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The Relationship Between Tinnitus Handicap Inventory Score And Degree Of Hearing Impairment In Tinnitus Patients

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ABSTRACT : Tinnitus is a perception of sound without an external source, with sounds like ringing, humming, hissing, or roaring in one or both ears. Noise exposure increases the incidence of tinnitus, which can decrease a person's quality of life. Tinnitus research is still limited in Indonesia. The objective is to determine the relationship between the Tinnitus Handicap Inventory score and the degree of hearing loss in tinnitus patients. Methods: This research was conducted using an analytical observational method with a cross-sectional approach on all patients with hearing loss aged 18 to 60 years in the Ear, Nose, Throat, Head and Neck Department at RSUD Dr. Soetomo. Fundamental data in age, gender, type of tinnitus, duration of complaint, location of tinnitus, hearing status, and comorbidities were obtained from medical records. The patient's quality of life was assessed using the Indonesian version of the THI questionnaire instrument. Data analysis used the Spearman Correlation test. Results: The study revealed that 100% of patients experienced non-pulsatile tinnitus, a significant observation. The relationship between the THI score and the degree of hearing loss, a crucial aspect of our investigation, was found to have a significance value of 0.043, indicating a noteworthy correlation. Conclusion: Our study establishes a clear correlation between the Tinnitus Handicap Inventory score and the degree of hearing loss in tinnitus patients. Importantly, we found that the higher the THI score, the greater the hearing loss. This significant finding contributes to our understanding of tinnitus and its impact on patient's quality of life.

Keywords: Tinnitus, THI questionnaire, degree of hearing loss, quality of life, Health Risk

I. INTRODUCTION

Industrialization and modernization, while bringing about significant advancements, have also negatively impacted the environment and health. Noise generated by industrial processes and modern activities significantly contributes to health problems, particularly hearing problems. The detrimental effects of noise on health are well-documented in the short and long term. This underscores the urgent need for effective noise control measures and heightened awareness about the potential health risks of noise exposure [1].Noise is all unwanted or unpleasant sounds and harmful acoustic air vibrations perceived by the ear or other parts of the human body. It is part of sound pollution, a problem in various countries worldwide, including Indonesia [2]. The noise exposure level varies depending on gender, occupation, place of residence, use of earphones, and short-term exposure to noise (e.g., concerts, explosions, or firearms) [3,4].Exposure to noise for a certain period can cause various health problems, including hearing loss, which causes trauma to the cochlea. There is an increasing incidence of tinnitus caused by temporary and permanent noise exposure. The incidence of tinnitus can be related to exposure to noise at work or daily noise [5]. A large-scale study in South Korea by Kim et al. (2015) showed a significant relationship between noise exposure and the incidence of tinnitus. Workers with higher levels of noise exposure have a higher prevalence of tinnitus (24%) than the general population (14%) [6].

Tinnitus is a perception of sound without an external source with a duration of about 5 minutes and occurs more than once per week, with the perception of sounds that sound like ringing, humming, hissing, or roaring in one or both ears. The perception of sounds that are heard can originate from inside the head. The examiner can listen to it, referred to as objective tinnitus, or originates from outside the head and can only be heard by the patient, called subjective tinnitus [7]. The general prevalence of tinnitus in the world ranges from 10-25% in the adult population and increases with age. However, recent data shows an increase in the incidence of tinnitus at younger ages [7]. Adequate data regarding the incidence of tinnitus in Indonesia still needs to be obtained. Research conducted at Airlangga University Hospital, Surabaya, from 2016 to 2018, obtained data on the number of 420 tinnitus patients [8].

Persistent tinnitus can affect the quality of life. Patients with tinnitus will experience sleep disturbances, difficulty concentrating, problems socializing, and difficulty hearing conversations. Tinnitus can also increase the risk of anxiety disorders and depressive symptoms [9]. Therapy for tinnitus patients usually involves reducing the impact of tinnitus on the patient and counseling the patient [10]. Assessing the patient's quality of life is helpful as an evaluation to compare the beginning and end of therapy, one of which is using a questionnaire. Questionnaires as an evaluation tool can reveal mental problems that require consultation with a mental health service provider [11]. The Tinnitus Handicap Inventory (THI) is an assessment tool widely used in medical practice and is sensitive to changes in tinnitus severity after treatment [7]. There are 25 questions and three main items for assessment of the Tinnitus Handicap Inventory: functional reactions to tinnitus, emotional reactions, and catastrophic or dangerous reactions [12,13]. The tinnitus severity index is a global score assessment between 0 and 100, indicating a symptom severity scale ranging from mild to severe [13].Based on the description above, research regarding the incidence of tinnitus still needs to be improved, especially in Indonesia. This research will be carried out at one of the central referral hospitals in Indonesia, namely the Dr. Soetomo General Academic Hospital, Surabaya. Hopefully, this research can further examine the relationship between the THI score and the degree of hearing loss in tinnitus patients in the Outpatient Unit of the Neurotology Division of Dr. RSUD. Soetomo.

II. METHODS

This research uses a cross-sectional analytical observational method (cross-sectional). The population in this study were all tinnitus patients aged 18 – 60 years at RSUD Dr. Soetomo. The research sample was taken consecutively using a non-probability sampling method. A total of 47 samples were needed for the research. The instruments used in this research were medical records from audiometric examinations and the Tinnitus Handicap Inventory questionnaire, which had been adapted into Indonesian. The data collected in the data collection sheet will be arranged in data tabulation and analyzed descriptively and Analytically. Data analysis in this study used the Statistical Package for the Social Sciences (SPSS) version 25.0 application. Independent and dependent variables were analyzed using the Spearman Correlation test. The research was conducted in the Outpatient Unit of the Neurotology Division of RSUD Dr. Soetomo from November 2022 to September 2023 after obtaining ethical eligibility on October 31, 2022, with number 1110/LOE/301.4.2/X/2022.

III. RESULTS

The sample studied consisted of 47 respondents diagnosed as tinnitus patients between 18 and 60. The following are the results of the descriptive analysis of respondents, including age, gender, type of tinnitus, duration of complaint, location of tinnitus, hearing status, comorbidities, degree of hearing loss, and degree of severity based on the total score of the Tinnitus Handicap Inventory.The most respondents in the 41-50 year age group were 17 people (36.2%), ten people aged 21-30 years (21.3%) and the rest aged 31-40 years, 51- 60 years old, and 18-21 years old respectively nine people (19.1%), nine people (19.1%) and two people (4.3%). The mean patient age was 40.40 years, and the standard deviation was 11.38. Based on gender characteristics, the majority of respondents were female, namely 26 people (55.3%), and the remaining 21 people were male (44.7%). The ratio between female and male patients is a 1.2: 1 sample (Table 1).

Based on the characteristics of the type of tinnitus, most respondents fell into the ringing/buzzing category, namely 43 patients (91.6%). From the types of tinnitus sound perception, it can be concluded that 47 patients (100.0%) were of the non-pulsatile tinnitus type (Table 2). Research data shows that there are more acute patients than chronic patients. There were 32 acute patients with complaints < 6 months (68.1%). There were 15 chronic patients with complaints > 6 months (31.9%). The ratio between acute patients and chronic patients is 2.1: 1 sample. Based on the characteristics of the tinnitus location, 36 patients (76.6%) complained of unilateral tinnitus, and 11 patients (23.4%) complained of bilateral tinnitus (Table 3).Based on the history of comorbidities, the most significant number of respondents were patients who did not have comorbidities,

namely 42 people (89.3%). Two patients (4.3%) had a history of diabetes mellitus. Two patients (4.3%) had a history of hypertension. One person (2.1%) had a history of more than one comorbidity, namely diabetes mellitus with hypertension (Table 4). Most of the respondents had a moderate degree of hearing loss (41-60 dB), namely 16 patients (34%), and at least had a very severe degree of hearing loss (≥ 81 dB), namely three patients (6.4%). From the distribution data, the results showed that there were 15 patients with normal hearing (≤ 25 dB) and 32 patients with hearing impairment (≥ 25 dB) (Table 5).

Based on the degree of severity determined from the Tinnitus Handicap Inventory value, most respondents were patients in the severe category, namely 15 people (31.9%). In contrast, the fewest respondents were patients in the non-severe and dangerous categories, respectively. as many as four people (8.5%) (Table 6). Of the 15 respondents included in the no disturbance category, most were in the mild THI severity category, namely six people (40.0%). Of the seven in the mild disturbance category, the majority were included. In the moderate-severe THI severity categories, three people (42.9%) of the 16 respondents who were included in the moderate disorder category, most of them fell into the moderate and severe THI severity categories, namely five people each (31.3%), of the six respondents who Were included in the category of severe disorders, most of them fell into the category of moderate and severe THI severity, two people each (33.3%) and the three respondents who Were included in the category of very severe disorders Most of them fell into the severe THI severity category, namely two people (66.7%) (Table 7).Based on the results of Spearman correlation analysis, a significance value of 0.043 was obtained. If the sig value. 2-tailed < 0.05, it can be concluded that there is a significant correlation between the total Tinnitus Handicap Inventory score and the degree of hearing loss. The correlation coefficient figure shows a positive value, 0.296, where the relationship between the two variables is in the same direction. Thus, it can be interpreted that the greater the Tinnitus Handicap Inventory score, the greater the degree of hearing loss. This also supports the importance of a comprehensive evaluation of individuals experiencing tinnitus to help provide the best treatment (Table 8).

IV. DISCUSSIONS

Tinnitus is a perception of sound in the head and/or from the ears that has no source outside the body [14]. Persistent tinnitus can also affect a person's quality of life, such as experiencing sleep disturbances, anxiety disorders, difficulty concentrating, and difficulty listening to conversations [9]. The Tinnitus Handicap Inventory is a standardized questionnaire available for use in clinical settings and a research instrument as a reference for assessing the severity of tinnitus and its impact on a person's life in terms of communication, cognition, emotions, sleep patterns, and quality of life. The questionnaire inventory is also the most widely used and sensitive assessment tool for changes in tinnitus severity after treatment evaluation[7].

This study has inclusion criteria, namely having an age limit, namely respondents aged 18-60 years. Children under 18 have varying levels of understanding and cognition for each individual. Language understanding and the response to one question can differ for each individual [15]. Elderly patients, namely those over 60 years, have a relatively high risk of hearing loss and have a relatively low level of cooperation [16]. The average age of patients is around 40.40 years. This is evidenced by the general prevalence of tinnitus worldwide, ranging from 10-25% in the adult population and increasing with age [7]. The results of this study are also based on research that provides data on the incidence of tinnitus at an average age of 43.48 years [17].Based on research conducted by Oiticica et al. (2015) shows the same results, namely the number of female patients (53%) is higher than male patients (47%) with a ratio of 1.1:1. Psychological disorders (anxiety, depression, and somatoform disorders) occur more frequently in women than men [18,19]. Based on research by Henry et al. (2005), it is said that women tend to have worse emotional reactions to perceived tinnitus symptoms compared to men. So, regarding the incidence of tinnitus, women have a lower quality of life. The onset of tinnitus can also be based on emotional factors and stress. Any combination of auditory and somatosensory input that changes simultaneously with abnormal activity in central nervous structures can be at risk of causing tinnitus [20]. It can be concluded that hearing loss can be associated with exposure to noise in the surrounding environment. Primaditha et al. (2012) concluded that no relationship was found between increasing THI scores and female or male gender. So, the underlying cause of hearing loss is exposure to noise in the surrounding environment [21].Tinnitus can be categorized into non-pulsatile tinnitus (usually subjective) and pulsatile tinnitus (often objective). Subjective non-pulsatile tinnitus is the most common tinnitus condition. It can only be heard by the patient, referring to tinnitus that does not have a suitable sound source and is caused by disorders of the auditory nervous system [22,23]. Meanwhile, objective pulsatile tinnitus is less common. It is caused by biological activity in the body, for example, sounds produced by middle ear blood turbulence, pulse, and muscle contractions transmitted To the ear [23].

Infections and drugs can cause the causes of subjective, non-pulsatile tinnitus. Subjective tinnitus has a variety of high-frequency sounds, such as cricket notes, ringing, hissing, or roaring in one or both ears [7]. The results of this study are also similar to research conducted by Nugroho et al. (2015), where all 31 patients (100%) had subjective non-pulsatile tinnitus [16].Research data shows that there are more acute patients (< 6 months) than chronic patients (> six months). The ratio between acute patients and chronic patients is 2.1: 1 sample. Based on The American Academy of Otolaryngology-Head and Neck Surgery Foundation (AAO-HNSF) guidelines, tinnitus with a complaint duration of fewer than six months is generally more unstable. Someone with tinnitus that has bothered them for more than six months will need more treatment than tinnitus that bothered them for less than six months [14].

Based on research conducted by Vielsmeier et al. (2020) regarding the development of acute to chronic tinnitus patients, it was found that few people recovered from acute tinnitus. However, this cannot be generalized to everyone with similar tinnitus symptoms. Patients often report that their hearing has improved, but the tinnitus persists. Thus, acute tinnitus varies greatly, with as many as 20% of people recovering entirely within six months. Moreover, there have been positive developments in reducing the buzzing feeling over time, even though the sound remains the same. This means immediate intervention is needed so that acute tinnitus does not turn into chronic tinnitus over time [24].Subjective tinnitus is known to cause a variety of high-frequency sounds, such as cricket notes, ringing, hissing, or roaring in one or both ears [7]. These results are also similar to those of research conducted by Nugroho et al. (2015), with the most significant number of respondents being patients with unilateral tinnitus, namely 25 patients (80.6%) [16].

Subjective tinnitus has no visible signs, and the patient does not even feel the hearing loss. Hearing loss is also a common symptom of tinnitus, so sometimes, tinnitus patients complain of hearing loss or may not have hearing problems. Not all hearing loss will cause tinnitus; likewise, not all tinnitus sufferers experience hearing loss [25].Tinnitus can occur in all ages, but the cause can have predisposing factors related to age and gender. For example, tinnitus due to vascular disease tends to appear in young women. In addition, there are cases of tinnitus caused by neurological conditions generally occurring at a young age. Not only that, but tinnitus is usually also related to a history of head injury, exposure to loud noise, acoustic trauma, use of drugs that can damage hearing (ototoxic drugs), history of ear infections, and history of ear surgery. During the examination, it is also essential to ask about symptoms and signs of audiovestibular disorders, such as tinnitus, hearing loss, vertigo, and balance problems [26]. However, it should be remembered that the pathophysiology of various forms of tinnitus is not entirely understood because it can be related to the presence of various influencing factors. However, tinnitus patients, usually accompanied by comorbidities, tend to have a poorer quality of life than those without comorbidities [20,26].

The results of this study are also the results of research conducted by Nugroho et al. (2015), which stated that the frequency of subjective tinnitus is related to the patient's quality of life. Research conducted by Andersson (2003) also suggests a significant relationship between the severity of tinnitus and disturbances in patient quality and degree of tinnitus. These results demonstrate the importance of recognizing that tinnitus is not just a problem of sound Perception but can also significantly impact an individual's quality of life. The relationship between THI scores and the degree of hearing loss suggests that factors such as the severity of the hearing impairment may worsen the perception and impact of tinnitus. Therefore, an integrated approach to managing tinnitus and hearing loss must be considered for the patient's benefit [16].The general prevalence of tinnitus in the world ranges from 10-25% in the adult population and increases with age. However, recent data shows that an increase in the incidence of tinnitus can also occur at younger ages [7]. There is not yet adequate data regarding the incidence of tinnitus in Indonesia. Therapy for tinnitus patients usually involves reducing the impact of tinnitus on the patient and counseling the patient [27]. Sound therapy can also reduce the intensity of nerve activity related to tinnitus [28]. The lack of effective treatment for tinnitus patients means that tinnitus assessment relies heavily on questionnaires and education [29].

A large-scale study in South Korea by Kim et al. (2015) showed a significant relationship between noise exposure and the incidence of tinnitus [30]. Workers with higher levels of noise exposure have a higher prevalence of tinnitus (24%) than the general population (14%) [6]. Since tinnitus may increase and occur in all age groups, patients must also be given intervention to change their lifestyle by reducing exposure to surrounding noise. Humans can experience immediate or delayed hearing damage due to excessive acoustic exposure, and direct damage can be temporary or permanent [31].

V. CONCLUSIONS

There is a relationship between the THI score and the degree of hearing loss. Thus, it can be interpreted that the greater the THI score, the greater the degree of hearing loss.

Conflict of Interest : No conflicts were found in the text

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REFERENCES

1. Tan, D.N., 2021. The effects of noise pollution on the citizens in Ho Chi Minh City. *E3S Web Conf*. 234, 1–4.
2. Melyani, V., Purnami, N., 2018. Noise exposure in vocational school. *J. Phys. Conf. Ser.* 1075.
3. Flamme, G.A., Stephenson, M.R., Deiters, K., Tatro, A., Van Gessel, D., Geda, K., Wyllys, K., McGregor, K., 2012. Typical noise exposure in daily life. *Int. J. Audiol.* 51.
4. Kim, H.J., Lee, H.J., An, S.Y., Sim, S., Park, B., Kim, S.W., Lee, J.S., Hong, S.K., Choi, H.G., 2015. Analysis of the prevalence and associated risk factors of Tinnitus in adults. *PLoS One* 10, 1–15
5. Stansfeld, S., Clark, C., 2015. Health Effects of Noise Exposure in Children. *Curr. Environ. Heal. reports 2*, 171–178
6. Le, T.N., Straatman, L. V., Lea, J., Westerberg, B., 2017. Current insights in noise-induced hearing loss: a literature review of the underlying mechanism, pathophysiology, asymmetry, and management options. *J. Otolaryngol. - Head Neck Surg*. 46, 1–15.
7. Bauer, C.A., 2018. Tinnitus. *N. Engl. J. Med. 378*, 1234–1231.
8. Desihartati, B.D., Purnami, N., 2022. the Diagnosis and Assessment of the Quality of Life in Tinnitus Patients. a Literature Review. *Maj. Biomorfolog*i 32, 35. https://doi.org/10.20473/mbiom.v32i1.2022.35-45
9. McCormack, A., Edmondson-Jones, M., Somerset, S., Hall, D., 2016. A systematic review of the reporting of tinnitus prevalence and severity. *Hear. Res. 337*, 70–79.
10. Jasper, K., Weise, C., Conrad, I., Andersson, G., Hiller, W. and Kleinstaeuber, M., 2014. Internet-based guided self-help versus group cognitive behavioral therapy for chronic tinnitus: a randomized controlled trial. *Psychotherapy and psychosomatics*, *83*(4), pp.234-246.
11. Ukaegbe, O.C., Orji, F.T., Ezeanolue, B.C., Akpeh, J.O. and Okorafor, I.A., 2017. Tinnitus and its effect on the quality of life of sufferers: a Nigerian cohort study. *Otolaryngology–Head and Neck Surgery*, *157*(4), pp.690-695.
12. Heller, A.J., 2003. Classification and epidemiology of tinnitus. *Otolaryngol Clin Nam,* 36, pp.239-48.
13. Zeman, F., Koller, M., Figueiredo, R., Aazevedo, A., Rates, M., Coelho, C. 2011. Tinnitus handicap inventory for evaluating treatment effects: which changes are clinically relevant. *Otolaryngology - Head and Neck Surgery*, 145 (2): 282-7.
14. Henry, J.A., Reavis, K.M., Griest, S.E., Thielman, E.J., Theodoroff, S.M., Grush, L.D., Carlson, K.F., 2020. Tinnitus: An Epidemiologic Perspective. Otolaryngol. *Clin. North* Am. 53, 481–499.
15. Smith, H. et al. (2019) 'A scoping review to catalog tinnitus problems in children,' International Journal of Pediatric Otorhinolaryngology. Elsevier,122(Oktober 2018), pp. 141-151.
16. Nugroho, D. A., Muyassaroh, M., & Naftali, Z. (2015). Hubungan frekuensi dan intensitas tinitus subjektif dengan kualitas hidup pasien. *Oto Rhino Laryngologica Indonesiana (ORLI)*, *45*(1), 19-26.
17. Purnami, N. et al. (2022). 'Kesepadanan antara THI dengan TPFQ dalam Bahasa Indonesia', Correlation between Tinnitus Handicap Inventory with Tinnitus Primary Function Questionnaire in Indonesian language, 52(2), ORLI 2022 Volume 52 No.2: pp.132-8
18. Oiticica, J., & Bittar, R. S. M. (2015). Tinnitus prevalence in the city of São Paulo. Brazilian journal of otorhinolaryngology, 81, 167-176.
19. Malakouti, S. K., Mahmoudian, M. N. S., Alifattahi, N., & Salehi, M. (2011). Comorbidity of chronic tinnitus and mental disorders. The International Tinnitus Journal, 16(2), 118-122.
20. Langguth, B., Kreuzer, P.M., Kleinjung, T., De Ridder, D., 2013. Tinnitus: Causes and clinical management. *Lancet Neurol.* 12, 920–930
21. Primaditha, D., Kadriyan, H., & Widiastuti, I. A. E. (2012). Faktor-faktor yang Mempengaruhi Kualitas Hidup Pasien Tinitus di RSUD Provinsi NTB. Jurnal Kedokteran, 1(1).
22. Wu, V., Cooke, B., Eitutis, S., Simpson, M. T., & Beyea, J. A. (2018). Approach to tinnitus management. Canadian Family Physician, 64(7), 491-495.
23. Tang, D., Li, H., Chen, L., 2019. Advances in Understanding, Diagnosis, and Treatment of Tinnitus. *Adv. Exp. Med. Biol.* 1130, 109–128

24. Vielsmeier, V., Santiago Stiel, R., Kwok, P., Langguth, B., & Schecklmann, M. (2020). From acute to chronic tinnitus: pilot data on predictors and progression. Frontiers in Neurology, 11, 997.
25. Anastasiadou, S., Khalili, Y. Al, 2022. Hearing loss., *StatPearls.* StatPearls Publishing.
26. Zachreini, I., & Rianda, A. D. (2023). Tinitus Pada Lansia. Jurnal Anestesi, 1(1), 09-17.
27. Jasper, K., Weise, C., Conrad, I., Andersson, G., Hiller, W. and Kleinstaeuber, M., 2014. Internet-based guided self-help versus group cognitive behavioral therapy for chronic tinnitus: a randomized controlled trial. *Psychotherapy and psychosomatics*, *83*(4), pp.234-246.
28. Fernández, M., Cuesta, M., Sanz, R., & Cobo, P. (2022). Comparison of Tinnitus Handicap Inventory and Tinnitus Functional Index as Treatment Outcomes. Audiology research, 13(1), 23–31.
29. Widjaja, G., & Gunawan, V. L. (2023). Diagnosis dan Tata Laksana Tinitus. Cermin Dunia Kedokteran, 50(8), 414-418.
30. Kim, H.J., Lee, H.J., An, S.Y., Sim, S., Park, B., Kim, S.W., Lee, J.S., Hong, S.K., Choi, H.G., 2015. Analysis of the prevalence and associated risk factors of Tinnitus in adults. *PLoS One* 10, 1–15.
31. Rahmawati, R., Purnami, N., Cahyani, M.I., 2021. Analysis of Compliance of Ear Protector Usage on the Prevention of Noise Induce Hearing Loss At Sterilization Installation. *J. Community Med. Public Heal. Res. 2*, 1.

Table 1. Frequency Distribution of Research Subjects Based on Age and Sex

Variable	Frequency	Percentage (%)
Age		
18-21 years old	2	4,3
21-30 years old	10	21,3
31-40 years old	9	19,1
41-50 years old	17	36,2
51-60 years old	9	19,1
Total	47	100,0
Sex		
Male	21	44,7
Female	26	55,3
Total	47	100,0

Table 2. Frequency Distribution of Research Subjects Based on Tinnitus Type

Type of Tinnitus	Frequency	Percentage (%)
Tinnitus *Non-pulsatile*		
Ringing / Buzzing	43	91,6
Ringing dan Grebek	2	4,2
Roaring	1	2,1
Grebek grebek	1	2,1
Tinnitus *Pulsatile*	0	0
Total	47	100,0

Table 3. Frequency Distribution of Research Subjects Based on Complaint Length and Location

Variable	Frequency	Percentage (%)
Length of Complaint		
< 6 months (Acut)	32	68,1
> 6 months (Chronic)	15	31,9
Total	47	100,0
Location of Tinnitus		
Dextra	18	38,3
Bilateral	11	23,4
Sinistra	18	38,3
Total	47	100,0

Table 4. Frequency Distribution of Research Subjects Based on Concomitant Diseases

Comorbidities	Frequency	Percentage (%)
Does not have comorbidities	42	89,3
Diabetes Mellitus + Hypertension	1	2,1
Diabetes mellitus	2	4,3
Hypertension	2	4,3
Total	47	100,0

Table 5. Frequency Distribution of Research Subjects Based on Degree of Hearing Loss

Degree of Hearing Loss	Frequency	Percentage (%)	Mean	Standard deviation
Normal (≤ 25 dB)	15	31,9	16,4	4,8
Mild hearing (26-40 dB)	7	14,9	33,2	5,2
Moderate (41-60 dB)	16	34	50,5	6
Moderate-Severe (61-80 dB)	6	12,8	70,4	6,3
Profound (≥ 81 dB)	3	6,4	90,4	2,9
Total	47	100,0	42,1	23,1

Table 6. Frequency Distribution of Subjects Based on Degree of Severity of THI Score

Skor THI	Frequency	Percentage (%)	Mean	Std
Slight (0-16)	4	8,5	12,5	1,9
Mild (18-36)	11	23,4	27,4	6,6
Moderate (38-56)	13	27,7	47,8	6,1
Severe (58-76)	15	31,9	66,3	5,4
Catastrophic (78-100)	4	8,5	90,5	7,2
Total	47	100,0	49,6	22,5

Tabel 7. Tabulasi Silang

Degree of Hearing Loss	**Derajat Skor Tinnitus Handicap Inventory**					
	Slight	**Mild**	**Moderate**	**Severe**	**Catastrophic**	**Total**
Normal	3 (20%)	6 (40%)	2 (13,3%)	3 (20%)	1 (6,7%)	15 (100%)
Mild	0 (0%)	1 (14,3%)	3 (42,9%)	3 (42,9%)	0 (0%)	7 (100%)
Moderate	1 (6,3%)	3 (18,8%)	5 (31,3%)	5 (31,3%)	2 (12,5%)	16 (100%)
Severe	0 (0%)	1 (16,7%)	2 (33,3%)	2 (33,3%)	1 (16,7%)	6 (100%)
Profound	0 (0%)	0 (0%)	1 (33,3%)	2 (66,7%)	0 (0%)	3 (100%)
Total	4 (8,5%)	11 (23,4%)	13 (27,7%)	15 (31,9%)	4 (8,5%)	47 (100%)

Table 8. Analysis Results

Spearman Rho	**Degree of THI Score with Degree of Hearing Loss**	**Sig. 2-tailed**	**α**	**C**
		0.043	0.05	0.296

*Spearman rho correlation test: sig. 2-tailed = significance; α = value; C = correlation