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The Relationship Of Ear Picking Habits With The Incident Of Otitis Externa At Roemani Muhammadiyah Hospital Semarang

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ARTICLE INFO	ABSTRACT
<p>Article history Received 08-04-24 Revised 29-04-24 Accepted 04-05-24</p> <p>Keywords Ear picking habits Otitis eksterna</p>	<p>Acute ear canal inflammation, or otitis externa, is brought on by bacterial, fungal, or viral infections. One of factor that cause inflammation of the outer ear is a change in the pH in the ear canal, which is usually normal or acidic. When the pH becomes alkaline, protection against infection decreases. Edema of the squamous epithelium can result from the picking habit's reduction of the protective layer. It can cause local trauma which causes bacteria to enter through the skin, inflate and cause exudate. The aim of this study was to determine the relationship between ear picking habits and the incidence of otitis externa at Roemani Muhammadiyah Hospital. This study uses a cross-sectional design and observational analysis. Using a purposive sampling technique, samples of all ENT polyclinic patients who met the inclusion and exclusion criteria between January 2019 and December 2020 at Roemani Muhammadiyah Hospital in Semarang City, Central Java Province totaled roughly 36 individuals. The responders were asked to fill out a questionnaire. It has several questions that were utilized as study guidelines to gather research data and as note-taking tools. According to the findings, ear plucking and otitis externa were significantly correlated with a prevalence value of 0.000 <0.05. There is a significant relationship between the habit of picking the ears and otitis externa in ENT polyclinic patients, Roemani Muhammadiyah Hospital, Semarang.</p> <p style="text-align: center;">This is an open access article under the CC-BY-SA license.</p> <div style="text-align: right;">  </div>

INTRODUCTION

Otitis externa is an acute inflammation of the ear canal where the etiology is caused by microorganisms such as bacteria, fungi or viruses. Changes in pH in the ear canal, which is usually normal or acidic, facilitate inflammation of the outer ear. Changes in ear canal pH to alkaline cause a decrease in the protective function against infection. Microorganisms such as bacteria and fungi can easily reproduce in warm and humid environments. Minor trauma caused by ear picking procedures is an additional risk for otitis externa¹⁻³.

Acute otitis externa is divided into two types. The first is circumscribed otitis externa, which occurs due to skin adhesion in the outer third of the ear canal, such as the sebaceous glands, cerumen glands and hair follicles. The second type is diffuse otitis externa, which can affect the skin of the inner two thirds of the ear canal and cause furuncles. The skin of the ear canal shows edema and hyperemia with unclear boundaries. The most common causes of diffuse otitis externa are *Pseudomonas* and *Staphylococcus albus*^{3,4}.

According to research conducted by Balen et al. in 2003, the prevalence of this disease in the Netherlands reached 12-14 cases per thousand population every year, and in the UK, the prevalence reached more than 1% every year. Acute otitis externa is one of the types of infections most frequently treated by doctors in 2006. The incidence of acute otitis externa per year was 1:100 and 1:250 of the total population in the United States (Rosenfield, 2006), and based on the results of data analysis in 2007, an estimated 2.4 million cases of acute otitis externa occurred each year⁴. Research on otitis externa in Indonesia was carried out at RSU Prof. Dr. R.D. Kandou, Manado, where of 5,297 patients, 440 patients were found to have ear and mastoid process disease. Diseases of the ear and mastoid process rank 10th in the "Top 10 Outpatient Diseases in Hospitals in 2010", according to data collected by the Ministry of Health of the Republic of Indonesia in 2012⁵.

Ear picking can cause loss of the protective layer in the ear canal, which can lead to edema of the squamous epithelium. Local trauma caused by this condition can cause bacteria to enter through the skin, causing inflammation and exudate⁶. Ear picking can introduce bacteria and fungi into the ear canal, so infections can easily occur if the epithelium is injured. Picking your ears can also cause cerumen to enter the ear canal. The above conditions can cause a buildup of water to enter the ear canal when swimming or bathing. The ear canal is wet, moist, warm, and dark, which is an ideal place for the growth of bacteria and fungi. Studies in Malaysia show that 92 percent of people use cotton buds to clean cerumen⁷.

Based on the description above, the author is interested in conducting research in Semarang City regarding ear picking habits on the incidence of otitis externa by choosing Roemani Muhammadiyah Hospital as the research site.

METHODS

This research has received ethical approval by the Health Research Ethics Commission (KEPK) Faculty of Medicine, University of Muhammadiyah Semarang with number No.051/EC/FK/2021. This research was conducted using an analytical observational method with a cross sectional approach.

Population and Sample

The sample included all patients from the Ear, nose, and throat (ENT) polyclinic at Roemani Muhammadiyah Hospital, Semarang City, Central Java Province from January 2019 to December 2020. Subject were chosen using purposive sampling with restrictions according to inclusion and exclusion criteria.

The inclusion criteria in this research were willing to be a research respondent; male/female sufferers aged > 15 years; and not illiterate. Meanwhile, the exclusion criteria in the study were: patients who had a history of diabetes mellitus; ABD (Hearing Aid) users; and users of adrenergic drugs.

Data collection

An informed consent form was signed by the patient prior to the study's execution. Both primary and secondary data are used in this study. Age, length of service, and number of hours worked per day are among the topics covered in a questionnaire that serves as both a recording tool and a research guide for primary data. Researchers created the questionnaire, which was then put through statistical testing to ensure its validity and reliability. Medical records from the ENT polyclinic at Roemani Hospital Semarang from January 2019 to December 2020 comprise secondary data.

Data analysis

The data obtained was then analyzed using the chi square statistical test with a significance level of $p < 0.05$.

RESULTS

This research was conducted on ENT polyclinic patients at Roemani Muhammadiyah Hospital located in the city of Semarang, Central Java Province, from January 2019 – December 2020. Based on the data in Table 1, the results showed that there were 24 female respondents (66.67 %) more than 12 male respondents (33.33%). The ratio age, most respondents were between 20-29 years old, there were 12 people (33.33%). The incidence of otitis eksterna were 25 people (69.40 %) and 11 people (30.00%) did not. The respondent who had habit of picking their ears were 23 people (63.90%) and 13 people (36.10%) did not

Table 1. Demographic data patients of ear nose and throat polyclinic at Roemani Hospital Semarang from January 2019 – December 2020.

Variable	Frequency (n)	Percentage (%)
Gender		
Female	24	66,67
Male	12	33,33
Ratio Age		
<20 years old	4	11,11
20 -29 years old	12	33,33
30-39 years old	7	19,44
40-49 years old	6	16,67
50-59 years old	6	16,67
>59 years old	1	2,78
Otitis exsterna incidence		
Yes	25	69,40
No	11	30,60
Ear Picking Habits		
Yes	23	63,90
No	13	36,10

Table 2. The Relationship Between Ear Picking Habits and Otitis Externa

Ear Picking Habits	Otitis Eksterna				P		
	Yes		No		Total		
	N	(%)	N	(%)	N	(%)	
Yes	23	63,90	0	0,00	23	63,90	0,000*
No	2	5,50	11	30,60	13	36,10	
Total	25	69,40	11	30,60	36	100	

* P<0.05 (significant)

Table 2 shows the relationship between ear picking habits and otitis externa in subjects. It can be seen that 23 respondents (63.90%) had the habit of picking their ears and experienced otitis externa. There were 0 respondents who had the habit of picking their ears but did not experience otitis externa (00.00%). There were 2 respondents who did not have the habit of picking their ears but experienced otitis externa (5.50%). There were 11 respondents who did not have the habit of picking their ears and did not experience otitis externa (30.60%).

The statistical test uses the chi square analysis test with a p value of 0.000. The p value is smaller than 0.05 (0.000 < 0.05). It means that there is a significant relationship between ear picking habits and otitis externa in patients at the ENT polyclinic at Roemani Muhammadiyah Hospital, Semarang.

DISCUSSION

One of the most common otological complaints in the field of otolaryngology is otitis externa (OE). Several researchers have previously conducted similar studies on OE. The results of this study showed that the habit of ear picking in patients at the ENT polyclinic at Roemani Muhammadiyah Hospital Semarang had a significant relationship with otitis externa.

These results are in accordance with the results of research in 2007 at the ENT Polyclinic at Wonogiri Regional Hospital, which showed that the triggering factor for otitis externa cases was ear picking habit with a cotton bud. The incidence of otitis externa was 30 patients, of which 21 cases (70%) had the habit of picking their ears with cotton buds and 9 cases (30%) did not have the habit of picking their ears with cotton buds⁸. Research by Ijaz et al. found that one of the causes of injury to the ear canal was caused by excessive ear cleaning. This can increase the occurrence of *Staphylococcus aureus* infections as many as (43.3%) of OE patients⁹. Trauma to the ear canal skin resulting from excessive use of ear picks is the most common cause of OE trauma¹⁰.

The ears picking habit can cause mechanical stress to the ear canal's epithelium as well as cerumen being pushed into the ear. Mechanical trauma to the ear canal epithelium can also be caused by trauma due to scratching the ear which will cause bacteria to enter the ear canal so that inflammation and exudate can occur in the ear canal and otitis externa occurs. Pushing cerumen into the ear can cause an accumulation of cerumen which will moisten the ear canal, then the development of bacteria and fungi can occur which can result in otitis externa⁸.

CONCLUSION

There is a significant relationship between ear picking habits and otitis externa in patients at the ENT polyclinic at Roemani Muhammadiyah Hospital, Semarang. It is important to maintain healthy living habits, especially when cleaning your ears, because the consequences can be serious. Otitis externa has been proven to be caused by the habit of picking the ears incorrectly.

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