

or respiratory tract infection and were not under antibiotic therapy at the time of the procedure. The aspiration of the OMS was performed by tympanocentesis, using an Alden-Senturia collector and the NF sample was collected with swab. Bacteriological studies were initiated less than 45 min after obtaining the material and a part of the sample was stored at -20°C for further PCR analysis. Direct molecular determination of pneumococcal serotypes was performed by real-time PCR. Statistical analysis performed with the Mann–Whitney (numerical variables) and chi-square or exact Fisher tests (categorical variables) and measure of association of prevalence ratio together with 95% confidence interval and significance level of 5%.

Results: Vaccination coverage was 77.7% with basic regimen plus booster dose and 22.3% with basic regimen. In OM, *S. pneumoniae* was cultured in 7 (5%) of the children and detected by PCR in 52 (37.4%) of them, an increase of about 7 times (95% CI: 3.5–15.8). Of the 52 CRP children (+), 30 received PCV10 and 22 received PCV13 ($p=0.303$). In NF, *S. pneumoniae* was cultured in 29 (20.09%) of the children and detected by PCR in 58 (41.7%) of them, a two-fold increase (95% CI: 1.37–2.92). Of the 58 CRP children (+), 39 received PCV10 and 19 received PCV13 ($p=0.002$). Pneumococcus of serotype 19A was the most found, both in OMAs (24 of 52 children – 46.1%) and nf (37 of 58 patients – 63.8%). Serotype 19A was more detected in OMe and NF of children who received PCV10 ($p=0.040$ and $p=0.035$, respectively).

Conclusion: *S. pneumoniae* remains very prevalent in NF and in the middle ear of children who develop otitis media. In a group of Brazilian children with OMAR, there was no significant difference in the pneumococcal rates found in the OMOs of children vaccinated with PCV10 or PCV13, but the NF of those vaccinated with PCV13 had significantly less pneumococcus. Serotype 19A was the most prevalent in both NF and OMOs, confirming its importance as colonizer and cause of pneumococcal disease, although its prevalence was significantly lower, both in NF and in OMOs of children vaccinated with PCV13, when compared with those immunized with PCV10. CRP increased, between two and seven times, the possibility of germ detection when compared to the cultural examination. The analysis of the distribution of pneumococci and their serotypes in different countries can contribute to continuously estimate the impact of PCV and the possible need to modify and improve them.

Keywords: *Haemophilus influenzae*; Middle ear; Otitis media; Pneumococcal vaccination; *Streptococcus pneumoniae*.

<https://doi.org/10.1016/j.bjorl.2022.10.046>

SASA/UNIVALI: Overview of constant production in information systems between 2008 and 2019

Gustavo Braz Rasch, Lys Maria Allenstein Gondim, Yasmim Brustolin Lobo Rodrigues*,

Grazielle Bohora Silva Gonçalves, Gabriel Henrique Risso, Norton Tasso Junior

Departamento de Otorrinolaringologia, Universidade do Vale do Itajaí (Univali), Itajaí, SC, Brazil

E-mail address: yasmimbrustolinrl@gmail.com (Y.B. Rodrigues)

Objective: To outline the overview of the production of the Outpatient Hearing Health Service (SASA/UNIVALI) between 2008 and 2019. In addition, it has as its specific objective to update and disseminate epidemiological data in the area, including those of the diagnostic and therapeutic procedures of medium and high complexity, constant in DATASUS and compare with the production of Santa Catarina and the states of the southern region (Paraná and Rio Grande do Sul), considering the parameters obtained in 2011, in a study published by SILVA et al., in which the medium and high complexity of diagnostic procedures performed in Brazilian regions was evaluated, thus evaluating the evolution of PNASA in the Region during this period.

Methods: A documentary, evaluative, quantitative research was carried out, with secondary source database (DATASUS), performing a descriptive, comparative statistical analysis, through absolute and relative frequency tables, with the number of diagnostic and therapeutic tests of medium and high complexity in audiology performed in the southern region.

Results: Apart from the numbers presented only in the city of Itajaí, which is equivalent to the 52 municipalities served in the SASA, and the numbers presented in the southern region, there is a percentage increase in the amounts of tests requested and performed, both of medium complexity and high complexity, if we compare the years 2008–2019. In Itajaí-SC, the increase in requests for medium complexity exams was approximately 206.28%, based on the year 2008 and the last year evaluated being 2019. There is also an 84% increase in high complexity exams between 2011 and 2019. With the numbers obtained for the State of Santa Catarina, there is also an increase, both in the medium complexity exams, in which it presents an increase of 82.8%, as well as in high complexity exams, with an increase of 59.5%. In the medium complexity exams, 99.6% of the requested tests were performed and 100% of the high complexity tests were performed.

Discussion: It is observed that the result of CS is not different from the states: Paraná and Rio Grande do Sul. The medium complexity tests requested in the state of Paraná had an increase of 425% between 2008 and 2019 and an increase of 101.4% in high complexity exams, in addition to the increase of 225.4% in the medium complexity exams that were performed. And in the State of Rio Grande do Sul, an increase in requests for medium complexity exams by 175% and 178% in high complexity exams, in addition to a 176.9% increase in medium complexity exams that were performed in this state.

Conclusion: It is concluded that there was an increase in the number of procedures, both in Itajaí-SC, and in the states of the Southern Region (Paraná, Santa Catarina and

Rio Grande do Sul), reflecting the increase in demand and cases of hearing loss in the population over the years. However, the population increase was not proportional to the increase in demand, further reflecting the increase in hearing problems in the population and a transition of the age pyramid (less young and older), evidencing the importance of SASA, both at the municipal and state level, for hearing impairment diagnoses through a multidisciplinary service. Furthermore, it is concluded that the State of Santa Catarina has the necessary structure, according to the Ministry of Health, to meet the demand of one hearing health care unit for every 1.5 million inhabitants. Given that hearing problems in the general population tend to increase, the number of 1.5 million will no longer be ideal for each service. With the increase in demands on hearing health, it will be necessary to reevaluate this number per service and even openings of new services in the state. The requested exams that are approved are performed. However, this number of approved patients is not always the same as new patients that the service can assist. Therefore, the service proved to be efficient, but it cannot be considered effective with services still insufficient to meet all the latent demand.

Keywords: Epidemiology; Hearing loss; Deafness; Brazil; Otorhinolaryngology.

<https://doi.org/10.1016/j.bjorl.2022.10.047>

Analysis of the use of mindfulness meditation as therapy for chronic tinnitus

Geraldo de Assis Carvalho Júnior*,
Ana Paula Martins Inácio, Beatriz Gomes Dalla Justina,
Cássio Coutinho Arruda, Eduardo Campos Fontes,
Gabriel Nogueira de Resende,
Larissa Estefany Moreira de Paula, Lucas Sena Walter
Universidade Federal de São João del-Rei (UFSJ), São João del Rei, MG, Brazil

E-mail address: geramedico@yahoo.com.br
(G. de Assis Carvalho Júnior)

Objectives: The present work aims to establish a directed view of the impact of the meditative practice of mindfulness on the condition of chronic tinnitus and the relationship of the patient with this condition, seeking to quantify and correlate the access to practice with the indices of improvement and perception of tinnitus at different moments of treatment.

Methods: The research methodology was based on the follow-up, through an online platform, of a group of patients recruited from the diagnosis of tinnitus in the city of São João Del Rei (MG), who received the treatment for eight weeks. In this sense, the inclusion criteria were adulthood, diagnosis of chronic, non-rhythmic, subjective, primary cause tinnitus, and absence of concomitant treatment. Mental disability and a history of unstable psychiatric conditions one year before the beginning of the study were adopted as exclusion criteria. The THI (Tinnitus Handicap Inventory) questionnaire was applied, translated into Portuguese, before the beginning of treatment, shortly after the end

of treatment, and two months after mindfulness therapy to evaluate the short and long-term consequences of this practice of mindfulness for the tinnitus problem of patients.

Results: The THI questionnaire considers the emotional (how much tinnitus is associated with feelings of frustration), functional (how much this condition limits the activities of the individual), and catastrophic (how impotent the patient feels) about tinnitus. Thus, it can be inferred that the higher the final sum of the score, the more the picture impairs the patient's quality of life. Comparing the general impact of the meditative practice on tinnitus from the sum of the points of each participant, there was a decrease in the mean total score of the participants between the pre-protocol moment and immediately after, with a reduction in the mean total score of 11.67 points. In addition, within this same scope of analysis, data homogenization is observed with the reduction of standard deviation (SD) by 7.28 points, from 19.73 to 12.45. When analyzing the means of the total scores between the moments "immediately after" and "2 months after", there is an increase of this average by 1.67 points, but with a new reduction in SD by 0.36 points, indicating more homogenization of the scores. We also individually analyzed the emotional, functional and catastrophic components, observing a greater homogeneity in the score of the participants in the emotional component.

Discussion: In addition to the quantitative change perceived by the score obtained in the THI questionnaire, it was found, from subjective questions asked to the participants, that daily practice came to become reality for some, while others reported performing meditation punctually at sporadic moments. In this context, all participants expressed themselves very positively about their experience with mindfulness meditation. Thus, it turns out that there was an improvement in most different configurations. While some reported better managing their feelings, such as irritation, others said they had changed their relationship with food, reducing compulsive eating behaviors and the issue of tinnitus. Less anxiety and more patience and self-control were also common feedback between responses.

Conclusion: Although there was no control group in the study, we observed a significant change in the THI score before and after the protocol application. There is a small worsening score after two months, which may reflect the difficulty in maintaining a usual meditation practice after the end of guided meetings. The subjective perception of patients was very positive, bringing positive expectations that the practice of mindfulness meditation can be an effective tool for tinnitus control. The absence of a control group as well as the small sample size makes it necessary to conduct other studies to real prove the benefits of mindfulness meditation in tinnitus.

Keywords: Tinnitus; Mindfulness; Meditation; Quality of life.

<https://doi.org/10.1016/j.bjorl.2022.10.048>