

Influencing Factors the Behavior of Housewives Living Near the Railroad Tracks in Preventing Hearing Loss

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ABSTRACT

Background: The noise generated by the train can affecting the settlement along railway lines negatively based on previous studies, especially affecting the housewives. Preventing hearing disorders from the train's noise was very important to be done. This study aimed to find the dominant factor and analyzed the factors affecting the behaviour of hearing disorders prevention in settlement along railway lines of Surabaya. **Methods:** The design of this study was descriptive analytics with a cross-sectional approach. Data were collected with the questionnaire and analyzed using spearman's rho test and ordinal regression with the significance level was < 0.05. **Results and analysis:** There was a correlation between knowledge (p=0.001), attitude (p=0.001), and economic status (p=0.001) with the behavior of hearing disorders prevention. In addition to that, the dominant factor affecting behavior of hearing disorders prevention is knowledge (p=0.001) and attitudes (p=0.01). **Conclusions:** Hearing loss prevention behavior in people who live near railroad tracks is greatly influenced by knowledge, attitudes, and economic status. The better the respondent's knowledge, the more information they get, the higher the effort in preventing hearing loss.

Keywords: knowledge, attitudes, behavior, train's noise, hearing loss prevention.

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INTRODUCTION

Surabaya is one of the metropolitan cities, the large number of residents in the city of Surabaya affects the narrow living space so that cheap land is often sought to live in [1]. Many settlements in the Surabaya area are found in locations that are very close to the railroad tracks with a distance of less than 15 meters. The distance between the house and the railroad which has been determined by PT. KAI is 15 meters. The impact on residents around the railroad tracks is air pollution, noise and vibrations caused by a high-speed train [2]. Health problems due to the impact of noise on railroad communities which often occur due to noise pollution in the environment due to transportation noise continue to grow and have become a serious problem in many countries resulting in negative health impacts.

Data from the World Health Organization (WHO) in 2013 stated that 360 million people or 5.2% worldwide have hearing problems. This condition mostly occurs in low and middle income countries including Indonesia, this figure continues to increase due to sub-optimal access to services (Ministry of Health of the Republic of Indonesia, 2018). Noise-induced hearing loss (NIHL) is a hearing loss in the form of decreased function of the hearing sense. Puskesmas Surabaya recorded 368 data on the occurrence of noise-induced hearing loss (NIHL) [3].

Knowledge, attitudes, and economics greatly influence a person to live on the edge of the railroad tracks, so that many problems arise, both health and social. Knowledge is defined as material that has been previously studied, so that it can shape one's behavior, while attitude is a person's closed reaction or response to a stimulus or object [4]. The role of a housewife is very important for the family in addition to educating children, and taking care of housework, the role of the wife also always supports the husband and provides the best for his family. Housewives have participation in making decisions taken by their husbands, in choosing the health behaviors they take, so that the family is protected from unwanted diseases [5].

A preliminary study conducted by researchers on March 16, 2019 in the residential area of the Ngagel Rejo railway, Surabaya City. The results of this preliminary study, there are approximately 100 active trains that pass per day. There were 16 respondents aged between 29-45 years with a length of time living in the Ngagel Rejo area of 3-25 years, found that 10 people did not prevent hearing loss such as using barriers, closing windows and doors when the train was passing, and 8 people did not know the impact of noise on health, and 14 people had never had a hearing check at the nearest service center. The factors causing such prevention are economic factors and ignorance of the environment and health. Knowledge and factors possessed by each individual also affect to remain in the railroad area, this is a problem that will arise because frequent noise exposure can cause damage to sensory cells resulting in hearing loss [6].

Christi's research shows that there is a hearing loss in residents along the railway in the Karangrejo area, Surabaya [7]. In Krisnanti's research, it was found that there was a link between train noise and hearing loss for housewives in Madiun [8]. The awareness of the prevention of noise disturbances is very lacking, so researchers want to investigate the factors that influence the behavior of residents along railroad tracks regarding the prevention of hearing loss based on the theory of Lawrence Green. The concept of Lawrence Green 1991 is to analyze human behavior from the level of health which is influenced by two factors, namely behavior causes and non-behavior causes in the form of predisposing factors, supporting factors, and driving factors [9].

Behavioral factors to prevent hearing loss in residents on the edge of the railroad tracks are very important to avoid health problems caused by train noise. If you know and understand what precautions you can take, the people living on the edge of the railroad will increase hearing prevention and support from the government to carry out hearing screening. This study aims to analyze the behavioral factors of hearing loss prevention on the outskirts of the railroad tracks in the Surabaya area.

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MATERIALS AND METHODS

This descriptive cross-sectional study was conducted between June- July 2019 on 109 respondents. The population included housewives who live near the railway line in Surabaya. The data collection tool was a questionnaire on sociodemographic characteristics. The sociodemographic characteristics question asked about age, education, economic status, and distance between the house and the railroad tracks.

The questionnaires were developed by research with modification from Suryani (2016), Alyüz *et al.*, 2015, Lim *et al.*, 2006. Whilst preparing the questionnaire contents, the researchers were assisted by two experienced nurses in the field of hearing and auditory nursing.

Spearman's rho values were used to determine the correlation of knowledge, attitude, length of stay, long exposure, and economic status with hearing loss prevention behaviors. Ordinal regression was used to know the most influencing factors. Descriptive statistics including frequencies, percentages were used to describe sociodemographic characteristics, hearing characteristics, knowledge, attitude, length of stay, and long exposure. In all statistical analyses, a *P*-value < 0.05 was considered Table 1 Sociodemographic characteristics of participants (N=109)

| Characteristic | N | (%) |
|--|-----|--------|
| Education | | |
| Elementary school | 36 | (33) |
| Junior high school | 13 | (11.9) |
| Senior High school | 56 | (51.4) |
| High Education | 4 | (3.7) |
| Age | | |
| 17-25 years | 9 | (8.3) |
| 26-35 years | 18 | (16.5) |
| 36-45 years | 36 | (33) |
| 46-55 years | 25 | (22.9) |
| 56-65 years | 21 | (19.3) |
| Distance from the house by rail | | |
| < 15 meters | 100 | 100 |
| > 15 meters | 0 | 0 |
| Economic status | | |
| Low | 72 | (66) |
| High | 37 | (34) |

significant. All data were analyzed using the SPSS software. This study has passed the ethical clearance by the Ethics Committee of the Faculty of Nursing, Airlangga University with code number No. 1443-KEPK

RESULT

Table 1, respectively, shows that the result of a descriptive analysis of the variables in which the sociodemographic characteristics of the participants are included in the study. Most of respondents (n= 72, 66%) are in low economic status. Half of the respondents (n=56, 51.4%) are high school graduates. The ages of the respondents varied, with the most ranges of 36-45 years (n=36, 33%).

Table 2, shows the result of a descriptive analysis of the variables regarding the hearing characteristic of the participants. Almost all said there was no history of hearing loss (n=95, 87.2%), but half of them felt a hearing loss such as hurts or ringing in the ears (n=57, 53.3%). Table 3 describes the result of the descriptive analysis of the variables and the correlation between knowledge, attitude, length of stay, long exposure, and economic status with hearing loss prevention behaviors.

Table 2. Hearing characteristics of participant (N=109)

| Characteristic | n | (%) |
|--------------------------------|----|--------|
| History of hearing loss | | |
| Yes | 14 | (12.8) |
| No | 95 | (87.2) |
| Hearing complaints | | |
| Ringing / hurts | 57 | (52.3) |
| No | 51 | (47.7) |
| Sense of comfort | | |
| Comfortable | 28 | (25.7) |
| Ordinary | 55 | (50.5) |
| Uncomfortable | 26 | (23.9) |

Table 3 Correlation of knowledge, attitude, length of stay, long exposure and economic status with hearing loss prevention behaviors

| Factors | Hearing loss prevention behaviors | | | | | | P* | R |
|-----------------------|-----------------------------------|--------|--------|-------|------|--------|-------|-------|
| | Good | | Enough | | Poor | | | |
| | f | (%) | F | (%) | F | (%) | | |
| Knowledge | | | | | | | 0,000 | 0,506 |
| Good | 14 | (12.8) | 2 | (1.8) | 0 | (0) | | |
| Enough | 3 | (2.8) | 4 | (3.7) | 33 | (30.3) | | |
| Poor | 0 | (0) | 9 | (8.3) | 44 | (40.4) | | |
| Attitude | | | | | | | 0,000 | 0,374 |
| Good | 14 | (12.8) | 11 | (10) | 35 | (32.1) | | |
| Enough | 3 | (2.8) | 4 | (3.7) | 38 | (34.9) | | |
| Poor | 0 | (0) | 0 | (0) | 4 | (3.7) | | |
| Length of stay | | | | | | | 0,202 | 0,123 |
| < 5 years | 1 | (0.9) | 1 | (0.9) | 11 | (10.1) | | |
| 5-9 years | 1 | (0.9) | 1 | (0.9) | 7 | (6.4) | | |

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| Factors | Hearing loss prevention behaviors | | | | | | P* | R |
|------------------------|-----------------------------------|--------|--------|--------|------|--------|-------|--------|
| | Good | | Enough | | Poor | | | |
| | f | (%) | F | (%) | F | (%) | | |
| 10-20 years | 2 | (1.8) | 1 | (0.9) | 8 | (7.3) | 0,715 | -0,035 |
| ➤ 20 years | 13 | (11.9) | 2 | (11) | 51 | (46.8) | | |
| Long exposure | | | | | | | | |
| < 8 hours | 0 | (0) | 1 | (0.9) | 4 | (3.7) | | |
| 8-16 hours | 5 | (4.6) | 5 | (4.6) | 18 | (16.5) | | |
| ➤ 16 hours | 12 | (8.3) | 9 | (8.3) | 55 | (50.5) | | |
| Economic Status | | | | | | | 0,00 | 0,401 |
| Low | 2 | (1.8) | 11 | (10.1) | 59 | (54.1) | | |
| High | 15 | (13.8) | 4 | (3.7) | 18 | (16.5) | | |

* p value Spearman Rho

Table 4 analysis of the factors that most influence hearing loss prevention behavior

| Factors | Std. Error | Wald | p-value* |
|-----------------|------------|--------|----------|
| Knowledge | 1.133 | 16.268 | 0.001 |
| Attitude | 0.772 | 6.509 | 0.011 |
| Economic Status | 0.676 | 0.955 | 0.416 |
| Length of stay | 1.012 | 1.585 | 0.208 |
| Long exposure | 1,27 | 1.697 | 0.193 |

* p value ordinal regression

DISCUSSION

The results showed that knowledge affects the behavior of hearing loss prevention. The minimum exposure to information owned by the surrounding community also affects the knowledge they have. Various factors that affect a person's knowledge can be influenced by several factors, namely, experience, level of education, belief, facilities, one's income, and socio-culture. Green's theory also suggests that knowledge is a predisposing factor that affects health, including disease prevention behavior. A person's knowledge of hearing prevention behavior is the initial stage to find out the next action that will be taken from this knowledge [11].

Knowledge refers to the movement of knowledge between individuals to help and collaborate with others to solve problems, develop new ideas, or implement policies or procedures [12]. Knowledge and attitudes are things related to behavior, especially health behavior [13]. Someone knowledgeable about environmental noise problems must have information about hearing loss problems and prevention for individuals, families, and communities. The knowledge and information that is held regarding environmental problems that harm health will encourage individuals who have the knowledge to form behavior. The higher the education of a person, the easier it is for someone to receive correct and wrong information to implement this positive information. In line with Anggraini's research, in the case of hearing loss in children, it is also influenced by where they live, namely in cities or villages related to the sources of information obtained [14].

The results of the study by Balanay and Kearney (2015) state that knowledge of the harmful effects of noise on the hearing can help increase the use of hearing protection, with the knowledge that the behavior of someone who will obstruct hearing will be high and vice versa [15]. The results of systematic research on the effectiveness of promotion of interventions or education regarding hearing protection devices such as earplugs or the use of other materials in a person exposed to noise, the intervention carried out showed improved results [16].

The results of this study are good attitudes affect less behavior, but correlate with statistical tests are carried out. Judging from the questionnaire that has been answered by the respondent, the examination at health services is very important, but the surrounding community does not carry out hearing checks when their ears feel ringing, this can also be seen from the item in the answer to question 7 regarding checking their hearing when the ear has problems. 55 respondents said that a health service center that is close and easy to the railroad settlements can be easily reached. However, people around the edge of the railroad tracks rarely even visit the nearest health service center to carry out hearing checks when their ears are ringing. The prevention of hearing loss is also related to self-care behavior, even though they feel a disturbance such as ringing in the ears but they do not check themselves, in line with the research of Amelia on DM sufferers that self-care behavior is influenced by knowledge and attitudes [17].

According to respondents ear health to a health service center is very important, however, in fact, the researcher asked about the actions that have been taken from this attitude the respondent only has intentions that are not implemented in the form of actions or behaviors. So that the self-awareness and self-understanding of the respondents are lacking. Self-awareness and self-understanding, in everyday life, is self-awareness that is needed and cannot be separated, experience and knowledge will shape attitudes and actions that are desired or inline [18].

The attitude of a person to plant trees or wall dividers is something that has been done by the surrounding community, however, only a few respondents have this barrier because low income affects the decision-making choice of prevention. The researcher also observed that the environment matched the results of the responses to the behavior questionnaire so that there was prevention or the situation could not be known.

Attitudes have a dynamic nature towards a response due to interactions between individuals and the surrounding environment and there is a large number of positive or negative feelings towards an object (favorable) or negative (unfavorable) towards an object, person, institution, or activity [9]. Three important structural components are found in the attitude of the cognitive component, namely the perceptual, emotional, behavioral, or action component. The three components will form a complete attitude (total attitude). An individual's intention to perform behavior depends on his attitude about behavior, subjective norms (perceived social pressure), and perceived behavioral control (personal

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belief in a person's ability to perform behavior based on the presence of factors) [15].

The relationship between attitudes and behavior can vary because attitudes and behavior are factors that depend on but are influenced by other situations (mood, emotions, personality, social pressure, potential, risk, or time) [19]. So that a positive attitude does not guarantee a person's good behavior, various factors influence an action that a person will take. There are three factors in shaping a person's attitude. The influencing factors are personal experience, the influence of other people who are considered important, cultural influences, mass media, and educational institutions. Society can implement changes in attitudes, so that the more people have the knowledge, their attitudes have changed, thus affecting their behavior too. On the other hand, the perception of broad change in attitude may trigger uncertainty, which hinders behavior change [20].

Attitudes and hearing symptoms experienced by a person are important factors to understand and influence the use of hearing protection as a relationship between preventive behavior and hearing risk [15]. Creating a positive attitude in railroad communities regarding the prevention of hearing loss due to train noise requires the role of someone who is considered important by the community. For example, the health department, namely the puskesmas, provides information in the form of existing problems regarding noise. The incidence of the existing disease is expected to change people's minds about preventing hearing loss. Strengthening self-awareness and self-understanding of each individual is needed because with awareness there will be changes that encourage someone to do positive behavior.

So far, programs or efforts from the government or PT KAI agencies have not made any efforts to provide education regarding the prevention of hearing loss or other education regarding the negative impacts on the health of people living on the edge of the railroad tracks. Previous research conducted in Ngagel Rejo Surabaya, the noise of the area originated from the train of 65.89 dB (A), so that it exceeds the limit set by the government, thus it is hoped that there will be efforts to carry out education or add information to the railroad community. fire. Regional government and also PT. KAI can anticipate or carry out reconstruction of the construction of a dividing wall on the edge of the railroad tracks.

Economic status affects a person in choosing where to live. The increasing need for unorganized and controlled settlement space, the need to live has forced people to take advantage of the space to build settlements on the edge of the railroad tracks. Settlements in the area of

the edge of the Surabaya railway, the people who live in the area pay rent for land at PT. KAI. Button's research which compares various countries, the economy affects an action taken by the community, people who live in railway settlements have a low economy to build infrastructure around them, for example reducing the noise of passing trains [21].

Research by Waston states that there is a relationship between the condition of the railroad settlements on the economy, social, education, number of families, occupations, ways of life/habits, and social interactions between residents [22]. It can be seen that a person's economy will also affect decision making to survive and take actions that feel good and their reasons for staying there (Sosial et al., 2015). The results of research by Nevy show that the amount of income of a family is very

decisive in the quality of the building where they live and families who have a large income above the average UMK will certainly be easy. With an economy above the UMK, people can manage their income with primary and secondary needs [23].

These factors greatly influence why they persist in choosing to live on the edge of the railroad and not practice hearing loss prevention behavior. This is because the socio-economic conditions of the population are very low, and limited costs have made them what they are today. This is because in general, the community is still at a low standard of living both with limited job opportunities available and the level of education. Only 3 out of 109 respondents who lived for more than 20 years had different levels of education and medical history. The railroad community admits that it is normal to even feel comfortable living in the area because of the decades of residence so that people perceive there is no problem even though they do not prevent hearing loss. The length of stay of a person who has an undergraduate education with a residence time of <20 years, the respondent has an effort to prevent hearing loss even though the income they have is classified as high, but with high education, people who have an undergraduate education can prevent hearing loss. The low income in elementary-high school education of the surrounding community mostly uses prevention using planting land in front of their houses, this is the most economical. Noise sound with high intensity and for a long time, which is between 10-15 years, will result in tearing of the core organs, resulting in abnormalities of the destruction of the cortical organs (Permaningtyas, 2011). So far there has not been any work program to prevent noise or reduce the noise generated by the train passing by the Regional Government, but PT KAI is trying to build several locations with wall boundaries.

The results of a study conducted in Denmark indicated that there was a weak relationship between exposure to noise from the two railways with the surrounding housing but there was no hearing loss prevention behavior carried out in the residential area [24]. The results of Fina Violita Christi's study (2016) showed that there was no relationship between the length of stay and significant hearing loss, thus there was no relationship between length of stay that affected hearing loss and preventive behavior [7]. High traffic noise for a long time will cause discomfort and disturb the surrounding environment, but if someone has adapted to the surrounding environment and other factors affect the individual, they feel normal [25]. The results of this study, 50.5% of railway residents who were exposed to noise said they felt normal, 28% of respondents said they were comfortable and 26% of respondents said they were not comfortable, this is because respondents have adapted for a long time, the community initially felt uncomfortable because they had not familiar with environmental conditions. The ability to adapt to noise is the ability of an individual to be able to adapt to sounds that are not desired by the ear in certain times and conditions according to predetermined limits [26].

Based on the results of the research, respondents spent a lot of time at home for more than 16 hours, as many as 76 and 11 people who had good hearing loss prevention behavior out of 109 respondents. Duration of exposure <16 hours for respondents who have a history of hearing loss and also ringing ears, there is a hearing loss behavior, but most respondents also have less awareness that the

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respondent or the head of the household makes decisions so that there is no prevention of hearing loss that is taken with the length of exposure time > 16 hours per day. Noise intensity according to research by Nevy (2016) states that the intensity of Ngagel Rejo's blood is 65.89 dB (A), this indicates that the noise in the area exceeds the regulatory quality standards that have been determined by the Minister of Environment Decree No.48 of 1996, namely in the maximum 55 settlements dB (A). Although most of the respondents did not have a history of hearing loss, the results showed that half of the respondents had ringing ears, this complaint may indicate conduction or sensorineural deafness [27]. Besides, all respondents also have a house distance of fewer than 15 meters from the train tracks, this can cause exposure to noise that affects hearing [27].

The length of exposure in noisy locations has a 3.3 times risk of causing psychological problems, this study is in line with the statement which states that the longer a person is exposed to noise, the more risk of health problems [28]. In line with Juwarna research on the workers who continuously hear that noise intensity and working period can affect the occurrence of noise-induced hearing loss (NIHL) and increased blood pressure [29]. Exposure to noise in community settlements causes health problems for decreased hearing ability, decreased quality of sleep, and high blood pressure, but prevention of these problems can be prevented by using protective ear devices [6].

The factor that most influences the hearing threshold value is the age factor and the length of exposure to noise. A worker who has a work period of 8 hours longer may be more at risk of developing occupational diseases than workers who have a shorter work period [30]. The results of research from Pangemanan stated that 15 people working 7-8 hours/day (60%) experienced hearing loss, while employees who worked > 8 hours/day, all of them (four people) experienced hearing loss. which is do hearing prevention [28].

Housewives, most of whom are at home, certainly cannot avoid exposure to noise considering the relatively close distance of the house <15 meters with the provisions of PT. KAI with railroad tracks. The exposure experienced by housewives had a type of noise and a source of intermittent noise. The long period of exposure to the noise of the railroad settlements for 16 hours does not affect the hearing loss prevention behavior because several characteristics influence it. Besides, disease prevention behavior can also be built by empowering women, in this study the respondents were housewives, as in the Surbakti study the empowerment of women was effective in preventing cervical cancer [31].

CONCLUSION

Hearing loss prevention behavior in people who live near railroad tracks is greatly influenced by knowledge, attitudes, and economic status. The better the respondent's knowledge, the more information they get, the higher the effort in preventing hearing loss. Meanwhile, length of stay and length of exposure to noise from the train did not affect the behavior of preventing hearing loss. In fact, the longer they stay there and the longer they are exposed to it makes them accustomed to it and thinks it's not something to be a problem with, even though most of them complain of hearing loss.

Conflict of interest

The authors declare the absence of conflict of interest as regards their present work.

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REFERENCES

1. Badan Pusat Statistik Kota Surabaya, *Statistik Kesejahteraan Rakyat Kota Surabaya 2017*. 2018.
2. A. P. Mayangsari, "Perancangan Barrier untuk menurunkan tingkat kebisingan," pp. 1-7, 2013.
3. D. Kesehatan, *Laporan Tahunan*. surabaya, 2018.
4. B. B. Fitriyani and A. S. Wahyuningsih, "Hubungan Pengetahuan Tentang Alat Pelindung Telinga (Ear Plug) Dengan Kepatuhan Penggunaannya Pada Pekerja Bagian Tenun Departemen Weaving SI Pt. Daya Manunggal," *Unnes J. Public Heal.*, vol. 5, no. 1, p. 10, 2017, doi: 10.15294/ujph.v5i1.9699.
5. N. F. Lantara, "The Roles of Woman as Leader and Housewife," vol. 5, no. 1, pp. 1-5, 2015, doi: 10.4172/2167-0374.1000125.
6. N. J. Ms and U. Bobba, "Effect of Everyday Noise on Hearing in Rural and Urban Population; A comparative Study," *Narayana Med. J.*, vol. 4, no. 2, pp. 79-82, 2015.
7. Fina Violita Christi, "PENDUDUK SEPANJANG REL KERETA API NGAGEL REJO SURABAYA (Description Of Noise Level and Non Auditory Disorders to Residents in The Settlements Along The Rail Ngagel Rejo Surabaya) Fina Violita Christi Departemen Kesehatan Lingkungan Fakultas Kesehatan Ma," 2016.
8. K. E. Krisnanti and L. Sulistyorini, "The Potential Risk of Hearing Loss on Noise-Exposed Housewives : An Observational Study at Sukosari Madiun Railway Residentia," *J. Kesehat. Lingkung.*, vol. 12, no. 1, p. 10, Jan. 2020, doi: 10.20473/jkl.v12i1.2020.10-20.
9. Nursalam, *ILMU KEPERAWATAN Pendekatan Praktis*. 2015.
10. C. Lim, J. Kim, J. Hong, and S. Lee, "The relationship between railway noise and community annoyance in Korea," no. October, 2006, doi: 10.1121/1.2266539.
11. G. Demir, A. Kablan, Y. Aşar, Ü. Alyüz, H. E. Ökten, and S. Yalçın, "Peraturan : Studi Kasus Istanbul," vol. 7, no. 3, pp. 198-202, 2016.
12. O. Kaewchur and K. Phusavat, "Key Factors Influencing Knowledge Sharing," vol. 4, no. 3, pp. 236-240, 2016.
13. A. Madjid *et al.*, "Effect of knowledge and attitude factors on tuberculosis incidents in mandar ethnic in the District of Majene West Sulawesi," *Indian J. Public Heal. Res. Dev.*, vol. 10, no. 8, pp. 1935-1939, 2019, doi: 10.5958/0976-5506.2019.02135.1.
14. R. Anggraeni *et al.*, "Otitis media related hearing loss in Indonesian school children," *Int. J. Pediatr. Otorhinolaryngol.*, vol. 125, pp. 44-50, 2019, doi: 10.1016/j.ijporl.2019.06.019.
15. Jo Anne G. Balanay and Gregory D. Kearney, "Attitudes toward noise, perceived hearing symptoms, and reported use of hearing protection among college students: Influence of youth culture," *Noise Health*, pp. 394-405, 2015.

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16. D. Mayasari, R. Khairunnisa, B. Ilmu, K. Komunitas, F. Kedokteran, and U. Lampung, "Pencegahan Noise Induced Hearing Loss pada Pekerja Akibat Kebisingan Prevention of Noise Induced Hearing Loss on Workers Due to Noise Exposure," 2010.
17. R. Amelia, "The model of self care behaviour and the relationship with quality of life, metabolic control and lipid control of type 2 diabetes mellitus patients in Binjai city, Indonesia," *Open Access Maced. J. Med. Sci.*, vol. 6, no. 9, pp. 1762-1767, 2018, doi: [10.3889/oamjms.2018.363](https://doi.org/10.3889/oamjms.2018.363).
18. B. S. Rousse, "Self - awareness and self - understanding," no. April, pp. 1-25, 2018, doi: [10.1111/ejop.12377](https://doi.org/10.1111/ejop.12377).
19. T. Palupi and D. R. Sawitri, "Hubungan Antara Sikap Dengan Perilaku Pro-Lingkungan Ditinjau dari Perspektif Theory Of Planned Behavior Relationship Between Attitude And Pro-Environmental Behavior from the Perspective of Theory of Planned Behavior Perilaku Pro-Lingkungan," vol. 14, pp. 2015-2018, 2015.
20. C. J. Bechler, Z. L. Tormala, and D. D. Rucker, "Journal of Experimental Social Psychology Perceiving attitude change: How qualitative shifts augment change perception," *J. Exp. Soc. Psychol.*, vol. 82, no. February, pp. 160-175, 2019, doi: [10.1016/j.jesp.2019.02.001](https://doi.org/10.1016/j.jesp.2019.02.001).
21. K. Button, "High-Speed Railways : Do They Produce Economic Growth ?," 2017.
22. K. Sosial *et al.*, "ANTHROPOS: Jurnal Antropologi Sosial dan Budaya," Dec. 2015.
23. Nevy Fitriatna, "Nevy Fitriatna," *Pengaruh Tingkat Pendapatan dan Persepsi Pendud. Yentang Pelaks. UU Perkeretaapi. Terhadap Kualitas Bangunan yang Didirikan di Bantaran Rel Kereta Api di Kota Surabaya*, 2016.
24. N. Roswall *et al.*, "Residential Exposure to Traffic Noise and Health-Related Quality of Life—A Population-Based Study," *PLoS One*, vol. 10, no. 3, p. e0120199, Mar. 2015, doi: [10.1371/journal.pone.0120199](https://doi.org/10.1371/journal.pone.0120199).
25. S. Umiati, *Pengaruh Tata Hijau Terhadap Tingkat Kebisingan Pada Perumahan Jalan Ratulangi Makassar*. Makassar, 2011.
26. [26] Ruly Asmarani, "Hubungan Antara Kemampuan Adaptasi Terhadap Kebisingan," vol. 5, no. 1, pp. 71-93, 2017.
27. D. K. Wardhani and J. M. Mukono, "Sensorineural Hearing Loss Due to Exposure of Noisy Trains on Populations Around Turirejo Train Railroad Cross," *J. Kesehatan. Lingkung.*, vol. 12, no. 1, p. 59, Jan. 2020, doi: [10.20473/jkl.v12i1.2020.59-68](https://doi.org/10.20473/jkl.v12i1.2020.59-68).
28. P. Pajanan *et al.*, "PENGARUH PAJANAN BISING TERHADAP PENDENGARAN DAN TEKANAN DARAH PADA PEKERJA GAME CENTER DI KOTA MANADO," 2012.
29. W. Juwarna, A. Adnan, and T. S. H. Haryuna, "Noise induced hearing loss in begerpang palm oil mill workers," *Otorhinolaryngol. Clin.*, vol. 10, no. 2, pp. 56-60, 2018, doi: 10.5005/jp-journals-1003-1291.
30. Tarwaka, *Keselamatan dan Kesehatan Kerja*. Surakarta, 2008.
31. E. Surbakti, H. Santosa, N. Padang, and K. Rochadi, "The influence of empowerment of women of childbearing age on cervical cancer prevention behavior," *G. Ital. di Ostet. e Ginecol.*, vol. 40, no. 2, pp. 53-60, 2018.