Proceedings of International Conference and Community Service
Faculty of Pharmacy, Universitas Pekalongan
June 11-12, 2025

EFFECTIVENESS OF HEALTH EDUCATION ON PERCEPTION AND KNOWLEDGE ON THE USE OF ANTIBIOTICS WITHOUT A PRESCRIPTION IN KLUWIH VILLAGE

Kholifatur Rohmah, Musa Fitri Fatkhiya*
S1 Pharmacy, Faculty of Pharmacy, Pekalongan University
*E-mail:kholifrohmah28@gmail.com

Abstract

The use of antibiotics without a prescription remains a significant public health issue in Indonesia. Misperceptions and lack of knowledge about antibiotics are the main causes of the practice of using antibiotics without a prescription which is at risk of bacterial resistance. This study aims to evaluate the effectiveness of health education provided by pharmacists in improving public perception and knowledge about the proper use of antibiotics. This study used a one-group pre-test and post-test design to 53 respondents in Kluwih village, Batang district, Central Java. The instrument used was a perception questionnaire (Linkert scale) and knowledge (Guttman scale). Data analysis was conducted using paired samples t-test using SPSS software. The results showed a significant increase in perception and knowledge scores after health education with a significance value of 0,000 (p-value <0.05). Participatory health education has been proven effective in increasing public understanding of rational antibiotic use and has the potential to reduce the practice of using antibiotics without a prescription.
Keywords: antibiotics, education, health, knowledge, perception

INTRODUCTION

The use of antibiotics without a prescription is a global problem that contributes to the increasing problem of antibiotic resistance, resistance is a danger and a global health threat that can result in death (WHO, 2022). Data from the Indonesian Ministry of Health (2021) shows about 50% of people still buy antibiotics without a prescription, People still practice self-medication when using antibiotics without first consulting a doctor or medical personnel.

Misperception and low knowledge are the main causes of this phenomenon, public perception and knowledge regarding the function of antibiotics are still wrong they still think that antibiotics are a cure for all diseases and they still lack knowledge regarding the risk of antibiotic resistance due to irrational use of antibiotics (Siahaan et al., 2022).

Health education needs to be carried out to provide the public with an overview and knowledge regarding the proper use of antibiotics, this can be an effort to prevent the irrational use of antibiotics to reduce cases of antibiotic resistance that occur. Health education by pharmaceutical personnel is an important strategy in changing the mindset and behavior of the community, participatory education with two-way communication is considered more effective in increasing public understanding (Fatkhiya et al., 2024). The purpose of this study was to determine the effectiveness of health education provided on public perception and knowledge on the use of antibiotics without a prescription.

METHOD

The method used in this study is a quantitative study with a one-group pre-test design before education and a post-test after education. The instruments used during the research were in the form of a perception questionnaire and a knowledge questionnaire which had previously undergone validity and reliability tests. The sampling technique used non-probability side and the number of participants present during this study was 53 people. Health education activities were carried out by providing lectures on material and question and answer discussions between respondents and pharmacists regarding the use of antibiotics. The results of the pre-test and post-test data were then analyzed using the paired samples t test with a significance value (p-value <0.05) analysis was carried out with SPSS to determine the effectiveness of health education provided regarding public perception and knowledge on the use of antibiotics without a prescription.

RESULT AND DISCUSSION

The results obtained from the study of 2 variables, namely perception and knowledge, showed an increase in pre-test and post-test scores for each indicator of each variable.

1. Changes in perceived value

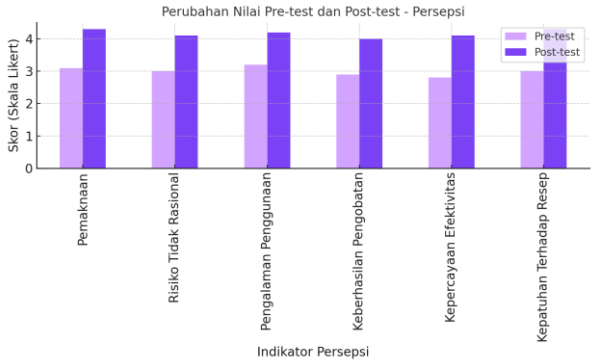

Figure1. Diagram of changes in pre-test and post-test perception values

The following diagram illustrates the average change in pre-test and post-test scores on perception indicators, the results show that there was an increase in all perception indicators after health education was carried out. The indicators of "belief in the effectiveness of antibiotics" became the indicator with the lowest value with a pre-test score of 59% and a post-test score of 70%, this shows that before being given health education, the public still thought that antibiotics were only effective for certain conditions (Limato et al., 2022). This is caused by an inaccurate perception that antibiotics can cure all types of diseases, including flu and common coughs (Nuraini et al., 2023).

2. Changes in knowledge values

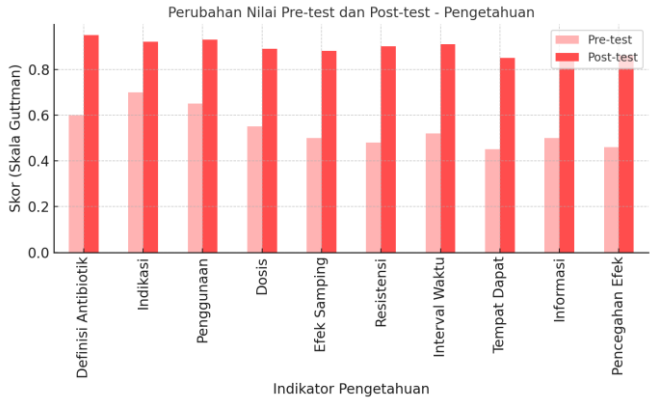

Figure2. Diagram of changes in pre-test and post-test knowledge values

The following diagram illustrates the average change in pre-test and post-test scores for each knowledge indicator. The results show an increase in scores for each indicator after health education was given. In the knowledge variable, the indicator with the lowest value was the indicator "where to get antibiotics" with a pre-test score of 44% and a post-test score of 57%, this shows that before health education, many people still do not understand that getting antibiotics should be done with a doctor's prescription. This condition is related to the habit of people who buy antibiotics freely at pharmacies or drug stores without first consulting a medical professional (Wulandari et al., 2022).

Average results of pre-test and post-test scores

Table1. Table of average pre-test post-test perception and knowledge scores

Questionnaire	Mark	Category	Mark	Category
	pre-test		*post test*	

Perception	61%	Enough	74%	Good
Knowledge	54%	Enough	77%	Good

From the following table, there is an increase in the pre-test score from the post-test on the two indicators and the perception and knowledge categories increased from the sufficient category to the good category.

Table2. Paired samples t test

		Mean	**Signification (p-value)**
perception	*pre-test*	45,7170	0,000
	post test	55,8113	
knowledge	*pre-test*	8,5660	0,000
	post test	12,3019	

Based on the results of the paired samples t-test analysis conducted on changes in the pre-test and post-test values of perception and knowledge, the significance value obtained for the two variables was0.000 (p-value <0.05), these results show that there is a significant difference between the pre-test and post-test values of the perception and knowledge variables.
Health education provided directly and participatively by pharmacists provides space for the community to discuss or ask questions between respondents and pharmacists (Mohebi et al., 2018). Health education with a two-way approach can increase knowledge. This study is also supported by previous research (Dania et al., 2021) And (Ridwan et al., 2021) which states that public perception and knowledge can be improved through appropriate educational approaches. Research conducted by (Ruslin et al., 2023) also stated that participatory education can increase public trust regarding the rational use of drugs.
The success of the health education program in this study was influenced by several interrelated factors. One of the main factors was the use of a participatory education method, where education was delivered directly by a pharmacist through presentations, discussions, and question-and-answer sessions. This method allowed for two-way interaction, making the information easier for the community to understand and accept (Fatkhiya., 2024). Additionally, the active role of the pharmacist as a credible and knowledgeable health professional increased the community's trust in the material presented. The educational content was also relevant and practical, as it clearly addressed the proper use of antibiotics, the risks of resistance, and the importance of using a doctor's prescription (WHO., 2021). The program's effectiveness was further supported by the suitability of the method for the characteristics of the village community, which largely consisted of individuals with low to middle educational backgrounds and were mostly housewives. A direct approach proved to be more effective than relying solely on media-based information. The program also utilized pre-test and post-test questionnaires that had been validated and tested for reliability, allowing for objective measurement of changes in knowledge and perception.

CONCLUSION

Health education provided by pharmacists in a participatory manner has proven effective in improving public perception and knowledge of the use of antibiotics without a prescription. Significant increases in pre-test and post-test scores indicate that educational interventions can be a strategy for preventing potential antibiotic resistance. The results were declared significant based on the p value produced in the paired samples t test of 0.000 (p-value < 0,05).

ACKNOWLEDGEMENTS

The author would like to thank all parties who have helped make this research run smoothly, namely:
a. The supervising lecturer who has helped and guided the author in completing his thesis

b. To the Kluwih village community who have participated and are enthusiastic in following the activities.

REFERENCES

Dania, IA, & Novziransyah, N. (2021). Sensation, Perception, Cognitive. Ibnu Sina: Journal of Medicine and Health - Faculty of Medicine, Islamic University of North Sumatra, 20(1), 14–21. https://doi.org/10.30743/ibnusina.v20i1.59

Fatkhiya, MF, Desiani, E., Jeff, J. Al, Prasetyo, EB, Wiwiduri, W., & Sakti, M. (2024). Counseling on the Recognition and Prevention of ARI in Bebel Village, Pekalongan. BESIRU: Journal of Community Service, 1(3), 55–61. https://doi.org/10.62335/y703az68

Ministry of Health of the Republic of Indonesia Regulation of the Minister of Health of the Republic of Indonesia. (2021). 615.1 Ind p. Journal of Pharmaceutical Analysis, 5(2), 130–136. http://dx.doi.org/10.1016/j.jpha.2015.11.005

Limato, R., Lazarus, G., Dernison, P., Mudia, M., Alamanda, M., Nelwan, EJ, Sinto, R., Karuniawati, A., Rogier van Doorn, H., & Hamers, RL (2022). Optimizing antibiotic use in Indonesia: A systematic review and evidence synthesis to inform opportunities for intervention. The Lancet Regional Health - Southeast Asia, 2(6). https://doi.org/10.1016/j.lansea.2022.05.002

Mohebi, S., Parham, M., Sharifirad, G., & Gharlipour, Z. (2018). Social Support and Self-Care Behavior Study. January, 1–6. https://doi.org/10.4103/jehp.jehp

Nuraini, A., Haris, MS, Rahayu, DR, & Rokhani, R. (2023). Profile of Parents' Knowledge and Perception of Antibiotic Use in Children at Bangkalan Pharmacy. JOPS (Journal Of Pharmacy and Science), 6(2), 122–131. https://doi.org/10.36341/jops.v6i2.3426

Ridwan, M., Syukri, A., & Badarussyamsi, B. (2021). Analytical Study of the Meaning of Knowledge and Science and Its Types and Sources. Geuthèë Journal: Multidisciplinary Research, 4(1), 31. https://doi.org/10.52626/jg.v4i1.96

Ruslin, Jabbar, A., Wahyuni, Malik, F., Trinovitasari, N., Agustina, Bangkit Saputra, Chichi Fauziyah, Fitrah Fajriani Haming, Herda Dwi Saktiani, Nurfadillah Siddiqah, Rezky Marwah Kirana, Sitti Masyithah Amaluddin, & Yuyun Asna Sari. (2023). Education on the Use of Antibiotics in the Community of Leppe Village, Soropia District, Konawe Regency. Mosiraha: Journal of Pharmaceutical Service, 1(1), 25–30. https://doi.org/10.33772/mosiraha.v1i1.5

Siahaan, S., Herman, MJ, & Fitri, N. (2022). Antimicrobial Resistance Situation in Indonesia: A Challenge of Multisector and Global Coordination. Journal of Tropical Medicine, 2022. https://doi.org/10.1155/2022/2783300

World Health Organization (WHO).co.id. (2022). Global antimicrobial resistance and use surveillance system (GLASS) report: 2022. World Health Organization (WHO).Co.Id. https://www.who.int/publications/i/item/9789240062702

Wulandari, A., & Rahmawardany, CY (2022). Antibiotic Use Behavior in Society. Sainstech Farma, 15(1), 9–16. https://doi.org/10.37277/sfj.v15i1.1105