*
He tells me that he has completely given up on socializing and trying to understand conversations. The constant ringing in his ears makes it impossible to concentrate on what other people are saying, and he'd rather just be by himself.	*I try to probe him on why he should make more of an effort to communicate with friends and family. I try and encourage him to focus on the positive aspects of his life.*	*He will stop talking to me about his social isolation, but I know that this is still problematic. It's tough for him to give me genuine and truthful reasons why he shouldn't give up on communication with loved ones.*	*He will continue to further isolate himself from his inner circle and society. He seems less willing than ever to talk to me about his struggles.*

Figure 2. ACT Short- and Long-Term Results Worksheet for helping professionals. Modified and adapted from "Acceptance and commitment therapy: Contemporary theory research and practice," by Blackledge, J. T., Ciarrochi, J., & Deane, F. P., 2009, *Bowen Hills, Old*: Australian Academic Press. P. 13.

The ACT Patient Analysis Worksheet for Helping Professionals

FIRST LEG: ACCEPTING POSTURE

Acceptance Behavior

What do I know about this person's ability to accept her sensations, thoughts, and feelings?

Strength of Acceptance Behavior: *Weak* *Medium* *Strong*

Rejecting Behavior

What do I know about this person's tendency to reject or shut-down in response to internal sensations, thoughts, and feelings?

Strength of Acceptance Behavior: *Weak* *Medium* *Strong*

SECOND LEG: PURPOSEFUL LIVING

Purpose-Driven Behavior

What behaviors or behavioral patterns demonstrate this person's commitment to live a purpose-driven life?

Strength of Purpose-Driven Behavior: *Weak* *Medium* *Strong*

Autopilot Behavior

What do I know about this person's tendency to behave on autopilot without thinking it through (e.g., desiring to just 'follow the rule' and hope for the best) or alternatively to act impulsively (e.g., to lash out when others interfere with her/his autopilot actions)?

Strength of Autopilot Behavior: *Weak* *Medium* *Strong*

THIRD LEG: APPROACH-ORIENTED PROBLEM SOLVING

Approach Behavior

What do I know about this person's ability to approach problems in a way that furthers resolution (e.g., taking the time to define the problem, looking at options, developing and evaluating action plans)?

Strength of Approach Behavior: *Weak* *Medium* *Strong*

Avoidance Behavior

What do I know about this person's tendency to avoid problems in general, including emotional and interpersonal problems (e.g., settling for the status quo, avoiding risks in an effort to control emotional discomfort or distress)?

Strength of Avoidance Behavior: *Weak* *Medium* *Strong*

Figure 3. ACT Patient Analysis Worksheet for helping professionals. Borrowed from "Acceptance and commitment therapy: Contemporary theory research and practice," by Blackledge, J. T., Ciarrochi, J., & Deane, F. P., 2009, *Bowen Hills, Old*: Australian Academic Press. P. 14.

In order to expand tinnitus management options at the University of Arizona Speech and Hearing Clinic, the author created a unique section of the clinic manual, which recapitulates ACT theory and implementation of its therapeutic techniques. In Appendix A, the guide commences with an unelaborate introduction to Relational Frame Theory, the philosophical backbone of ACT. Following this brief introduction, a question an answer (Q&A) section addresses how ACT can be applied to tinnitus management, what makes ACT unique, and how to support patients that do not benefit from ACT. Then readers can learn how to use value statements, goal statements, committed actions, and other ACT tactics in a simple bulleted format. To abridge the various teaching points, a table categorizes examples of ACT strategies, their rationale, and scripts for each strategy which are designed specifically to be used with tinnitus patients. For example, the technique 'evaluating the cost of control' is meant to help the patient see how suppressing feelings of distress can be draining cause loss of control in other aspects of their life. Specifically it recommends asking the patient:

- "How workable is your life when you are feeling anxiety due to the tinnitus?
- "See if you can let yourself contact the experience of distress."
- "Where do you notice it in your body?"
- "Can you describe the feeling?"

Appendix B provides a worksheet that patients can fill out to help them construct goals, focus on values, avoid barriers to achieving goals, and measure their own progress.

This format was designed for readers with little to no background in counseling psychology. Condensing the research findings of ACT into guidelines, which are straightforward and well-organized, could facilitate audiologists in conveying a new and effective tinnitus management strategy. The goal of this resource is to enable clinicians to use ACT by teaching their patients to accept all feelings of negativity associated with tinnitus in order to manage undesirable reactions.

Following implementation of these ACT techniques for tinnitus management using this guide, clinical audiologists should regularly evaluate the effectiveness of their counseling approach. Fortunately, there are a plethora of standardized self-report measures that can be used to assess clinical progress and sustained effects of tinnitus treatments. The THI is a popular choice for its brevity, simplicity, excellent test/retest reliability, and established validity in assessing the impact of tinnitus on the patient's everyday experience (Newman, Sandridge, & Jacobson, 1998). Additional self-report questionnaires that trace changes in secondary outcomes associated with perceived tinnitus handicap (e.g. insomnia, anxiety, and stress) include the HADS, the QoLI, the ISI, the CGI-I, and the TAQ (Westin et al., 2011; Hesser et al., 2012). Presumably, clinicians would not routinely request all of these self-report questionnaires for every patient due to time constraints, which are common in clinical audiologic care. Instead, the clinician should tailor which measures to use based on the individual needs of the patient. Researchers, however, will often use several standardized self-report measures to examine the outcomes of a given intervention meticulously.

Research Needs

Future research should evaluate potential confounding variables and effect modifiers moderators of ACT as a tinnitus treatment intervention. Moderators identify subgroups of

patients who report dissimilar outcomes or effect sizes from one therapy approach versus another. The goal of identifying moderators is to improve the utility of research results and to aid clinicians in evidence-based treatment planning (Kraemer, Wilson, Fairburn, & Agras, 2002). This could elucidate if or why ACT may be as, or more, effective than CBT in managing tinnitus for specific patients.

Future research should also compare and contrast the various methods of ACT delivery such as at-home practice, group processing activities, or individual sessions (Godfrey, Gallo, & Afari, 2015). To date, randomized control trials of ACT to treat tinnitus have only recruited mental health care professionals to administer the intervention. Although Hayes (2018) argues that various types of healthcare providers can easily learn these counseling techniques, no previous study has evaluated the effectiveness of specific training for audiologists to use ACT techniques and incorporate them into tinnitus management and counseling. The prospect, however, seems promising based on examples of ACT use among other non-mental health care professionals. For instance, Robinson & Reiter (2007) found that primary care providers, who used ACT principles with their patients, reported that they felt: 1) their care was more effective 2) they experienced more satisfaction in their work 3) and reported less burnout that many providers of human services experience.

Conclusion

ACT focuses on contextual change, which is particularly crucial for patients with tinnitus and other chronic conditions that have no effective medical cure. Scholarly literature supports the effectiveness of ACT compared with other treatments (e.g., TRT). The use of ACT may reduce secondary effects of tinnitus (anxiety, sleeplessness), enhance the impact of other treatments (e.g., hearing aids, TRT, CBT), and allow patients to demonstrate behaviors and actions that are

consistent with their goals and values. Tinnitus sufferer's experiential avoidance of their chronic condition is problematic and can be associated with anxiety, depression, insomnia, and a lower QoL. This, combined with the limited effectiveness of popular tinnitus treatments, is why patients may often leave appointments feeling discouraged and hopeless.

Using ACT counseling techniques to help patients manage their tinnitus is within an audiologist's scope of practice. This article reviews the core features of ACT's theoretic model, summarizes teaching methods of ACT for audiologists, examines the evidence of ACT for treating various chronic conditions, and describes its approach using examples that are common in an audiologic tinnitus evaluation. The research on ACT is proliferating. Future studies should determine if ACT 'soundbites' can be easily and efficiently taught to audiologists and other healthcare professionals.

Appendix A

Introducing Acceptance and Commitment Therapy skills to manage tinnitus

What is Acceptance Commitment Therapy (ACT)?

The following acronym is a concise way of summing up Acceptance and Commitment Therapy:

Accept your reactions and be present
Choose a valued direction
Take action

ACT is based on Relational Frame Theory, the psychological theory of human language which argues that people can achieve better reasoning and cognitive skills by relating links between words, feelings, and ideas. In other words, when we see things we articulate them in terms that are meaningful to us. When we say, 'that's amazing,' 'that's disgusting,' or 'that's frightening' it will affect how we conceptualize and store memories. Clinicians using ACT want to try and get their patients to stop seeing the world in 'all-or-nothing' terms by using linguistic cues and focusing on the changeable variables in the environment. Some variables, such as the tinnitus itself, is not changeable. Unfortunate life conditions can disrupt the way people experience events, people, and things that they value, which is why ACT usually starts with the patient describing their values and deciding on future goals. This is a very important step that will help them to find ways of being present and engaged in activities that they value. The next step is allowing the patient to decide on their stage of readiness for change.

How does Acceptance Commitment Therapy (ACT) fit in with tinnitus treatment?

Tinnitus patients often come to the clinic wanting/expecting the audiologist to take away their bothersome tinnitus. ACT cannot do that (and neither can any other intervention). The goal of ACT is to confront the negative feelings associated with tinnitus as real and valid and learn to accept those feelings while achieving their goals. It is common for patients to respond to

bothersome tinnitus by trying to get rid of it in any way possible. They typically don't realize that their tinnitus may be the source of anxiety or depression until much later. CBT would suggest trying to control their reactions; however, if someone is continually trying to regulate or suppress negative responses to tinnitus, it can result in a loss of control in other life situations. We are all born with a 'fight or flight' response to stressful events, but we can teach our brains not to perceive the sound as a threat.

What makes ACT unique to other behavioral counseling interventions?

ACT can be used in a wide range of clinical populations and settings (like an audiology clinic). Unlike cognitive behavioral therapy, it is not manualized. ACT allows clinicians to create and individualize their own mindfulness techniques, or even co-create them with the patient. Most importantly, ACT does not include symptom reduction as a goal. The primary goal is to transform the patient's relationship with their tinnitus and learn to perceive it as a harmless noise.

What if my patient doesn't respond to ACT techniques?

Then don't use it and try something new. Some research shows that some individuals with tinnitus do benefit from ACT; however, no tinnitus treatment is a one-size-fits-all. The goal of this guide isn't to replace other types of tinnitus treatment, but rather to give clinicians more tools and strategies that can be used in conjunction with noise maskers, cognitive behavioral therapy, and other tinnitus treatment approaches.

How should I start the appointment/counseling session?

Begin by asking, "What do you want to get out of this visit? Let's create a goal. What can I teach you in the way of a new skill that might help you with this goal?"

ACT Teaching Points for Audiologists

Now that you have collected data from your case history interview and tinnitus evaluation, spend time talking to your patient about the results. This is a good time to use your Values/Goal assessment that will drive your tinnitus management plan.

1. Start by helping your patient choose what the initial focus of today's plan will be: communication, socialization, health, better sleep habits, concentration etc…

- In theory, ACT uses values to encourage committed action and resilience in the face of avoidance or impulsive behavior.
- For example, a patient may avoid going to dinner parties because they feel anxious about their tinnitus getting in the way of having conversations.
- This person might want to focus on socialization or communication.

2. Take the time to learn about the patient's values by constructing a *value statement* and a *goal statement*.

- The reason we ask about values is to provide direction for goal-setting.
- When asking a patient about their values, understand that this is different from a goal. Values are abstract statements, and goals are specific and measurable.
    - Value statement- 'I care about spending time with my family.'
    - Goal statement- 'I plan to go out to restaurants with my family even if it is hard to communicate.'

3. Provide suggestions on how they can achieve their commitment following their values and goals

- Encourage the patient to develop new skills that could change bad habits
    - Example- telling the patient to state aloud that their values are **not** important to them as a source of motivation. '*I do not care about being able to concentrate on my work because my co-workers don't matter to me*.' This may inspire them to try and ignore the tinnitus when they realize that their co-workers do matter to them.

- Find new ways of getting unstuck from repetitive negative thought patterns through coping strategies
    - Taking a brisk walk when tinnitus is bad
    - Using prescribed sound therapy
    - Engaging in meaningful conversation

4. Remind the patient that we expect for our behavior to not always reflect our values. Encourage the patient to find resilience and persistence rather than perfection.

- Encourage them to be present in the moment
- Try and notice the tinnitus without judgment, fear, or anxiety

5. Provide a way for them to track progress.

- Keeping a diary
- Self-report questionnaires
    - Tinnitus Handicap Inventory (THI)
    - Insomnia Severity Index (ISI)
    - Quality of Life Inventory (QoLI)
    - Hospital Anxiety and Depression Scale (HADS)
    - Clinical Global Impression-Improvement (CGI-I)
    - Tinnitus Acceptance Questionnaire (TAQ) **specifically evaluates tinnitus avoidance and acceptance*

"ACT Teaching Points for Audiologists" is adapted and modified from "Acceptance and commitment therapy: Contemporary theory research and practice," by Blackledge, J. T., Ciarrochi, J., & Deane, F. P., 2009, *Bowen Hills, Old*: Australian Academic Press.

Examples of ACT Implementation for Tinnitus Patients

Technique	Examples	Rationale
Identifying Goals	*"In what situations would you like to overcome the anxiety/depression associated with tinnitus? (Sleeping, reading, dinner conversations, etc.)*	This will help the patient to identify situations of importance in order to begin practicing how to be present and engaged in activities that they value.
Evaluating the cost of control	*"How workable is your life when you are feeling anxiety due to the tinnitus?"* *"See if you can let yourself contact the experience of ___. Is it there? Do you notice it? Where do you notice it in your body? Can you describe the feeling?"*	The patient can better understand how trying too hard to control and suppress feelings of distress can actually lead to decreased quality of life. ACT theory postulates that if someone is continually trying to control negative response to tinnitus, it can result in a loss of control in other life situations.
Evaluating the Cost of Unwillingness	*"As you notice these feelings, when they show up you want to escape the anxiety, what are the costs of wanting to escape those feelings?"*	Willingness to experience the feelings associated with tinnitus may result in allowing the patient to choose a valued path or at least feeling more motivated to attain valuable life goals. ACT seeks to accomplish this by holding the anxiety, being present to it in the moment, noticing the thoughts they have about those thoughts (metacognition).

Undermining Cognitive Fusion	*"How old are these thoughts of anxiety associated with tinnitus?"* *"What do you do when you have these thoughts?"* *"Notice these feelings and carry them. Like they're not your enemy like they're not your boss."*	Allow the patient a means of finding a focus on new ways of guiding the mind, and not on habitual thought patterns.
Getting in contact with the present moment	*"Go back to the moment where you feel isolated and anxious, and stay there. Be aware of what your body is doing, notice your hands, notice your breath, and stay in this moment with this experience. Notice how your mind reacts to the tinnitus and stay with it for a few more moments."* *"You're experiencing an ongoing sense in each moment of anxiety and isolation *describe body language of patient in the moment*, but your experience tells you that you can stand it and it keeps changing."* *Lead the patient away from what they're experiencing. Observe the ongoing process of experience: for example one moment the patient might be wringing their hands, crying, or showing other signs of distress. Ideally, they will eventually come back to a more neutral feeling if you give them enough time.	To move away from their history and future. See the moment as an ongoing experience, rather than being anxious about the past and future.

Getting in contact with the present moment (cont'd)	*"Pause and take a deep breath. I can feel the urgency and the anxiety, can you locate it. Where do you experience it?"* *"Just stay present with the sound. Notice what emotion shows up with that."* *"Did you notice that something changed in the tone of your voice? The urgency left. "*	(see above)
Distinguishing the Conceptualized Self from Self-as-Context	*"Let's try an exercise. I'm going to say some phrases about yourself, and I want you to pay attention to the thoughts in your head when I say these things. 'I have some good qualities.' 'I'm a pretty healthy person.' 'I'm a perfectly healthy person that doesn't age ever.'"* *Listen to the response and acknowledge their thoughts *"Let's try this in the opposite direction; I'm going to say some more statements. 1) 'I have some flaws.' 2) 'I have some health problems, like hearing loss and tinnitus.' 3) 'My tinnitus makes my life unbearable, and it makes finding happiness impossible.'"* *Listen to the response and acknowledge their thoughts	Be able to observe better their own thoughts and ideas about themselves, such as feelings they might have related to their tinnitus. Being able to find the context where these thoughts take place may allow the patient to distinguish the contents of consciousness vs. consciousness itself.

Distinguishing the Conceptualized Self from Self-as-Context (cont'd)	*Did you notice a more positive reaction with the negative statements and a more negative reaction with the positive statements?*	This exercise is supposed to help the patient see self as content and distinguish that from seeing the self as context (or as an observer). We want them to recognize that their interpretation of self-evaluations works as a spectrum with inverse properties (positive reactions with the negative statements and more negative reactions with the positive statements).
Titchener's repetition *Evidence shows this is Helpful in patients that <u>do not</u> suffer from anxiety and depression	*Patient: I feel like my body is a torture chamber that I'm trapped inside. This buzzing in my ears is the only thing I can think about. I just don't have enough self-control to ignore it.* *Audiologist: This sounds strange, but I want you to slow down and repeat that last thing you told me, 'I just don't have enough self-control ignore it.'* *Patient: 'I just don't have enough self-control ignore it.'* *maybe have them do this several times *Audiologist: Look inward at your body, maybe even close your eyes for a second and tell me what you notice. What sensations do you notice in your body that show up when you say that?*	The goal here is to 'Deliteralize' [sic] the language used in negative thoughts. In theory, the patient will verbally repeat the problematic thought until it becomes an abstract assemblage of sounds. This provides the context for the thought to be stripped of its literal meaning.

Defining Valued Directions	*Audiologist: So this anxiety you have concerning your tinnitus, it kind of stands in the way of some things you want to do. What kind of goals do you have?* *Patient: I don't want socializing, reading, or trying to sleep to feel like a chore, where I'm trying to forget about my tinnitus. I want actually to enjoy these things that I used to love.* *Audiologist: When was the last time you felt that way? And how do you think you can get there again?*	This is a more advanced technique of identifying goals. We want the patient to find the answers on their own, with some guidance, so that they can build a weekly goal to work on outside the clinic.
A Facing the current situation ("creative hopelessness")	*How was your week? Were you able to (*insert patient's individual goal, e.g., go out with friends, sleep, or read) and enjoy the moment?*	Encourages clients to draw out what they have tried to make better, examine whether they have indeed worked, and create space for something new to happen. Confronting the unworkable reality of their multiple experiences often leaves the client not knowing what to do next, in a state of "creative hopelessness." This state is creative because entirely new strategies can be developed without using the previous rules governing their behavior.

Acceptance	***	Techniques are geared toward reducing the motivation to avoid certain situations. Emphasis is given to "unhooking"—realizing that thoughts and feelings don't always lead to actions. Often these techniques are done "in vivo," structuring experiences in session. Discriminating between thoughts, feelings, and experiences is a salient focus.

Examples of ACT Implementation for Tinnitus Patients. Modified and adapted from " Learning ACT: An Acceptance and Commitment Therapy Skills-Training Manual for Therapists," by Weeden, M., & Poling, A., 2010. New harbinger publications. P. 549-552.

Appendix B

The Cost of Avoiding Tinnitus

Complete the following statements:

The thoughts related to my tinnitus that I want to eliminate are: • • •
The emotions related to my tinnitus that I want to eliminate are: • • •
The bodily sensations related to my tinnitus that I want to eliminate are: • • •
Because of my tinnitus I have avoided the following activities, opportunities, and/or people: _____ _____ _____ _____ I have unsuccessfully tried to distract myself from the tinnitus by: _____ _____ _____ _____

Values & Living a Meaningful Life

Complete the following statements:

Life is short and I want to spend more time doing:

-
-
-

I want to be a better person by:

-
-
-

The following people/activities help me to relax and enjoy the present moment:

-
-
-

Because of my tinnitus, these barriers/negative thoughts make it difficult to live by my values:

_____

_____

_____

_____

_____

Progress rating: Since my last appointment, I have acted with my values:

1	2	3	4	5
Not at all	A little	Half the time	Quite a lot	Almost always

Works Cited

American Speech□Language□Hearing Association. (2018). Scope of practice in audiology [Scope of Practice]. Available from www.asha.org/policy.

Baguley, D. M., Andersson, G., McFerran, D., & McKenna, L. (2013). *Tinnitus: A multidisciplinary approach* (Second Ed.). Chichester, West Sussex, UK: John Wiley & Sons, Ltd.

Blackledge, J. T., Ciarrochi, J., & Deane, F. P. (2009). Acceptance and commitment therapy: Contemporary theory research and practice (1st Ed.). Bowen Hills, Qld: Australian Academic Press.

Bohlmeijer, E. T., Fledderus, M., Rokx, T. A. J. J., & Pieterse, M. E. (2011). Efficacy of an early intervention based on acceptance and commitment therapy for adults with depressive symptomatology: Evaluation in a randomized controlled trial. Behaviour Research and Therapy, 49(1), 62-67.

Cima, R., Joore, M. A., Maes, I., Scheyen, D., Refaie, E., A, Baguley, D. M., Anteunis, L. (2009). Cost-effectiveness of multidisciplinary management of tinnitus at a specialized tinnitus centre. *BMC Health Services Research, 9*(1), 29-29. doi:10.1186/1472-6963-9-29

Forman, E. M., Herbert, J. D., Moitra, E., Yeomans, P. D., & Geller, P. A. (2007). A randomized controlled effectiveness trial of acceptance and commitment therapy and cognitive therapy for anxiety and depression. Behavior Modification, 31(6), 772-799.

Graham, C. D., Gouick, J., Krahe, C., & Gillanders, D. (2016). A systematic review of the use of Acceptance and Commitment Therapy (ACT) in chronic disease and long-term conditions. Clinical Psychology Review, 46, 46-58.

Gaudiano, B. A. (2009). Öst's (2008) Methodological Comparison of Clinical Trials of Acceptance and Commitment Therapy versus Cognitive Behavior Therapy: Matching Apples with Oranges? Behaviour Research and Therapy, 47, 1066-1070.

Godfrey, K. M., Gallo, L. C., & Afari, N. (2015). Mindfulness-based interventions for binge eating: a systematic review and meta-analysis. Journal of Behavioral Medicine, 38, 348-362. DOI: 10.1007/s10865-014-9610-5

Henry, J. A., Dennis, K. C., & Schechter, M. A. (2005). General review of tinnitus: Prevalence, mechanisms, effects, and management. Journal of Speech, Language, and Hearing Research, 48(5), 1204-1235.

Hayes, S. (2016). State of the ACT Evidence. Retrieved December 1st, 2017, from <http://www.contextualpsychology.org/state_of_the_act_evidence>

Hayes, S. (2016) The Six Core Processes of ACT: The Psychological Flexibility Model. Retrieved on December 15th, 2017 from <https://contextualscience.org/the_six_core_processes_of_act>

Hayes, S., Strosahl, K., 1950, & Wilson, K. G. (1999). Acceptance and commitment therapy: An experiential approach to behavior change. New York: Guilford Press.

Hesser, H., Weise, C., Westin, V. Z., Andersson, G., Linköpings universitet, Avdelningen för klinisk och socialpsykologi. Institutionen för beteendevetenskap och lärande. (2011). A systematic review and meta-analysis of randomized controlled trials of cognitive–behavioral therapy for tinnitus distress. *Clinical Psychology Review, 31*(4), 545-553.

Hofmann, S. G., & Asmundson, G. J. G. (2008). Acceptance and mindfulness-based therapy: New wave or old hat? *Clinical Psychology Review, 28*(1), 1-16.

Hughes, L. S., Clark, J., Colclough, J. A., Dale, E., & McMillan, D. (2017). Acceptance and Commitment Therapy (ACT) for chronic pain: A systematic review and meta-analyses. Clinical Journal of Pain, 33, 552-568.

Klainin-Yobas, P., Cho, M. A. A., & Creedy, D. (2012). Efficacy of mindfulness-based interventions on depressive symptoms among people with mental disorders: A meta-analysis. International Journal of Nursing Studies, 49, 109-121. DOI: 10.1016/j.ijnurstu.2011.08.014

Kraemer, H. C., Wilson, G. T., Fairburn, C. G., & Agras, W. S. (2002). Mediators and moderators of treatment effects in randomized clinical trials. *Archives of General Psychiatry*, *59*(10), 877–883.

Lee, E. B., An, W., Levin, M. E., & Twohig, M. P. (2015). An initial meta-analysis of Acceptance and Commitment Therapy for treating substance use disorders. *Drug and Alcohol Dependence, 155*, 1-7.
DOI: 10.1016/j.drugalcdep.2015.08.004

Martinez-Devesa, P., Perera, R., Theodoulou, M., & Waddell, A. (2010). Cognitive behavioural therapy for tinnitus. Cochrane Database of Systematic Reviews (Online), 9(9), CD005233.

Musiek, F. E. (2012). *Disorders of the auditory system*. San Diego, California; Abingdon, England; Plural Publishing, Inc.

Narrow, W., Reiger, D., Rae, D., Manderscheid, R., & Locke, B. (1993). Use of services by persons with mental and addictive disorders: Findings from the National Institute of Mental Health Epidemiologic Catchment Area Program. *Archives of General Psychiatry*, *50*, 95–107.

Newman, C. W., Sandridge, S. A., & Jacobson, G. P. (1998). Psychometric adequacy of the tinnitus handicap inventory (THI) for evaluating treatment outcome. Journal of the American Academy of Audiology, 9(2), 153-160.

Öst, L. (2008). Efficacy of the third wave of behavioral therapies: A systematic review and meta-analysis. Behaviour Research and Therapy, 46(3), 296-321.

Ost, L. G. (2014). The efficacy of Acceptance and Commitment Therapy: an updated systematic review and meta-analysis. *Behaviour Research and Therapy, 61*, 105-121.

Phillips, J. S., & McFerran, D. (2010). Tinnitus retraining therapy (TRT) for tinnitus. Cochrane Database of Systematic Reviews (Online), 3(3), CD007330.

Robinson, P. J., & Reiter, J. T. (2007). Behavioral consultation and primary care: A guide to integrating services. New York: Springer.

Simpson, P. A., Mars, I., & Esteves, J. E. (2017). A systematic review of randomized controlled trials using Acceptance and Commitment Therapy as an intervention in the management of non-malignant, chronic pain in adults. *International Journal of Osteopathic Medicine. 24*, 18-31.

Swain, J., Hancock, K., Hainsworth, C., & Bowman, J. (2013). Acceptance and commitment therapy in the treatment of anxiety: A systematic review. *Clinical Psychology Review, 33*(8), 965-978.

Sweetow, R. W. (2013, February). An integrated approach to tinnitus management. AudiologyOnline, Article #11598. Retrieved on 3/2/18 from www.audiologyonline.com

Twohig, M. P., & Levin, M E. (2017) Acceptance and Commitment Therapy as a Treatment for Anxiety and Depression: A Review. Psychiatric Clinics of North America. 40 (4).

Thompson, D., Hall, D., Walker, D., & Hoare, D. (2016). Psychological Therapy for People with Tinnitus: A Scoping Review of Treatment Components. *Ear & Hearing*, 38(2), 149-158.

Veehof, M. M., Trompetter, H. R., Bohlmeijer, E. T. & Schreurs, K. M. G. (2016) Acceptance- and mindfulness-based interventions for the treatment of chronic pain: A meta-analytic review. Cognitive Behaviour Therapy, 45, 5-31.

Westin, V., Hayes, S. C., Andersson, G., Linköpings universitet, Avdelningen för klinisk och socialpsykologi (CS), Institutionen för beteendevetenskap och lärande, & Filosofiska fakulteten. (2008). Is it the sound or your relationship to it? The role of acceptance in predicting tinnitus impact. *Behaviour Research and Therapy*, 46(12), 1259-1265.

Westin, V. Z., Schulin, M., Hesser, H., Karlsson, M., Noe, R. Z., Olofsson, U., Noe, R. Z., Stalby, M., Wisung, G., Östergötlands Läns Landsting. (2011). Acceptance and commitment therapy versus tinnitus retraining therapy in the treatment of tinnitus: A randomised controlled trial. *Behaviour Research and Therapy, 49*(11), 737-747.

Zettle, R. (2007). ACT for Depression: A clinician's guide to using acceptance and commitment therapy in treating depression. Oakland: New Harbinger Publications.