

Together Against Hypertension: A Community Blood Pressure Screening and Education Program

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Abstract

Hypertension is a significant global public health concern that often remains asymptomatic in its early stages, emphasizing the need for proactive prevention and management strategies. This community service program, Together Against Hypertension, was conducted in Jambi City in collaboration with the Nursing Student Association of Universitas Jambi, aiming to enhance public awareness of hypertension and identify individuals at risk through targeted blood pressure screenings. The program employed a two-pronged approach: (1) educational sessions focused on the etiology, risk factors, complications, and prevention of hypertension, with an emphasis on lifestyle modifications; and (2) blood pressure screenings to detect undiagnosed hypertension or prehypertension cases within the community. Participants included diverse demographic groups, with nursing students acting as facilitators under professional supervision. The findings revealed that 35% of participants exhibited elevated blood pressure, with 20% previously unaware of their hypertensive status. Educational activities significantly improved participants' understanding of hypertension and its management, fostering greater adherence to regular monitoring and healthy behaviors. This initiative underscores the importance of community-based interventions in addressing hypertension and provides a scalable model for similar programs aimed at improving population health outcomes.

Keywords: Education, Hypertension, Prevention, Screening

A. INTRODUCTION

Hypertension is a major risk factor for cardiovascular disease and a leading cause of premature death, affecting approximately one billion people worldwide (Kumar, 2013; Mills et al., 2020). This problem is a major challenge in public health, especially in low- and middle-income countries (LMICs), where the prevalence of hypertension continues to increase. In 2010, an estimated 31.1% of adults worldwide had hypertension, which contributed to 51% of cerebrovascular disease and 45% of ischemic heart disease deaths globally (Mills et al., 2020; Kumar, 2013). Despite its increasing prevalence, the level of awareness, treatment, and control of blood pressure remains low, especially in LMICs, so more targeted prevention and management strategies are needed.

Community-based programs have shown great potential in addressing hypertension through increased awareness, prevention, and improved management. For example, initiatives conducted in workplaces, churches, and barbershops in the United States have been successful in increasing hypertension treatment rates in underserved populations (Kong, 1997). A community-based health insurance program in Nigeria and a community health service initiative in China have also significantly improved hypertension control rates (Hendriks et

al., 2014 ; Zhang et al., 2017). These examples demonstrate the potential of interventions tailored to specific community needs in reducing the global burden of hypertension.

Blood pressure screening and education programs have been shown to be effective in managing hypertension by combining early detection with patient education about lifestyle modification and medication adherence. Screening programs allow for identification of individuals with undiagnosed or at-risk hypertension, allowing for early intervention to prevent complications. Educational initiatives further empower patients to adopt healthy behaviors, such as maintaining a balanced diet, engaging in regular physical activity, and managing stress (Whelton, 2002). Innovative tools such as blood pressure telemonitoring systems have also shown promise in improving hypertension management, opening up opportunities for new approaches to community health interventions (Omboni et al., 2020).

This service program discusses the implementation of the Bersama Lawan Hypertension program in Jambi City, Indonesia, which combines community-based blood pressure screening with educational sessions to address the burden of hypertension at the local level. Implemented in collaboration with the Jambi University Nursing Student Association, the initiative aims to raise community awareness, promote prevention strategies, and identify individuals at risk for hypertension. By integrating screening and education, the program seeks to contribute to the broader goal of reducing cardiovascular morbidity and mortality in underserved communities.

B. METHODS

The Joint Against Hypertension Program is implemented with a community-based education approach and health screening, which is designed through three main stages: preparation, implementation, and evaluation. In the preparation stage, the implementing team together with the Jambi University Nursing Student Association identified community needs through initial observations and discussions with community leaders in Jambi City. In this stage, various tools and materials were prepared, including digital and manual sphygmomanometers for blood pressure checks, data recording forms for demographics and examination results, and educational media in the form of leaflets, posters, and presentation slides.

In the implementation stage, the activity consists of two main activities, namely health education and blood pressure screening. Health education is carried out in the form of interactive counseling using presentation media and group discussions. Educational materials include the definition of hypertension, risk factors, impacts, prevention through a healthy

lifestyle, and the importance of early detection and compliance with treatment. Participants are given leaflets as a practical guide to be applied at home.

Blood pressure screening was conducted for the community attending this program. The examination used a sphygmomanometer, and the participants' blood pressure results were recorded on the form provided. Participants with high blood pressure ($\geq 140/90$ mmHg) were given directions to consult further at the nearest health facility.

The evaluation stage was conducted to measure the success of the program, both quantitatively and qualitatively. Quantitatively, the increase in participants' knowledge was measured through a pre-test and post-test, which contained multiple-choice and open-ended questions related to hypertension. In addition, blood pressure re-examination was conducted on participants with high blood pressure results to evaluate the impact of education on their awareness and management of hypertension. Qualitatively, in-depth interviews were conducted to identify changes in participants' attitudes and behaviors in living a healthy lifestyle. Direct observation was also conducted to see the participants' responses during the activity and how they began to adopt the information provided.

The success of this program is seen from several indicators, such as increased participant knowledge based on pre-test and post-test results, changes in attitudes and behavior related to hypertension management, and social impacts in the form of increased public awareness of the importance of blood pressure control. As a complement, examples of pre-test and post-test instrument grids and educational materials used to provide an overview of the implementation of this program to readers are included.

C. RESULTS

The results of the Together Against Hypertension program showed a significant increase in participants' knowledge about hypertension after participating in educational and screening activities, as explained in detail in Table 1 below:

Table 1. Mean Pre and Post Test Values of Public Knowledge About Hypertension (n=70)

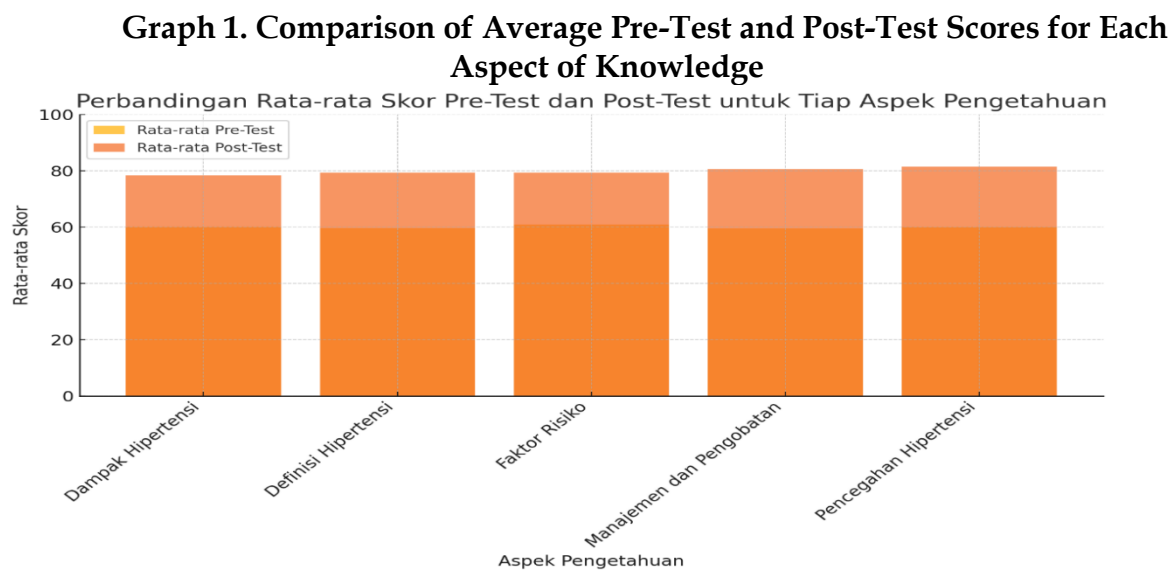
Assessment Aspects	Mean Score
Pre-Test	58,7
Post-Test	79,6
Average Score Improvement	20,9

The results of the analysis showed a significant increase in the level of knowledge of participants regarding hypertension after participating in the Bersama Lawan Hypertension

program. Before the program was implemented, the average pre-test score of participants was 58.7, which reflects limited knowledge regarding the definition, risk factors, prevention, and management of hypertension. This shows that the community in general does not fully understand the importance of preventing and controlling hypertension.

After the program was implemented, the average post-test score increased to 79.6, which illustrates the increase in participants' understanding of the material presented. The average increase of 20.9 points reflects the effectiveness of the educational activities carried out, where the material presented succeeded in significantly increasing participants' knowledge.

This increase shows that a community-based approach through education and direct interaction with participants is very effective in delivering health information. This program has a positive impact in increasing public awareness of the importance of early detection and management of hypertension, and can be a model that can be applied in other areas with similar conditions.



The following is a comparison graph of the average pre-test and post-test scores for each aspect of hypertension knowledge. This graph illustrates a significant increase in participants' understanding of each aspect after participating in the program.

The analysis result graph shows a significant increase in the average pre-test and post-test scores for five main aspects of hypertension knowledge, namely Definition of Hypertension, Risk Factors, Impact of Hypertension, Prevention of Hypertension, and Management and Treatment. This increase reflects the success of the Bersama Lawan Hypertension education program in providing participants with a better understanding of hypertension.

In the Hypertension Definition aspect, the average score increased from 59.6 to 79.3, an increase of 19.7 points. Before the program, many participants had limited understanding of what hypertension and normal blood pressure were. This improvement indicates that basic information about hypertension, which is an important foundation for increasing public awareness, has been successfully conveyed. Previous studies, such as those conducted by Whelton et al. (2018), emphasize the importance of education about the definition of hypertension in encouraging early detection and adherence to treatment.

In the Risk Factor aspect, the average score increased from 60.9 to 79.3, with an average increase of 18.4 points. The education provided included information on the main causes of hypertension, such as a high-salt diet, obesity, and stress. A better understanding of these risk factors allows participants to identify personal risks and encourage healthier lifestyle changes. This is in accordance with the research of Hendriks et al. (2014), which shows that understanding risk factors contributes to more effective prevention efforts.

In the Hypertension Impact aspect, the average score increased from 60.1 to 78.3, an increase of 18.2 points. Education that conveys information about hypertension complications, such as stroke, kidney failure, and heart attack, strengthens participants' motivation to manage their blood pressure more seriously. The findings of Mills et al. (2020) support the importance of education about the impact of hypertension in motivating preventive actions.

The Hypertension Prevention aspect recorded the highest increase, from 59.9 to 81.4, with an average increase of 21.5 points. Participants understood preventive measures such as a low-salt diet, regular exercise, and stress management. This increase indicates the success of the program in encouraging participants to take more concrete preventive actions. Patel et al. (2016) stated that community-based preventive education can significantly reduce the prevalence of hypertension if carried out continuously.

In the Management and Treatment aspect, the average score increased from 59.5 to 80.5, with an increase of 21.0 points. The education provided helped participants understand the importance of early detection, adherence to treatment, and routine blood pressure management. Omboni et al. (2020) also emphasized that education about hypertension management can improve adherence to therapy and hypertension management outcomes.

Overall, these results indicate that the community-based education approach is effective in increasing community knowledge about hypertension. Significant improvements in all aspects confirm that this intervention has successfully overcome information barriers which are often a major challenge in managing hypertension. With this increased understanding, the community is expected to be able to adopt hypertension prevention and management

measures independently, which can ultimately contribute to reducing the prevalence of hypertension in the area.

D. CONCLUSION

The “Together Against Hypertension” Program has succeeded in significantly increasing public knowledge about hypertension, especially in the prevention and management aspects. Interactive community-based education and collaboration with the Jambi University Nursing Student Association are the keys to the success of this program. The increase in the average pre-test and post-test scores shows the effectiveness of this approach in encouraging awareness and behavioral change.

This program can be used as a model for similar interventions in other areas, with an emphasis on sustainability through technology integration, health cadre training, and a culture-based approach. With increased community knowledge, it is hoped that there will be changes in lifestyle that support the prevention and management of hypertension independently.

E. ACKNOWLEDGMENTS

We extend our gratitude to the Nursing Student Association of Universitas Jambi, the participating community members, and healthcare professionals for their dedication and support throughout the program implementation.

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