

Health Awareness Education Through Blood Checking in Pharmacies

Oktaviarika Dewi Hermawatiningsih ¹, Rahmawati Raising ², Lukman La Basy ³, Vevi Maritha ⁴

^{1, 2, 3} STIKES Maluku Husada, Indonesia

⁴ Universitas PGRI Madiun, Indonesia

* oktaviarika1717@gmail.com

Abstract

Increasing public health awareness is one of the main challenges in the health sector in Indonesia. Pharmacies not only play a role as a place to get medicine, but also as a means of health services that can provide education and basic health checks for the community. This education aims to increase public awareness about the importance of health and teach ways to maintain and improve the quality of life. Pharmacies that adopt blood testing services as part of health education programs can help reduce the burden on larger health services, such as hospitals and clinics. The educational activity to the community carried out at Apotek X Madiun City which lasted for 2 hours received a good response from the surrounding community. Where there were 35 participants who took part in blood tests and also gave various types of questions related to health. So that the provision of education and information to increase health awareness can be carried out properly. Health awareness education through blood checks in pharmacies is a strategic step in improving the quality of public health. With the strategic role of pharmacies, blood testing services can be an entrance for people to be more concerned about their health conditions.

Keywords: *Health; Awareness Education; Blood Checking; Pharmacies*

Introduction

Increasing public health awareness is one of the main challenges in the health sector in Indonesia (Frigon et al, 2019). As an effort to improve public health, it is important to provide effective education on the importance of regular health monitoring. One method that can be used to support this effort is through blood checks at pharmacies (Awat et al, 2017). Health checks are a crucial aspect in maintaining and improving the quality of life of the community (Basheti et al, 2017). One of the important methods in health monitoring is blood checks, which can provide vital information related to body conditions, such as blood sugar levels, cholesterol, hemoglobin, and others (Dosea et al, 2017). However, public awareness of the importance of regular blood checks is still relatively low in Indonesia. Lack of education and understanding of the benefits of blood testing is a major challenge in efforts to increase health awareness in the community (Bishop et al, 2019).

Pharmacies, as one of the health facilities that are easily accessible to the public, have a strategic role in providing blood check services and educating the public about the

importance of routine health checkups. However, the challenges faced by pharmacies in this effort are quite complex (Ung, 2020). Some of these challenges include the lack of skilled health workers in providing health education, limited medical facilities and equipment in pharmacies, and low public participation in health screening programs. Pharmacies not only play a role as a place to get medicine, but also as a means of health services that can provide education and basic health checks for the community (Goode et al, 2019). In this digital and information era, pharmacies have great potential to become health education centers that can be easily accessed by the public (Green et al, 2017). Blood checks at pharmacies can be one of the effective first steps to detect early health conditions that are at risk, such as hypertension, diabetes, and high cholesterol.

In recent years, many pharmacies have begun to initiate various health awareness activities, such as free health checkups, education on the correct use of drugs, and healthy lifestyle campaigns (Hindi et al, 2019). The purpose of this activity is to increase public knowledge about the importance of maintaining health and provide easier access to health services (Steed et al, 2019). Pharmacies as the spearhead in health services can help prevent the spread of diseases through education and health promotion. In addition, health awareness activities carried out in pharmacies can also improve the image of pharmacies as institutions that care about public health (Horumpende et al, 2018).

Health education is the process of providing information and skill development to individuals or groups to improve knowledge, attitudes, and behaviors that support health (Hamzah et al, 2021). This education aims to increase public awareness about the importance of health and teach ways to maintain and improve the quality of life. According to a study, health education is part of health promotion efforts that can be carried out by various parties, including pharmacies (Notoatmodjo, 2012). A study shows that 60% of people who receive education at pharmacies tend to be more disciplined in undergoing routine health check-ups compared to those who do not receive similar education (Malhi et al, 2020). This shows the importance of the role of pharmacies in increasing public health awareness and education.

However, health education conducted through blood checks in pharmacies has high relevance in today's health industry (Savickas et al, 2020). With the increasing prevalence of non-communicable diseases such as diabetes and hypertension, regular blood checks are becoming increasingly important for early detection and prevention of complications. In addition, lifestyle changes and increased awareness of the importance of health also drive the need for more accessible health services, one of which is through pharmacies (Milosavljevic et al, 2018).

In the context of the current health industry, where the focus on disease prevention is increasing, health awareness education through blood checks in pharmacies is becoming increasingly relevant (Mugo et al, 2017). Pharmacies that adopt blood testing services as part of health education programs can help reduce the burden on larger health services, such as hospitals and clinics (Mattingly et al, 2018). In the post-COVID-19 pandemic era, public awareness of the importance of health is increasing. However,

without proper educational support from health workers, including pharmacies, this awareness is not necessarily followed by the right actions. Therefore, the role of pharmacies as the front line in providing health education is becoming increasingly crucial (Randleh et al, 2017). Understanding and overcoming the problems faced by pharmacies in increasing health awareness is very relevant to ensure that people can take proactive steps in maintaining their health.

Against this background, the implementation of this educational activity focuses on how health education provided through blood checks at pharmacies can increase public awareness about the importance of regular health monitoring. This activity is expected to make a significant contribution to the development of health services in pharmacies and improve the quality of life of the community.

Method

The health awareness education activities at Pharmacy X in Madiun City commenced at 08.00 and continued until 10.00 WIB, with a series of blood checks serving as the initial step. These blood checks included tests for blood sugar, uric acid, cholesterol, and blood pressure. Upon arrival, every patient was promptly attended to, and after their tests, they were given a comprehensive record of their examination results. If any of the results exceeded the normal limits, the health workers on duty immediately informed the patients. This immediate communication was crucial, as it enabled patients to become aware of potential health risks and allowed them to take timely action.

Following the blood checks, the focus shifted to educational activities led by the pharmacist. During these sessions, patients received detailed explanations about their test results, particularly those that were outside of normal limits. The pharmacist provided guidance on how to manage and reduce these levels, as well as advice on maintaining their health within normal ranges in the future. This education was not just verbal; it was supplemented with leaflets and video media, which made the information more accessible and easier for patients to understand. The aim was to empower patients with knowledge so that they could take control of their health and make informed decisions moving forward.

To evaluate the effectiveness of the education provided, a health awareness assessment was conducted using a questionnaire designed to gauge daily health practices. The questionnaire comprised 10 simple questions that the community members answered with either "yes" or "no." This questionnaire was administered twice—before the educational session and after it. The purpose of this approach was to measure any changes in health knowledge and awareness among the participants as a result of the educational intervention. The pre- and post-education comparison allowed the organizers to determine the impact of the educational activities.

The significance of this activity lies in its ability to assess the effectiveness of direct educational interventions in improving public health awareness. By comparing the results

of the questionnaires before and after the educational sessions, the health workers and pharmacists could gauge the level of knowledge retained by the participants. This not only provided insights into the immediate effectiveness of the education but also highlighted areas that might need further attention or more targeted educational efforts in the future.

The flow of implementation of this activity can be seen in the diagram below:

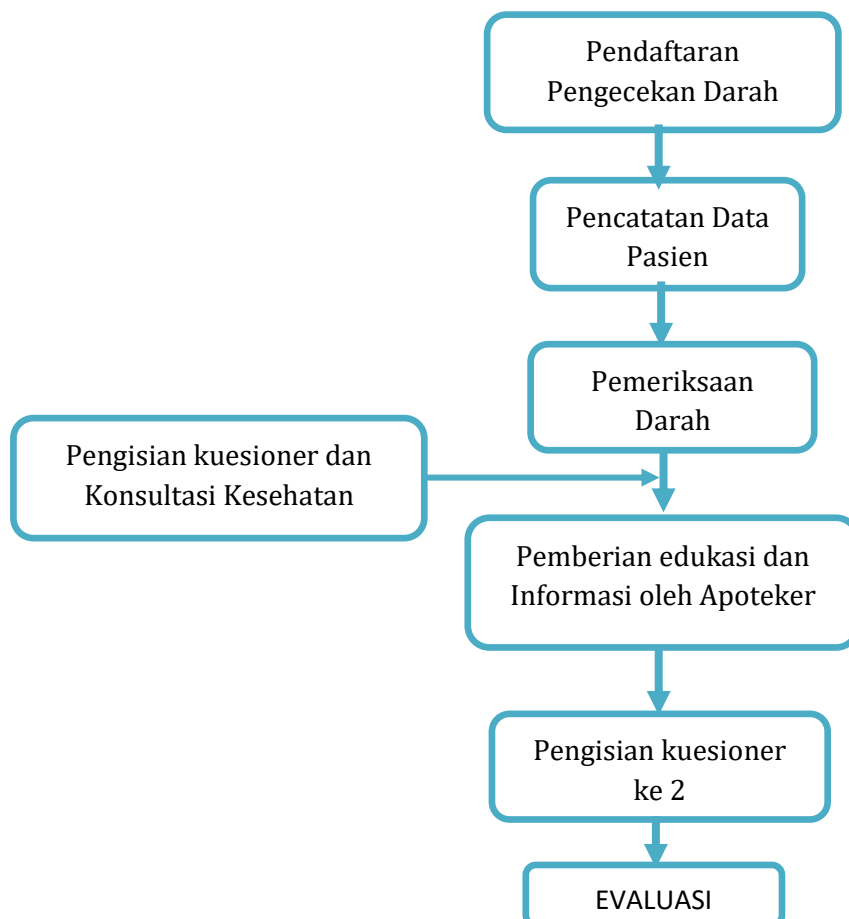


Figure 1. *Implementation Flow*

Results

In the educational activity which was carried out for 2 hours at Pharmacy X in Madiun City, there were 35 patients who participated. Most of the patients who attended came from the community around the pharmacy who were passing through the area or who wanted to buy medicine at the pharmacy. During the examination process, there were several patients who had examination values that exceeded normal. The following is the blood test data from the patients who attended:

Table 1. Blood Test Data

Types of Examinations	Blood Sugar	Asam Urat	Cholesterol	Blood pressure
Usual	18	30	22	25
Abnormal	17	5	13	10
Total	35	35	35	35

After a blood test is carried out, for patients who have abnormal values, education is carried out by the Pharmacist, during the education process and providing information, patients who have questions can be submitted to the Pharmacist. Here are some questions that are often asked by patients:

Table 2. Questions and information and education provided by Pharmacists

Question	Information and Education Delivered
1. How to control blood pressure correctly?	Blood pressure can be controlled by improving lifestyle by maintaining a low-salt diet and also regularly consuming blood pressure-lowering drugs.
2. What is the correct diet in diabetic patients?	1. Consume foods with fiber and complex carbohydrates, because they can control blood sugar levels Where these types of foods take longer to be processed in digestion. 2. Eat regularly, according to the correct meal schedule, as it can help avoid excessive appetite. 3. Consuming a lot of omega 3 can prevent inflammation in diabetics. 4. Regular exercise, such as walking, running and cycling, as they can help control blood sugar levels.
3. What are the consequences if cholesterol levels do not drop?	High blood cholesterol levels can cause the onset of arteroskeloris (plaque buildup in blood vessels) so that it will interfere with blood circulation, which later can cause narrowing of blood vessels and can cause one of them a heart attack.
4. Which is better between simvastatin and atorvastatin?	Both drugs can lower LDL and TG cholesterol levels, but atorvastatin is more effective than simvastatin. Atorvastatin can reduce LDL levels by 30-40% and triglycerides by 29-37% whereas Simvastatin can reduce LDL levels by 20-30% and triglycerides by 16-25%.
5. What are the signs when blood sugar levels are high?	1. Easily hungry and thirsty 2. Frequent urination 3. Easily tired 4. Significant BB drop 5. Skin problems (dryness and itching)

Assessments related to public awareness knowledge related to health were carried out using questionnaires, which were given before and after the delivery of education by pharmacists. The assessment is carried out by giving a score from the yes or no answer stated on the questionnaire. The assessment categories are presented in 3 categories, namely up, fixed or down. The results of the questionnaire of 35 patients who participated can be seen in the table below:

Table 3. Questionnaire assessment results

Questionnaire score	Sum	Percentage (%)
Climb	32	91,43
Remain	3	8,57
Go down	0	0
Total	35	100

Discussion

Blood checks are one of the health services that can be done at pharmacies. These services include blood sugar, cholesterol, and blood pressure checks, all of which are important indicators of a person's health condition. Regular blood checks can help in the early detection of various diseases such as diabetes and hypertension. With this service in pharmacies, people can easily monitor their health conditions without having to go to the hospital (Van Eikenhorst et al, 2017). Based on the results listed in table 1 of the blood test data of patients in this educational activity to the community, it was obtained that most of them had abnormal blood test values from all types of examinations. Therefore, the educational activities carried out at this pharmacy are very important to increase public health awareness. Pharmacies have an important role in providing health education to the community (Waaseth et al, 2019). Through blood testing services, pharmacies can provide accurate information about the results of the examination and provide appropriate health advice. In addition, pharmacies can also provide educational materials, such as brochures or posters, that contain information about the importance of regular blood checks and how to maintain general health. According to a study stating that Pharmacy as one of the closest health facilities to the community, has a strategic role in health education. Based on the data of questions and information and education provided to the community, it can be seen that many people are enthusiastic about knowing tips and information related to health. This can be seen from the variety of questions asked by the public. The process of providing information and skill development to individuals or groups to improve knowledge, attitudes, and behaviors that support health. This education aims to increase public awareness about the importance of health and teach ways to maintain and improve the quality of life.

The assessment of knowledge related to health awareness assessed using a questionnaire has the results as shown in table 3. It is known that most of the patients who participated had an increased score of 91.43%. From these results, it can be seen that after the provision of education, the understanding related to patient awareness knowledge related to health has increased. Assessment of health knowledge and awareness is one of the important aspects of health research, especially when the purpose of the research is to measure an individual's level of understanding of a particular health topic. Health knowledge refers to a person's understanding of health information that can affect their health behavior. This knowledge includes an understanding of diseases, prevention, treatment, and health promotion. Health awareness, on the other hand, includes an individual's awareness of the importance of maintaining health and the influence of behavior on health.

Health knowledge and awareness can be influenced by a variety of factors, including education, access to information, personal experiences, and sociocultural factors. Good knowledge is usually accompanied by high awareness, however, in some cases, individuals with sufficient knowledge do not necessarily have high awareness to carry out actions that support their health. Questionnaires are a commonly used tool to measure

health knowledge and awareness in various studies. The questionnaire can contain both closed-ended and open-ended questions designed to uncover information about respondents' health knowledge, attitudes, and behaviors. Questionnaires provide convenience in data collection because they can be distributed to many respondents in a relatively short time. The use of questionnaires in health research helps researchers to obtain objective and quantitative data, which can then be used to develop more effective health interventions.

In the implementation of this activity, the results obtained have achieved the expected goals, but in the implementation there are several problems that arise such as (1) Lack of Community Participation: Although these activities are designed to attract the attention of the public, not everyone feels motivated to participate. This can be caused by a lack of understanding of the importance of these activities or activity schedules that are not in accordance with people's leisure time, (2) Limited Resources: Pharmacies, especially small ones, often face limitations in terms of human and financial resources. This can hinder the implementation of effective and sustainable health awareness activities, (3) Coordination and Cooperation: In some cases, a lack of coordination between the pharmacy and other parties, such as health centers or other health institutions, can reduce the effectiveness of the activities carried out. Good cooperation is needed to ensure that these programs can reach the wider community, and (4) Evaluation and Monitoring: Without a good evaluation, it is difficult to measure the success of health awareness activities carried out. Many pharmacies do not have an adequate evaluation system to assess the impact of this activity.

Conclusion

Pharmacies not only function as a place to sell drugs, but also as a public health service center that provides health-related education. However, in its implementation, health education activities in pharmacies often face various problems that can affect the effectiveness and success of the program. One of the main problems that arise is the low awareness and understanding of the public about the importance of health and disease prevention. Many people still tend to think that pharmacies are only a place to buy medicine when they are sick, not as a place to get health information and education. This results in low community participation in educational activities held in pharmacies. Health awareness education through blood checks in pharmacies is a strategic step in improving the quality of public health. With the strategic role of pharmacies, blood testing services can be an entrance for people to be more concerned about their health conditions. Health problems that occur in the community need to be overcome with the right strategy so that public health awareness education activities in pharmacies can run effectively and achieve their goals. Collaboration between pharmacies, governments, and other health organizations is essential to improve the quality of health education and, ultimately, increase public awareness of the importance of health.

References

- Awad, A. I., Al-Rasheedi, A., & Lemay, J. (2017). Public perceptions, expectations, and views of community pharmacy practice in Kuwait. *Medical Principles and Practice*, 26(5), 438-446. <https://doi.org/10.1159/000481662>
- Basheti, I. A., Nassar, R., Barakat, M., Alqudah, R., Abufarha, R., Mukattash, T. L., & Saini, B. (2021). Pharmacists' readiness to deal with the coronavirus pandemic: assessing awareness and perception of roles. *Research in Social and Administrative Pharmacy*, 17(3), 514-522. <https://doi.org/10.1016/j.sapharm.2020.04.020>
- Bishop, C., Yacoob, Z., Knobloch, M. J., & Safdar, N. (2019). Community pharmacy interventions to improve antibiotic stewardship and implications for pharmacy education: a narrative overview. *Research in Social and Administrative Pharmacy*, 15(6), 627-631. <https://doi.org/10.1016/j.sapharm.2018.09.017>
- Dosea, A. S., Brito, G. C., Santos, L. M., Marques, T. C., Balisa-Rocha, B., Pimentel, D., ... & Lyra Jr, D. P. (2017). Establishment, implementation, and consolidation of clinical pharmacy services in community pharmacies: perceptions of a group of pharmacists. *Qualitative health research*, 27(3), 363-373. <https://doi.org/10.1177/1049732315614294>
- Dolovich, L., Austin, Z., Waite, N., Chang, F., Farrell, B., Grindrod, K., ... & Sproule, B. (2019). Pharmacy in the 21st century: enhancing the impact of the profession of pharmacy on people's lives in the context of health care trends, evidence and policies. *Canadian Pharmacists Journal/Revue Des Pharmaciens Du Canada*, 152(1), 45-53. <https://doi.org/10.1177/1715163518815717>
- Frigon, M. P., Blackburn, M. È., Dubois-Bouchard, C., Gagnon, A. L., Tardif, S., & Tremblay, K. (2019). Pharmacogenetic testing in primary care practice: opinions of physicians, pharmacists and patients. *Pharmacogenomics*, 20(8), 589-598. <https://doi.org/10.2217/pgs-2019-0004>
- Goode, J. V., Owen, J., Page, A., & Gatewood, S. (2019). Community-based pharmacy practice innovation and the role of the community-based pharmacist practitioner in the United States. *Pharmacy*, 7(3), 106. <https://doi.org/10.3390/pharmacy7030106>
- Green, T. C., Case, P., Fiske, H., Baird, J., Cabral, S., Burstein, D., ... & Bratberg, J. (2017). Perpetuating stigma or reducing risk? Perspectives from naloxone consumers and pharmacists on pharmacy-based naloxone in 2 states. *Journal of the American Pharmacists Association*, 57(2), S19-S27. <https://doi.org/10.1016/j.japh.2017.01.013>
- Hamza, M. S., Badary, O. A., & Elmazar, M. M. (2021). Cross-sectional study on awareness and knowledge of COVID-19 among senior pharmacy students. *Journal of community health*, 46, 139-146. <https://doi.org/10.1007/s10900-020-00859-z>
- Hindi, A. M., Schafheutle, E. I., & Jacobs, S. (2019). Community pharmacy integration within the primary care pathway for people with long-term conditions: a focus group

- study of patients', pharmacists' and GPs' experiences and expectations. *BMC family practice*, 20, 1-15. <https://doi.org/10.1186/s12875-019-0912-0>
- Horumpende, P. G., Sonda, T. B., van Zwetselaar, M., Antony, M. L., Tenu, F. F., Mwanziva, C. E., ... & Chilongola, J. O. (2018). Prescription and non-prescription antibiotic dispensing practices in part I and part II pharmacies in Moshi Municipality, Kilimanjaro Region in Tanzania: A simulated clients approach. *PloS one*, 13(11), e0207465. <https://doi.org/10.2217/pgs-2019-0004>
- Mallhi, T. H., Liaqat, A., Abid, A., Khan, Y. H., Alotaibi, N. H., Alzarea, A. I., ... & Khan, T. M. (2020). Multilevel engagements of pharmacists during the COVID-19 pandemic: the way forward. *Frontiers in public health*, 8, 561924. <https://doi.org/10.3389/fpubh.2020.561924>
- Milosavljevic, A., Aspden, T., & Harrison, J. (2018). Community pharmacist-led interventions and their impact on patients' medication adherence and other health outcomes: a systematic review. *International Journal of Pharmacy Practice*, 26(5), 387-397. <https://doi.org/10.1111/ijpp.12462>
- Mugo, P. M., Micheni, M., Shangala, J., Hussein, M. H., Graham, S. M., Rinke de Wit, T. F., & Sanders, E. J. (2017). Uptake and acceptability of oral HIV self-testing among community pharmacy clients in Kenya: a feasibility study. *PloS one*, 12(1), e0170868. <https://doi.org/10.1371/journal.pone.0170868>
- Mattingly, A. N., & Mattingly II, T. J. (2018). Advancing the role of the pharmacy technician: a systematic review. *Journal of the American Pharmacists Association*, 58(1), 94-108. <https://doi.org/10.1016/j.japh.2017.10.015>
- Radley, A., Melville, K., Tait, J., Stephens, B., Evans, J. M., & Dillon, J. F. (2017). A quasi-experimental evaluation of dried blood spot testing through community pharmacies in the Tayside region of Scotland. *Frontline gastroenterology*, 8(3), 221-228. <https://doi.org/10.1136/flgastro-2016-100776>
- Savickas, V., Stewart, A. J., Rees-Roberts, M., Short, V., Bhamra, S. K., Corlett, S. A., ... & Veale, E. L. (2020). Opportunistic screening for atrial fibrillation by clinical pharmacists in UK general practice during the influenza vaccination season: a cross-sectional feasibility study. *PLoS medicine*, 17(7), e1003197. <https://doi.org/10.1371/journal.pmed.1003197>
- Steed, L., Sohanpal, R., Todd, A., Madurasinghe, V. W., Rivas, C., Edwards, E. A., & Walton, R. T. (2019). Community pharmacy interventions for health promotion: effects on professional practice and health outcomes. *Cochrane Database of Systematic Reviews*, (12). <https://doi.org/10.1002/14651858.CD011207.pub2>
- Ung, C. O. L. (2020). Community pharmacist in public health emergencies: quick to action against the coronavirus 2019-nCoV outbreak. *Research in Social and Administrative Pharmacy*, 16(4), 583-586. <https://doi.org/10.1016/j.sapharm.2020.02.003>
- Van Eikenhorst, L., Taxis, K., Van Dijk, L., & De Gier, H. (2017). Pharmacist-led self-management interventions to improve diabetes outcomes. A systematic

literature review and meta-analysis. *Frontiers in pharmacology*, 8, 891.

<https://doi.org/10.3389/fphar.2017.00891>

Waaseth, M., Adan, A., Røen, I. L., Eriksen, K., Stanojevic, T., Halvorsen, K. H., & Nordeng, H. M. (2019). Knowledge of antibiotics and antibiotic resistance among Norwegian pharmacy customers—a cross-sectional study. *BMC public health*, 19, 1-12.

<https://doi.org/10.1186/s12889-019-6409-x>