

Education Through Poster Media “Flu Is Not The Same as The Common Cold” For Patients at Azim Farma Pharmacy

Gandis Triwidya Larasati^{1*}, Diana Laila Ramatillah², Kashif Ullah Khan³

¹² Universitas 17 Agustus 1945

³ Universiti Malaya

gandislarasati17@gmail.com

Abstract

DOI:
<https://doi.org/10.47134/comdev.v6i3.1898>

*Correspondensi: Gandis Triwidya Larasati

Email: gandislarasati17@gmail.com

Received: 23-12-2025

Accepted: 23-01-2026

Published: 23-02-2026



Copyright: © 2026 by the authors.
Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

Myths and misconceptions about flu and the common cold are widespread in society, including the assumptions that flu is the same as the common cold, that influenza vaccination causes illness, or that flu is only a mild illness. These myths are suspected to affect the ability to differentiate between the two illnesses. This counseling activity aims to provide education about the differences between influenza and the common cold, their appropriate management, and to correct misconceptions and myths circulating within the community.. The session was held on Sunday, November 30, 2025, from 10:30 AM to 12:30 PM WIB. The primary target of this counseling was patients at Azim Farma Pharmacy, with a target of 82 participants. The method of implementation was in the form of direct face-to-face interaction, providing education using poster media. The success indicator was measured by comparing pre-test and post-test scores. The results of the activity showed that before the education was given, the majority of respondents (34 respondents, 41.5%) were in the good knowledge category. After the education, the majority (64 respondents, 75.6%) were in the good knowledge category, indicating that the counseling participants were able to receive and understand the information and knowledge well. Statistical analysis using the Wilcoxon test on these results yielded a p-value = 0.000 ($p < 0.05$), indicating a significant difference before and after the education. This shows that overall, the intervention can be considered successful in improving respondents' understanding of the difference between influenza and the common cold. This counseling has positive implications for health education and promotion efforts in increasing public awareness in differentiating and managing coughs and colds.

Keywords: Influenza, Common Cold, Health Education

I. INTRODUCTION

Influenza is an acute viral infection caused by the influenza virus and spreads easily from person to person. This virus circulates worldwide and can affect individuals regardless of age or sex. The pathophysiology of influenza begins with the inhalation of influenza virus droplets. The virus enters the body through inhalation of infectious droplets, microaerosol particles, or direct inoculation via hand contact from infected individuals. The influenza virus then binds to sialic acid receptors on the epithelial cells of the respiratory tract, particularly in the trachea and bronchi. Subsequently, viral replication reaches its peak within 48 hours after infection, and the viral load is directly associated with the severity of the disease (Kapahang, Praysi and Ramatillah, 2024). The common cold is defined by the National Institute for Health

and Care Excellence (NICE) as “a mild, self-limiting upper respiratory tract infection characterized by nasal congestion and discharge, sneezing, sore throat, and cough” (Eccles, 2023).

Influenza is an acute respiratory infection caused by the influenza virus and remains a global public health problem due to its high morbidity, complications, and economic burden each year. According to the World Health Organization (2023), seasonal influenza can cause millions of severe cases and hundreds of thousands of deaths worldwide annually. In contrast, the common cold is generally mild, self-limiting, and caused by various viruses such as rhinovirus. Although both conditions share several similar clinical symptoms, they differ in etiology, severity, risk of complications, as well as in prevention and treatment approaches. Annual vaccination is recommended as the primary strategy for preventing influenza (Nypaver, Dehlinger and Carter, 2021). However, its effectiveness in reducing disease burden is strongly influenced by public understanding and acceptance.

Recent studies from 2021–2026 indicate that public health literacy regarding influenza and the common cold remains suboptimal. Swed et al. (2022) reported that most respondents were unable to accurately distinguish between influenza and the common cold and held misconceptions about the use of antibiotics for viral infections. Similar findings were reported by Kurniawati et al. (2022), Felita dan Hajma (2023), and Yulianto (2024), highlighting the high prevalence of self-medication for influenza without proper understanding of its viral etiology. Furthermore, Eccles (2023) emphasized that the common cold is a mild viral infection that does not require antibiotics) (however, irrational antibiotic use remains common in the community. Although antibiotic stewardship education programs have been implemented (Norsafitri et al, 2023), misconceptions persist, particularly at the primary healthcare level.

Health education through visual media such as posters has been shown to be effective in improving public knowledge about respiratory infectious diseases. Ayu et al. and Haikal et al. demonstrated that poster-based education significantly enhances understanding by presenting information in a concise, visual, and easily comprehensible format. Educational interventions in healthcare facilities such as clinics and pharmacies have also been reported to improve patient literacy regarding influenza prevention and management (Handayani, 2023) (Wijaya et al, 2023) (Sida et al, 2024). However, most of these studies focused on general acute respiratory infections or antibiotic use rather than specifically emphasizing the fundamental differences between influenza and the common cold as the core content of the intervention.

On the other hand, influenza vaccination coverage in many countries remains suboptimal, partly due to the perception that influenza is no different from the common cold and is not a serious illness (Centers for Disease Control and Prevention, 2024) (Zhang et al, 2025). This indicates a knowledge gap that influences preventive behavior. Although several studies have examined influenza education, there remains a research gap in the limited number of studies evaluating the effectiveness of poster-based interventions quantitatively using a pre-test and post-test design within community pharmacy settings, which serve as the first point of contact for self-medication practices.

Based on this background, an educational activity using poster media entitled “Flu Is Not the Same as the Common Cold” was designed and implemented at Azim Farma Pharmacy to improve public health literacy. The main objectives were to correct common misconceptions about influenza and the common cold, encourage appropriate medication use, and strengthen awareness of infection prevention. This

intervention was expected to produce measurable changes in knowledge through pre-test and post-test assessments, as well as to evaluate community responses to poster media as an educational tool.

II. METHODS

This health education activity employed a community-based intervention approach with a pre-experimental one-group pre-test–post-test design to evaluate the effectiveness of educational counseling on the differences between influenza and the common cold. The counseling was conducted on Sunday, November 30, 2025, from 10:30 AM to 12:30 PM WIB. The study population consisted of patients at Azim Farma Pharmacy, with a total of 82 patients participating as respondents. The selected intervention was comprehensive education delivered through poster media entitled “Flu Is Not the Same as the Common Cold,” which contained information on the definitions of influenza and the common cold, differences in symptoms, myths and facts, prevention strategies, and pharmacists’ recommendations for the management of influenza and the common cold.

The data analysis consisted of univariate analysis, which included respondents’ age, sex, pre-test and post-test knowledge scores, and mean knowledge scores. Data normality testing was conducted to determine whether the sample data were normally distributed. In this study, the sample comprised 82 respondents) (therefore, the Kolmogorov–Smirnov test was used, as it is appropriate for samples larger than 50. The criterion for normal distribution was a significance value greater than α (0.05). Bivariate analysis was performed to analyze differences in respondents’ knowledge between the pre-test and post-test. A paired *t*-test was applied when the data were normally distributed, while the Wilcoxon test was used when the data did not meet the normality assumption.

III. RESULTS AND DISCUSSION

This educational counseling activity was conducted among patients at Azim Farma Pharmacy and was attended by 82 respondents. The educational program employed a community-based intervention approach, followed by data analysis to determine the distribution of respondents’ age, sex, pre-test and post-test knowledge scores, and mean knowledge scores. The activity began with a pre-test administered via barcode scanning available on the poster. This was followed by the delivery of educational material using poster media, after which respondents’ knowledge was assessed through a post-test. The results are presented as follows:



Figure 1. Educational Activity

Based on Figure 1, the stages of the health education counseling activity were implemented according to the schedule agreed upon with the pharmacy, namely on Sunday, November 30, 2025, from 10:30 AM to 12:30 PM WIB at Azim Farma Pharmacy, Pesisir Barat Regency, Lampung. The activity began with an opening session and a brief introduction explaining the objectives and benefits of the counseling for the respondents, followed by a pre-test conducted before the educational material was delivered via barcode scanning available on the poster. The educational material was clearly presented through direct explanations using poster media, which covered the definition of influenza and the common cold, differences in symptoms, myths and facts, prevention strategies, and pharmacists recommendations for the management of influenza and the common cold, as well as simple case examples to facilitate respondents' understanding. The counseling was conducted using a two-way communication approach, allowing participants to ask questions and engage in discussions related to the presented topic. After the educational session, a question-and-answer session was held, followed by a post-test to evaluate the impact of the education on respondents' knowledge. The activity concluded with reinforcement of key health messages, distribution of door prizes to respondents who answered questions correctly, documentation, closing remarks, expressions of gratitude to Azim Farma Pharmacy and the respondents, and the placement of the poster at Azim Farma Pharmacy.

Subsequently, univariate analysis was conducted to determine the frequency distribution of each variable in this educational activity, with the results presented as follows:

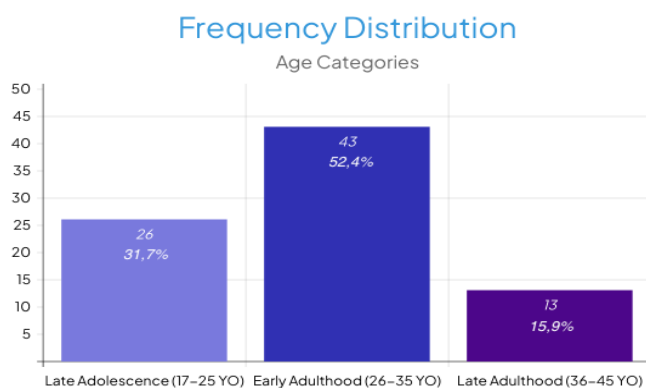


Figure 2. Frequency Distribution Diagram of Age Categories

Based on Figure 2, the majority of respondents were in the early adulthood age category (26–35 years), totaling 43 respondents (52.4%). The dominance of this group indicates that early adulthood represents a productive age group with high mobility and more frequent interaction with primary healthcare facilities, including pharmacies. At this stage, individuals are generally more active in seeking health information, both from healthcare professionals and digital media, making them more receptive to visual-based educational interventions. Recent studies have shown that young adults are more likely to utilize online health information sources and community healthcare services compared to older age groups (Nguyen *et al*, 2022) (Li, Liu and Tang, 2023). The late adolescence group (31.7%) also demonstrated fairly good participation. However, at this developmental stage, understanding of rational drug use is often still influenced by social environment and family habits. A study by Puspitasari *et al.* indicated that younger age is associated with a higher prevalence of self-medication without professional consultation, particularly for mild illnesses such as influenza and the common cold. In addition, Rahmawati and Sari reported that health literacy among young people remains at a moderate level, highlighting the need for educational interventions to strengthen understanding of viral etiology and appropriate antibiotic use.

The relatively low proportion of late adulthood respondents (15.9%) may be influenced by time constraints, work responsibilities, and the perception that influenza and the common cold are mild illnesses that do not require special attention. In fact, international studies have shown that older age groups have a higher risk of influenza complications, especially when comorbidities are present (Grohskopf *et al*, 2022). Furthermore, Silva *et al.* found that low risk perception among late adults is associated with lower participation in educational programs and influenza vaccination. This uneven age distribution may potentially affect the outcomes of the educational intervention, as each age group has different baseline knowledge levels, health experiences, and risk perceptions. A systematic review by Martins *et al.* emphasized that the effectiveness of health promotion interventions is strongly influenced by demographic characteristics, including age and educational level. Therefore, analyzing age distribution is essential for accurately interpreting knowledge improvement results and for designing more targeted educational strategies tailored to the characteristics of the target population.

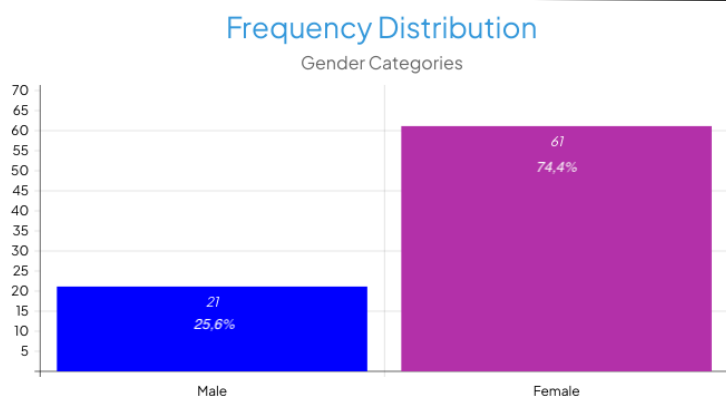


Figure 3. Frequency Distribution Diagram of Gender Categories

Based on Figure 3, the majority of respondents were female, totaling 61 respondents (74.4%). The high participation of women (74.4%) is consistent with numerous studies indicating that women are more active in seeking health information and visit pharmacies more regularly. In contrast, male participation tended to be lower, which may be influenced by a lack of interest in educational activities, the perception that influenza and the common cold are mild illnesses, time constraints, or work-related responsibilities.

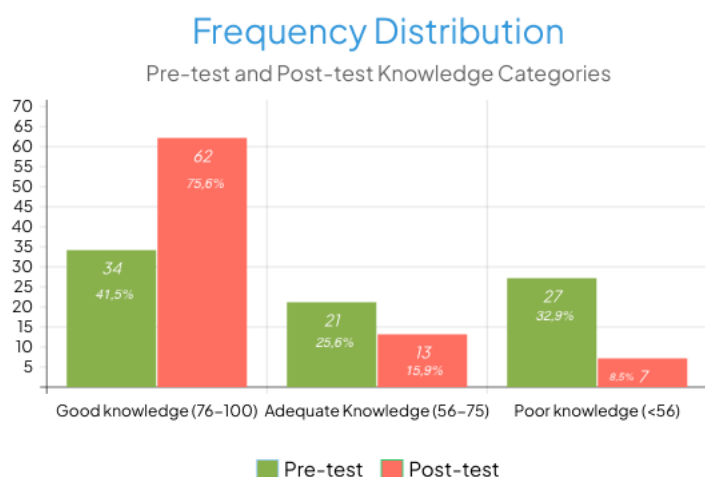


Figure 4. Frequency Distribution Diagram of Pre-test and Post-test Knowledge Categories

Based on Figure 4, prior to the educational intervention, the majority of respondents were in the good knowledge category, with 34 respondents (41.5%). Approximately one-third of respondents (32.9%) had poor knowledge, indicating that a substantial proportion of the community still held misconceptions about influenza, the common cold, and the use of antibiotics. This finding is consistent with the study by Swed et al, which reported that the public frequently misunderstands the causes of influenza and the common cold and tends to rely excessively on antibiotics. The presence of good knowledge among 41.5% of respondents suggests that some participants were aware of basic differences between the two conditions, although their understanding was not yet comprehensive. After the educational intervention, the majority of respondents were categorized as having good knowledge, totaling 64 respondents (75.6%). A significant shift was observed from the “poor” to the “good” knowledge category, with the number of respondents with

poor knowledge decreasing from 27 to only 7. The dominance of the good knowledge category after the intervention indicates that most respondents were able to understand information regarding the differences between influenza and the common cold, as well as appropriate management strategies.

The pre-test results indicate that respondents knowledge regarding the differences between influenza and the common cold prior to the educational intervention was still in the moderate category, with a mean score of 66.22 out of a maximum possible score of 100. The very low minimum score of 10 and the maximum score of 100 indicate a wide disparity in knowledge levels among respondents. This variation suggests that while some respondents possessed a good basic understanding, others still experienced misconceptions or lacked adequate exposure to accurate information.

The post-test results indicate the mean knowledge score of respondents after the intervention was 85.98, with the lowest score being 30 and the highest score being 100. The total post-test score was 7,050. An increase in the mean score of 19.76 points, from 66.22 (pre-test) to 85.98 (post-test), reflects the success of the poster as a visual educational tool. The majority of respondents were able to understand information regarding the definitions of influenza and the common cold, differences in main symptoms (caused by different viral infections), the importance of prevention and influenza vaccination, as well as commonly circulating myths and facts.

Subsequently, data analysis was performed using the Kolmogorov–Smirnov test and the Wilcoxon test, with the results presented as follows:

Table 3. Data Normality Test

Pretest-posttest	Kolmogorov-Smirnov	
	N	Sign.
Pretest	82	.002
Posttest	82	.000

The normality test was conducted to determine whether the studied sample data were normally distributed. In this study, the sample consisted of 82 respondents) (therefore, the Kolmogorov–Smirnov test was used, as it is appropriate for sample sizes greater than 50. The criterion for normal distribution was a significance value greater than α (0.05). Based on Table 3, the significance value for the pre-test indicated a non-normal distribution (Sig < 0.05), with a value of 0.002. Similarly, the post-test data were also not normally distributed, with a significance value of 0.000 (Sig < 0.05).

When the significance value is < 0.05, the data distribution is considered non-normal and does not meet the assumptions required for the use of parametric tests such as the paired t-test. Therefore, the analysis should employ a non-parametric test, namely the Wilcoxon test, which is appropriate for paired data with a non-normal distribution. This approach is consistent with recommendations in modern health research methodology, which state that the Wilcoxon test is used when data are ordinal or do not satisfy the normality assumption (Siyoto and Sodik, 2021).

Table 4. Changes in Respondents Knowledge Scores Using the Wilcoxon Test

Pretest-posttest	N	Knowledge Score	Total	Mean Rank	P-Value
Posttest- Pretest	82	Decrease	3	7,00	0,000
		Increase	46	26,17	
		Same	33		

Based on the results presented in Table 4, the study showed that 46 respondents experienced an increase in knowledge scores after the educational intervention, indicating that the poster-based educational approach was highly effective in this context. A total of 33 respondents had the same scores before and after the intervention, most likely because their baseline scores were already high or they had adequate prior health literacy, as also discussed in literature regarding variability in respondents' initial abilities (Martins, Santos and Duarte, 2021). Meanwhile, 3 respondents experienced a decrease in scores, which may be explained by external factors such as limited focus while answering the questions, misreading items, or less conducive environmental conditions during the post-test factors that have also been highlighted in studies examining situational influences in knowledge assessment (Nguyen et al, 2022).

The increase in the Mean Rank value of 26.17 indicates that the improvement in respondents' knowledge scores was not only observed individually but was also statistically meaningful. In contrast, the Mean Rank for the decrease was only 7.00, suggesting that the decline among the three respondents did not significantly affect the overall results. The Wilcoxon statistical test produced a p-value of 0.000 ($p < 0.05$), demonstrating a significant difference between pre-test and post-test scores. This finding supports the conclusion that the educational poster was effective in improving knowledge regarding the differences between influenza and the common cold, consistent with visual educational approaches previously reported to enhance public health understanding (Li, Liu and Tang, 2023) (Silva, Galvão and Pereira, 2023). These findings are consistent with various studies indicating that visual media such as posters play an important role in improving public health literacy. A study by Lee, Kim dan Bae (2024) showed that poster-based visual communication designs incorporating contrasting colors and informative illustrations significantly improved public understanding of infectious diseases compared to conventional text-based delivery. This finding is consistent with the results of the present study, in which the majority of respondents experienced an increase in knowledge scores. Haikal, Khasanah dan Ernawati (2025) and Ayu et al. (2024) demonstrated that educational posters help clarify complex clinical information through illustrations and accessible presentation formats, thereby improving knowledge about respiratory diseases. Furthermore, other studies have reported that educational media designed according to effective communication principles can reduce common medical misconceptions (Prasetyo, Wijayanti and Febriyanti, 2022), where clear education is crucial to improving understanding of influenza etiology and appropriate treatment.

The benefits of posters as educational media are also reflected in their ability to attract attention through the use of colors, symbols, and simple illustrations suited to the cognitive capacities of various age groups. The structured presentation of information including myths and facts, clinical symptoms, and professional recommendations such as those from pharmacists helps participants grasp the core messages

more easily. The use of simple language also enables the material to be understood across demographic groups, including individuals with diverse educational backgrounds (Martins, Santos and Duarte, 2021) (Rahmawati and Sari, 2024). The permanent placement of the poster in the pharmacy service area further allows education to occur continuously, contributing to cumulative knowledge acquisition over time. The effectiveness of the poster is also reflected in the increase in the proportion of respondents categorized as having “good knowledge,” rising from 41.5% to 75.6% after the intervention. These results indicate that poster media are not only visually appealing but also effective in delivering health messages and improving public literacy regarding the important differences between influenza and the common cold a distinction that is often misunderstood (Swed et al, 2022).

Nevertheless, this study has several limitations that should be considered when interpreting the findings. The research employed a pre-experimental one group pre-test post-test design without a control group, meaning that the increase in knowledge cannot be fully attributed solely to the poster intervention. In addition, knowledge was assessed over a short period, so long-term retention was not measured. The study was also limited to a single pharmacy with uneven respondent characteristics, and the evaluation focused only on knowledge outcomes without assessing changes in attitudes or health related decision making behaviors aspects that, according to the literature, are strongly associated with long-term educational outcomes (Prasetyo, Wijayanti and Febriyanti, 2022) (Silva, Galvão and Pereira, 2023).

IV. CONCLUSION

The educational activity using poster media entitled “Flu Is Not the Same as the Common Cold,” conducted among patients at Azim Farma Pharmacy, was proven to have a positive impact on improving respondents’ knowledge. Prior to the intervention, the majority of respondents were in the good knowledge category, totaling 34 respondents (41.5%). After the educational intervention, respondents’ understanding increased substantially, as evidenced by the rise in the good knowledge category to 75.6% and an increase in the mean score of 19.76 points, from 66.22 (pre-test) to 85.98 (post-test). Statistical analysis using the Wilcoxon test yielded a p-value of 0.000, indicating a significant difference between knowledge levels before and after the education. This reflects the success of the poster as a visual educational tool, highlighting the importance of educational interventions in correcting health misconceptions. Beyond improving public knowledge, this activity also provides important insights into the effectiveness of community-based education, the value of visual media, and the need for collaboration between academic institutions and healthcare facilities. The significant improvement in knowledge serves as evidence that simple interventions such as posters can produce substantial improvements in public health literacy.

ACKNOWLEDGMENTS

We would like to express our gratitude to all parties who supported this activity, especially the supervising lecturer, Azim Farma Pharmacy, and the respondents who actively participated in this educational activity.

REFERENCES

- Ayu, R. D., et al. (2024). Pengaruh media edukasi poster ISPA terhadap pengetahuan siswa di Desa Baru Batu, Kabupaten Pangkep. *Jurnal Mandala Pengabdian Masyarakat*, 5(1), 170–178.
- Centers for Disease Control and Prevention. (2024). Influenza vaccination coverage, United States.
- Eccles, R. (2023). Common cold. *Frontiers in Allergy*, 4, 1224988. <https://doi.org/10.3389/falgy.2023.1224988>
- Felita, T. R., & Hajma, L. P. A. (2023). Hubungan tingkat pengetahuan masyarakat terhadap perilaku swamedikasi influenza di Desa Kwayangan Kecamatan Kedungwuni Kabupaten Pekalongan Provinsi Jawa Tengah. *Usadha Journal of Pharmacy*, 429–443.
- Grohskopf, L. A., et al. (2022). Prevention and control of seasonal influenza with vaccines: Recommendations of the Advisory Committee on Immunization Practices—United States, 2022–23 influenza season. *MMWR Recommendations and Reports*, 71(1), 1–28. <https://doi.org/10.15585/mmwr.rr7101a1>
- Haikal, H., Khasanah, L. N., & Ernawati, D. (2025). Edukasi pencegahan ISPA melalui media poster pada mahasiswa DIII Rekam Medis dan Informasi Kesehatan Universitas Dian Nuswantoro. *Jurnal Abdi Masyarakat Indonesia*, 5(4), 1521–1530.
- Handayani, T. W. (2023). Obat influenza dan upaya pencegahan influenza di Desa Lampo, Kecamatan Banawa Tengah, Kabupaten Donggala, Provinsi Sulawesi Tengah. *Jurnal Malikussaleh Mengabdikan*, 4(2), 261–265. <https://doi.org/10.5281/zenodo.8179160>
- Kapahang, P., Praysi, & Ramatillah, D. L. (2024). Edukasi pengobatan swamedikasi batuk pilek dan demam. *Berdikari*, 7(1).
- Kurniawati, D., et al. (2022). Tingkat pengetahuan dan perilaku swamedikasi batuk pilek mahasiswa Farmasi angkatan 2019 Universitas Sari Mulia dengan metode TPB. *FARMASIS: Jurnal Sains Farmasi*, 3(2), 92–99.
- Lee, J. S., Kim, Y. J., & Bae, S. (2024). Visual health communication design improving public awareness of infectious diseases: A randomized study on posters and infographics. *Health Communication*, 39(4), 625–635. <https://doi.org/10.1080/10410236.2023.2304325>
- Li, Y., Liu, Q., & Tang, S. (2023). Digital health literacy and health information-seeking behavior among young adults: A cross-sectional study. *BMC Public Health*, 23, 1184. <https://doi.org/10.1186/s12889-023-1184-0>
- Martins, M. M., Santos, C., & Duarte, J. (2021). Effectiveness of health education interventions according to demographic characteristics: A systematic review. *International Journal of Environmental Research and Public Health*, 18(19), 10321. <https://doi.org/10.3390/ijerph181910321>
- Nguyen, H. C., et al. (2022). People's health information seeking behaviors and associated factors: A cross-sectional study. *Frontiers in Public Health*, 10, 849231. <https://doi.org/10.3389/fpubh.2022.849231>
- Norsafitri, R. A., et al. (2023). Promosi kesehatan “bijak menggunakan antibiotik” pada masyarakat di wilayah kerja Puskesmas Martapura 2. *Jurnal Pengabdian Masyarakat Panacea*, 1(1). <https://doi.org/10.20527/jpmp.v1i1.8842>
- Nypaver, C., Dehlinger, C., & Carter, C. (2021). Influenza and influenza vaccine: A review. *Journal of Midwifery & Women's Health*, 66(1), 45–53. <https://doi.org/10.1111/jmwh.13203>
- Prasetyo, E., Wijayanti, A., & Febriyanti, R. (2022). Impact of health communication design on community understanding of infectious diseases: A community trial in urban settings. *Health Communication Research*, 4(2), 87–96.
- Rahmawati, F., & Sari, D. (2024). Health literacy level among young adults and its influence on rational drug use in community settings. *Journal of Community Health Promotion*, 6(1), 45–54.
- Sida, N. A., et al. (2024). Edukasi pencegahan dan penanganan penyakit influenza selama musim hujan pada pasien di klinik dan apotek Callista Farma. *Jurnal Pengabdian Masyarakat Panacea*, 2(2), 93–99.
- Silva, M. T., Galvão, T. F., & Pereira, M. G. (2023). Risk perception and influenza vaccination uptake in adults: A population-based study. *Vaccine*, 41(7), 1234–1240. <https://doi.org/10.1016/j.vaccine.2022.12.034>
- Siyoto, S., & Sodik, M. A. (2021). *Dasar metodologi penelitian*. Literasi Nusantara.

- Swed, S., et al. (2022). Knowledge and attitudes about influenza and the common cold in Syria post COVID-19: A qualitative study. *Annals of Medicine and Surgery*, 80, 104166. <https://doi.org/10.1016/j.amsu.2022.104166>
- Wijaya, S., et al. (2023). Edukasi tentang penanggulangan batuk dan pilek di TK IT Anak Cerdas 2 Kurungan Nyawa, Kecamatan Gedong Tataan, Kabupaten Pesawaran. *Jurnal Pengabdian Farmasi Malahayati*, 6(2).
- World Health Organization. (2023). Influenza (seasonal).
- Yulianto, D. (2024). Gambaran tingkat pengetahuan masyarakat tentang swamedikasi obat influenza di Dusun Soka Klaten bulan Februari 2023. *Jurnal Ilmiah Farmasi Simplisia*, 4(1), 52–59.
- Zhang, Y., et al. (2025). Opportunities to increase influenza vaccine uptake among pregnant women: Insights from surveys in 2013 and 2023. *Vaccines*, 13(6), 589. <https://doi.org/10.3390/vaccines13060589>