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Pengetahuan, Sikap, Praktik, dan Faktor-Faktor yang Berhubungan dengan Pembersihan Telinga secara Mandiri pada Tenaga Kesehatan di Yogyakarta, Indonesia

Knowledge, Attitudes, Practices, and Factors Associated with Self-Ear Cleaning among Healthcare Workers in Yogyakarta, Indonesia

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ABSTRACT / ABSTRAK

Cerumen is a natural secretion that protects the ear, but it is often perceived as dirt, leading many people, including health workers, to self-clean their ears, which can cause injury if done excessively. This analytic cross-sectional study aimed to assess knowledge, attitudes, and practices regarding self-ear cleaning and examine their association with sociodemographic characteristics among health workers at a hospital in Yogyakarta. A total of 150 health workers were recruited using consecutive sampling from January to March 2024, and data were collected using a structured, validated, and reliable questionnaire via Google Forms. Associations between sociodemographic characteristics and knowledge, attitude, and practice categories were analysed using the chi-square test. Most respondents were female (84.7%), had vocational education (59.3%), and worked as nurses (62.7%). The majority demonstrated good knowledge, positive attitudes, and good practices. Education level (p=0.003) and occupation (p=0.014) were significantly associated with knowledge. Gender was significantly associated with attitude (p=0.046), with a higher proportion of good attitude among women. Overall, health workers showed generally good knowledge, attitudes, and practices toward self-ear cleaning, with differences by education, occupation, and gender.

Keywords: *Attitudes, Cerumen, Health Knowledge, Practice*

Serumen merupakan sekresi alami yang melindungi telinga, namun sering dianggap sebagai kotoran sehingga banyak orang, termasuk tenaga kesehatan, membersihkan telinga secara mandiri, yang dapat menyebabkan cedera bila dilakukan berlebihan. Penelitian analitik cross-sectional ini bertujuan menilai pengetahuan, sikap, dan praktik pembersihan telinga secara mandiri serta mengkaji hubungannya dengan karakteristik sosiodemografis pada tenaga kesehatan di salah satu rumah sakit di Yogyakarta. Sebanyak 150 tenaga kesehatan direkrut menggunakan consecutive sampling pada Januari–Maret 2024, dengan data dikumpulkan menggunakan kuesioner terstruktur yang telah teruji validitas dan reliabilitasnya melalui Google Forms. Hubungan antara karakteristik sosiodemografis dengan kategori pengetahuan, sikap, dan praktik dianalisis menggunakan uji chi-square. Sebagian besar responden adalah perempuan (84,7%), berpendidikan vokasi (59,3%), dan bekerja sebagai perawat (62,7%). Mayoritas responden memiliki pengetahuan baik, sikap positif, dan praktik baik. Pendidikan (p=0,003) dan pekerjaan (p=0,014) berhubungan signifikan dengan pengetahuan. Jenis kelamin berhubungan signifikan dengan sikap (p=0,046), dengan proporsi sikap baik lebih tinggi pada perempuan. Secara keseluruhan, tenaga kesehatan menunjukkan pengetahuan, sikap, dan praktik yang umumnya baik terhadap pembersihan telinga mandiri, dengan perbedaan berdasarkan pendidikan, pekerjaan, dan jenis kelamin.

Kata kunci: Sikap, Serumen, Pengetahuan Kesehatan, Praktik

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INTRODUCTION

The outer part of the external auditory canal's sebaceous and cerumen glands normally secrete cerumen or earwax (Adegbiji et al., 2014). Cerumen is produced when secretions from the glands in the outer two-thirds of the ear canal combine with the shedding of squamous epithelial cells (Schwartz et al., 2017). Cerumen, commonly known as earwax, is a combination of immunological particles that have the ability to remove bacteria from the ear, maintain ear cleanliness, and decrease the likelihood of ear infections (Oron et al., 2011). In addition to acting as a natural barrier against infection, cerumen lubricates the inner ear canal and ear skin (Hauk, 2017). The self-cleaning mechanism usually allows cerumen to be flushed out of the ear canal with the help of jaw movements (Schwartz et al., 2017). Several studies have reported that most people perceive cerumen as dirt and harmful to humans, giving rise to the practice of self-ear cleaning (Oladeji et al., 2015). The majority of people regularly clean their own ears, making it a common practice. The incidence of self-ear cleaning varies among research but is generally elevated. Several studies indicate that over 90% of individuals engage in self-ear cleaning (Khan, Thaver and Govender, 2017; E Tobih et al., 2021). A study conducted in poor nations previously reported a prevalence rate of 93.4% for self-ear cleaning. Participants often engage in self-ear cleaning for reasons such as maintaining hygiene, perceiving the ear as unclean if not cleaned, and experiencing irritation in the ear (Adegbiji et al., 2019).

The habit of self-ear cleaning can cause injury to the ear, especially if done excessively. Ear pain, ear bleeding, eardrum rupture and a decrease in the ability of the external ear canal to protect the ear from fungus and infection are some of the effects of self-ear cleaning behaviour (Khan, Thaver and Govender, 2017). Another complication that can result from self-ear cleaning behaviour is that the self-cleaning function of the external auditory canal is disrupted, causing build-up and impaction of earwax (Adegbiji et al., 2014; Adegbiji and Olajide, 2017). Prevention and efforts to reduce injury to the ear caused by self-ear cleaning behaviour can be made (Olaosun, 2014).

Studies on self-ear cleaning knowledge, attitudes, and practices have mostly been conducted among the general population and university students in Nigeria and Saudi Arabia (Alshehri et al., 2020; Haji et al., 2021; Bin Abdulrahman et al., 2022). A study among health workers in Nigeria found that knowledge of cerumen and self-ear cleaning practice was associated with sociodemographic characteristics such as education level and occupation (Oladeji et al., 2015). However, comparable evidence among health workers in Indonesia remains limited, and prior studies have rarely examined how education level, occupation, and gender relate to health workers' knowledge, attitudes, and practices regarding self-ear cleaning, even though health workers are expected to model appropriate ear-care behaviour for the community they serve. This gap indicates the need for further research to describe self-ear cleaning knowledge, attitudes, and practices among health workers and to identify the sociodemographic characteristics associated with them, as a basic for developing targeted aducational interventions.

MATERIALS AND METHODS

A study was conducted to determine the description of knowledge, attitudes and practices about self-cleaning among health workers in one of Yogyakarta's hospitals. This study

has received research ethics approval from the Ethics Committee of PKU Muhammadiyah Gamping Hospital with No. 006/KEP-PKU/I/2024. This study employed an analytic cross-sectional design with a quantitative approach, using descriptive statistics to characterize respondents and bivariate knowledge, attitudes, and practices. A Cross-Sectional study is an observational research that examines data from a specific population at a single point in time (Wang and Cheng, 2020).

The study was conducted from January to March 2024. The participants in this study were healthcare professionals employed at a hospital located in the Yogyakarta region. The sample was determined using consecutive sampling, in which all health workers at the hospital who met the inclusion criteria and were willing to participate were enrolled during the study period, until a total of 150 respondents had been collected. The exclusion criteria included health workers in the hospital area who did not complete the questionnaire.

Data collection in this study was carried out using a research questionnaire. The questionnaire used in this study was a demographic questionnaire and a research questionnaire consisting of three parts, knowledge, attitudes and practices about self-ear cleaning. The research questionnaire on knowledge, attitudes, and practices of self-ear cleaning in this study is a questionnaire that has been used by previous studies (Alharbi et al., 2022), then translated and modified in Indonesian by the researcher. The questionnaire was then tested for validity and reliability before use. The results of the validity of the questionnaire consisting of 24 knowledge items, five attitude items and five practice items obtained results ranging from 0.320-0.763 for knowledge items, 0.463-0.694 for attitude items and 0.599-0.738 for practice items. These validity results are more significant than the r table, which is 0.301, so it can be concluded that all of these statements are valid. The Cronbach Alpha value is 0.749 for knowledge items, 0.727 for attitude items and 0.758 for practice items. This means the questionnaire is reliable in measuring knowledge, attitudes and practices of self-ear cleaning in health workers.

After obtaining permission to conduct research, the questionnaire was distributed to prospective respondents via Google Forms. Before filling out the questionnaire, prospective respondents who are willing to take part in the study are invited to agree to the informed consent form and are given an explanation of how to fill out the questionnaire by the researcher through the form. The collected data were analysed descriptively using frequencies and percentages to summarise respondent characteristics and overall knowledge, attitude, and practice categories. Knowledge, attitude, and practice scores were each categorised into good and poor. The association between sociodemographic characteristics (gender, education, occupation) and each categorical outcome was examined using the chi-square test, with Fisher's exact test applied. A p-value <0.05 was considered statistically significant. The collected data were then analysed using SPSS 22.0 for Windows.

RESULTS

The study found that the majority of participants were female, accounting for 84.7% of the respondents. Additionally, the highest degree of education completed by most participants was vocational, with 59.3% reporting this. Furthermore, a significant proportion of participants, specifically 62.7%, worked in the field of nursing. An overview of the

characteristics of health worker respondents in one of the hospitals in Yogyakarta can be seen in Table 1.

Tabel 1. Characteristics of respondents

Characteristics of Subject	Category	n	%
Gender	Male	23	15,3
	Female	127	84,7
Education	High school	13	8,7
	Vocational	89	59,3
	Undergraduate/Professional	44	29,3
	Master's Degree	4	2,7
Occupation	Doctor	2	1,3
	Nurse	94	62,7
	Medical record	5	3,3
	Midwife	7	4,7
	Others	42	28,0
Total		150	100,0

Source: Primary Data, 2024

According to Table 2, the majority of participants in this study engage in self-ear cleaning on a weekly basis (66.7%). Nevertheless, a portion of the participants engaged in daily self-ear cleaning, including 10% of the respondents.

Tabel 2. Behavioral description of respondents (n = 150)

Frequency of self-ear cleaning	n	%
Every day	15	10
Once a week	100	66,7
More than once a week		
Two times	16	10,7
Three times	17	11,3
Four times	1	0,65
Five times	1	0,65

Source: Primary Data, 2024

The results of this study showed that gender was associated with self-ear cleaning attitude (p=0.046), with a higher proportion of good attitude among female respondents (86.6%) than male respondents (82.6%) (Table 3). In addition, education level was associated with self-ear cleaning knowledge (p=0.003), with the highest proportion of good knowledge observed among respondents with a master's degree (100%, n=4) and undergraduate/professional education (95.5%), compared with vocational (92.1%) and high-school education (69.2%). Occupation was also associated with self-ear cleaning knowledge (p=0.014), with doctors showing the highest proportion of good knowledge (100%, n=2), followed by nurses (94.7%). However, the doctor and master's-degree subgroups were very small, so these two estimates should be interpreted with caution and not overstated.

Tabel 3. Association Between Gender, Education and Occupation with Knowledge, Attitude and Practice of Self-Ear Cleaning

Variable	Knowledge Score		*p-value*	Attitude Score		*p-value*	Practice Score		*p-value*
	Good n (%)	Poor n (%)		Good n (%)	Poor n (%)		Good n (%)	Poor n (%)	
Gender									
Male	22 (95.6)	1 (4.4)	0,093	19 (82.6)	4 (17.4)	0,046	18 (78.3)	5 (21.7)	0,145
Female	115 (90.5)	12 (9.5)		110 (86.6)	17 (13.4)		112 (88.2)	15 (11.8)	
Education									
High school	9 (69.2)	4 (30.8)	0,003	11 (84.6)	2 (15.4)	0,100	11 (84.6)	2 (15.4)	0,706
Vocational	82 (92.1)	7 (7.9)		77 (86.5)	12 (13.5)		77 (86.5)	12 (13.5)	
Undergraduate/ Professional	42 (95.5)	2 (4.5)		37 (84.1)	7 (15.9)		38 (86.4)	6 (13.6)	
Master's degree	4 (100)	0 (0)		4 (100)	0 (0)		4 (100)	0 (0)	
Occupation									
Doctor	2 (100)	0 (0)	0,014	2 (100)	0 (0)	0,245	2 (100)	0 (0)	0,524
Nurse	89 (94.7)	5 (5.3)		81 (86.2)	13 (13.8)		81 (86.2)	13 (13.8)	
Medical record	4 (80)	1 (20)		5 (100)	0 (0)		5 (100)	0 (0)	
Midwife	6 (85.7)	1 (14.3)		7 (100)	0 (0)		5 (71.4)	2 (28.6)	
Others	36 (85.7)	6 (14.3)		28 (66.7)	8 (33.3)		31 (73.8)	5 (26.2)	

Source: Primary Data (Processed), 2024

DISCUSSION

The ear is the organ responsible for auditory perception and balance, along with earwax, which serves as a lubricant and immune system. However, many people tend to self-clean earwax for various reasons, potentially resulting in additional complications (Bin Abdulrahman et al., 2022). Assessment of ear care knowledge, attitudes and practices will provide a picture of knowledge gaps as well as poor attitudes and practices, which can ultimately lead to hearing loss. Therefore, this must be addressed using various strategies to reduce the incidence and prevalence of hearing loss (Solheim, Shiryaeva and Kvaerner, 2016). The objective of this study is to ascertain the characteristics of knowledge, attitudes, and practices of self-ear cleaning, particularly among healthcare professionals.

Based on the results of the study, the percentage of respondents in this study had good knowledge (80.50%), attitude (68.50%) and practice (70%) regarding self-ear cleaning. Health workers have the main task of providing health care services, including ear care, to the community. Therefore, the proper knowledge about ear care for health workers is essential so that education carried out to the community is effective (Oladeji et al., 2015).

However, some respondents in this study (10%) still need to practice better self-ear cleaning. They do self-ear cleaning every day. Similar to a previous study (Hobson and Lavy, 2005) conducted with a survey method on 325 respondents, it was found that the majority of respondents cleaned their ears regularly using cotton buds without knowing the adverse effects. In addition, another study also revealed a similar thing. As many as 93% of research respondents performed self-ear cleaning regularly without knowing the adverse effects.16 The

reasons for self-ear cleaning mainly were itching (11.8%), dirt (21.8%) and personal hygiene (35.1%) (Adegbiji, W.A., Olajide, T.G. and Nwawolo, 2018).

This study shows that there is a correlation between gender and self-ear-cleaning attitude, with the average attitude score in women higher than in men. This could be due to various factors. Women are more proactive than men in routine health maintenance, including ear care. In addition, sociocultural influences often place women as health carer in the family so that they tend to better understand good healthcare attitudes and practices (Kalaitzi et al., 2019; Naila et al., 2023). Additionally, studies carried out in the Makkah region demonstrated that gender significantly influenced the habit of self-ear cleaning. However, the results of the study contrasted with this study in that more women performed self-ear cleaning than men (Haji et al., 2021). This means that gender has a role in shaping attitudes towards self-cleaning practices.

In addition, this study also showed that there is an association between education and the average knowledge score of postgraduate education level, which is higher than others, in line with previous research conducted with health worker respondents in the Nigerian region. The findings indicated a notable correlation between the level of education and the extent of health personnel' understanding regarding self-ear cleaning (Oladeji et al., 2015). This study also showed that the higher education a person has, the higher the knowledge they have, especially regarding self-ear cleaning. Another study also showed the same thing that education level is closely related to knowledge about self-ear cleaning (Alshehri et al., 2020).

Based on the results of the study, there is also a correlation between occupation and knowledge, with the average knowledge score of doctors being higher than other occupations. Previous studies have also found similar things to this study, such as the occupation being related to knowledge about self-ear cleaning. A study in Nigeria found a strong association between knowledge scores and occupation among health workers (Oladeji et al., 2015). This suggests that the occupation of health workers is significantly associated with their knowledge of self-ear cleaning practices. This study found that health personnel possess satisfactory knowledge, attitudes, and practices when it comes to self-ear cleaning. However, there is still a need for education regarding self-ear cleaning because the coverage is not 100% good. The weakness of this study is that the samples used in this study were mostly nurses, so an overview of knowledge, attitudes, and practices of self-ear cleaning in other occupations is still needed. So, it is necessary to conduct research with a more evenly distributed sample randomisation in the futureThis study has several methodological limitations that should be considered when interpreting the findings. First, the cross-sectional design captures knowledge, attitudes, and practices at a single point in time, so the associations reported cannot be interpreted as causal relationships and the possibility of reverse causation cannot be ruled out. Second, the study was conducted at a single hospital in Yogyakarta with respondents recruited through a self-administered online questionnaire, which may introduce selection bias if health workers with particular interest in or awareness of ear care were more likely to participate, and limits the generalisability of the findings to health workers in other institutions or regions. Third, self-reported practices may be subject to social desirability bias, and the marked imbalance in subgroup sizes across occupation and education categories (for example, only two doctors and four respondents with a master's degree) means that the estimates for these subgroups are imprecise and should be interpreted cautiously.

CONCLUSIONS AND RECOMMENDATIONS

This study found that health personnel at a hospital in Yogyakarta generally demonstrated good knowledge, positive attitudes, and good self-ear cleaning practices, although a meaningful minority still showed gaps, particularly the respondents who reported cleaning their ears daily. Self-ear cleaning knowledge was associated with education level and occupation, and self-ear cleaning attitude was associated with gender. Because this study used a cross-sectional design, these associations should be read as relationships observed at a single point in time rather than as evidence that sociodemographic characteristics cause differences in knowledge, attitudes, or practice; the higher proportion of good knowledge seen among doctors and postgraduate-educated respondents should also be interpreted cautiously given how few respondents were in these two subgroups.

These findings suggest that health workers with lower levels of formal education, in occupations other than medicine, and male health workers may benefit most from targeted ear-care education, since these groups showed comparatively lower knowledge or less positive attitudes toward self-ear cleaning in this sample. Health institutions should consider integrating evidence-based ear-care education detailing the function of cerumen, the hazards associated with self-ear cleaning, and safer alternatives when cleaning is necessary into their ongoing training programs for healthcare personnel, customized to the groups identified within this study. Future multicentre research involving several hospitals or regions, with a more representative and proportionally distributed sample across occupations and education levels, is needed to confirm these associations and strengthen the generalisability of the findings.

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