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Audiologist's Insights on Global Trends in Tinnitus Management: A Pilot Study of Practices in Kerala

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Abstract: ***The current study aims to assess the level of awareness among audiologists regarding recent trends and advancements in tinnitus management. Given the evolving landscape of tinnitus treatments, it is crucial to understand how well audiologists are informed about contemporary therapeutic options and their integration into clinical practice. A structured questionnaire was distributed to audiologists across various regions, including urban and rural settings, to gauge their familiarity with recent tinnitus management trends. The questionnaire included yes/no questions focusing on knowledge of specific. The findings of the current study revealed varying levels of awareness among audiologists regarding recent tinnitus management techniques. While familiarity with conventional treatments like (Cognitive behavioural therapy (CBT) and Sound Therapy is high, newer modalities such as Neuromodulation and digital apps show lower levels of recognition. The study also highlights a significant proportion of audiologists who have not received formal training on these emerging trends and express a need for additional resources to stay updated. The current study underscores the necessity for targeted educational programs and resources to enhance audiologists' knowledge of recent tinnitus management advancements. Improving awareness and training can lead to better patient outcomes and the effective implementation of innovative therapies in clinical practice. The results provide a basis for developing strategies to address knowledge gaps and support audiologists in delivering up - to - date care for tinnitus patients.***

Keywords: Low Level Laser therapy, Mind Ear App, Neuromodulation (Lenire), Sound Oasis Travel Sleep Sound Therapy System, Sound pillows, Resound Tinnitus Relief App, Tailor - made notched music training, Head and Neck Manipulation Exercises by Physiotherapist.

1. Introduction

Baguley et al. (2013) "Tinnitus is defined as the conscious perception of an auditory sensation in the absence of a corresponding external stimulus. "

The impact of tinnitus can range from being a minor inconvenience to a serious, life - altering condition. For some individuals, the symptoms are mild, causing minimal disruption to their daily activities and overall well - being. However, for others, tinnitus can be severely debilitating, making it difficult to concentrate, perform tasks, and engage in social interactions. It may also interfere with sleep patterns, leading to fatigue, irritability, and reduced mental health. (Jastreboff, & Hazell, 1993). The persistent ringing or buzzing sound can become overwhelming, creating a constant background noise that distracts and exhausts those affected. As a result, individuals with severe tinnitus often experience heightened stress, anxiety, and sometimes even depression (Tyler, 2006). The impact on Standard of living can be profound, affecting not only the person's emotional and mental state but also their professional and personal relationships.

Treatment options, such as sound therapy (Jack Vernon, 1978), [CBT] (Beck, 1960) and medications, can help reduce the intensity of tinnitus and improve coping strategies. However, the effectiveness of these treatments varies widely among individuals. While some people may experience significant relief and improvement over time, others may find that the symptoms persist for many years. Consequently, managing chronic tinnitus often involves a combination of medical interventions and lifestyle modifications to enhance Well - being.

An audiologist plays a key role in evaluating and managing tinnitus by conducting detailed assessments to determine its severity and impact **(**American Speech - Language - Hearing Association [ASHA], 2014) They provide counselling to educate patients on the condition and offer sound therapy options, such as hearing aids or sound masking devices, to help reduce symptoms. Audiologists also use specialized therapies, like Tinnitus retraining therapy [TRT] (Jastreboff, 1990) to promote habituation. They often work collaboratively with other healthcare professionals, such as ENT specialists or psychologists, for comprehensive care. Additionally, audiologists offer ongoing support and follow - up to adjust treatment plans and help patients cope effectively.

Klein Jung et al. (2024) evaluated the Current State of Tinnitus Diagnosis and Treatment by analysing the shortcomings, knowledge gaps, and challenges of health care community in the field of tinnitus research. The results of the study suggested that the healthcare community can collaboratively drive advancements in tinnitus management, by improving outcomes for those affected by these challenging conditions by integrating patient perspectives and adopting innovative approaches.

Need of the study

Tinnitus is a common condition affecting many individuals often leading to distress and dissatisfaction. Recent global advancements in tinnitus management such as CBT, TRT,

and innovative sound therapies. have shown improved patient outcomes. However, it is unclear if audiologists in Kerala are fully aware of integrating these global trends into their clinical practice. Understanding the current awareness and application of advanced methods among audiologists in Kerala is essential for enhancing treatment standards, aligning local practices, to match current, evidence - based global advancements, ensuring that they are effective, up - to - date, and provide the best possible outcomes for patients.

Aim of the Study

The study aims to ensure up - to - date practice in tinnitus management by assessing awareness among audiologists in Kerala, identifying gaps in knowledge, and promoting continued professional education. By staying informed on recent advancements, audiologists can offer personalized treatment strategies, provide comprehensive care, and adopt best practices aligned with global standards. The study also considers regional relevance, ensuring that management strategies are adapted to Kerala's cultural context. Increased awareness among professionals can improve public education, support early intervention, and highlight research needs specific to the region. Ultimately, the findings can inform health policy and advocate for better resources and accessibility of advanced treatments, enhancing overall patient outcomes. The need for studying awareness about recent trends in the management of tinnitus among audiologists in Kerala is critical for ensuring that practitioners are equipped with the latest knowledge and tools to provide the best possible care. This, in turn, leads to improved patient outcomes, professional development, and a stronger public health approach to managing tinnitus in the region.

2. Methodology

The present study is carried out in two phases.

Phase 1: Preparation Of Questionnaire

The closed - ended questionnaire to assess the awareness among audiologist about tinnitus management

Phase 2: Participants

100 Audiologist with an experience of minimum 2 - 5 years were randomly selected from Kerala. Licensed audiologists with at least a bachelor's degree in audiology and speech - language pathology (BASLP). Audiologists who have a minimum of two year of clinical experience, currently practice in Kerala, actively manage patients with tinnitus, and provide informed consent to participate.

Stimuli and Procedure

The closed - ended English questionnaire was developed and distributed to 100 Audiologists. The consent from Audiologist was taken initially before collecting the data. The closed - ended English Questionnaire was validated by 5 Audiologists who were fluent in English language. The questionnaire consists of 17 questions. A score of 1 was given to 'yes 'and 0 to 'No'.

Statistical Analysis

Categorical data was summarised by frequency and percentages. To compare the proportions within the group chi - square test for goodness of fit was used SPSS 23 software was used to analyse the data. Level of significance was 5%

3. Results & Discussion

The findings of the current study reveal varying levels of awareness among audiologists regarding recent tinnitus management techniques.

Table 6.1: Showing percentage of the responses from audiologists.

	No		Yes		Total		Binomial test p
	Count	Row N %	Count	Row N %	Count	Row N %	
1. Are you familiar with Cognitive Behavioural Therapy (CBT) as a treatment for tinnitus?	0	0.0%	100	100.0%	100	100.0%	0.000, HS
2. Have you heard of Sound Therapy for managing tinnitus?	0	0.0%	100	100.0%	100	100.0%	0.000, HS
3. Do you know about Low - Level Laser Therapy (LLLT) for tinnitus?	93	93.9%	6	6.1%	99	100.0%	0.000, HS
4. Are you aware of Tinnitus Retraining Therapy (TRT) as a treatment option?	0	0.0%	100	100.0%	100	100.0%	0.000, HS
5. Have you heard about Neuromodulation techniques (e. g., Lenire) for tinnitus?	86	86.0%	14	14.0%	100	100.0%	0.000, HS
6. Are you familiar with the use of White Noise Machines for tinnitus management	59	59.0%	41	41.0%	100	100.0%	0.088, NS
7. Do you know about the Mind Ear app as a tool for managing tinnitus?	72	72.0%	28	28.0%	100	100.0%	0.000, HS
8. Do you regularly update your knowledge on tinnitus management trends?	80	80.0%	20	20.0%	100	100.0%	0.000, HS
9. Are you aware of any challenges in implementing recent tinnitus management trends in your practice?	63	63.0%	37	37.0%	100	100.0%	0.012, sig
10. ARE YOU AWARE OF The Sound Oasis Travel Sleep Sound Therapy System?	90	90.0%	10	10.0%	100	100.0%	0.000, HS
11. ARE YOU AWARE OF RESOUND TINITUS RELIEF APP?	66	66.0%	34	34.0%	100	100.0%	0.001, HS
12. Are you aware of Phase - Out Treatment for tinnitus?	91	91.0%	9	9.0%	100	100.0%	0.000, HS
13. Are you Aware of sound pillows for management of tinnitus?	83	83.0%	17	17.0%	100	100.0%	0.000, HS
14. Are you aware of the tinnitus maskers in hearing aids?	0	0.0%	100	100.0%	100	100.0%	0.000, HS

15. Are you aware of Tailor - made notched music training?	84	84.0%	16	16.0%	100	100.0%	0.000, HS
16. Are you aware about Neuromonics?	92	92.0%	8	8.0%	100	100.0%	0.000, HS
17. Are you aware that physiotherapists can help audiologist for management of tinnitus with head and neck manipulation exercises?	82	82.0%	18	18.0%	100	100.0%	0.000, HS

HS=highly significant., NS=Not significant, Sig=significant.

Table 1 and figure 1 revealed that 100 % of the audiologists were aware of the about the conventional methods like CBT, sound therapy, TRT, resound tinnitus relief app, & tinnitus maskers in hearing aids. Hence high significant difference is noticed.62% - 92% of the audiologists were not aware about the newer technology's like, low level laser therapy's, lenire, white noise machines, ' mind ear' app, 'sound oasis travel sleep sound therapy system', phaseout treatment, sound pillows, tailor made notched music therapy, neuromonics & head and neck manipulation exercises by physiotherapist, hence shows high significant differences. only 37% of them are aware about the challenges in implementing recent tinnitus management trends in practice, hence significant difference is noticed.41.01% of the audiologists were aware of the use of white noise machines for tinnitus management, hence no significant differences were noticed.

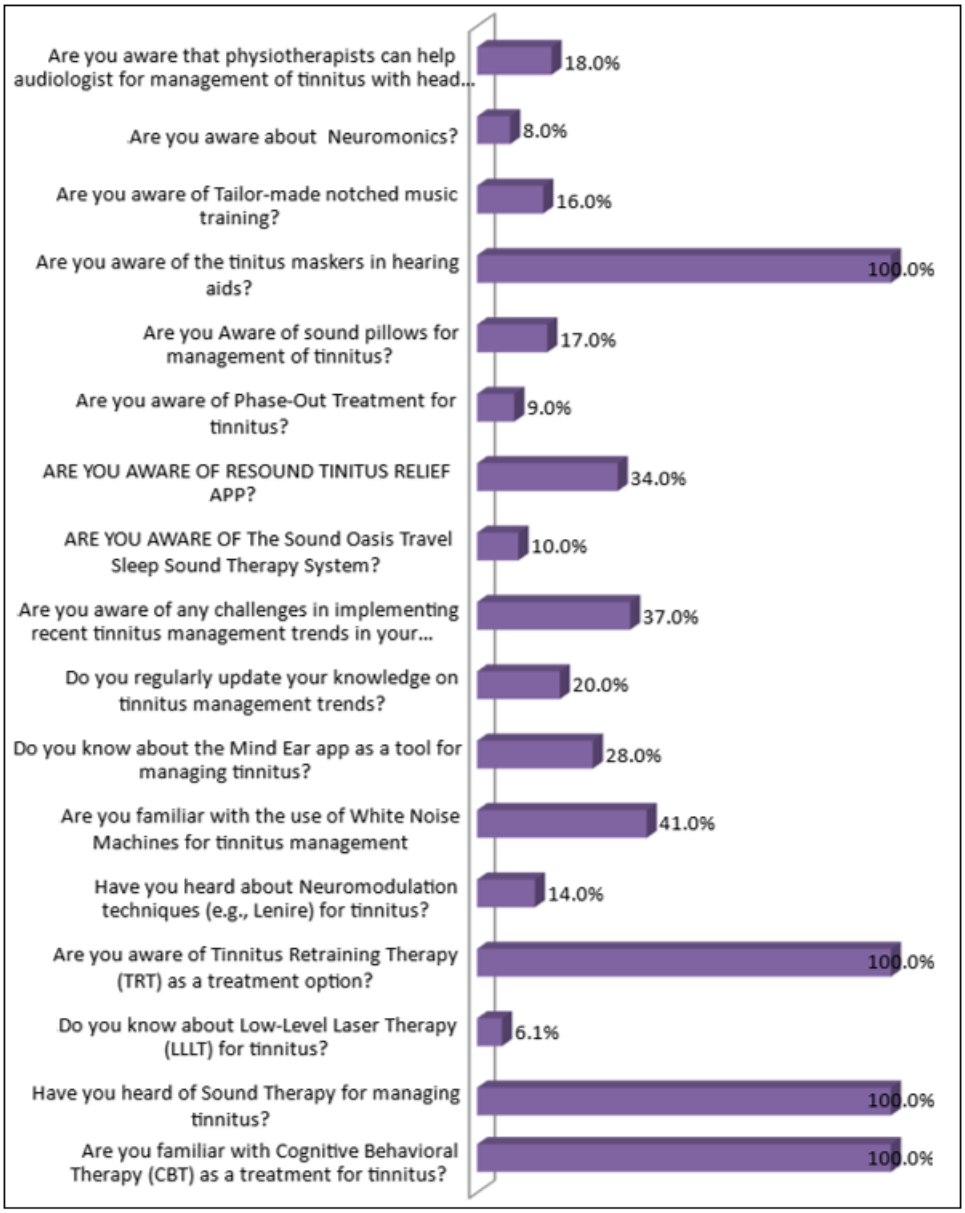

Figure 1: Showing percentage score of questions on audiologists'

4. Discussion

The current study focuses on assessing the insights among audiologist about the global trends in management of tinnitus in Kerala. the participants were 100 audiologists. a questionnaire of 17 closed ended questions was developed and was distributed to them. The results revealed that these audiologists have moderate awareness (53%) regarding the recent trends in management of tinnitus. The results of the current study are in accordance with the western study by Klein Jung et al (2024)

5. Summary and Conclusion

In the current study, out of 100 audiologists, many were familiar with traditional methods like CBT, Sound Therapy, TRT, tinnitus maskers. Recognition of newer approaches such as Neuromodulation, digital therapies, sound pillows, head & neck manipulation exercises by physiotherapists, linere, phaseout treatment, mind ear app, neuromonics, sound oasis travel sleep sound therapy system, tailormade notched music therapy, was limited, indicating a lack of formal training in these emerging techniques. Addressing these knowledge gaps can enhance audiologists' ability to provide updated and effective care, ultimately improving patient outcomes in tinnitus management. Hence more intensive training and educational programs are needed for audiologists from both government & private setups to stay updated with the recent technology used in management of tinnitus.

6. Limitations of the study

Sample size was limited

7. Future Directions

The study can be conducted in national and international level.

Questions related to Upcoming technologies in the management of tinnitus can be included.

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