

Chapter 11

Mindfulness–Based Therapy in the Management of Tinnitus

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ABSTRACT

Mindfulness-based interventions are one of the recent techniques that have proven to be very useful in tinnitus management. Mindfulness therapy refers to experiencing the present, which helps control the attention system, which significantly contributes to getting relief from the adverse reactions due to tinnitus. Several systematic reviews and randomized controlled trials report relief from tinnitus perception even with the heterogeneity of the patients with mindfulness therapy. The different study designs and outcome measures reported similar results suggesting the efficacy of mindfulness-based training. Thus, psychologists and audiologists dealing with individuals suffering from tinnitus can attempt this technique in management. The mindfulness-based training can be combined with formal Cognitive Behavioral Therapy (CBT) and Tinnitus Retraining Therapy (TRT) approaches to enhance tinnitus treatment.

INTRODUCTION

Tinnitus is the sensation of sound without the presence of an external stimulus (Henry, Dennis, & Schechter 2005). Tinnitus significantly affects the quality of life of individuals, such as affecting sleep, thinking ability, and functional skills (Henry, Dennis, & Schechter 2005). Tinnitus is one of the common otological symptoms reported by individuals with hearing impairment. Also, tinnitus is seen even in individuals with normal hearing without any underlying organic pathology (Jastreboff, 1990). It is also necessary to differentiate tinnitus and auditory hallucinations. Auditory hallucinations mainly occur due to neurological and psychiatric conditions (Nam, 2005). Although the definitions of tinnitus and auditory hallucination are very similar, the origins and underlying causes clearly differ (Nam, 2005). Tinnitus can be seen in one ear, both ears or in the head (Jastreboff, 1990). The tinnitus can be perceived just for few seconds or can be heard throughout the day (Henry et al., 2005). The symptom of tinnitus is reported in children, adults and also geriatrics with or without any hearing loss (Jastreboff, 1990).

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In the United States, the symptom of tinnitus is reported in 8% to 25.3% of the population (Kochkin, Tyler, & Born 2011; Nondahl et al., 2011; Shargorodsky, Curhan & Farwell, 2010). In Asia, the prevalence of tinnitus ranges from 2.6% to 19.7% (Park et al., 2014; Khedr et al., 2010; Thirunavukkarasu & Geetha, 2015). Epidemiological studies in other countries have also reported prevalence rates that range from 4.6% to 30% (Jalessi et al., 2013; Quaranta, Assennato, & Sallustio, 1996; Park & Moon 2014; Sindhusake et al., 2003). Tinnitus is a common symptom reported in approximately 70-90% of individuals with hearing impairment (Nondahl et al., 2011), and 10-15% of individuals with normal hearing sensitivity also report of tinnitus (Shargorodsky, Curhan, & Farwell 2010; Heller, 2003). The individuals with tinnitus also report of a moderate degree of annoyance, anxiety, depression, and cognitive processing problems along with hearing difficulties (Baguley, Andersson, McFerran & McKenna, 2013).

Multiple theories have attempted to understand the pathophysiology of tinnitus. Considering the heterogeneous nature of tinnitus, there may not be a single rationale for the generation of tinnitus. Several studies indicate that there could be an influence of the central auditory nervous system in the production of tinnitus. It is suggested that an increase in the spontaneous firing rate could be one of the reasons for tinnitus. This has been attributed to the selective damage of the inner hair cells than the outer hair cells, which affects the spontaneous neural firing rate. This can lead to automatic neurotransmitter release from the synaptic regions leading to tinnitus (Dallos & Harris, 1978). Also, other theories propose that tinnitus is generated due to the synchronization of neural activity, which is pathological, neural fibers getting reorganized, increased burst firing rates, and the hypersensitivity of nerves (Eggermont, 1990; Martin, 1995; Ochi & Eggermont, 1996). Differential damage to the outer hair cells compared to inner hair cells (discordant-dysfunction theory) is also reported as one of the causes at the level of cochlea leading to tinnitus (Jastreboff, 1990, 1995; Stypulkowski, 1990). One of the popular theories which explain the generation of tinnitus in individuals with normal hearing is the 'Neurophysiological model of tinnitus' (Jastreboff, 1990, 1995). The model suggests that tinnitus occurs because of its association with negative emotions. The tinnitus activates the limbic system and the autonomic nervous system, which makes the tinnitus to become pathological. An adverse reaction to tinnitus reinforces feelings, which increases the severity of tinnitus. The increased attention provided to the tinnitus makes it difficult to ignore and starts affecting the daily life functioning (Jastreboff, 1990, 1995).

Tinnitus is also associated with difficulty in sleeping, anxiety, stress, and reduced cognitive performance (Baguley et al., 2013). Considering the psychological co-morbidity of tinnitus, several treatment techniques are proposed in the literature. The most popular treatment approaches include tinnitus retraining therapy (TRT) (Jastreboff, 1995; Wu et al., 2018) and cognitive behavioral therapy (CBT) (Jun & Park, 2013) and a combination of TRT and CBT (Cima et al., 2012). Recently, it is also attempted to determine the efficacy of 'third wave' cognitive and behavioral therapies, which focuses on accepting the situation, such as mindfulness-based therapy. The recent behavioral therapy approaches of CBT have also attempted to check the efficacy of mindfulness-based therapy techniques for the intervention of tinnitus. Mindfulness-based therapy approach can help individuals with tinnitus to accept tinnitus and live in the present (Kabat-Zinn 1982; Segal & Walsh, 2016). It can help individuals with tinnitus to reduce their everyday tinnitus related distress. Tinnitus is known to cause several emotional problems and affects quality of life (Jastreboff, 1990). Mindfulness-based therapy can help them to reduce psychological difficulties and assist in improved quality of life. It could be an efficient technique in managing the tinnitus-related distress in the everyday life of a person with tinnitus.

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