EXAMINING THE FREQUENCY OF TINNITUS, HOW IT AFFECTS QUALITY OF LIFE, AND WHETHER PEOPLE SEEK TREATMENT

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ABSTRACT

Background: A common ailment that impacts millions of people worldwide, tinnitus significantly lowers the quality of life for those who suffer from it. However, there is a dearth of information in the literature currently available on tinnitus in Indian subjects.

Aim: The purpose of this study was to determine how common tinnitus is in Indian participants, how it affects their quality of life, and how they go about getting medical attention.

Methods: The survey method was used to evaluate 8832 participants in this study. The prevalence of tinnitus, its impact on quality of life, and the method used to seek medical attention were all evaluated using the Indian version of the Tinnitus Handicap Inventory (THI) questionnaire. The results were developed through statistical analysis of the collected data.

Results: The study's findings indicated that 37.6% (n=3324) of the 8832 participants who completed the survey had tinnitus. Of the affected subjects, 39.7% sought medical assistance. The study participants' mean THI score was 16.5, indicating a slight impairment. Age, gender, tinnitus duration, and the emotional subscale of the THI all had statistically significant associations ($p=0.01$, 0.01, and <0.001 respectively), according to the study's findings. Additionally, there was a statistically significant correlation ($p<0.001$) between seeking medical assistance and persistence, kind, laterality, tinnitus duration, and age.

Conclusions: The current study comes to the conclusion that tinnitus is much more common in Indian people, especially in women, and that it is more closely related to aging. Despite the fact that tinnitus negatively impacts quality of life, many people are prevented from obtaining medical attention.

Keywords: Tinnitus, THI, Tinnitus Handicap Inventory, Tinnitus Effect, and quality of life

INTRODUCTION

An auditory perception of sound in the ear or head without an external source is known as tinnitus, and it remains a mystery to researchers, doctors, and patients everywhere, even in India. Tinnitus is thought to be idiopathic, however there is little evidence in the literature to support the idea that it has a physical cause. The aging process, ototoxic medications, and noise exposure—all of which are thought to be the primary causes of tinnitus—are the main causes of cochlear damage. Tinnitus is a perceptual experience brought on by aberrant neuronal activity in the central auditory system, which is caused by cochlear injury. Additionally, among other causes, the causal factors include temporomandibular joint diseases, neck injuries, semicircular canal dehiscence, and underlying vascular illness.[1]

Depending on the subjects evaluated, worldwide estimates of the prevalence of tinnitus have produced differing results. The prevalence is reported to be 9.6% in the United States and 14.7% in the other 12 European countries. In contrast, South Korea reports a prevalence of 19.7%. The incidence in South Asia, Africa, and the Western Pacific varied, ranging from 5% to 43%.2

Although few people consider tinnitus to be a harmless auditory sensation, research on the condition undervalues how detrimental it is to afflicted people's quality of life, leading to symptoms like headaches, difficulty concentrating, trouble sleeping, depression, annoyance, sadness, and/or anxiety. These symptoms have a variety of effects on the affected persons' emotional, social, and physical lives; as a result, they have an impact on their personal, professional, and social environments.3

The majority of tinnitus sufferers do not seek medical attention, which is inconsistent with the significant prevalence of tinnitus and its impact on quality of life. Understanding the reasons behind not seeking medical assistance is crucial, especially in light of the management strategies that can lessen the toll that tinnitus takes on both individuals and society.4

Additionally, given the Indian context, there is a dearth of information in the literature regarding tinnitus-related research, with few reliable data regarding the prevalence of tinnitus in the day-to-day life of Indian participants and a small sample size. Therefore, the current study sought to determine the prevalence of tinnitus among Indian participants, its impact on their quality of life, and how they approached obtaining medical attention.

MATERIALS AND METHODS

Assessing the prevalence of tinnitus in Indian respondents, its impact on their quality of life, and their strategy to seeking medical therapy were the objectives of the current cross-sectional observation study. The study participants came from the Institute's ENT Department. Prior to participation, all individuals gave their written and verbal informed consent.

The participants in this study had to be at least eighteen years old and living in India. Survey method was used for the study in order to evaluate the participants. The survey was divided into three primary portions, the first of which evaluated questions pertaining to study participants' demographic information. Tinnitus features, length (less than a year or more than a year), kind, laterality (head, left ear, right war, bilateral), and persistence (occasional, intermittent, or continuous) were all covered in the second section.

In the third section of the survey, the Indian version of the THI5 was evaluated using extra questions about the propensity of tinnitus patients to seek medical attention. The THI questionnaire, which was first created by Newman et al.6 in 1996, was a valid instrument for assessing the difficulties that individuals with tinnitus faced and, as a result, offered information on their general quality of life. The 25-item THI is broken down into three subscales: 11 functional, 9 emotional, and 5 catastrophic questions. With scores of 4, 2, and 0 for each question, the subjects had to choose one answer: yes, sometimes, or no.

With scores ranging from 0–16, 18–36, 38–56, 58–76, and 78–100, respectively, the overall THI scores fell into the following categories: slight, mild, moderate, severe, and catastrophic. Subscale values ranged from 0 to 20 for catastrophic, 0-36 for emotional, and 0 to 44 for functional. The final analysis did not include incomplete survey data. Participants with tinnitus were defined as

those who reported hearing sound in their ears or heads for more than five minutes within the previous two years.

The collected data was statistically evaluated using the Student t-test, ANOVA (analysis of variance), Turkey post hoc analysis, Chi-square test, and SPSS (Statistical Package for the Social Sciences) software version 24.0 (IBM Corp., Armonk, NY, USA) for evaluating descriptive measures. To evaluate correlation across different factors, the Pearson correlation coefficient was employed. The findings were presented as frequency, percentages, mean, and standard deviation. A p-value of less than 0.05 was taken into account.

RESULTS

Assessing the prevalence of tinnitus in Indian respondents, its impact on their quality of life, and their strategy to seeking medical therapy were the objectives of the current cross-sectional observation study. 8832 participants were evaluated in this study using a survey methodology. The Tinnitus Handicap Inventory (THI) questionnaire in its Indian version was used to evaluate each of the individuals. In the current study, there were 47.7% (n=4212) females and 52.3% (n=4620) males. 29.2% (n=2580) of the individuals were between the ages of 41 and 59, followed by 28.6% (n=2526) in the 18–30 age group, 25.1% (n=2214) in the 31–40 age group, 10.3% (n=912) in the 51–60 age group, and at least 6.8% (n=600) in the >60 age group. Table 1 shows that 52.26% (n=4616) of the participants lived in rural areas, whereas 47.73% (n=4216) did so in urban areas.

When the study participants' tinnitus features were evaluated, 49.8% (n=1656), 0.4% (n=12), 11.9% (n=396), 5.4% (n=180), 6% (n=198), 16.6% (n=552), and 9.9% (n=330) of the participants experienced whistle, ocean wave, wind, pulse, buzz, whizzing, and click type tinnitus, respectively. 63.9% (n=1200) and 63.1% (n=2124) of the participants had a disease duration of less than a year, and more than a year, respectively. In terms of persistence, 30.2% (n=1002), 53.2% (n=1770), and 16.6% (n=552) of the study participants had occasional, intermittent, and persistent disease, respectively. In 4.3% (n=144), 20.2% (n=672), 22.7% (n=756), and 52.7% (n=1752) of the research participants, disease laterality was in the head, left ear, right ear, and bilateral, respectively (Table 2).

According to the study's findings, the study participants' mean catastrophic THI was 1.7±0.4 for both the whole and subscale scores on the Tinnitus Handicap Inventory, indicating a mild, moderate feeling. THI was 6.9±7.3, indicating a light grade; mean functional THI was 7.5±8.8, indicating a minor disease grade; and the total mean THI score was 16.5±17.0, indicating a mild score as well (Table 3).

According to Table 4, the most common reason why tinnitus sufferers did not seek medical attention was that they believed there was no way to manage their condition, which was cited by 66.7% (n=1266) of the study participants. This was followed by the belief that they could live with their tinnitus, which was cited by 22.5% (n=426) of the participants, and the fact that they were unsure of which specialist to see for tinnitus treatment, which was reported by 10.8% (n=204) of the participants.

Additionally, it was observed that there was a statistically significant correlation between study subjects' THI scores and age, sex, tinnitus duration, laterality, persistence, and type. The correlations were p=0.01, 0.01, and <0.001 for age, gender, tinnitus duration, and the emotional

subscale of the THI, respectively. Additionally, there was a statistically significant correlation ($p<0.001$) between medical support and persistence, kind, laterality, tinnitus duration, and age (Table 5).

DISCUSSION

8832 participants were evaluated in this study using a survey methodology. The Tinnitus Handicap Inventory (THI) questionnaire in its Indian version was used to evaluate each of the individuals. In the current study, there were 47.7% (n=4212) females and 52.3% (n=4620) males.

29.2% (n=2580) of the individuals were between the ages of 41 and 59, followed by 28.6% (n=2526) in the 18–30 age group, 25.1% (n=2214) in the 31–40 age group, 10.3% (n=912) in the 51–60 age group, and at least 6.8% (n=600) in the >60 age group. Of the subjects, 52.26% (n=4616) lived in rural areas, while 47.73% (n=4216) did so in urban areas. These statistics were similar to those from earlier studies by Seydel C et al. (2013) and Baigi A et al. (2011), in which the authors evaluated tinnitus patients using disease and demographic data similar to the current study.

Regarding the evaluation of the study participants' tinnitus characteristics, 49.8% (n=1656), 0.4% (n=12), 11.9% (n=396), 5.4% (n=180), 6% (n=198), 16.6% (n=552), and 9.9% (n=330) of the study patients, respectively, had whistle, ocean wave, wind, pulse, buzz, whizzing, and click type tinnitus. 63.9% (n=1200) and 63.1% (n=2124) of the participants had a disease duration of less than a year, and more than a year, respectively. In terms of persistence, 30.2% (n=1002), 53.2% (n=1770), and 16.6% (n=552) of the study participants had occasional, intermittent, and persistent disease, respectively. Of the study participants, 4.3% (n=144), 20.2% (n=672), 22.7% (n=756), and 52.7% (n=1752) had disease laterality in the head, left ear, right ear, and bilaterally. These findings were in line with those of Fujji K et al. (2011) and Ciminelli P et al, who found that the tinnitus features described by the authors in their research were similar to those of the current study.

The study participants' mean catastrophic THI score was 1.7±0.4, indicating a slight THI grade; the mean emotion THI score was 6.9±7.3, indicating a mild grade; the mean functional THI score was 7.5±8.8, indicating a mild disease grade; and the total mean THI score was 16.5±17.0, indicating mild scores.

These results were consistent with those of Nascimento ID et al. (2011) and Hiller W et al. (2006), whose authors similarly reported Tinnitus Handicap Inventory total and subscale scores similar to the current study in their separate investigations.

According to the study's findings, the most frequent excuse given by researchers for not seeking medical attention for tinnitus was that there was no treatment for the condition, which was cited by 66.7% of participants (n=1266). This was followed by the belief that one could live with tinnitus, which was cited by 22.5% of participants (n=426), and the fact that 10.8% of participants (n=204) said they were unsure of which specialist to see for tinnitus treatment. These findings were consistent with those of Meyer C et al. (2013) and Smith SL et al. (2011), who found that the authors' explanations for not seeking medical treatment for tinnitus in their patients were similar to those of the current study.

The study's findings also revealed a statistically significant correlation between study participants' THI scores and their age, sex, tinnitus duration, laterality, persistence, and type. The correlations

were p=0.01, 0.01, and <0.001 for age, gender, tinnitus duration, and the emotional subscale of the THI, respectively.

Additionally, there was a statistically significant correlation (p<0.001) between medical support and persistence, kind, laterality, tinnitus duration, and age. These results were consistent with those of Rhee J et al. (2015) and Hofmann E et al. (2013), who found that age, sex, tinnitus duration, laterality, persistence, and type were associated with THI scores in study participants. The authors of those studies also reported findings similar to the current study.

CONCLUSIONS

Within its limitations, the present study concludes that the prevalence of tinnitus in Indian subjects is significantly high with a high occurrence in females and a higher association with advancement in age. While tinnitus has a detrimental effect on the quality of life, a significant proportion is restricted from seeking medical support. In the future, longitudinal studies with larger sample sizes and longer monitoring are needed to reach a definitive conclusion.

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Characteristics	**Number (n=8832)**	**Percentage (%)**
Gender		
Males	4620	52.3
Females	4212	47.7
Age range		
18-30	2526	28.6
31-40	2214	25.1
41-50	2580	29.2
51-60	912	10.3
>60	600	6.8
Residence		
Rural	4616	52.26
Urban	4216	47.73

Table 1: Demographic data of study subjects at baseline

Parameters	**Number (n=3324)**	**Percentage (%)**
Type		
Ocean wave	12	0.4
Wind	396	11.9
Pulse	180	5.4
Buzz	198	6
Whizzing	552	16.6
Click	330	9.9
Whistle	1656	49.8
Duration (years)		
<1	1200	63.9
>1	2124	63.1
Persistence		
Occasional	1002	30.2
Intermittent	1770	53.2
Constant	552	16.6
Laterality		
Head	144	4.3

Left ear	672	20.2
Right ear	756	22.7
Bilateral	1752	52.7

Table 2: characteristics of tinnitus in the study subjects

THI	**Mean ± S. D**	**Grade**
Catastrophic	1.7±0.4	Slight
Emotional	6.9±7.3	Mild
Functional	7.5±8.8	Mild
Total score	16.5±17.0	Mild

Table 3: Tinnitus Handicap Inventory total and subscales scores in study subjects

Reason for not seeking treatment	**Number (n=3324)**	**Percentage (%)**
Though there is no management	1266	66.7
Not aware of specialty to visit	204	10.8
Can live with tinnitus	426	22.5

Table 4: Reason in study subjects for not seeking medical support for tinnitus

Parameters	**Seeking medical help**	**Catastrophic**	**Emotional**	**Functional**	**Total THI**
Age	p=**0.001**	0.45	**0.01**	0.39	0.33
Sex	0.08	0.3	**0.01**	0.7	0.5
Tinnitus duration	**0.001**	0.4	**<0.001**	0.3	0.5
Laterality	**<0.001**	0.6	0.3	0.4	0.3
Persistence	**<0.001**	0.4	0.4	0.3	0.4
Type	**0.001**	0.7	0.5	0.3	0.6

Table 5: Association of age, sex, tinnitus duration, laterality, persistence, and type to THI scores in study subjects