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Public Lecture on Reducing the Risk of Hearing Loss in the Elderly in Surabaya City's Wonokromo Subdistrict

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A B S T R A C T

The sensorineural hearing loss experienced by the elderly is known as presbycusis. Generally, sensorineural hearing loss is permanent. The prevalence of hearing loss in Indonesia, according to 2013 Rikesdas data, is 2.6%. According to the elderly population in the age range of 65-85 years who experience hearing loss is as much as 30%. The highest rate of hearing loss was found in the age group ≥75 years, namely 36.6%. This community service aims to increase knowledge related to preventing hearing risks in the elderly in RW 07, Wonokromo Village, Surabaya City. Counselling, by carrying out outreach activities by holding a Lay Seminar in the Context of Preventing the Risk of Hearing Loss for the Elderly in RW 7, Wonokromo sub-district, Surabaya City. This lay seminar was very beneficial for the seminar participants. Characteristics of the seminar participants were that most of them were women with the most education, 49 years old, aged > 60 years and working as retirees, the results of the pretest and post-test showed an increase of 19.3% from the test statistically there a significant difference between the Pretest and Post Test.

INTRODUCTION

Hearing loss in the elderly is common. In 2012, the World Health Organization estimated that one in three seniors aged over 65 years had hearing loss. Even though it is common, hearing loss cannot be underestimated (Rantung, Palandeng and Mengko, 2018a). Hearing loss can lead to impaired communication, reduced response to signs of danger, and reduced cognitive function. Research shows that reduced hearing increases the risk of dementia and the decline in cognitive abilities such as memory and concentration occurs more quickly in elderly people with hearing problems (Yudhanto et al., 2020).

Broadly speaking, hearing loss is grouped into conductive hearing loss and sensorineural hearing loss. Conductive hearing loss is caused by disruption of the propagation of sound to the inside of the ear which can occur due to a buildup of earwax, fluid, or damage to the eardrum (Nurfaizi et al., 2021). Another hearing loss, namely sensorineural hearing loss, is caused by damage to the auditory nerve which is located in the inner ear (Nugroho PS and Wiyadi H, 2009).

The sensorineural hearing loss experienced by the elderly is known as presbycusis.

Generally, sensorineural hearing loss is permanent. Several factors such as being used to hear loud sounds, health conditions such as diabetes mellitus and hypertension, use of certain medications, and heredity increase the risk of hearing loss in the elderly (Yuliyani et al., 2022b). The morbidity rate of presbycusis can be reduced by promotive, preventive, curative and rehabilitative management efforts. The newest thing in carrying out this activity is that Health cadres will be given knowledge in carrying out this effort which requires integrated cooperation from the community itself and Health services or community health centers, Non-Governmental Organizations, and the Government, in this case health institutions. The community through cadres needs to be involved actively and innovatively, especially at the promotional level. Frontline health lines, for example Community Health Centers, Health Centers, etc., have a big role at the promotive, curative and early detection levels of complications due to presbycusis. In addition, increased knowledge and skills are needed to diagnose presbycusis.

In old age, there is a decline in function in terms of the physical and sensory systems which greatly affects the quality of life and limitations in doing many things. Hearing loss is one of them (Sarah Nabila Istiqomah, 2019). This condition is very common in the elderly group. Apart from a decrease in physiological function, several factors can also affect hearing function, namely ear hygiene factors such as blockage of cerumen or dirt in the ear canal, infection of the middle ear which leads to rupture of the eardrum or tympanic membrane and consumption of ototoxic drugs (Rantung, Palandeng and Mengko, 2018b). Ringing in the ears (tinnitus) is also often quite a disturbing complaint, namely the presence of sounds from unknown sources which will sound louder when the atmosphere is quiet (Yuliyani et al., 2022a). Based on World Health data, The Organization (WHO) currently estimates that around 360 million people (5.3%) worldwide experience hearing loss, of which 328 million (91%) are adults and 32 million (9%) are children (Istiqomah & Mukhlis, 2019). The prevalence of hearing loss in Indonesia, according to 2013 Rikesdas data, is 2.6%. According to the elderly population in the age range of 65-85 years who experience hearing loss is as much as 30%. The highest rate of hearing loss was found in the age group ≥75 years, namely 36.6%, followed by 17.1% in the 65-74 year age group, 5.7% in the 55-64 year age group and 6.1% in the age group >55 years (Ministry of Health of the Republic of Indonesia, 2018).

METHOD

The method of service carried out is as follows:

1. Survey method, by observing the environment of RW 07, Wonokromo Village, Wonokromo District, Surabaya City with interviews about the activities of the elderly and several things that are often experienced by the elderly regarding several incidents of hearing loss.

2. Extension Method, by carrying out outreach activities by holding a Lay Seminar in the Context of Preventing the Risk of Hearing Loss for the Elderly in RW 7, Wonokromo sub-district, Surabaya City.
3. The question and answer method in this outreach activity was carried out to evaluate the level of understanding of the members material provided and to obtain other information related to household waste. With this question and answer session, it can be seen the level of activeness of the Taklim Council members in participating in this activity and For evaluation, a pre-test and post-test are used to measure the increase in participants' knowledge.

RESULT AND DISCUSSION

Table 1. Characteristics of Lay Seminar Participants in the Context of Preventing the Risk of Hearing Loss for the Elderly in RW 7, Wonokromo sub-district, Surabaya City

No	Gender	Frequency	Percentage
1	Man	35	44.30%
2	Women	44	55.70%
No	Education		
1	Elementary School	3	3.80%
2	Junior High School	12	15.19%
3	Senior High School	49	62.03%
4	Bachelor	15	18.99%
No	Audience Age		
1	< 50 Years	8	10.13%
2	50 - 55 Years	15	18.99%
3	56 - 60 Years	27	34.18%
4	> 60 Years	29	36.71%
No	Work		
1	Retired	43	54.43%
2	Government employees	20	25.32%
3	Private	8	10.13%
4	Other	8	10.13%
No	Sports Activities of the Week	Frequency	Percentage
1	One time	24	30.38%
2	Twice	21	26.58%
3	Three times	18	22.78%
4	More Than Three Times	16	20.25%
		79	100.00%

Based on Table 1. The characteristics of seminar participants are that most of them are women with the most education being 49 years old, aged > 60 years old and working as retirees. The following is the implementation of public seminar activities in the context of preventing the risk of hearing loss for the elderly in RW 7, Wonokromo Village.

Figure 1 Flyer for Public Seminar Activities in the Context of Preventing the Risk of Hearing Loss for the Elderly in RW 7, Wonokromo Village

The seminar began with the creation of an invitation flyer, the method used was a lecture and discussion system. Some presentation of material as asked in the Pretest and Posttest. To complete the teaching aids, brochures were made. Brochures are a printing tool that is still used to provide education to the public. Brochures are one of the media used to convey information. Brochures are also defined as paper documents which are usually used for advertising or promotions.

Figure 2 Brochure for Hearing Loss in the Elderly for Hearing Loss Examination.

A method called audiometry is used to determine a person's hearing level. In the medical and medical field, audiometric examination can not only measure hearing acuity but can also determine the location of anatomical damage that causes hearing loss. Audiometry is an examination of hearing ability that measures hearing level and the ability to differentiate sound intensity (Silvanaputri et al., 2019).

Figure 3 Participants in the Elderly Seminar at RW 07, Wonokromo District

Figure 3 shows the seminar participants who looked enthusiastic and enthusiastic about participating in the lay seminar on hearing loss. Some of the material presented by the presenters was related to several things related to hearing loss, as follows. Neurological deafness which is caused by the process of degeneration (ageing) of the hearing organs due to increasing age is called presbycusis (Aprianta, Kuswardhani and Aryana, 2020). This process is heavy on both sides of the ear and occurs gradually. In the case of presbycusis, hearing loss is usually caused by a combination of the following: decreased elasticity of the eardrum, decreased elasticity of cochlear hair cells, decreased flexibility of the basilar membrane, decreased neurons in the auditory pathway, changes in the brainstem system and auditory centre, decreased auditory memory and decreased processing speed in the brain's hearing centre (central auditory cortex).

Risk factors for presbycusis include hypertension, diabetes mellitus, high cholesterol, hyperlipidemia, hypertriglyceridemia, smoking, and a history of noise exposure. Men are more at risk than women because they work in noisier places. Installation of hearing aids (ABD) that suit your needs is part of the rehabilitation effort. The purpose of installing ABD is to amplify the sound around the user.

By carrying out promotive, preventive, curative and rehabilitative measures, the morbidity rate of presbycusis can be reduced. To achieve this goal, society itself, non-governmental organizations, and government, especially health institutions, must work together.

Cadres must involve the community actively and innovatively, especially promotionally. Main health lines, such as Community Health Centers and Health Centers, play an important role in promotive, curative and early detection of presbycusis complications. Increasing knowledge and skills for diagnosing presbycusis is also needed (Hamdalah and Muntasirin, 2019).

Patients over 60 years of age or those undergoing routine physical examinations undergo hearing screening. To identify presbycusis, the question given is "Are there any problems with hearing" Ten items from the Hearing Inhibition Inventory for Short Elderly (HHIE-S) are very effective (Heryana, Mahadewi and Ayuba, 2019). Decreased hearing in both ears is the main symptom of presbycusis. Patients rarely complain about this condition in the early stages. However, sufferers are usually less aware of this disorder than family members and friends. Patients also often experience other early symptoms, such as difficulty hearing or understanding conversations in certain situations, such as in a noisy room. Some other symptoms commonly experienced by patients are also included.

Hearing problems in older people can sometimes cause psychological and emotional problems for the sufferer. Parents will have difficulty communicating if they have difficulty understanding conversations, especially those who always need help to carry out daily activities. So, if you experience the complaints mentioned, immediately go to an ENT doctor to check your hearing function (Rantung, Palandeng and Mengko, 2018a).

Table 3. Results of Pre-Test and Post-Test for Lay Seminar Participants in the Context of Preventing the Risk of Hearing Loss for the Elderly in RW 7, Wonokromo Subdistrict, Surabaya City

No	Position	Pretest	Post Test
1	Definition of Hearing Loss	65.3%	82.8%
2	Causes of Hearing Loss	62.9%	81.9%
3	Hearing Loss Treatment	65.9%	83.5%
4	Diagnosis and Treatment of Hearing Loss	68.6%	86.9%
5	The Importance of Ear Examination	67.2%	87.8%
6	Social interaction	64.8%	85.5%
7	Loss of Hearing Function	62.2%	86.8%
8	Barriers to social activities	65.9%	83.9%
9	Symptoms of Hearing Loss	61.9%	82.9%
10	Hearing Treatment in the Elderly	66.4%	81.9%
		65.1%	84.4%

Table 3 shows that the results of the pretest and posttest showed an increase of 19.3%. The following are the statistical results of the Paired Samples Correlation test.

Table 4 Results of Paired Samples Correlation of Lay Seminar Participants in the Context of Preventing the Risk of Hearing Loss in the Elderly in RW 7, Wonokromo Subdistrict, Surabaya City

No	Paired Samples Correlation	Mark
1	*Pre Test*	64.5
2	*Post Test*	83.6
3	*Correlation*	0.3741
4	*Sig*	0.2868
4	*Sig (2-Tailed)*	0,000

Correlation explains the correlation or relationship between before and after the test, there is a significant difference between the Pretest and post-test.

CONCLUSION

This lay seminar was very beneficial for seminar participants. The characteristics of the seminar participants were that most of them were women with the most education, 49 years old, aged > 60 years and working as retirees. The results of the pretest and posttest showed an increase of 19.3% from the statistical test, there was a significant difference between the pretest and posttest.

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