

**DESCRIPTION OF THE UNDERSTANDING AND CONCERN OF
CHILDREN WITH SPECIAL NEEDS FOR EAR HYGIENE, EAR
INFECTION AND HEARING HEALTH AT GOVERNMENT
SPECIAL SCHOOL II BANJARMASIN**

Melody Audria Kurniadi

Department of Ear, Nose, Throat - Head and Neck Surgery, Sari Mulia Hospital,
Banjarmasin, Indonesia

E-mail: Melodyaudria@gmail.com

Abstract

Children with special needs often lack good knowledge about health. In addition, ear and hearing health is often neglected by society. Ear and hearing disorders can cause disability or limitations in socializing and can also cause serious complications. The aim of this study is to provide an overview of the level of understanding and concern for ear health and hearing health. The number of samples was 37 people with an age range of 11-18 years with a cross-sectional study. The research was conducted descriptively by using a questionnaire containing 18 questions. The results of this study showed that all research subjects did not understand the correct habit of cleaning their ears. Most of the subjects did not understand the causes of ear infections. The most commonly recognized symptom of an ear infection is ear pain (54%). Almost all participants understand that ear infections can have complications in the brain. The use of earphones (40%) is not a habit for the subject. More than 50% of subjects have an understanding that hearing loss can be cured. Almost all (97%) of respondents felt the need to get more information about ear and hearing health. Understanding of ear and hearing health in children in special needs is still relatively low. The level of children in special needs' concern for ear and hearing health is also still low. Government Special School II Banjarmasin students feel they need information related to ear and hearing health.

Keywords: Children with Special Needs, Ear Hygiene, Ear Infections, Hearing Health

1. INTRODUCTION

The ear organ is one of the five senses which is important for human survival. Besides functioning as the sense of hearing, the ear is also one of the organs associated with the human balance system. The human ear is anatomically divided into three parts, namely the outer ear, middle ear and inner ear. Disturbances in one part of the ear can cause disturbances in hearing and balance functions which can cause limitations in activities and social life. People must understand how to maintain and correct good ear and hearing health when it comes to ear and hearing health.

Ear infection is an infection that often occurs in humans, especially in children. This can be caused because the anatomy of the ear in children and adults has differences. There are differences in the shape of the eustachian tube in children and adults where in children the position of the tube is more horizontal and shorter making it easier for the spread of ear infections originating from upper respiratory tract infections when compared to adults.

Otitis or ear infections, are divided based on their location into otitis externa and otitis media. Otitis externa is an infection of the ear canal which is often caused by bacteria and

can also be caused by fungi. The condition of the ear canal that is moist can be one of the easy causes of ear infections. In addition, repeated trauma to the canal can be a risk factor for ear infections. Repetitive trauma to the ear canal can also be caused by the habit of picking your own ears. This happens because there is a disturbance in the ear's natural mechanism for removing cerumen (Schaefer & Baugh, 2012).

The incidence of otitis externa is strongly influenced by knowledge about ear hygiene and how to care for the ears. Data regarding the incidence of otitis externa cases in the world reach 10%. It is estimated that 4 out of 1000 people suffer from otitis externa each year (Waitzman, 2022). In Indonesia, the latest data regarding the population with ear health problems is from RISKESDAS in 2013. From these data it is said that there were 18.8% cases of cerumen obstruction and 2.4% cases of fluid in the ears (Riskesdas Report, 2013).

Apart from otitis externa, otitis media also has a fairly high incidence. Otitis media can occur in almost all age groups, but the highest rate of occurrence of otitis media is in children aged between 6-24 months. Nearly 80% of children have had otitis media and about 80-90% of children have had otitis media with effusion before school age (Usonis et al., 2016). Complications from otitis media can cause hearing loss, especially in children aged between 6-24 months. This is very important to note because hearing loss at a developing age can have an impact on speech and developmental disorders in children (Gendeh et al., 2019).

Apart from its impact on social life, otitis media can also cause complications, both extracranial and intracranial complications. The most common extracranial complications are facial paralysis, subperiosteal abscess, mastoiditis and labyrinthitis. In addition, intracranial complications can also occur with the most frequent cases being meningitis, cerebral abscess, lateral sinus thrombosis, extradural abscess, otic hydrocephalus and encephalitis (Penido et al., 2016).

Deaths that occur as a result of cases of otitis media usually occur due to intracranial complications. The causes of complications from otitis media are due to lack of education, low level of concern for symptoms and ear health, low socioeconomic conditions and limited health facilities. This needs to be a concern because otitis media is a disease that can be treated if you get fast and proper treatment (Dongol et al., 2020).

The deaf or hearing impaired are included in the category of persons with disabilities because people with hearing impairments can experience obstacles in interacting and fully participating in everyday life. Of the total world population, which is around 7 billion people in 2021, as many as 15% of the population are persons with disabilities (KemenPPPA RI, 2013). According to RI Law No. 8 of 2015 concerning persons with disabilities, the definition of persons with disabilities is any person who experiences physical, intellectual, mental and/or sensory limitations. in the long term in interacting with the environment may experience obstacles and difficulties to participate fully and effectively with other people.

Globally, currently more than 1.5 billion people live with hearing loss. WHO even predicts that this number can increase in 2030 to reach 2.5 billion people. The greatest risk of hearing loss due to exposure to loud noises occurs at a young age, which is between the ages of 12-35 years (WHO, 2021). Based on data from the 2019 National Socioeconomic Survey (SUSENAS), the number of people with disabilities in Indonesia is 9.7% of the total Indonesian population, which is around 26 million people. National data regarding the description of persons with disabilities as a whole population with a variety of disabilities and the characteristics of each disability are still limited. As many as 7.03% of persons with

disabilities are deaf. According to data from the Central Statistics Agency for 2021 there are 4019 residents with hearing impairments in the West Java region. Hearing loss causes disability in humans, especially in interacting socially in everyday life.

Seeing the high rate of hearing loss in Indonesia, hearing loss has become the focus of the government to reduce the incidence in an effective promotive, preventive and curative manner. Based on the causes of hearing loss and deafness, the Indonesian Ministry of Health divides it into 5 major groups of ear disorders, namely;

- 1) Cerumen blockage, namely the accumulation of products from the ear glands which can interfere with sound conduction or can clog the ears
- 2) Chronic Suppurative Otitis Media is a middle ear infection which is characterized by discharge of fluid into the ear canal for a long time for more than two months
- 3) Noise-induced hearing loss (NIHL), namely deafness or hearing loss that occurs as a result of exposure to strong and frequent sound or noise
- 4) Congenital deafness is deafness that occurs due to genetic problems or occurs due to problems during childbirth
- 5) Prebiscusis is hearing loss that occurs due to degeneration or aging processes that are multifactorial.

Children with special needs with their limitations often do not get proper understanding and information about how to maintain a healthy body. Children with special needs according to the Indonesian Ministry of Women's Empowerment and Child Protection in 2013 are divided into 12 major groups, one of which is children with hearing loss (KemenPPPA RI, 2013). This needs special attention because proper care with good education needs to be improved to support children's development. Children with hearing disabilities do not show intellectual impairment, which means they still have the potential to develop themselves if they receive appropriate and effective treatment.

Healthy ears can be obtained with knowledge and a high level of concern for ear hygiene and health. There is a close relationship between the habit of maintaining ear and hearing hygiene and ear health. The level of public understanding regarding ear and hearing health is also a focus that needs attention. Some common habits such as the habit of picking ears with a lighter, the habit of using ear phones, giving ear drops without a doctor's prescription, not doing regular ear checks are several factors that can cause problems with ear health and hearing. Data regarding the description of knowledge and concern for ear health is still very rare, especially in children with special needs. Therefore, this study aims to provide an overview of the level of understanding and concern for ear health and hearing health.

2. RESEARCH METHOD

This research was a descriptive study, with a cross-sectional approach to describe the understanding and level of concern about how to maintain ear hygiene, ear infections and hearing health in children with special needs at Government Special School II Banjarmasin in East Banjarmasin District, South Kalimantan. This research was conducted on May 12, 2022. The research population taken was Government Special School II Banjarmasin students with a vulnerable age of 11-18 years. The selection of subjects was taken thoroughly with a range of ages according to the criteria. The research instrument used was a questionnaire containing 18 questions containing several groups of questions, namely

regarding how to clean the ears, knowledge about ear infections, knowledge of hearing loss. The type of questions used are closed questions with answers Yes or No.

The data collection method was carried out by interviewing each subject. All data was collected and processed using a computer program, namely Microsoft Excel. The data was then processed with the SPSS program for statistical assessment and presented in tabular form.

3. RESULT AND DISCUSSION

3.1. Research Results

The processed data is then presented in tabular form for analysis.

Table 1 Demographic Data of Students at Special Public School II Banjarmasin with an Age Vulnerability of 11-18 Years

Gender	
Man	Woman
18 (48%)	19 (52%)

The research was conducted by giving a questionnaire containing 18 questions. The questions given are in the form of closed questions with a Yes or No answer for the statement that is considered the most correct. In Table 2, a list of questionnaire questions with the right answers based on the literature can be seen. Some of the questions are quantitative questionnaire questions that have no right or wrong answers.

Table 2 List of Questionnaire Questions and Correct Answers

No	Question	Yes	No				
1	Ears should be cleaned frequently	-	√				
2	If there are complaints of blocked ears, they must be corrected immediately	-	√				
3	If there are complaints of itchy ears, they must be corrected immediately	-	√				
4	Ears can be cleaned using a lighter or cotton buds	-	√				
5	Earwax has a bad impact	-	√				
6	Ear infections that are left unchecked can cause infections in the brain	-	√				
7	Clogged nose or colds can cause ear infections	-	√				
No	Question	Have a cold	Swimming Activities	Ear Picking Habit			
3	What are the causes of ear infections?	√	√	√			
No	Question	Ear pain	Out of Ear Fluid	Itchy Ears	Impaired Hearing	Closed Ears	Ringling Ears

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4	What are the known symptoms of an ear infection?	√	√	√	√	√	√
No	Question				Yes		No
1	A hole in the eardrum can cause hearing loss				√		-
2	Do you often use earphones?				-		-
3	The duration of using earphones in 1 day	< 1 hour		1-3 hours	3-6 hours	6 hours	
		-		-	-	-	
No	Question				Yes		No
4	Using earphones for a long time and loudly can cause hearing loss?				√		-
5	Hearing loss can be cured				-		√
No	Question	Go to the Doctor	Ear Match	Buying Ear Drops without a Doctor's Prescription		Let It Go	
1	What will be done if there is a complaint in the ear?	√	-	-		-	
No	Question	Yes			No		
2	Ear examinations need to be done regularly	√			-		
No	Question	School	Parent	Public health center		Friend	Social media
3	Educational resources about ear health and hearing	-	-	-		-	-
No	Question	Yes			No		
4	Does information about ear health and hearing	-			-		

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	need to be improved?		
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Table 3 An Overview of the Understanding of Ear Hygiene in Children with Special Needs at Government Special School II Banjarmasin

No	Question	Yes	No
1	Ears should be cleaned frequently	91 %	9 %
2	If there are complaints of blocked ears, they must be corrected immediately	84 %	16 %
3	If there are complaints of itchy ears, they must be corrected immediately	89 %	11 %
4	Ears can be cleaned using a lighter or cotton buds	95 %	5 %
5	Earwax has a bad impact	95 %	5 %

The subjects in this study were 37 students consisting of 18 male students and 19 female students at Government Special School II Banjarmasin. Table 2 provides an overview of students' understanding of how to maintain good and correct ear hygiene. Participants were given 5 closed statements about ear hygiene and participants answered Yes if they agreed with the statements and answered No if they did not agree with the statements given. The results of the analysis show that as many as 91%, namely as many as 34 participants, think that their ears must be cleaned frequently. Only 3 people think that ears don't have to be cleaned often. As many as 31 (84%) participants agreed that if there were complaints of blocked ears, they had to be scratched immediately, while as many as 89% of participants agreed that if there were complaints of itching in the ears, they had to be corrected immediately. Almost all participants agreed that the ears could be cleaned using a match or cotton bud i.e. 95% of participants. Only 5% of participants disagreed with the statement that earwax had a bad effect. In the group of questions about understanding ear hygiene, no participants chose all the answers correctly.

Table 4 An Overview of Understanding of Ear Infections in Children with Special Needs at Government Special School II Banjarmasin

No	Question	Yes	No
1	Ear infections that are left unchecked can cause infections in the brain	75 %	25%
2	Clogged nose or colds can cause ear infections	95%	5%

No	Question	Have a cold		Swimming Activities		Ear Picking Habit	
3	What are the causes of ear infections?	95%		35%		37%	
No	Question	Ear pain	Out of Ear Fluid	Itchy Ears	Impaired Hearing	Closed Ears	Ringling Ears
4	What are the known symptoms of an ear infection?	54 %	57%	40%	43%	27%	32%

Table 5 An Overview of the Understanding of Hearing Loss in Children with Special Needs at Government Special School II Banjarmasin

No	Question	Yes		No	
1	A hole in the eardrum can cause hearing loss	94 %		6 %	
2	Do you often use earphones?	40 %		60%	
3	The duration of using earphones in 1 day	< 1 hour	1-3 hours	3-6 hours	6 hours
		40%	8%	8%	3%
No	Question	Yes		No	
4	Using earphones for a long time and loudly can cause hearing loss?	78 %		22 %	
5	Hearing loss can be cured	62 %		38 %	

Tables 3 and 4 show an overview of the understanding of ear infections and hearing loss in children with special needs at Government Special School II Banjarmasin. More than 50% of participants agree that ear infections can lead to brain infections. Almost all participants agreed (95%) that ARI can cause ear infections. Questions 3 and 4 are given questions with several answer choices presented. According to the results of the analysis, colds or respiratory tract infections (95%) were the most common causes of ear infections, then the habit of picking at the ears and finally swimming was the cause of ear infections. The most well-known symptoms of ear infection are symptoms of ear discharge, which is as much as 57%, then ear pain (54%), impaired hearing (43%).

In table 4, there is an overview of the understanding regarding hearing loss in children with special needs at Government Special School II Banjarmasin. Almost all participants (94%) agreed that a hole in the eardrum can cause hearing loss. The use of earphones (40%) was not a habit for research participants with the most duration of using earphones, which was less than 1 hour (40%). Almost all participants agreed that excessive use of earphones (78%) could cause hearing loss and as many as 62% of participants agreed that hearing loss could be cured.

Table 6 Description of the Level of Concern for Ear and Hearing Health in Children with Special Needs at Government Special School II Banjarmasin

Special Needs at Government Special School A Banjarmasin						
No	Question	Go to the Doctor	Ear Match	Buying Ear Drops without a Doctor's Prescription	Let It Go	
1	What will be done if there is a complaint in the ear?	75%	19%	14%	11%	
No	Question	Yes		No		
2	Ear examinations need to be done regularly	83%		17%		
No	Question	School	Parent	Public health center	Friend	Social media
3	Educational resources about ear health and hearing	35%	39%	43%	16%	38%
No	Question	Yes		No		
4	Does information about ear health and hearing need to be improved?	98%		2%		

Table 5 provides an overview of the level of concern for ear and hearing health. Treatment to the doctor (75%) is the main choice of participants if there are complaints in the ear. As many as 83% of participants felt the need for periodic ear examinations. The most common source of information for obtaining education about ear and hearing health is from the Puskesmas (43%). Information about ear and hearing health still needs to be improved.

3.2. Discussion

Based on the research, it was found that the research subjects were 37 Government Special School II Banjarmasin students. Subjects taken in the study were students with a vulnerable age of 11-18 years with school levels ranging from 5th grade elementary school to XII grade high school student. Based on demographic data, the sex of the research subjects was almost balanced namely 18 men and 19 women. Comparison between the number of female and male students who are balanced benefits the research because there is no significant difference in the number of sexes that can affect the research results.

In research regarding an overview of understanding about maintaining ear hygiene, it was found that all research subjects did not provide correct answers regarding how to maintain ear hygiene. This is in accordance with previous research conducted by Deviprasad et al. that picking ears and cleaning one's own ears has become a habit for the community (Dosemane et al., 2015). The use of cotton buds or lighters is also a habit for almost all research subjects. This habit was also found in a study conducted by Jonathan et al. that trauma to the ear caused by cotton buds is often found in daily clinical practice (Hobson &

Lavy, 2005). The habit of picking at the ear increases when there are complaints of the ear such as itchy ears or clogged ears. Almost all research subjects also thought that earwax was a bad thing and had to be cleaned immediately. This can happen due to a lack of education about how to maintain good and correct ear hygiene.

Insight of knowledge about ear infections is quite good. Participants understand about ear infections which can be complicated to become infections of the brain (Dongol et al., 2020). Most of the participants (95%) also understood that respiratory tract infections can cause ear infections as well. The symptom often found by participants in ear infections is otorrhea. Otorrhea is a symptom of many ear infections such as otitis externa, otitis media, cholesteatoma or cerebrospinal fluid leak. Anamnesis and proper examination to be able to make the right diagnosis and therapy in patients with complaints of otorrhea.

The statement that perforation of the eardrum can cause hearing loss was agreed by almost all research respondents. A ruptured tympanic membrane can cause conductive hearing loss with varying degrees of severity. The etiology of membrane rupture is varied and the others are trauma and infection (Rana et al., 2020). The use of earphones was not a habit for study participants. This is most likely because the research subjects are children with special needs so they don't have the habit of listening to music or sounds using earphones. In contrast to the majority of children in general who have the habit of listening to sounds or music using earphones as in a study conducted by Vogel et al in 1687 children aged 12-19 years as many as 90% of participants listened to music using earphones. The duration of using the earphones is only less than 1 hour. This is again associated with research subjects who are children with special needs. The understanding of excessive use of earphones can cause hearing loss is quite good. Excessive use of earphones in the long term and with great sound intensity can cause hearing loss (Widén et al., 2017). Most of the participants have an understanding that hearing loss can be cured. This needs to be considered because not all hearing loss can be cured depending on the etiology that causes hearing loss (Sofia & Yasir, 2022).

The level of concern of the participants was quite good because most of the participants would go to the doctor for treatment if they had complaints about their ears. Participants also understand that regular checks on ear health should be carried out. The most sources of education or information according to the participants were at the Puskesmas. This needs to be paid more attention to because people often come to the Puskesmas if they have complaints. Promotive efforts must be increased again, especially in the school environment, social media and family environment.

4. CONCLUSION

The most commonly recognized symptom of an ear infection is ear pain (54%). Almost all participants understand that ear infections can have complications in the brain. The use of earphones (40%) is not a habit for the subject. More than 50% of subjects have an understanding that hearing loss can be cured. Almost all (97%) of respondents felt the need to get more information about ear and hearing health. Understanding of ear and hearing health in children in special needs is still relatively low. As for the level of children in special needs 's concern for ear and hearing health is also still low. Understanding of ear hygiene and hearing health needs to be improved. Sources of information that are still very limited

make most children with special needs still have a wrong understanding of ear and hearing health. Ear and hearing health education efforts need to be improved again.

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