

The Effect of Health Education on Family Knowledge in Caring for Patients with Hypertension

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ABSTRACT

Hypertension is a major health problem that requires effective management not only by the patient but also through the support and knowledge of the family. This study aims to determine the effect of health education on family knowledge in caring for patients with hypertension in the working area of Surade Public Health Center. This research used a pre-experimental design with a one-group pretest-posttest approach. The population in this study consisted of 71 family members of hypertensive patients, selected using a total sampling technique. Data collection was carried out using a knowledge questionnaire administered before and after the health education intervention, which was conducted in a 45-minute session using verbal explanations, visual materials, and interactive discussions delivered by trained health educators. The results showed a substantial improvement in the level of family knowledge after the health education intervention. Before receiving education, the majority of respondents (88.7%) were categorized as having poor knowledge, with only 5.6% each in the good and fair categories. After the intervention, there was a significant shift: 28.2% of respondents were categorized as having good knowledge, 69% as fair, and only 2.8% remained in the poor category. These findings indicate that the health education intervention effectively improved the knowledge level of families in caring for patients with hypertension. The Wilcoxon signed-rank test further confirmed this improvement with a significance value of 0.001 ($p < 0.05$), indicating a statistically significant difference in knowledge levels before and after the intervention. The study concludes that health education has a significant effect on increasing family knowledge in caring for patients with hypertension. Therefore, providing regular and structured health education is highly recommended to empower families in managing hypertension effectively.

Keywords: family knowledge, health education, hypertension, patient care, public health center

INTRODUCTION

Hypertension, commonly referred to as high blood pressure, is a major public health concern that affects millions of individuals worldwide (Mancia et al., 2023). It is a chronic medical condition in which the blood pressure in the arteries is persistently elevated, often leading to severe health complications such as heart disease, stroke, and kidney failure if left untreated (Purwono et al., 2020). According to the World Health Organization (WHO), hypertension affects approximately 1.28 billion adults aged 30 to 79 years globally, and nearly two-thirds of them reside in low- and middle-income countries (WHO, 2021). The increasing prevalence of hypertension is not only a global issue but also a growing concern in Indonesia, where recent health surveys indicate a worrying trend.

The Indonesian Ministry of Health, through the 2018 Basic Health Research (Riskesdas), reported that the prevalence of hypertension among individuals aged 18 years and older had reached 34.1%, with a higher incidence in urban populations. This data signifies the urgent need for comprehensive strategies that target both prevention and management of hypertension at the community level. While clinical management remains important, the role of families in supporting hypertensive patients has become increasingly recognized as a critical element in promoting treatment adherence and long-term health outcomes. Unfortunately, many families still lack the proper knowledge and skills required to provide adequate care (Musakkar & Djafar, 2021).

Family support in the management of chronic diseases such as hypertension is essential, especially in rural and underserved areas where access to healthcare services may be limited (Kohn et al., 2023). When families are knowledgeable about the nature of the disease, its complications, and the importance of treatment adherence, they are more capable of assisting patients in making lifestyle changes, monitoring blood pressure regularly, and ensuring that medications are taken consistently (Fani, 2022). However, studies have shown that without structured health education, families may have misconceptions or incomplete information regarding hypertension management (Nuraini, 2018). This highlights the importance of empowering families through health education programs as part of community health interventions (Ana, 2021).

Health education is one of the most effective public health tools for increasing awareness and improving health-related behaviors (Rahmawati et al., 2022). It involves providing individuals and families with accurate, relevant, and practical information that can be applied in daily life (Purwono, 2020). In the context of hypertension care, health education serves as a bridge between healthcare providers and family members, ensuring that patients receive consistent support at home (Purnawan, 2020). The benefits of health education have been demonstrated in various studies, where improved knowledge among caregivers was associated with better blood pressure control and reduced hospital readmission rates (Susanto et al., 2021). Therefore, introducing targeted health education initiatives can be a key strategy in reducing the burden of hypertension.

This study was conducted to evaluate the effect of health education on family knowledge in caring for patients with hypertension in the working area of Surade Public Health Center (Lestari & Wibowo, 2021). By applying a pre-experimental design with a pretest-posttest approach, the research aimed to measure changes in knowledge before and after the educational

intervention. The results of this study are expected to provide valuable insights for healthcare professionals, policymakers, and community health workers in developing effective family-centered care models. Ultimately, this research underscores the significance of family involvement in chronic disease management and the pivotal role of education in achieving sustainable health improvements. This study aims to determine the effect of health education on family knowledge in caring for hypertension patients, with a novelty in targeting family caregivers in a rural public health setting using interactive educational methods, which has been rarely explored in previous studies.

METHODS

This study employed a quantitative pre-experimental research design using a one-group pretest-posttest approach. This design was chosen to measure the difference in knowledge levels among participants before and after receiving health education, thus allowing the assessment of the intervention's effectiveness in a single group without a control group (Sugiyono, 2017).

The participants in this study were family members who lived with and were directly involved in the care of patients diagnosed with hypertension in the working area of Surade Public Health Center. The inclusion criteria comprised individuals aged 18 years and older, literate, and available to complete both the pretest and posttest instruments. Meanwhile, exclusion criteria involved those with professional medical backgrounds or prior structured training on hypertension care within the last six months, as their knowledge might bias the intervention outcome (Notoatmodjo, 2019).

Sampling was conducted using a total sampling technique due to the manageable population size. A total of 35 respondents who met the eligibility criteria were selected from the Surade Health Center's working area (Dahlan, 2014). The research context is rural and community-based, where family caregivers are essential in supporting chronic illness management. The unit of analysis was individual family caregivers. Respondents' demographic characteristics, such as age, gender, education level, and their relationship to the patient, were collected to provide a comprehensive profile of the study population.

Data were collected using a validated structured questionnaire designed to assess participants' knowledge of hypertension, including causes, symptoms, complications, treatment, and family care practices. This instrument was developed based on national health guidelines and previous studies (Kementrian Kesehatan RI., 2020). The intervention consisted of a 45-minute health

education session delivered by trained health educators, which included verbal explanations, visual materials, and interactive discussions. The same questionnaire was administered after the session to evaluate knowledge changes.

Ethical clearance for this study was obtained from the Health Research Ethics Commission of the Faculty of Health Sciences, Muhammadiyah University of Sukabumi, with ethical approval number 092/KET/KE-FKES/I/2025. All participants provided informed consent after being briefed on the purpose, risks, and benefits of the study. They were assured of confidentiality, anonymity, and the voluntary nature of participation, consistent with ethical research guidelines (Kementerian Kesehatan RI, 2017).

The instrument used to measure knowledge was a structured questionnaire developed based on national hypertension care guidelines and relevant literature. It was reviewed and validated by three health education experts to ensure content validity, resulting in a Content Validity Index (CVI) score of 0.92, indicating strong agreement among the reviewers on the relevance and clarity of each item. The questionnaire evaluated multiple domains including the definition of hypertension, risk factors, prevention strategies, treatment adherence, and home-based care practices. To test its reliability, a preliminary trial was conducted on 15 respondents who had similar characteristics to the study population. The internal consistency of the instrument was measured using Cronbach's Alpha, which yielded a coefficient of 0.87, indicating high reliability. The instrument was then refined based on the feedback before being used in the actual data collection.

RESULTS

The research results can be seen in the table below:

Table 1. Frequency Distribution of Respondents' Characteristics by Gender (n = 71)

Characteristic	Frequency	%
Gender		
Male	47	66.2
Female	24	33.8

The majority of respondents were male (66.2%), indicating a male-dominant participation in the study population.

In addition, the characteristics of respondents were also analyzed based on age, which was presented in numerical data. Therefore, descriptive statistics were used to describe the age distribution of respondents, as shown in Table 2 below.

Table 2. Descriptive Statistics by Age (n = 71)

Characteristic	N	Minimum	Maximum	Mean
Age (years)	71	48	58	53.58

Respondents were aged 48–58 years, with a mean of 53.58, indicating a middle to older age group.

Table 3. Frequency Distribution of Respondents' Knowledge Levels (n = 71)

Measurement	Good		Fair		Poor	
	f	%	f	%	f	%
Before	4	5.6	4	5.6	63	88.7
After	20	28.2	49	69.0	2	2.8

Before the intervention, most respondents had poor knowledge about hypertension care. After receiving health education, knowledge levels improved significantly, with more respondents categorized as having good or fair knowledge. These findings indicate the effectiveness of health education in increasing family understanding in the Surade Health Center area.

Table 4. Wilcoxon Signed Ranks Test-The Effect of Health Education on Family Knowledge in Caring for Hypertensive Patients

		N	Sig. (2-tailed)
Posttest knowledge - Pretest knowledge	<i>Negative Ranks</i>	61 ^a	0.001
	<i>Positive Ranks</i>	1 ^b	
	<i>Ties</i>	9 ^c	
	Total	71	

The Wilcoxon Signed Ranks Test showed a significant improvement in knowledge after the intervention ($p = 0.001$), confirming the effectiveness of health education in increasing family understanding of hypertension care.

DISCUSSION

Respondent Characteristics

The characteristics of respondents in this study include gender and age, which play a role in determining the level of family knowledge in caring for patients with hypertension. The majority of respondents in this study were male, indicating that in the context of caring for sick family members, men often play an active role in making health-related decisions. This can be linked to social roles within the family, where men are more frequently responsible for ensuring that family members receive proper medical care. Gender role differences may influence how individuals receive and process health information, as previously discussed in a study stating

that the level of involvement in health education may vary depending on the roles and responsibilities within the family (Santoso & Wijayanti, 2023).

In terms of age, most respondents in this study were in the middle-aged to elderly group. This age group tends to have more life experience in managing family health, but still requires additional information to provide optimal care (Yasril, 2020). A study conducted by Sari et al., (2022) found that as people age, they become more selective in accepting health information. However, at the same time, older individuals tend to be more responsible in making decisions related to family care. Therefore, health education becomes essential to enhance their understanding, so they can care for hypertensive patients more effectively and in accordance with medical recommendations (Musakkar & Djafar, 2021).

Knowledge Improvement After Health Education

The level of family knowledge regarding hypertension care showed a notable and statistically significant improvement following the health education intervention. Prior to receiving the education, the majority of family members demonstrated poor knowledge, especially in recognizing hypertension risk factors, the importance of lifestyle modifications, and appropriate home-based care. This condition may be attributed to limited access to accurate health information, low health literacy, and minimal previous exposure to structured educational sessions. As highlighted by Putri and Suyanto, (2021), inadequate knowledge among family members can negatively influence treatment adherence, as many health-related decisions are often made by the family, especially in rural communities.

After the intervention, there was a substantial shift in the distribution of knowledge levels. Many respondents who were previously in the "poor" category moved into the "fair" and "good" categories. Families became more aware of the importance of regular blood pressure monitoring, low-sodium diets, medication adherence, physical activity, and stress management. This improvement was further validated by the results of the Wilcoxon Signed Ranks Test, which yielded a significance value of 0.001 ($p < 0.05$), indicating that the intervention led to meaningful changes in knowledge.

This result is in line with Rahmawati et al. (2022) and Purnawan (2020)., who found that well-structured and interactive health education can significantly improve understanding and promote behavioral changes among caregivers. In this study, the education was delivered through a 45-minute session involving verbal explanations, visual aids, and active discussions, which helped ensure better comprehension and retention of information. According to Bela.,

(2022), education that involves two-way communication and repetition tends to be more effective in fostering awareness and long-term behavioral change.

The positive outcome of this intervention highlights the essential role of family members in chronic disease management. When families are equipped with the right knowledge and skills, they can provide daily support to hypertensive patients, reduce the risk of complications, and encourage consistent health-promoting behaviors. Moreover, this study provides additional evidence supporting the integration of family-centered education into public health strategies, especially in primary healthcare settings such as community health centers.

In conclusion, health education plays a vital role in enhancing family knowledge and caregiving capacity. To achieve sustainable impact, such interventions should be carried out regularly, supported by culturally appropriate materials, and adapted to the educational level and needs of the target population. Encouraging active family involvement through education is a key strategy in controlling the prevalence and consequences of hypertension, particularly in rural and resource-limited areas.

CONCLUSION

Based on the research findings, it can be concluded that health education has a significant effect on improving family knowledge in caring for patients with hypertension. Before the education was provided, the majority of families had a low level of understanding regarding hypertension care. However, after the intervention, there was a significant increase in their knowledge. These findings confirm that health education is an effective strategy for enhancing family understanding, enabling them to play a more active role in caring for hypertensive patients and preventing more serious complications in the future. Therefore, it is important for healthcare providers to consistently deliver structured health education programs to families. Additionally, integrating such educational efforts into community health policies can help ensure sustainable improvements in hypertension care and prevention.

LIMITATION

This study has several limitations, including the limited sample scope, which was restricted to a single working area of the community health center (Puskesmas), making the results not yet generalizable to a broader population. Additionally, the health education intervention was conducted over a relatively short period, which limits the ability to evaluate the long-term

impact on behavioral changes among families in caring for hypertensive patients. External factors such as the respondents' educational level and prior experience may also have influenced the study outcomes, but these were not analyzed in depth in this study.

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