

PREVALENCE OF OTOLOGICAL SYMPTOMS AT RIO GRANDE DO NORTE'S POPULATION

PREVALÊNCIA DE SINTOMAS OTOLÓGICOS NA POPULAÇÃO DO RIO GRANDE DO NORTE

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Financial support: None.

Conflicts of interest: None.

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Submitted: apr 24; accepted after revision, jul 10, 2023.

ABSTRACT

Otorhinolaryngology has several areas, including otology, rhinology, in addition to involving complaints of the throat, sleep, dysphagia, phoniatry, taste, smell and otoneurology. In terms of frequency in otorhinolaryngology outpatient clinics, right after nasal alterations, there are otological complaints. **OBJECTIVE:** Define the prevalence of hypoacusis, dizziness, tinnitus, otological pruritus and earache of Rio Grande do Norte's population. **METHOD:** A total of 1067 volunteers at the Hospital Universitário Onofre Lopes (HUOL-RN) were evaluated regarding the presence of otological complaints. **RESULTS AND CONCLUSION:** Otological complaints are extremely common in the studied population, especially otological pruritus, hypoacusis and tinnitus.

Keywords: otorhinolaryngology, hypoacusis, dizziness, tinnitus, otologic pruritus, earache.

RESUMO

A otorrinolaringologia tem diversas atuações, entre elas a otologia, rinologia, além de envolver queixas da garganta, sono, disfagia, foniatria, gustação, olfato e otoneurologia. Em termos de frequência nos ambulatórios de otorrinolaringologia, logo após as alterações nasais, estão as queixas otológicas. OBJETIVO: Definir a prevalência dos sintomas hipoacusia, tontura, zumbido, prurido otológico e otalgia na população do estado do Rio Grande do Norte. MÉTODO: Foram avaliados 1067 voluntários no Hospital Universitário Onofre Lopes (HUOL-RN) quanto à presença de queixas otológicas. RESULTADO E CONCLUSÃO: As queixas otológicas são extremamente comuns na população estudada, sobretudo o prurido otológico, hipoacusia e zumbido, sendo fundamental mais estudos acerca do tema a fim de proporcionar uma melhor qualidade de vida para a população.

Palavras-chaves: otorrinolaringologia, hipoacusia, tontura, zumbido, prurido otológico, otalgia.

INTRODUCTION

Otorhinolaryngology is an area of medical specialization that operates in the context of ear, nose, and throat (ENT) alterations, as well as in the areas of sleep, dysphagia, phoniatria, taste, smell, and otoneurology^{1,2,3}. In terms of frequency, nasal alterations are the most prevalent ones when looking for an otorhinolaryngologist, but right after that, there are alterations related to the ear, mainly due to their important relationship with complaints of hypoacusis, dizziness, and tinnitus^{3,4}.

Presbycusis, which refers to the progressive symmetrical loss of auditory capacity with age, can be highlighted in the complaint of hypoacusis⁵. Its frequency is impressive, as in American literature, it has an initial prevalence of 30% for individuals between 60-69 years old, reaching up to 80% in the elderly over 80 years old⁶.

In addition, tinnitus is a very frequent complaint and harms both sleep and the daily activities of an individual, which can lead to depression, social isolation, and insomnia⁷. Understanding that tinnitus is defined as the perception of a sound in the absence of an external source of acoustic stimulus opens the range to different diagnostic hypotheses since it is a symptom⁷.

Thus, an American study showed a frequency of any tinnitus between 26.1% for men of any age and 24.6% for women⁷. It is important to note that when evaluating daily tinnitus, there is a significant drop in prevalence, being 9.4% for men and 6.5% for women. However, regardless of tinnitus frequency, there is an increase in frequency with age⁸.

Furthermore, dizziness is the third most common symptom reported in American general clinics, which means a high prevalence of ill-defined sensations such as imbalance, instability, rotation, and sensation of movement in its absence^{9,10}. A 2008

study by the Mayo Clinic evaluated the etiology of dizziness in 9472 patients admitted to emergency care, reaching the conclusion that otological/vestibular causes represent 32.9%, followed by cardiovascular causes with 22.1%¹¹.

The symptom of itching in the ear is also very prevalent and may occur due to eczematous dermatitis, the presence of earwax, or a fungal infection¹². However, there wasn't a general prevalence for just the presence of the pruritus symptom in the literature, as studies have been dedicated to the etiological frequency, with incidence ranging from 5.7% to 81% in Iran for fungal infection¹³.

Thus, it is evident how prevalent otorhinolaryngology's symptoms related to the human ear are, such as reduced hearing, dizziness, tinnitus, and others. Therefore, it is important to highlight further studies evaluating the theme as a way of promoting science in the area of ENT.

Finally, we understand that a study carried out in Brazil may be able to provide better interpretations of how these otorhinolaryngological symptoms behave, providing a better environment for reflection and the development of public policies aimed at ear care.

METHODS

This is a cross-sectional and observational study involving adult. To calculate the sample size, the total number of residents in the state of Rio Grande do Norte aged over 18 years (2,521,595 inhabitants according to IBGE 2020) was used as a population parameter with a sampling error of 3% and an interval of 95% confidence, which led to a sample size of 1067 volunteers. The collection of data was carried out from April 2021 to May 2022 among patients, patient escorts, and employees of a tertiary hospital with statewide coverage.

As inclusion criteria, it was necessary to find volunteers aged 18 years or over inside the Hospital Universitário Onofre Lopes (HUOL), being assisted in the clinics or in the wards. As exclusion criteria, there are patients with agenesis of the auditory canal, surgical closure of the external auditory canal, the presence of acute otitis (external or media), and chronic otitis media, in addition to patients with incompatible cognitive or vigilance levels to respond to the interview.

This research was approved by the Research Ethics Committee (CEP) of HUOL, CAAE 39732920.3.000.5292, presenting the Free and Informed Consent Form before data collection. In addition, it was used as a basis for the ethical aspects of research with humans as propositions contained in Resolution 466/12 of the National Health Council.

The data collection was carried out by medical students of 6th period at the Federal University of Rio Grande do Norte (UFRN) and by otorhinolaryngology residents

at UFRN, in which social and clinical-epidemiological forms were filled out, read, and completed by the evaluator.

Initially, a descriptive analysis was carried out with data about median and mean age, the proportion of each sex, and the prevalence of the questioned symptoms: hypoacusis (self-reported), dizziness, tinnitus, ear itching, and earache. Then, the statistical relation analysis began using the Chi-Square test between all clinical categorical variables in search of any association. In addition, the findings found in the study were compared with those found in similar studies, always using a two-tailed p value of less than 0.05 as an indication of statistical significance.

RESULTS

During the research, the frequency and epidemiological profile of the symptoms of otological pruritus, otalgia, tinnitus, hypoacusis, and dizziness in the selected sample were analyzed. A total of 1067 volunteers were evaluated, of whom 375 were men (35.14%) and 692 were women (64.85%). Regarding age, the mean age of the volunteers was 49.39 years old, with the mean age of men being 51.7 years old (ranging from 18 to 86 years old) and the mean age of women corresponding to 48.14 years old (ranging from 18 to 87 years old). In total, 799 young adults and 268 elderly (age over 60) were evaluated [Table 1].

Table 1 – Prevalence of sex and age of the study.

gender	Young adults	Elderly	Total
Men	245 (22.9%)	130 (12.1%)	375 (35.1%)
Women	554 (51.9%)	138 (12.9%)	692 (64.8%)
Total	799 (74.8%)	268 (25.1%)	1067 (100%)

Regarding the symptom of hypoacusis, 538 cases (50.42%) were identified in the studied population, with 208 cases (38.66%) being bilateral and 330 (61.33%) being unilateral. There were 385 cases (36.1%) of hypoacusis in the left ear and 361 cases (33.8%) in the right. As for age group, 156 seniors complained of hypoacusis anywhere, corresponding to 58.2% of the evaluated seniors, while 382 young adults had this complaint (47.8%) [Table 2].

Table 2 – Complaints of hypoacusis by gender stratified by age.

Hypoacusis Age	Men			Women		
	Right	Left	Bilateral	Right	Left	Bilateral
18-29	4 (0,37%)	5 (0,46%)	3 (0,28%)	11 (1,03%)	6 (0,56%)	7 (0,65%)
30-39	7 (0,65%)	8 (0,74%)	8 (0,74%)	13 (1,21%)	17 (1,59%)	16 (1,49%)
40-49	8 (0,74%)	10 (0,93%)	12 (1,12%)	33 (3,09%)	31 (2,9%)	36 (3,3%)
50-59	13 (1,21%)	21 (1,96%)	20 (1,87%)	25 (2,3%)	31 (2,9%)	37 (3,4%)
> 60 anos	21 (1,96%)	20 (1,87%)	34 (3,1%)	18 (1,68%)	28 (2,6%)	35 (3,2%)

About the symptom of dizziness, 419 people reported this complaint (39.3% of the population), including 303 young adults and 116 elderly. Of the individuals with dizziness, 330 were women, of whom 255 were young adult women and 75 were elderly. There was a statistical association between gender and the complaint of dizziness ($p < 0.001$), which shows a predilection for females. There was also a difference between the ages of those who reported dizziness and those who did not, with a higher age in the group of those who reported having dizziness ($p = 0.003$).

As for tinnitus, 538 people reported the complaint (50.4%), equivalent to 149 elderly and 389 young adults. Regarding laterality, 395 people reported tinnitus on the left side and 399 on the right side [Figure 1]. As for gender, a total of 173 men had tinnitus, 72 being elderly men and 101 being young adult men. Also, 365 women reported this complaint; 77 of them were elderly and 288 were young adults.

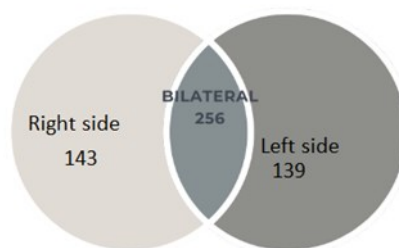


Figure 1: Cases of tinnitus in relation to laterality

With regard to the complaint of otological pruritus, 757 people reported having this complaint in any ear, corresponding to 70.94% of the people evaluated in the study. Of these people, 179 were elderly, and 578 were young adults. About 543 people (71.73%) reported the complaint being bilateral, and there were 214 cases of unilateral pruritus. There were 655 cases of pruritus in the left ear and 645 in the right. Regarding sex, 239 men (81 elderly and 158 young adults) and 518 women (98 elderly and 420 young adults) reported pruritus on any side.

Finally, regarding earache, 185 people had earache any ear: 41 men (10.93%) and 144 women (20.8%). Of the people with earache, 46 were elderly (17.16%) and 139 were young adults (17.39%).

Information on the prevalence of symptoms evaluated in the study in relation to sex and age group is shown in Table 3.

Table 3 – Prevalence of studied symptoms in relation to gender and age group.

Symptom	Adult men	Elderly men	Adult women	Old women	Total
Hypoacusis	119 (11.1%)	75 (7%)	263 (24.6%)	81 (7.5%)	538 (50.4%)
Dizziness	48 (4.5%)	41 (3.8%)	255 (23.8%)	75 (7.02%)	419 (39.3%)
Tinnitus	101 (9.4%)	72 (6.7%)	288 (26.9%)	77 (7.2%)	538 (50.4%)
Pruritus	158 (14.8%)	81 (7.5%)	420 (39.3%)	98 (9.1%)	757 (70.9%)
Earache	24 (2.2%)	17 (1.5%)	115 (10.7%)	29 (2.7%)	185 (17.3%)

DISCUSSION

Given the data collected during the research, it was possible to observe that the most prevalent symptom in the studied population was otological pruritus, regardless of laterality, present in 70.9% of the population. The symptom was more commonly reported bilaterally, with no relevant statistical difference in relation to the affected side (61.4% on the left side and 60.4% on the right side). As for the age group, there was a greater association of pruritus in young adult patients (72.34% of young people reported this symptom), and the complaint was more frequent in females (74.85% of females) than in males (62.3%).

In view of the high prevalence of otological pruritus, it is important to collect a complete anamnesis, investigating the habit of manipulating the auditory canal with flexible rods or other materials, such as pen caps or keys, which are extremely common in outpatient consultations; in addition to the recurrent use of ear drops. This is because manipulation of the ear canal leads to loss of the protective layer of cerumen and small lesions in the ear canal, while otological drops cause a change in the microbiota of the skin of the external ear. These factors increase the likelihood of developing fungal infections, which are important causes of otological pruritus¹³. The patient should also be asked about possible comorbidities, such as diabetes mellitus, which is also a risk factor for otomycosis.

Another cause of otological itching is dermatitis, which can be caused by a direct irritant, such as earrings and soap, or by an allergic reaction. In addition to collecting the clinical history, it is essential to perform otoscopy in all cases so that it is possible to

differentiate between the different pathologies that cause itching and, based on this, propose the appropriate treatment.

As for complaints of tinnitus and hypoacusis, both showed similar prevalence, corresponding to 50.42% of the studied population. Interesting data, since the main cause of tinnitus is hearing loss. Both hypoacusis and tinnitus were more frequent unilaterally, this data reflects the importance of performing adequate anamnesis and otoscopy, in order to eliminate pathologies of the middle and external ear, such as the presence of cerumen plugs and external and middle otitis, that can lead to these symptoms.

When external causes are ruled out, it is important to proceed with the investigation of inner ear pathologies. In the research, it was seen that hypoacusis and tinnitus affect the elderly population more frequently, with presbycusis being an important cause⁵. Studies carried out in the United States showed that the prevalence of hearing loss increased in relation to age, with 11% of individuals between 44 and 54 years old presenting presbycusis, 25% between 55 and 64 years old, and 43% between 65 and 84 years old¹⁴.

Dizziness was reported in 39.3% of the study population, with a statistical association between gender and the complaint of dizziness ($p < 0.001$), which shows a predilection for females. In addition, there is a difference between the ages of those who report having or not having dizziness, with the age of the group of patients who report having this symptom being higher ($p = 0.003$). This data is remarkable, as older adults have a higher incidence of central causes of vertigo, which must be quickly discarded in the evaluation of patients with complaints of dizziness¹⁵. However, in outpatient consultations, the frequency is higher for vestibular causes and psychiatric disorders¹⁶, making it necessary to have a complete approach with emphasis on otoneurological examination.

Finally, earache was the least reported symptom during the research, being present in 17.33% of the individuals. This is probably due to the fact that the survey was conducted with individuals who were not receiving care at the time the form was submitted. As the most intense earache is usually an acute symptom, it is more frequent in the emergency room than in outpatient clinics.

There are several causes for this symptom, from acute external otitis and foreign bodies to facial and neck muscle pathologies whose pain radiates to the ear. Temporomandibular joint dysfunction (TMD) affects about 31% of adults and 11% of children¹⁷. It is about 1.5 times more prevalent in the female population than in men^{18,19}, making it an important diagnosis to be raised in cases of earache.

In the study, there was a statistical association between sex and the complaint of earache, both for the left ($p < 0.001$) and for the right ($p < 0.001$), showing a predilection for females. Thus, it is important to evaluate not only otoscopy but also palpation of the

neck and facial muscles to investigate points of tension and muscle contraction and, if indicated, refer the patient to the maxillofacial.

CONCLUSION

Otological complaints are extremely common in the studied population, which reflects the high frequency of these symptoms in the population of the state of Rio Grande do Norte. Of the evaluated symptoms, otologic pruritus was the most prevalent, followed by hypoacusis and tinnitus. Through the study, it was also possible to identify different prevalence of symptoms when comparing the gender and age of volunteers, which alerts to different pathologies for the same complaint.

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