

Health Education and Screening for Hypertension and Diabetes Mellitus Among Older Adults Through the Elderly Foster Village Program in Selacau Village

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ABSTRACT

The Elderly Foster Village Program in Selacau Village was conducted as a promotive and preventive community service activity for older adults. The program combined health education, hypertension exercise, blood pressure measurement, and blood glucose screening. Pre-test knowledge data were available for 32 participants, while post-test data were available for 28 participants. For the hypertension item, correct responses changed descriptively from 29/32 (90.6%) before education to 26/28 (92.9%) after education. For the diabetes mellitus item, correct responses changed from 26/32 (81.3%) to 23/28 (82.1%). Because post-test data were incomplete and no inferential paired analysis was performed, these findings are interpreted as descriptive changes rather than evidence of effectiveness. Screening provided participants with individual blood pressure and glucose measurements; aggregated screening outcomes were not reported in this manuscript. The program supports continued community education and regular health screening for older adults.

Keywords: older adults; health education; hypertension; diabetes mellitus; screening

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INTRODUCTION

Non-Communicable Diseases (NCDs) are a group of diseases that cannot be transmitted from one individual to another and generally develop over a long period due to the interaction of genetic, physiological, environmental, and behavioral factors. NCDs include various chronic diseases such as hypertension, diabetes mellitus, cardiovascular diseases, cancer, and chronic respiratory diseases. In Indonesia, NCDs have become one of the major challenges in health development because their prevalence continues to increase and contributes significantly to morbidity, disability, and mortality. Therefore, the prevention, control, and early detection of NCDs have become priorities in efforts to improve public health (Ministry of Health of the Republic of Indonesia, 2024).

According to the World Health Organization (WHO, 2025), non-communicable diseases are the leading cause of death worldwide. In 2021, NCDs accounted for approximately 43 million deaths, representing about 75% of all non-pandemic-related deaths globally. Cardiovascular diseases were the leading cause of death, accounting for approximately 19 million deaths, followed by cancer with 10 million deaths, chronic respiratory diseases with around 4 million deaths, and diabetes mellitus with more than 2 million deaths. These data indicate that NCDs remain a major public health challenge in many countries, including Indonesia. Therefore, preventive measures through the adoption of healthy lifestyles, early detection of risk factors, and continuous disease management are essential to reduce morbidity and mortality associated with NCDs.

In Indonesia, non-communicable diseases have also become a growing public

health concern. Based on the 2023 Indonesian Health Survey (Survei Kesehatan Indonesia/SKI), the prevalence of various NCD risk factors, including smoking, physical inactivity, unhealthy dietary habits, overweight, and obesity, remains relatively high and contributes to the increasing incidence of NCDs. Consequently, diseases such as hypertension, diabetes mellitus, cardiovascular diseases, and cancer have become major burdens on the Indonesian healthcare system. Therefore, promotive and preventive efforts through risk factor control, early detection, and increased public awareness should continue to be strengthened to reduce the morbidity and mortality associated with NCDs (Ministry of Health of the Republic of Indonesia, 2023; Ministry of Health of the Republic of Indonesia, 2024).

Hypertension and diabetes mellitus are two non-communicable diseases that have become major priorities in Indonesia's NCD control efforts because they significantly increase the risk of cardiovascular disease, stroke, kidney failure, and other serious complications. The results of the 2023 Indonesian Health Survey (SKI) showed that the prevalence of hypertension among adults aged ≥ 18 years, based on blood pressure measurements, reached 30.8%, while the prevalence of diabetes mellitus among individuals aged ≥ 15 years, based on blood glucose measurements, reached 11.7%. Furthermore, there remains a gap between the prevalence based on physician diagnosis and that identified through clinical examinations, indicating that many individuals are still unaware of their disease status. These findings highlight the importance of regular blood pressure and blood glucose screening, particularly among older adults, as an essential strategy for preventing complications and improving quality of life.

These findings are consistent with the study conducted by Mashuri et al. (2024), which demonstrated that the Integrated Non-Communicable Disease Health Post (Posbindu PTM) plays an important role in improving community knowledge about hypertension through health screening, health education, and early detection of risk factors. The study emphasized that regular blood pressure monitoring and risk factor assessment are essential strategies for increasing public awareness of non-communicable diseases.

The evaluation of the implementation of Posbindu PTM in Indonesia has shown that this program plays a significant role in screening for hypertension and diabetes mellitus within communities. However, the program's coverage and follow-up of screening results still need to be strengthened to optimize the early detection of NCD risk factors.

Efforts to prevent and control non-communicable diseases should be implemented continuously through promotive and preventive approaches. One such effort is the implementation of the Integrated Non-Communicable Disease Health Post (Posbindu PTM), which serves as a community-based program for the early detection of NCD risk factors through regular health examinations, including blood pressure measurement and blood glucose testing. In addition, Posbindu PTM functions as a platform for health education, promoting public awareness of healthy lifestyles and preventing complications associated with non-communicable diseases (Ministry of Health of the Republic of Indonesia, 2021).

Based on the burden of non-communicable diseases and the importance of regular screening, a community service program was conducted in Selacau Village, Batujajar District, West Bandung Regency. The program combined blood pressure measurement, blood glucose testing, hypertension exercise, and health education on hypertension and diabetes mellitus. The activity aimed to support early identification

of health risks, improve participant knowledge, and encourage regular health checks and healthy lifestyle practices.

METHODS

This community service program used an educational, promotive, preventive, and participatory approach for older adults in Selacau Village, Batujajar District. A pre-test was completed by 32 participants to describe baseline knowledge of hypertension and diabetes mellitus, followed by blood pressure measurement and blood glucose testing. Post-test responses were available for 28 participants. Because four participants did not have post-test data, the pre-test and post-test percentages were compared descriptively and were not treated as complete paired data.

Subsequently, the participants took part in a hypertension exercise program designed to improve physical fitness and help maintain stable blood pressure. The program continued with a health education session delivered through an interactive lecture using simple and easily understandable language. The educational materials covered the definition of hypertension and diabetes mellitus, risk factors, signs and symptoms, impacts and complications, the importance of early detection through regular health examinations, and strategies for preventing and controlling both diseases through the adoption of healthy lifestyles.

Participants were also given the opportunity to engage in discussions and ask questions regarding the topics presented, thereby promoting two-way communication between the presenters and the participants. At the end of the program, a post-test was conducted to evaluate the improvement in participants' knowledge following the educational intervention. The entire program was implemented through direct interaction between the students and the participants, encouraging the active participation of older adults in maintaining and improving their health.

RESULTS AND DISCUSSION

The community service program was conducted in Selacau Village, Batujajar District, targeting older adults. The program began with a pre-test to assess the participants' baseline knowledge of hypertension and diabetes mellitus. This was followed by a health education session delivered through an interactive lecture covering the definition, risk factors, signs and symptoms, complications, prevention, and management of hypertension and diabetes mellitus.

Following the educational session, participants engaged in a question-and-answer discussion, after which a post-test was administered to evaluate the improvement in their knowledge. In addition to the educational intervention, participants received free blood pressure measurement and blood glucose testing as part of an early detection program for non-communicable diseases.



Figure 1. Health Education on Hypertension and Diabetes Mellitus

The available pre-test and post-test data showed small descriptive changes in knowledge regarding hypertension and diabetes mellitus. For hypertension, the proportion of correct responses increased from 90.6% at pre-test (29/32) to 92.9% at post-test (26/28). For diabetes mellitus, the proportion of correct responses increased from 81.3% (26/32) to 82.1% (23/28). Because the number of available responses differed between pre-test and post-test, these percentages should not be interpreted as a paired causal effect.

The post-test data indicate that most participants who completed the final questionnaire correctly identified diabetes mellitus as a condition characterized by elevated blood glucose. This finding is descriptive and does not establish a statistically significant knowledge change.



Figure 2. Older Adults Completing the Pre-Test and Post-Test on Hypertension and Diabetes

The screening component provided participants with their individual blood pressure and blood glucose measurements and reinforced the importance of regular health checks. However, aggregated screening results, diagnostic classifications, and follow-up outcomes were not reported in the available activity data; therefore, the manuscript does not estimate the prevalence of hypertension or diabetes mellitus or the number of newly detected cases.



Figure 3. Health Screening for Hypertension and Diabetes Mellitus

Table 1. Evaluation of Participants' Knowledge Before and After the Hypertension Education Session

Category	Pre-test	Post-test
Correct	29 (90.6%)	26 (92.9%)
Wrong	3 (9.4%)	2 (7.1%)
Total	32 (100%)	28 (100%)

Table 1 shows a small descriptive increase in the proportion of correct responses to the hypertension item, from 29 of 32 participants (90.6%) at pre-test to 26 of 28 participants (92.9%) at post-test. Because four post-test responses were unavailable, the percentages have different denominators and should be interpreted descriptively.

Table 2. Evaluation of Participants' Knowledge Before and After the Diabetes Mellitus Education Session

Category	Pre-test	Post-test
Correct	26 (81.3%)	23 (82.1%)
Wrong	6 (18.7%)	5 (17.9%)
Total	32 (100%)	28 (100%)

For the diabetes mellitus item, correct responses changed from 26 of 32 participants (81.3%) at pre-test to 23 of 28 participants (82.1%) at post-test. The proportion of incorrect responses was 18.7% at pre-test and 17.9% at post-test. These data indicate a small descriptive shift among the available responses rather than a demonstrated intervention effect.

Overall, the program combined education, discussion, exercise, and screening in a format that was feasible for community implementation. The knowledge data show only small descriptive changes, and incomplete post-test data limit direct comparison. The screening component may support awareness by providing individual measurements, but its clinical yield cannot be evaluated because aggregated screening outcomes were not reported.

CONCLUSION

The Elderly Foster Village Program in Selacau Village delivered health education, hypertension exercise, blood pressure measurement, and blood glucose screening to older adults. Knowledge responses showed small descriptive improvements, but post-test data were available for 28 of 32 baseline participants and no inferential paired

analysis was conducted. The activity therefore supports the feasibility of combining education and screening in a community setting rather than establishing program effectiveness. Future activities should ensure complete follow-up data and report aggregated screening findings, referral needs, and longer-term knowledge or behavior outcomes.

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