

Changes in Community Behavior Regarding Cardiovascular Health and Hypertension After Participating in Prolanis Activities

Literature Review

Dina Rahmah Fajriana*

Public Health Science, University of
Jenderal Soedirman, 53122

Dina.fajriana@mhs.unsoed.ac.id

*Corresponding author

Budi Aji

Public Health Science, University of
Jenderal Soedirman, 53122

Budi.aji@unsoed.ac.id

Joko Mulyanto

Public Health Science, University of
Jenderal Soedirman, 53122

Joko.mulyo@unsoed.ac.id

• Submitted: 2025-05-01; Accepted: 2025-05-21; Published: 2025-06-05

Abstract—The Chronic Disease Prevention and Management Program (Prolanis) has become one of the main strategies in efforts to increase public awareness of cardiovascular health and reduce the prevalence of hypertension. This study aims to present a literature review regarding the impact of the Prolanis program on changing people's behavior regarding cardiovascular health and hypertension management. The literature search method was carried out through various online databases using relevant keywords. The results of literature analysis show that the Prolanis program has consistently proven effective in increasing public knowledge about cardiovascular risk factors, motivating changes in healthy behavior such as balanced eating patterns and increasing physical activity, as well as increasing compliance with treatment and monitoring of hypertension conditions. These findings highlight the important role of the Prolanis program in changing people's behavior towards a healthier lifestyle and better management of hypertension. The implications of the results of this literature include the need for wider development and implementation of the Prolanis program as well as ongoing evaluation to ensure its sustainability and effectiveness in overcoming cardiovascular health problems and hypertension at the community level. Systematic review research is a way in the research process to find the best results from previous research to search for literature systematically and then analyze and conclude using the data prism method flow from the results of literature data analysis to answer problems effectively and significantly. The data that has been collected from this data collection method is then processed and combined to obtain related explanations. The impact of the Healthy Elderly Program (Prolanis) on changes in community behavior in relation to cardiovascular health and controlling hypertension.

Keywords—Behavioral Changes, Cardiovascular, Hypertension, Prolanis.

I. INTRODUCTION

Cardiovascular health is an important aspect of health and is the focus of world attention, especially in developing countries like Indonesia (Kustiyanti, 2023). In the midst of demographic transformation and changes in lifestyle, cardiovascular disease is increasingly becoming a serious threat to people's welfare (Sabrina & Indrawan, 2020). According to data from the Ministry of Health of the Republic of Indonesia, heart and blood vessel disease is the biggest cause of death in Indonesia, including in rural areas (Rikesdas, 2013). Rural communities often face their own challenges in maintaining their cardiovascular health. Factors such as limited access to health services, minimal understanding of healthy lifestyles, and limited resources are the main obstacles in preventing and treating this disease (Palupi et al, 2023). Therefore, a holistic and integrated approach is needed to improve the cardiovascular health of rural communities.

One of the efforts adopted is through the Heart House community program. This program emphasizes approaches to preventing and managing cardiovascular disease through health education, promotion of healthy lifestyles, and the formation of communities that care about heart health (Kurniawidjadja *et al.*, 2023). According to Saelan *et al.* (2021), education on Self Management regarding self-care behavior in patients failed to produce significant changes in behavior.

The Healthy Elderly Program (Prolanis) is a program organized by the Indonesian government through the Ministry of Health. This program aims to improve the welfare and health of the elderly in Indonesia. The active role of Prolanis participants in implementing Prolanis is very necessary in achieving optimal health outcomes through Prolanis activities. The types of Prolanis activities are, medical consultations, group education and club activities, SMS gateway reminders, and home visits. Several previous studies have proven that hypertension sufferers who take Prolanis can optimize their health status. The perception of Prolanis participants who experience

hypertension is that if they do not regularly participate in Prolanis activities, their blood pressure will become uncontrolled and they are at risk of experiencing complications (Ariana *et al.*, 2022). The blood pressure of Prolanis participants became controlled after attending Prolanis activities regularly compared to Prolanis participants who did not regularly participate in Prolanis activities (Deiby *et al.*, 2016). Hypertension sufferers who receive education and health consultations show treatment compliance, increased quality of life, and reduced risk of complications (Nugraheny *et al.*, 2016). Previous research also found that Prolanis participation had a significant relationship in hypertensive patients regarding blood pressure control (Ariana *et al.*, 2022). From several previous studies, it is known that participants who actively take Prolanis prove that their blood pressure is better controlled, reduces the risk of complications and improves the quality of life of Prolanis participants who suffer from hypertension. Based on initial research studies regarding Prolanis, research on "Effectiveness of Prolanis Services in Controlling Blood Pressure in Prolanis Participants Who Experience Hypertension" can be carried out in depth and detail in further research. The results of this research can be used as a literature reference in solving Prolanis management problems, increasing compliance in preventing and managing hypertension, as a basis for measuring the effectiveness of PROLANIS, and providing input to stakeholders in making health policies. The aim of this literature review journal is to investigate and analyze the impact of the Healthy Elderly Program (Prolanis) on changes in community behavior in relation to cardiovascular health and hypertension control.

II. METHOD

This research is a systematic literature review. The literature review was conducted by looking at various

perspectives related to blood pressure problems in Prolanis participants obtained from various articles. Literature collection was carried out by searching published journals on the electronic data base Google Scholar, Pubmed and Researchgate using keywords in Indonesian Blood Pressure, cardiovascular, Indonesian Chronic Disease Management Program or Prolanis and Hypertension with the inclusion criteria in this article are as follows. 1) not duplicate articles; 2) articles published in the range of 2010 - 2024; 3) English or Indonesian language; 4) non-experimental research design; 5) articles that aim to determine the blood pressure of Prolanis participants during Prolanis activities; 6) articles are free and fully accessible.

III. RESULT AND DISCUSSION

The results of a literature search using the Google Scholar, Pubmed and Researchgate electronic databases found 6 articles that met the research inclusion criteria. Based on the results of a review of the 6 selected articles, it was found that all research respondents suffered from hypertension, although not all respondents were Prolanis participants. A number of articles use a combination of respondents consisting of active Prolanis participants, inactive Prolanis, participants, and non-Prolanis participants. The articles reviewed show that Prolanis is effective in controlling the blood pressure of Prolanis participants who experience hypertension through consultation activities, education, SMS gateway reminders, club activities, and home visits. However, there is one article which states that Prolanis home visits and education activities are not effective in influencing the blood pressure of Prolanis participants who have hypertension. The results of the review of the article can be seen in table 1.

Table. 1 Prolanis Intervention Research Overview

Author And Year	Research Methods And Instrument	Result
Alkaff <i>et al.</i> , 2020	Health monitoring sheet to monitor body mass index (BMI), blood pressure and laboratory evaluation Attendance to see participants' compliance with Prolanis	Mean systolic and diastolic blood pressure remained within the normal range. There was improvement in serum triglycerides. BMI and LDL showed improvement at first follow-up but worsened thereafter. TC only showed improvement in the last evaluation. HDL results and the average rate of blood filtration that occurs in the glomerulus change
Dyanneza <i>et al.</i> , 2017	Food Frequency Questionnaire(FFQ) to collect dietary data based on the DASH eating plan. International Physical Activity Questionnaire (IPAQ) to monitor physical activity	Prolanis participants who suffer from hypertension doing Prolanis activities show a decrease in blood pressure.
Hastuti <i>et al.</i> , 2021	Chronic disease management program questionnaire based on caring theory with blood pressure reduction	Application of Prolanis based on caring theory can reduce systolic and diastolic blood pressure. Obtained a p value = 0.000 on the average decrease in systolic and diastolic blood pressure before and after the intervention

Daryanti <i>et al.</i> , 2020	Questionnaire Medical equipment (tension meter, blood sugar checker, weight scale, height meter, and metlin) to determine the patient's condition	The effectiveness of Prolanis activities can affect the patient's condition, both in terms of blood pressure and physical activity.
Larasati & Husna, 2019	Patient medical records Morisky Medication Adherence Scale (MMAS-8) questionnaire to assess patient medication adherence	There was no significant relationship between consultation, education and home visits with blood pressure. There is a significant relationship between SMS gateway reminders and medication adherence and blood pressure.
Cakra <i>et al.</i> , 2018	Interview, blood pressure measurement Medical records from the Prolanis database	There is a significant relationship between reducing blood pressure with active participation in the Prolanis program, good medication adherence, and regular physical activity. 75.7% of respondents actively participated in the Prolanis program with 81.6% experiencing a decrease in blood pressure.
Komalasari <i>et al.</i> , 2023	Using an electrocardiogram Check blood pressure after participating in prolanis exercises	There was no significant change ($p > 0.05$) in systolic blood pressure. Based on analytical analysis, there were significant changes in systolic blood pressure and pulse rate ($p < 0.05$), which indicated that prolanis exercise had an impact on systemic blood pressure. However, there was actually no significant change in blood pressure ($p > 0.05$) in diastolic blood pressure.
Kamarudin, 2023	Data collection uses research instruments	Knowledge, attitudes and motivation towards the activeness of elderly people with hypertension in prolanis exercise activities have an influence on blood pressure
Misbach <i>et al.</i> , 2023	The data collection technique consists of filling out a questionnaire related to hypertension disease and exercise.	There is an influence of increasing public knowledge on the distribution of leaflets and the exercise activities carried out.
Ulfa <i>et al.</i> , 2019	Data collection uses research instruments Check blood pressure and sugar after participating in prolanis exercises	The effectiveness of prolanis exercises in reducing blood pressure before and after treatment

Based on the results of the analysis of the 10 articles used in this study, it was found that there were 3 articles stating that Prolanis was able to reduce blood pressure and its complications. 3 articles show that it has successfully demonstrated effectiveness in maintaining systolic and diastolic blood pressure within the normal range. Hypertension sufferers who take Prolanis have better blood pressure control than non-prolanis. 1 article shows that a chronic disease management program based on caring theory applied in Prolanis is able to reduce blood pressure. 1 article states that being active in participating in prolanis activities can reduce blood pressure effectively through compliance with taking medication and group physical activity. 1 article stating that the SMS gateway reminder was able to reduce the blood pressure of Prolanis participants. Meanwhile, there is 1 article which states that prolanis consultation, education and home visit activities are not related to blood pressure. Improving the quality of

life of hypertensive sufferers can be done by controlling blood pressure. Prolanis participants who regularly take part in Prolanis activities consistently show that their successfully demonstrated effectiveness in maintaining systolic and diastolic blood pressure within the normal range. Hypertension sufferers who take Prolanis have better blood pressure control than non-prolanis. 1 article shows that a chronic disease management program based on caring theory applied in Prolanis is able to reduce blood pressure. 1 article states that being active in participating in prolanis activities can reduce blood pressure effectively through compliance with taking medication and group physical activity. 1 article stating that the SMS gateway reminder was able to reduce the blood pressure of Prolanis participants. Meanwhile, there is 1 article which states that prolanis consultation, education and home visit activities are not related to blood pressure. Improving the quality of life of hypertensive sufferers can be done by controlling

blood pressure. Prolanis participants who regularly take part in Prolanis activities consistently show that their systolic and diastolic blood pressure is stable (Dewi *et al.*, 2014).

In elderly people with hypertension, the formation of group therapy can effectively reduce blood pressure (Cakera *et al.*, 2018). Other research conducted in the city of Dongguan, China also shows that interactive public health education strategies can effectively improve clinical outcomes in hypertensive patients (Lu *et al.*, 2015). Studies in the United States also show that a proactive hypertension management approach in community groups can control blood pressure better (Kravetz & Walsh, 2016).

Monitoring the health status of each Prolanis participant through medical consultation activities. Apart from health monitoring, this activity also provides treatment for one month. Early detection of health problems can be the right treatment if the health status of Prolanis participants is not good. A study in Japan during 6 months of intervention with personal counseling activities was able to reduce the participants' risk of cardiovascular disease by 10 years (16). Research conducted for 4 months on group-based effectiveness in blood pressure management in primary health care showed that blood pressure had decreased significantly. in prolanis participants compared with patients with usual care (Kravetz & Walsh, 2016). Systolic and diastolic blood pressure is stable (Dewi *et al.*, 2014).

In elderly people with hypertension, the formation of group therapy can effectively reduce blood pressure (Cakera *et al.*, 2018). Other research conducted in the city of Dongguan, China also shows that interactive public health education strategies can effectively improve clinical outcomes in hypertensive patients (Lu *et al.*, 2015). Studies in the United States also show that a proactive hypertension management approach in community groups can control blood pressure better (Kravetz & Walsh, 2016). Monitoring the health status of each Prolanis participant through medical consultation activities. Apart from health monitoring, this activity also provides treatment for one month. Early detection of health problems can be the right treatment if the health status of Prolanis participants is not good. A study in Japan during 6 months of intervention with personal counseling activities was able to reduce the participants' risk of cardiovascular disease by 10 years (16). Research conducted for 4 months on group-based effectiveness in blood pressure management in primary health care showed that blood pressure had decreased significantly. in prolanis participants compared with patients with usual care (Kravetz & Walsh, 2016).

Group-based health monitoring in hypertensive sufferers who do not take antihypertensive medication, which affects medication compliance and/or other psychosocial behavior that can affect blood pressure control (Kravetz & Walsh, 2016). Technological advances make it easier for people to access health services such as time, distance, cost, and improvements in the quality of health services for Prolanis participants. From the research above, it can be seen that Prolanis health monitoring can have an influence on medication compliance, lifestyle and

behavior of hypertension sufferers so that their blood pressure becomes more controlled. Group education is an effort to increase the knowledge of Prolanis participants in controlling and improving health as well as preventing complications. The selection of educational topics for the Prolanis participant group is made by health workers from each health service facility so that the topics in each health service can be different and do not only focus on managing hypertension. Management of hypertension is lifelong, so it is very important to maintain compliance in controlling blood pressure by applying the education provided by health workers (Dyanneza *et al.*, 2017).

The health services implemented in India are similar to the implementation of Prolanis, such as distributing posters, leaflets, street plays and lectures, with the result that this intervention only succeeded in increasing people's knowledge without significant changes in behavior (Pandey *et al.*, 2013). Health education that involves participant activity shows a significant increase in knowledge regarding hypertension, reduction in body mass index, blood pressure, serum LDL levels, and preventing complications (Lu *et al.*, 2015). Based on the results of this research, it can be seen that through educational activities, Prolanis participants regularly experience increased knowledge, reduce risk factors, prevent complications, and control blood pressure. SMS gateway reminders are used as reminders of the Prolanis schedule and to motivate each Prolanis participant to take part in Prolanis activities. Reminder SMS gateway can be via the WA group of Prolanis participants or SMS. Research conducted in Japan for 6 months using personal counseling methods, exercise groups, and telephone reminders was able to reduce participants' 10-year risk of cardiovascular disease (Zhu *et al.*, 2016).

Prolanis activity reminders via short messages can have a positive impact in behavior change treatment by increasing compliance and controlling systolic and diastolic blood pressure in hypertension sufferers (Zhu *et al.*, 2016). Based on the results of previous research, it can be seen that Reminder SMS gateway activities can increase the motivation of hypertension sufferers in their active compliance and treatment so that blood pressure is effectively controlled. Physical activity is one of the therapies in controlling hypertension and its complications.

Several previous studies stated that routine physical activity carried out in a group among hypertension sufferers can increase motivation and health status in controlling blood pressure. Types of physical activity that can be done include light daily activities or sports. Physical activity and types of aerobic exercise and physical activity carried out in groups can improve vasodilation in the endothelium and increase endothelial function (McCarthy *et al.*, 2017). Perseverance in carrying out light physical activity in the form of daily activities such as walking and doing other housework can play a role in improving the cardiometabolic health of adults and reducing the risk of death (McCarthy *et al.*, 2017).

A study in Japan using a 6-month population intervention in an exercise group was able to reduce participants' 10-year cardiovascular disease risk (Zhu *et al.*,

2016). Home visits to Prolanis participants are one of Prolanis' health services in providing education to Prolanis participants. Public health workers who work in the public sector can have an important role in hypertension (Jafar *et al.*, 2020). Elderly people with hypertension who have been visited by health workers at home have better systolic and diastolic blood pressure than elderly people who have never been visited by health workers at home. his house (Dyanneza *et al.*, 2017). Blood pressure counseling activities, and care for people with hypertension, centered on proactive home visits by trained community health workers, led to significant blood pressure reductions in rural areas of Bangladesh, Pakistan, and Sri Lanka (Jafar *et al.*, 2020). Based on several previous studies, it can be seen that the role of health workers in implementing Prolanis home visit activities can increase the motivation of Prolanis participants to control blood pressure so that the results obtained are that Prolanis participants' blood pressure is controlled more effectively than participants who never or routinely receive home visits.

IV. CONCLUSION

Elderly exercise significantly helps lower blood pressure by promoting blood vessel dilation, reducing resistance to blood flow, and enhancing cardiovascular function. Regular physical activity, such as walking, light aerobics, stretching, or tai chi, improves circulation, reduces arterial stiffness, supports weight management, lowers stress, and boosts heart health. These effects collectively aid in managing and preventing hypertension. Physical activity also improves the responsiveness of the blood vessels, making them more elastic and efficient at regulating blood flow. This increased flexibility decreases the strain on the heart and vascular system, reducing the risk of high blood pressure. In addition, consistent exercise helps regulate blood sugar levels and cholesterol, both of which are important for overall cardiovascular health.

Furthermore, exercise stimulates the release of endorphins, which not only improve mood but also help reduce stress-related hormonal responses that can negatively impact blood pressure. Elderly individuals who engage in regular exercise routines often report better sleep quality, higher energy levels, and a greater sense of well-being, all contributing to improved cardiovascular outcomes. Given these extensive benefits, exercise should be promoted as a vital, non-pharmacological intervention in elderly care programs. Encouraging older adults to stay physically active is essential for long-term blood pressure control and overall health maintenance.

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