

Cognitive behavioral therapy for patients suffering with tinnitus distress

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ABSTRACT

Of the 21% of the US population with tinnitus, between 3% and 6% develop tinnitus distress, a sudden, traumatic, and severe emotional response to tinnitus. Cognitive behavioral therapy (CBT) is the most effective therapy for reducing the initial and secondary emotional stresses caused by tinnitus distress. The skills taught in CBT lead to habituation and desensitization, providing relief for the patient. This article describes tinnitus distress, CBT, and resources that clinicians can use immediately in their practices.

Keywords: tinnitus distress, hyperacusis, phonophobia, misophonia, cognitive behavioral therapy, habituation

Learning objectives

- Describe how to recognize when a patient is in tinnitus distress.
- Describe the importance of habituation in the tinnitus distress recovery process.
- Outline the four skills for tinnitus distress management taught in CBT.
- Assemble a list of CBT resources for patients.

A 41-year-old woman presented to an otolaryngology practice and proclaimed, “I can’t take it anymore! This constant ringing won’t stop. I haven’t had a full night’s sleep in years. I can’t concentrate. It’s all I ever think about. I feel like I’m going crazy! If you don’t do something to take it away, I am to the point of ending it all!”

When providing her history, she stated that when she was a teen, her father would take her to the shooting range, and they would only wear the “bright orange foam plugs” for hearing protection. In her 20s, she attended many rock concerts and liked sitting up front near the speakers. About this time, she was diagnosed with social anxiety disorder, experienced panic attacks, and was prescribed venlafaxine.

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Her constant bilateral tinnitus started in her mid-30s and was tolerable for several years. Over a year ago, her tinnitus changed in pitch and loudness and became all-consuming for her, affecting her ability to focus, relax, and sleep.

Her physical examination was unremarkable. She takes 150 mg of extended-release venlafaxine once per day. An audiogram was performed in the office and showed a mild high-frequency sensorineural hearing loss (SNHL), notched at 4 kHz bilaterally, indicative of hearing damage from excessive noise exposure. Because tinnitus and tinnitus distress have no cure, what is the best way to manage this patient?

TINNITUS DISTRESS

Tinnitus is the perception of sound, typically heard only by the patient, in the absence of an external source.¹ Tinnitus is not a disease but a symptom that can be associated with various causes and aggravating factors.² Most patients who experience tinnitus also have some degree of hearing loss, but not all patients with hearing loss have tinnitus.³ The patient may hear ringing, ocean waves, roaring, crickets, a dial tone, sirens, hissing, buzzing, their heartbeat, and even music. It may be heard in one or both ears or throughout the head, and tinnitus can be intermittent or constant. Of the 21% of the US population who experience tinnitus, between 3% and 6% develop “bothersome tinnitus.”⁴ The terms *tinnitus distress* and *bothersome tinnitus* are used interchangeably to describe the persistent negative emotional responses to tinnitus.⁵ Cima defines tinnitus

Key points

- Tinnitus distress has no cure. Management is aimed at addressing the patient's negative emotional response to their tinnitus.
- CBT is the most effective and most underused form of therapy. Its self-help methodology gives patients the skills they need to eventually function independently in their recovery.
- For habituation to occur, patients must stop resisting the tinnitus and instead expose themselves to it as much as possible.

distress as a “negative auditory experience coinciding with aversive emotional reactivity, associated with, or described in terms of, actual or potential (bodily or psychological) harm.”⁶

The World Health Organization classifies functional impairments associated with tinnitus into four broad groups: thoughts and emotions, hearing, sleep, and concentration. At times, the distress will be so severe that patients will consider anything, including suicide, to make the persistent sound stop.⁵ Patients who have tinnitus accompanied by severe anxiety or depression require prompt identification and intervention because suicide has been reported in patients with coexisting psychiatric illness.²

CAUSES

Tinnitus may be classified as either primary (idiopathic and may or may not be associated with SNHL) or secondary (linked to a specific cause other than SNHL).² When evaluating a patient with tinnitus, consider whether an auditory or nonauditory disorder was the trigger. Examples of disorders include cerumen impaction of the external auditory canal, otosclerosis, Eustachian tube dysfunction, Ménière disease, auditory nerve pathologies, vascular anomalies, intracranial hypertension, and myoclonus. Underlying health conditions also can contribute to the risk of tinnitus or an increased level of severity. Patients' descriptions of their tinnitus can be indicators of the potential causes. Patients are at greater risk if they have a history of exposure to loud noises, are age 50 years or older, are male, use tobacco or alcohol, or are obese.⁷

PATHOPHYSIOLOGY

The pathophysiology of tinnitus is complex and multifactorial, with potential involvement of auditory and nonauditory systems. Although numerous theories have been reported about the pathophysiology of tinnitus and tinnitus distress, recent theories presume the involvement of extra-auditory brain regions for tinnitus to reach consciousness. Abnormal neuronal activity in the auditory cortex appears to be a contributor. Lesions that put pressure on cranial nerve VIII also may cause tinnitus, as can an increase in fluid pressure in the inner ear.⁸

In the past decade, researchers have made significant advances in understanding the molecular, cellular, and system-level mechanisms of tinnitus.⁸ Reduction of stimulus to the auditory nerve “shifts the balance of central excitation and inhibition, and this may lead to hyperactivity, increased bursting activity, and increased synchrony.”⁸ This increased neural activity is believed to be the patient's perception of their tinnitus.

The emotional response of tinnitus distress is theorized to be a symptom of involvement of the peripheral and central auditory systems. Though a peripheral insult may occur from the ear, such as through a reduction in auditory function, there is evidence that tinnitus distress is caused by functional changes to the CNS, specifically changes to the primary auditory cortex.⁸ The primary auditory cortex, located in the temporal lobe, is responsible for deriving meaning from sounds. The emotional responses of tinnitus distress may be explained by involvement of the ascending auditory pathway, which transmits sounds from the ear to the primary auditory cortex, then onto the amygdala, which plays a role in emotions and the processing of fear.⁸

HISTORY AND EXAMINATION

No specific image or test confirms tinnitus distress, so diagnosis is based on patient history. Ask patients about the timeline and character of the tinnitus; if it is unilateral or bilateral; if they have associated otologic symptoms or hearing loss, or a history of noise exposure; if they have started any new medications or changed dosages; if the tinnitus is bothersome; or if they have a history of anxiety or depression. Perform an otologic and cranial nerve examination; an audiogram is strongly recommended by the American Academy of Otolaryngology–Head and Neck Surgery (AAO-HNS) guidelines as part of all tinnitus workups.²

MANAGEMENT

The most common management approaches include education, audiologic examination, sound therapy, medical therapy, dietary supplements, acupuncture, transcranial magnetic stimulation, and cognitive behavioral therapy (CBT).² The AAO-HNS recommends CBT for patients with persistent, bothersome tinnitus.² CBT has shown the most evidence of efficacy in reducing the initial tinnitus distress of hearing a constant sound and secondary distresses as well.^{6,9} Secondary distresses include anxiety, depression, lifestyle disruptions, hyperacusis (reduced tolerance to everyday sounds), phonophobia (fear of loud sounds), and misophonia (an abnormally strong reaction to specific and/or repetitive sounds, such as water dripping or someone chewing gum).^{6,8}

CBT is the only treatment with moderate- to high-quality evidence to suggest benefit on the primary tinnitus outcome.¹⁰ CBT techniques could include psychoeducation,

cognitive restructuring, relaxation training, mindfulness-based training, attention control techniques, imagery training, biofeedback, or exposure to difficult situation techniques.

ABOUT COGNITIVE BEHAVIORAL THERAPY

CBT was developed in the 1960s by psychiatrist Aaron Beck, MD, for managing pain, depression, and anxiety.¹¹ CBT started being used as a treatment for tinnitus distress in the 1980s.¹² The goal of CBT is not to reduce the loudness or pitch of tinnitus, but to help patients form more beneficial thinking patterns to accept their situation and take their lives back.¹³ CBT is not a well-known form of treatment, is underused, and often has a stigma attached to it as it is a form of “therapy.” CBT commonly is provided by a mental health care professional or audiologist trained in CBT and involves 6 to 10 weekly sessions in an individual or group setting.¹¹ According to Woods and Theodoroff, each session addresses a specific topic and may be different for each patient because therapy is customized. The similarities are the use of goal-oriented problem-solving techniques, assessing and responding to dysfunctional thoughts, and modifying negative behavior patterns.¹¹ This leads to habituation, or the process of becoming used to the tinnitus, so that it is no longer unpleasant or seen as a threat.

This article focuses on four of the techniques taught in CBT for tinnitus distress: cognitive restructuring, mindfulness, therapeutic sound masking, and repeated exposure.⁵

Cognitive restructuring is the process of identifying and challenging unhelpful beliefs.¹¹ Thoughts have strong influence over emotions, which in turn influence behavior. Encourage patients to have an attitude of recovery by focusing on the facts of tinnitus (“This is not a life-threatening condition,”) instead of the negative feelings (“My life as I knew it is over.”)¹¹ Remember that patients with tinnitus distress who present with suicidal thoughts require the same type of immediate attention and crisis stabilization support as any patient with suicidal ideation. After stabilization, CBT, including cognitive restructuring processes, can be an important therapeutic option to consider.

Mindfulness is being aware and accepting of your surroundings, emotions, and thoughts, even if you do not like them or are unable to control them.¹⁴ As a patient’s response to tinnitus neutralizes and becomes less hypervigilant, their emotional reaction also will lessen, enabling them to regain control of their attention.¹⁵ This often is done through yoga and other relaxation techniques, such as progressive muscle relaxation exercises or meditation.

Therapeutic sound masking reduces the perception of tinnitus by having a sound on in the background when tinnitus is heard. Patients often are told to keep the masking sound on at all times; this is faulty advice. For the brain

to recognize a sound as nonthreatening, patients must not resist hearing it and instead should expose themselves to it as much as possible. For this reason, it is important to only have the masking sound on during essential times such as sleep or studying, so that the tinnitus can still be heard but can be neutralized. The brain must be able to hear the tinnitus in order to adapt and habituate to it.¹⁶

Repeated exposure aims to promote desensitization and confidence, enabling patients to again participate in the things they once loved doing.¹¹ This usually is done in stages with a well-thought-out plan. Patients with tinnitus distress tend to withdraw and avoid situations that would make their tinnitus worse or more noticeable. Asking them to purposefully expose themselves takes courage.

Not every patient with tinnitus distress will need the same amount of CBT. As with most forms of therapy, CBT can be adjusted to fit the patient’s needs: Some patients may need a few sessions with education and self-help skills; others may need several sessions and prescription medication.¹¹ Patients are pronounced *in recovery* when they have achieved habituation and have rejoined their lives. CBT gives patients the skills they need to eventually function independently in their recovery.¹¹

CBT is not a quick fix but can be learned and, with practice, can become a daily habit. Burle and colleagues indicated that habituation-based treatment produces changes in the auditory system’s neural connections and that although some patients habituate quickly, the complete process can take up to 18 months.¹⁶ The sooner patients start CBT, the earlier they will find relief.

The patient introduced at the beginning of this article who had had severe tinnitus distress for more than a year ultimately habituated to her tinnitus after 2 years of CBT with a trained mental health care professional, along with an alteration to her venlafaxine dosage.

FINDING A THERAPIST

Early referral for psychologic treatment is recommended for patients with persistent or distress-associated tinnitus. The longer the patient goes without therapy, the more negative habits they form when responding to their tinnitus.¹¹ Audiologists can provide sound therapy, particularly when hearing loss is evident, as well as education and some counseling. However, most patients will have elevated levels of emotional distress and may benefit from mental health care.¹⁵ The main challenge with this form of therapy is finding a CBT-trained therapist, especially one who has experience treating patients with tinnitus distress.

RESOURCES

The following organizations provide CBT resources. Some also have professional listings to help patients find a therapist in their area.

- www.cbtfortinnitus.com/resources: CBT articles, podcasts, self-help books, and tinnitus information and support.

- www.ABCT.org: Information and resources on CBT and help with finding a CBT-trained therapist.
- www.ADAA.org: Information on anxiety and depression and help with finding a CBT-trained therapist.
- www.ATA.org/providerlist: Help with finding a tinnitus healthcare provider.

CONCLUSION

Clinicians should promote CBT as an available and effective treatment for tinnitus distress. Months of suffering can be quelled by referral to a CBT-trained therapist. With time and patient effort, recovery is possible. **JAAPA**

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