Original Article

Prevalence of Ear, Nose, and Throat Diseases in the Elderly: Khon Kaen University's Community Service from 2017 to 2018

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Objective: To identify the prevalence of ear, nose, and throat diseases in elderly members of a local community and provide treatment or referral in cases in which further treatment was needed.

Materials and Methods: This cross-sectional study employed a quantitative approach to evaluate the prevalence of the ear, nose, and throat diseases. The residents of Lao Subdistrict, Maha Sarakham Province aged 60 years and above were invited to participate in one of the four screening sessions held over a one-year period in 2017 and 2018. A proportion of ear, nose and throat diseases and general health status of participants were evaluated by otolaryngologists that included (a) a general appearance examination, (b) an ear examination via otoscopy, (c) a throat and neck examination, and (d) a nasal examination via rhinoscopy.

Results: The ear examination revealed pathologies in 23 (16.79%) of the 137 participants who were enrolled in the study. The throat examination revealed problems in less than 10% of participants. Nasal diseases were found less than 5%. None of the participants needed urgent or emergency treatment or referral. Six participants have received medications for their ambulatory diseases.

Conclusion: We identified ear, nose, and throat problems among the elderly population at the community level. The prevalence of ear diseases was significantly higher than those reported by the Ministry of Public Health.

Keywords: Otolaryngology, Ear, Nose, Throat, Screening

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According to the National Statistical Office of Thailand, Thailand will become an aged society in 2021, as Thai residents over 60 years old will account for 20 percent of the country's total population[1]. Khon Kaen University (KKU) is the first and largest university in the northeastern region of Thailand. Its mission is to create a learning experience that brings people together, to promote local wisdom and cultural diversity, and to enhance local communities through research and academic services. As such, KKU has allocated some of its budget to supporting non-profit community services in the Greater Mekong Subregion[2].

In 2017, KKU was asked by the local community of Lao Subdistrict in Kosum Phisai District (Maha Sarakham Province) to arrange a public health project that would benefit the community[3]. The meeting with local community leaders was held, and an agreement was reached to conduct a screening project for ear, nose, and throat diseases in the elderly community members.

The objectives of this project were to identify the prevalence of ear, nose, and throat diseases in the elderly members of a local community and provide treatment and referral in cases in which further treatment was needed.

Materials and Methods

Study design

This is a cross-sectional study that employed a quantitative approach to evaluate the prevalence of the ear, nose, and throat diseases. The numbers of cases treated and referred to community hospitals are reported.

Setting

Lao Subdistrict is one of 17 subdistricts in Kosum Phisai, Maha Sarakham in northeast Thailand. The subdistrict consists of 11 villages with a total population of 4,474. There are two public nurseries, four public primary schools, and two primary hospitals.

Participants

The residents of Lao Subdistrict aged 60 years and above were invited to participate in one of the four screening sessions held over a one-year period in 2017 and 2018.

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Screening protocol

The physical examinations were conducted by otolaryngologists and included a general appearance examination, an ear examination via otoscopy, a throat and neck examination, and a nasal examination via rhinoscopy.

Statistical methods

The data were collected in case record forms and extracted to a Microsoft Excel spreadsheet by a research assistant. The data were analyzed using SPSS version 20.0 (Chicago, IL). The categorical variables were presented as frequencies and percentages. The continuous variables were presented as means.

The sample size was calculated based on the data from the Ministry of Public Health[4]. Assuming that 20% of the subjects in the population have the respiratory diseases, 10% margin of error and 95% level of confidence, the study would require a sample size of 62.

Ethics

This project was approved by the Khon Kaen University Ethics Committees for Human Research (HE611 189).

Results

There were 137 participants in this study, 55 of whom were male, and 82 of whom were female. The common underlying diseases were diabetes mellitus (25 participants; 18.25%), hypertension (22 participants; 16.06%). Other diseases found were chronic renal failure, gouty arthritis, rheumatoid arthritis, eye problems, allergies, back pain, and hearing loss.

All participants underwent a physical examination by the otolaryngologists including a general examination and specific examinations of the ears, nose, and throat. According to the ear examination, the most common disease was impacted ear wax (13.4%; Table 1).

Most participants were healthy according to the throat examination. Less than 10% had acute pharyngitis, chronic tonsillitis, tonsillolith, or dental caries. Neck examination revealed that only two participants had multi-nodular goitres and one participant had significant lymphadenopathy (Table 2). Forty-two of 137 participant (30.66%) had the hearing loss symptom.

Table 1. Ear examination results

Finding (%)	Right (n = 137)	Left (n = 137)
1) Normal	114 (83.21)	119 (86.86)
2) Impacted ear wax	18 (13.14)	13 (9.49)
3) Chronic otitis media	3 (2.19)	2 (1.46)
4) Otitis media with effusion	1 (0.73)	1 (0.73)
5) Old healed tympanic membrane perforation	1 (0.73)	2 (1.46)

We found that most participants had normal-sized tonsils. Only 10% of participants exhibited tonsil enlargement (Table 3).

The nasal examination revealed allergic rhinitis (2.92%), acute rhinitis (1.46%), and chronic rhinitis (0.73%). The other diseases identified were low back pain, frozen shoulder, cataract, dry eyes, vertigo, vitiligo, arthritis, constipation, urticaria, and burns. None of the participants needed urgent or emergency treatment or referral. Six participants have received medications for their ambulatory diseases.

Discussion

Khon Kaen University received funding from the government to implement development projects in the local community according to the principles of "sufficiency economy" and "sustainable communities". Our team saw an opportunity to contribute to better ear, nose, and throat health in the community. As the budget from the funding body was limited, the teaching staff at Khon Kaen University's Department of Otorhinolaryngology discussed ways in which the project could be conducted at a low cost.

The project received significant cooperation from the community. The directors of Subdistrict Health Promoting Hospitals (SDHPHs) and the Tambon (subdistrict)

Table 2. Throat and neck examination results

Finding (%)	n = 137
Oral cavity and pharynx	
1) Normal	125 (91.24)
2) Acute pharyngitis	9 (6.57)
3) Chronic hypertrophic tonsillitis	1 (0.73)
4) Tonsillolith	1 (0.73)
5) Dental caries	1 (0.73)
Thyroid	
1) Normal	135 (98.54)
2) Detectable only on palpation	0
3) Palpable and visible with neck extended	1 (0.73)
4) Goitre visible with neck in normal position	1 (0.73)
5) Large goitre visible from a distance	0
Cervical lymph nodes	
1) Not palpable	136 (99.27)
2) Non-significant lymphadenopathy	0
3) Significant lymphadenopathy	1 (0.73)

Table 3. Tonsils size

Finding (%)	Right (n = 137)	Left (n = 137)
1) Grade 1	129 (94.16)	131 (95.62)
2) Grade 2	7 (5.11)	5 (3.65)
3) Grade 3	1 (0.73)	1 (0.73)
4) Grade 4	0	0

Administration Organisation (TAO) were major supporters in recruiting the participants for this project.

General practitioner has a crucial role in promote the health condition of the people in a community. Some of the ear, nose, and throat diseases can be treated by a general practitioner such as common cold[5], acute rhinosinusitis[6] and acute otitis media[7]. However, there was a possibility that the patients that need referral to otolaryngology did not seeking help and manage their problem by themselves[8-10]. For example, the patient with chronic rhinosinusitis which is a chronic disease that need a long-term treatment by otolaryngologist may refrain to visit the specialist from economical reason[11-13].

Our screening results were compared to the data from the Ministry of Public Health. The Ministry had data from all outpatient clinics in Thailand from 2009 to 2017[4]. We found that less than 10% of the participants had diseases of the respiratory system, whereas the rates reported by the Ministry ranged from 14.4 to 18.9%. We found diseases of the ear in 15% of participants, while the rates reported by the government ranged from 0.8 to 2.8%.

The prevalence of respiratory disease in our study and that reported by the Ministry were comparable, as this figure tends vary according to area and season of screening. However, the prevalence of ear diseases was around 10-times higher in this study. This discrepancy may be due to the fact that the participants in this study were screened by otolaryngologists, which implies that many cases of ear disease in the population remain undetected when examined by general practitioners.

The strength of this ear, nose, and throat screening was the use of otolaryngologists to screen elderly participants. However, in most of regions in Thailand, there are too few otolaryngologists to support this type of project.

We believe that this was the first project to conduct ear, nose, and throat screenings in Thailand and ASEAN. The screening results found the prevalence of ear diseases to be higher than expected. These results will help in planning the next series of projects for this community.

Conclusion

We identified ear, nose, and throat problems among the elderly population at the community level. The prevalence of ear diseases was significantly higher than those reported by the Ministry of Public Health.

What is already known on this topic?

- There are potentially undetected health problems among elderly members of local communities.

What this study adds?

- This is the first screening project conducted by otolaryngologists for a local community in Thailand.

- Cooperation between the university and local community created an opportunity for identifying health problems in the elderly population.

- The extent of undetected ear problems in the elderly population is significant.

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Potential conflicts of interest

The authors declare no conflicts of interest.

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