Empowering Hypertension Patients: How Flipcharts Improve Self-Management Skills

Yusfika Afrianti, Rizka Febtrina, Wardah, Indah Indreani Sari
Institut Kesehatan Payung Negeri Pekanbaru
Email: rizka.febtrina@payungnegeri.ac.id

Abstract

Hypertension is an incurable condition; thus, it is essential to control it by improving patient self-management, particularly through education. This study seeks to assess the impact of instruction through flipcharts on self-management in individuals with hypertension. The study employs a quasi-experimental design featuring pre- and post-tests, lacking a control group. This study's population comprises hypertension patients, with a sample size of 21 respondents from the Simpang Tiga Community Health Center in Pekanbaru City, gathered between May 20 and June 3, 2024. The research instrument employed is the Hypertension Self-Management Behavior Questionnaire. This study was executed during two meetings within a fortnight. The analysis included a paired t-test. The research findings indicated that the mean self-management score prior to the intervention was 85.90, whereas the mean self-management score subsequent to the intervention rose to 114.62. The paired test findings revealed a p-value of 0.000 (<0.05). It can be stated that teaching utilizing flipcharts influences the self-management capabilities of patients with hypertension. This research aims to establish flipchart media as a tool for disseminating information and health education to the population. Further studies should explore health education interventions utilizing flipchart media for more non-communicable diseases.

Keywords: Education, Flipcharts, Hypertension, Self-Management

Introduction

Hypertension is one of the non-communicable diseases (NCDs). Hypertension is a condition where blood pressure is above 140/90 mmHg. Hypertension is often referred to as a "silent killer" due to the nature of high blood pressure, which does not show clear signs and symptoms. Hypertension can affect anyone, both men and women (Isnaini & Lestari, 2018).

According to data from the World Health Organization (WHO) in 2019, one in four men and one in five women worldwide suffer from hypertension. In 2025, the prevalence of hypertension is expected to reach 29.2% of the world's population, amounting to 972 million people with hypertension, with 333 million in developed countries and the remaining 639 million in developing countries, including Indonesia. A basic health survey conducted by the Indonesian Ministry of Health (2018) indicated that in 2018, the prevalence of hypertension among the population aged over 18 years in Indonesia was 34.1%. According to the Pekanbaru City Health Office (2019), in Riau Province, the number of hypertension cases among the population over 18 years old increased by more than 25% in 2018. Hypertension in the city of Pekanbaru is the second highest disease, with a total of 21,656 sufferers.

One of the efforts to prevent complications of hypertension is the need to enhance hypertension prevention. Hypertension sufferers are advised to engage in self-management as a form of disease management in their daily lives (Utami & Hudiyawati, 2020). Self-management for hypertension patients refers to the ability to maintain effective behaviors and disease management that can be applied in daily life to lower and stabilize blood pressure. Self-management in hypertension patients includes adherence to medication, a low-fat diet, daily exercise, limiting alcohol consumption, avoiding smoking, weight loss, self-monitoring of blood pressure, regular health check-ups, and stress reduction (Wandira et al., 2023).

The low level of self-management among hypertension sufferers currently receiving long-term treatment is influenced by a lack of knowledge and feelings of boredom, leading to unsuccessful treatment programs. Hypertensive patients who lack good confidence and self-management may face further complications. However, this program requires education, motivation, and support from all parties involved (Prabasari, 2021). Education is the process of empowering communities through activities designed to provide information, influence, and assist them in actively participating in supporting behavior and environmental changes, as well as maintaining and improving health towards optimal well-being. The educational function is to generate interest in the target of education, help overcome misunderstandings or obstacles, stimulate the educational target to convey messages that are easily accepted by others, facilitate the delivery of information, ease the acceptance of information by the recipient or target, encourage someone to learn, delve deeper, and gain a better understanding of the information presented, and to help establish an understanding of the information received (Notoadmodjo, 2018). Education can be carried out using media to convey messages or information that can be presented through Leaflets, Posters, Audio Visuals, Booklets, Flip Charts, and Flip Books (Jatmika et al., 2019).

To improve self-management in patients with hypertension, one effective method is educating them through the use of flipcharts. A flipchart is a sheet of paper resembling an album or calendar; this medium can be used for individuals or groups and serves the purpose of conveying information. Utilizing flipcharts is practical because they are easy to carry, lightweight, durable, and easy to store, containing key points that make the information easily understandable for the public and capable of enhancing knowledge about the management of the hypertension they are experiencing (Wahyuliani et al., 2016).

The preliminary survey results at the Simpang Tiga Health Center in Pekanbaru included interviews with five individuals diagnosed with hypertension. According to the gathered data, 80% of patients said that they had not received education on hypertension self-management and indicated that they were solely prescribed medication during their healthcare visits. The interview

results indicated that respondents lack dietary control, seldom engage in physical activity, fail to notice symptoms, and some do not adhere to the examination schedule established by healthcare professionals.
The purpose of this research is to determine the effect of education using flipcharts on self-management in hypertension patients at the Simpang Tiga Public Health Center in Pekanbaru City. This research is expected to serve as a reference source, evidence-based nursing (EBN), to enhance knowledge about self-management in patients with hypertension.

Research Methods

This research employs a quantitative approach using a quasi-experimental design in the form of a pre and post-test without a control group. This research was conducted at the Simpang Tiga Community Health Center in Pekanbaru City. The research took place in May 2024. The population in this study is hypertensive patients visiting the Simpang Tiga Community Health Center in Pekanbaru City. The sampling technique used is random sampling, calculated using binomial probability formula, resulting in a sample size of 21 respondents.

Prior to initiating the research, the investigator elucidated the research protocols and obtained informed permission. Subsequent to the respondents' consent to the self-management assessment via the Hypertension Self-Management Behaviour Questionnaire (HMSBQ), the researcher delivered educational content utilizing a flipchart. The content of the flipchart is consist of definition, etiology, sign and symptom, complication, how to manage blood pressure. The instruction was sent twice within a fortnight. On the initial day, the researcher administered a pre-test and delivered the inaugural educational session utilizing a flip chart on self-management in accordance with the SOP. During the second week or meeting, the respondents participated in the second educational session, and on the 14th day, the researcher conducted a post-test questionnaire. An evaluation was performed post-education to assess the impact of flip chart media on self-management among hypertension patients.

The statistical test used for analysis is the Paired-t test with a significance level of (= 0.05). This research has also been approved by the Ethics Committee of the Payung Negeri Pekanbaru with the number No.103/ IKES PN/KEPK/V/2024.

Results

Table 1. Distribution of Respondents Based on Age, Gender, Education, Occupation, and Duration of Hypertension in Hypertensive Patients

Respondent Characteristics		Frequency	Percentage
Age	**Pre-Erderly (45-59 yo)** **Olderly (> 60 yo)**	**14** **7**	**66.7** **33.3**
Gender	**Male** **Female**	**9** **12**	**42.9** **57.7**
Education	**Elementary** **Junior** **Senior** **Collage**	**5** **5** **7** **4**	**23.8** **23.8** **33.8** **19.0**
Employed	**Laborer** **Teacher** **Houswife** **Constructive** **Retired** **Farmer** **Enterpreuner**	**2** **1** **8** **3** **1** **2** **4**	**9.5** **4.8** **38.1** **14,3** **4.8** **9.5** **19.0**
Duration of HT	**< 1 Year** **> 1 Year**	**1** **20**	**4.8** **95.2**
Total		**21**	**100**

Based on the table above, it can be seen that in the general data on age in this study, the majority of respondents are under 60 years old, categorized as pre-elderly, totaling 14 individuals or 66.7%. Meanwhile, in the next general data, regarding the gender of the respondents, there are more females, with a frequency of 12 out of 21 respondents or 57.1%. Furthermore, regarding the education of the respondents, the highest level of education is high school, with 7 individuals or 33.3%, and those working as housewives total 8 individuals or 38.1%. Additionally, the respondents suffering from hypertension for the longest duration are predominantly those with more than 1 year, totaling 20 individuals or 95.2%.

Table 2. The values of the Self-Management before and after intervention on Hypertension Patients.

Self-Management	N	Mean	SD	SE	Min	Max
Pre-Test	21	85,90	8,729	1,905	65	103
Post-Test	21	114,62	15,121	3,300	88	132

Based on table 2, it can be seen that the average self-management before the intervention was 85.90 with a standard deviation of 8.729, a minimum value of 65, and a maximum value of 103. Meanwhile, the average self-management after the intervention was 114.62 with a standard deviation of 15.121, a minimum value of 88, and a maximum value of 132.

Table 3. The influence of education with flipcharts on the self-management of hypertensive patients.

Self Management	Mean	SD	CI		P-Value
			Lower	Uper	
Pretest - Post test	28.714	14.283	35.216	22.213	.000

Based on the paired t-test table, a significance score of 0.000 was obtained (<0.05). This indicates that there is a significant difference between the pre-test and post-test results. It can be concluded that education using flipcharts has an impact on the self-management abilities of hypertension patients.

Discussion

Characteristic

The results of the research conducted by the researchers indicate that out of 21 respondents, the majority fall within the pre-elderly age range of 45-59 years, totaling 14 respondents or 66.7%, while a smaller portion is in the elderly age range of over 60 years, comprising 7 respondents or 33.3%. As we age, the arteries in the body become wider and stiffer, resulting in a decreased capacity and recoil of blood accommodated through the blood vessels.

This decline also results in an increase in systolic blood pressure and disturbances in neurohormonal mechanisms such as the renin-angiotensin-aldosterone system. This leads to an increase in peripheral plasma concentration and glomerulosclerosis due to the aging process, as well as intestinal fibrosis that results in increased vasoconstriction and vascular resistance. As a result, blood pressure increases. Research findings indicate that individuals of older age (≥ 45 years) are at a higher risk of suffering from hypertension compared to those who are younger (< 45 years) (Nuraeni, 2019).

The results of the research conducted show that the characteristics of the respondents based on gender are dominated by females, with a total of 12 respondents or (57.1%), while males account for 9 respondents or (42.9%). Gender is one of the unmodifiable factors that influence blood pressure. Studies indicate that women are more prone to hypertension than men. Research findings reveal that 58% of women experience hypertension, in contrast to only 27.5% of men. Women face an elevated risk of hypertension post-menopause, typically occurring beyond the

age of 45. Women who have not yet attained menopause are safeguarded by estrogen hormones, which contribute to elevated High-Density Lipoprotein (HDL) levels (Sari & Susanti, 2016)

Based on the results of the research conducted, it can be seen that there are 5 respondents with elementary education (23.8%), 5 respondents with junior high school education (23.8%), 7 respondents with senior high school education (33.3%), and 4 respondents with a bachelor's degree (19.0%). The higher a person's education, the easier it is for them to receive information, and ultimately, the more knowledge they possess. On the contrary, if a person's level of education is low, it will hinder their development of attitudes towards the acceptance of new information and values that are being introduced (Sari & Susanti, 2016).

According to Notoatmodjo (2018:9), the level of education of an individual influences their ability to receive and process information before it translates into good or bad behavior, which in turn impacts their health status. This is supported by research from Cekti (2018:169), which states that an individual's knowledge affects their awareness of hypertension prevention behaviors. In other words, the higher an individual's knowledge about the causes of hypertension, triggering factors, symptoms, and normal versus abnormal blood pressure, the more likely they are to avoid behaviors that can trigger hypertension, such as smoking, drinking coffee, and obesity. Education provides a strong foundation in building the basic knowledge and skills necessary for an effective educational process, education helps develop the critical and analytical thinking skills necessary to evaluate information, understand complex concepts, and make informative decisions in an educational context, education also provides an understanding of how to use a variety of media and technologies that can support the educational procedure. These include the use of flipchart media that helps in delivering information more effectively. Thus, good and comprehensive education provides a solid foundation for educational success. In this study, the researcher provided education about hypertension, including its definition, causes, symptoms, complications, prevention, and tips for controlling blood pressure.

Based on the research that has been conducted, it can be seen that in this study, the majority are employed as housewives, totaling 8 individuals or (38.1%). Meanwhile, a small portion are employed as laborers, with 2 individuals or (9.5%), teachers 1 individual or (4.8%), construction workers 3 individuals or (14.3%), retirees 1 individual or (4.8%), farmers 2 individuals or (9.5%), and entrepreneurs totaling 4 individuals or (19.0%). Hypertension is one of the conditions caused by modern lifestyle factors; people nowadays are busy prioritizing work to achieve success. Busyness, hard work, and heavy goals lead to feelings of stress and create high pressure. The feeling of stress causes blood pressure to rise. In addition, busy people also do not have time to exercise. As a result, the fat in the body increases and accumulates, which can obstruct blood flow as the blood vessels are compressed by the buildup of fat, leading to high blood pressure. This is one of the causes of hypertension (Setiandari L.O, 2022).

Based on the research conducted, it can be seen that among the respondents suffering from hypertension, the majority, totaling 20 individuals or 95.2%, have been affected for more than one year. Hypertension that persists over a long period can trigger strokes, heart attacks, heart failure, and is a leading cause of chronic kidney failure (Y. R Sari & Priyantari, 2019).

Self-Management

The research indicates that self-management education positively influences hypertension patients, resulting in enhanced self-management following the intervention. The mean self-management prior to the intervention was 85.90, with a standard deviation of 8.729, a minimum of 65, and a high of 103. The average self-management following the intervention was 114.62, with a standard deviation of 15.121, a minimum of 88, and a maximum of 132. The researcher used flipchart media for its portability and ease of storage, ensuring accessibility at all

times. The flipchart possesses a coherent organization with distinct chapters or sections, facilitating comprehension for readers. The flipchart is visual, integrating text with images, graphs, or diagrams to elucidate the presented information. Utilizing the flipchart enables readers to modify their reading tempo in accordance with their speed and learning preferences. In contrast to films, the flipchart is accessible without an internet connection or electricity, rendering it appropriate for environments with restricted technological or infrastructural access.

Readers can easily search for the information they require without watching the entire film or navigating to specific segments, which may be time-consuming. The flipchart enables users to concentrate on the text and graphics thoroughly, free from the distractions sometimes associated with digital media, including advertisements or notifications. A flipchart that use a synthesis of text, images, graphics, and colors to communicate information. Effective visualization enhances readers' comprehension of concepts beyond mere text; a flipchart with written content can be vocalized or audibly perceived when read by another individual. While it does not directly engage the auditory sense, it can function as an instrument to enhance verbal comprehension. Lifestyle modification and enhanced self-management are crucial health behaviors for preventing hypertension problems and are essential components of its therapy. Collaboration between individuals and healthcare services is essential to improve and sustain health status in order to avert issues associated with hypertension.

The research results indicate that there is an influence of self-management education on hypertension patients, meaning there is an improvement in self-management after the intervention was provided. The average self-management score before the intervention was 85.90 with a standard deviation of 8.729, a minimum value of 65, and a maximum value of 103. Meanwhile, the average self-management score after the intervention was 114.62 with a standard deviation of 15.121, a minimum value of 88, and a maximum value of 132. According to the research conducted (Fransiskus et al., 2022). Non-pharmacological therapy is a treatment for hypertension that involves adopting a healthier lifestyle. Several studies also indicate that non-pharmacological therapy is a mandatory intervention that must be implemented in the management of hypertension. Considering that hypertension requires self-care in terms of controlling and lowering blood pressure, as well as preventing and minimizing the risks associated with hypertension. According to the assumption, lifestyle modification is a crucial health behavior to prevent the effects of hypertension and is an integral part of its treatment. Collaboration between individuals and healthcare services is necessary to improve and maintain health status in order to prevent the impacts of hypertension.

Based on the research that has been conducted, the results of the pre-test and post-test showed an average of 28.714 and a standard deviation of 14.283. The results of the paired t-test show a p-value of 0.000 (< 0.05), thus H0 is rejected, which means there is an effect of education using flipcharts on self-management in patients with hypertension. High blood pressure is the leading cause of cardiovascular diseases and is a major issue in both developed and developing countries. Many people with high blood pressure are unaware of whether they have a history of hypertension, and this will only become apparent once complications arise (Kemenkes, 2019). High blood pressure occurs due to many factors that can influence it both quickly and gradually. High blood pressure can be caused by various conditions such as age, stress, smoking habits, alcohol consumption, kidney disease, and others (Wahyuni & Susilowati, 2018). Some complications of uncontrolled high blood pressure include transient ischemic attack, myocardial infarction, diabetes mellitus, chronic kidney disease, and blindness. Knowledge is the key in efforts to improve behavior to prevent hypertension. The lack of knowledge about hypertension complications can affect behaviors aimed at preventing hypertension issues due to lifestyle changes, fatty food intake, smoking, and excessive anxiety. One way to enhance knowledge is through educating patients. (Yanti et al., 2020). Several studies show that the level of knowledge and preventive behavior regarding hypertension complications influence each

other. According to the research assumption, there is an influence of education using flipcharts on self-management in hypertension patients at the Simpang Tiga Community Health Center in Pekanbaru City.

The results of the paired t-test show a p-value of 0.000 (<0.05), which means H0 is rejected. In this study, self-management can be improved due to respondents with the highest education level, which is high school, totaling 7 individuals or 33.3%. The respondents received information regarding health education, which was well absorbed due to the knowledge, experience, and understanding they had gained. During the intervention, the respondents appeared focused on listening to the education provided, and they also gave positive feedback by asking questions if there was anything they did not understand from the material presented. Additionally, in this study, the respondents had only suffered from hypertension for 1-3 years, totaling 20 respondents. Hypertension detected at an early stage provides an opportunity for effective medical intervention and lifestyle changes before long-term damage occurs to the body's organs. In the early phase of the disease, the body is generally more responsive to treatment, whether it involves medication or lifestyle changes, such as a healthy diet and regular exercise. The limitation of this research is that the research location is quite crowded, which may make it difficult for the researcher to provide clear education. The researcher also cannot ensure whether each respondent listens to and clearly understands the education conveyed by the researcher.

Conclusion

The results of this research can be used as one of the interventions to improve self-management or the control of hypertension by providing health education using flipchart media. Recommendations for further research can provide health education interventions using flipchart media for other non-communicable diseases.

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