

The effect of nutrition education with booklet media on knowledge about diet in patients with hypertension

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Abstract

Hypertension is a worldwide public health disease today. Low knowledge about diet can risk an increase in blood pressure in hypertensive patients. This study aims to determine the effect of nutrition education with booklet media on knowledge about diet in patients with hypertension. The research design used was a quasy experiment with a non-randomized one-group pretest-posttest design. This research was conducted at the Lubuk Pakam Health Center. The research time starts from November-December 2023. The subjects of this study were all hypertensive patients in the Lubuk Pakam Health Center work area, as many as 202 people. The sample size was obtained from as many as 66 people using a purposive sampling technique. The inclusion criteria for research samples are hypertensive patients aged 40-60 years and subjects willing to become respondents. Data was collected through questionnaires and a Food Frequency questionnaire (FFQ). Data were analyzed using the T-paired test. The results showed that the mean value of knowledge of hypertensive patients about diet before being given nutrition education with booklet media was 46.9, with an SD value of 17.05. Still, after being given nutrition education with booklet media, it was 69.7, with an SD value of 12.5. Providing education through booklet media is significant to the knowledge score of hypertensive patients about diet. The study concludes that booklet media can contribute to increasing the knowledge score of hypertensive patients when choosing the ingredients and types of food they consume.

Keywords: hypertension, nutrition education, booklet, knowledge, diet

Introduction

Hypertension is the leading cause of cardiovascular disease and premature death worldwide.¹ The burden of disease and death from all causes is still attributable primarily to hypertension, which is a significant health problem worldwide and continues to be the largest contributor.² An increased risk of cardiovascular disease and death is associated with hypertension.³ Globally, about 1.28 billion people between the ages of 30 and 79 have high blood pressure. Two-thirds of them live in low-and middle-income countries. About 46% of people who have high blood pressure don't know they have it, and about 21% of adults with high blood pressure can control it. Not half of people with high blood pressure (42%) are diagnosed and treated.⁴ In Indonesia, the prevalence of hypertension based on measurements of age >18 years was 31.7% in 2013, increasing to 34.1% in 2018.⁵

One of the factors contributing to increased blood pressure in people with hypertension is low knowledge about diet. Previous studies reported that excess sugar consumption, alcohol consumption, and fruit and vegetable consumption were significant for hypertension.⁶ Poor diet is significant for the incidence of hypertension.⁷ Other studies have also indicated that dietary patterns such as caffeine consumption, seafood consumption, and other nutritional patterns are risk factors for hypertension.⁸ For this reason, it is essential to provide education through booklet media to increase the knowledge of hypertensive patients regarding a good lifestyle and diet. Based on the study (Rachmasari, SI, and Mardiana, 2022) reported that

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in hypertensive patients, nutrition counseling using booklet media affected increasing knowledge scores, attitudes, and salt and potassium intake.⁹

Studies on the knowledge and impact of diet on hypertensive patients have been conducted, but until now, many hypertensive patients have had poor diets. The initial survey showed that out of 6 hypertensive patients interviewed, four people did not know the impact of a poor diet on increasing blood pressure. Based on this phenomenon, it is necessary to research the effect of nutrition education with *booklet media* on knowledge about diet in patients with hypertension.

Method

This quantitative study uses a quasy experiment method with a non-randomized one-group pretest-posttest design.¹⁰ This research was conducted at the Lubuk Pakam Health Center. The research time started from November to December 2023. The subjects of this study were all hypertensive patients in the Lubuk Pakam Health Center working area in 2023, and there were as many as 202 people. The sample size was obtained from as many as 66 people using a purposive sampling technique. The inclusion criteria for research samples are (1) hypertensive patients aged 40-60 years and (2) subjects who are willing to become respondents and take part in intervention activities in the form of providing nutrition education with booklet media during the study. Then, the inclusion exclusion criteria are (1) hypertensive patients who cannot be interviewed due to illness and (2) subjects who are not willing to become respondents and are not willing to participate in intervention activities in the form of nutrition education with booklet media during the study. The dependent variables of this study were knowledge and diet measured before and after the intervention. The independent variable was the provision of nutrition education with booklet media.

The intervention in this study was providing nutrition education with booklet media. Pre-tests and post-tests measuring knowledge about the diet of hypertensive patients were carried out before and after giving nutrition education with booklet media. Knowledge questions consisted of 15 items with correct =1 and incorrect =0 answer options, which included food ingredients and consumption frequency as well as signs, symptoms, and effects of hypertension. Measurement of dietary patterns was carried out using the Food Frequency Questionnaire (FFQ) questionnaire, which included food ingredients and frequency of consumption. The data analysis stage begins with calculating the frequency distribution of respondent characteristics and the mean value of knowledge. Data analysis used paired t-tests because the data were normally distributed.^{11,12} This study has passed the Health Research Ethics Commission approval stage with number .01.25.265/KEPK/Poltekkes Kemenkes Medan 2023.

Results

Table 1 presents the characteristics of a group of 66 respondents. The data is broken down by gender, age, education level, and occupation. The sample is almost evenly split between genders, with 34 males (51.5%) and 32 females (48.5%). The respondents are grouped into two age categories: 40-50 years and 51-60 years. There are 34 respondents (51.5%) in the 40-50 age group and 32 respondents (48.8%) in the 51-60 age group. The majority of respondents (53%) completed senior high school. The respondents are categorized as either employed or unemployed. 46 respondents (69.6%) are employed, while 20 respondents (30.3%) are unemployed.

Table 2 shows that the mean value of respondents' knowledge about diet before being given an intervention in the form of nutrition education with booklet media is 46.9 with an SD value of 17.05, but after being given an intervention in the form of nutrition education with book-

Table 1. Respondent characteristics (n=66)

Variable	f	%
Gender		
Male	34	51.5
Female	32	48.5
Age		
40-50 years	34	51.5
51-60 years	32	48.8
Education		
Elementary school	4	6.1
Junior high school	13	19.7
Senior high school	35	53.0
Undergraduate	14	21.2
Occupation		
Employed	46	69.6
Unemployed	20	30.3

Table 2. Mean values and paired t-test

Variable	Booklet media education				p value
	Mean	SD	Min	Max	
Knowledge					
Pretest	46,9	17,05	9,3	84,3	0,002
Posttest	69,7	12,5	34,3	96,8	

let media is 69.7 with an SD value of 12.5. Providing education through booklet media is significant to hypertensive patients' knowledge about diet.

Discussion

This study describes the characteristics of hypertensive patients. The study found that 51.5% of respondents were male. In terms of gender, men are more likely to be at risk of developing hypertension from a young age than women. The results of the previous study showed that 23.2% of male respondents suffered from hypertension.¹³ Regarding age, 51.5% of respondents were 40-50 years old. This is in line with previous studies that have shown that the age of hypertension sufferers is higher at the age of 50, as much as 47.6%.¹⁴ The age of respondents is closely related to hypertension treatment compliance; age > 46 years tend to be compliant with treatment.¹⁵ Regarding education, 53% of respondents had a high school education. The level of education is closely related to knowledge about a better diet. A previous study reported that 66.7% of respondents had secondary education.¹⁶ Based on occupation, 69.6% of respondents were workers. Previous studies reported that most respondents worked as civil servants, private sector workers, farmers, and traders.¹⁷

Nutrition education is one way to expand knowledge. Nutrition education is a health message that people or organizations can use to change their behavior.¹⁸ Nutrition education using visual aids is more likely to increase hypertension awareness.¹⁹ The results of this study showed that the mean value of respondents' knowledge about diet before being given an intervention in the form of nutrition education with booklet media was 46.9 with an SD value of 17.05, but after being given an intervention in the form of nutrition education with booklet media was 69.7 with an SD value of 12.5 (Table 1). This means there has been an increase in the average score of knowledge of hypertensive patients about diet after being given nutrition education through booklet media. This study is in line with previous research that there is an increase in the score of respondents' knowledge before and after being given nutritional counseling.⁹

Media for nutrition education, communication, and information use clear images, sounds, and words presented in an exciting way to make the information more accessible and valuable in everyday life.¹⁹ This study presented nutrition education as a media booklet containing ingredients and food frequency, including the impact of poor diet on increasing blood pressure. Based on the results of statistical tests, it is known that the provision of education through booklet media is significant in expanding the knowledge score of hypertensive patients about diet ($p=0.002$) (Table 2). This is in line with the previous study that patients with hypertension experienced changes in knowledge, fiber consumption, and blood pressure when they were given the DASH (Dietary Approach to Stop Hypertension) diet booklet as a treatment in nutrition counseling.²⁰

In this study, it was found that the diet of hypertensive patients was mainly classified as poor. This was obtained from the observation of questions related to the Food Frequency Questionnaire (FFQ) that hypertensive patients have a habit of consuming foods that are high in sodium, namely salted fish and anchovies (1-2x / week), because these food ingredients are cheap and easy to find or affordable. In addition, high-fat foods such as fried foods and fatty meats as much as (1-2x/week). They often consume high-carbohydrate foods such as biscuits and crackers (1-2x/week) because they can be used as snacks during breaks while working in the fields. This diet causes high blood pressure to increase because it often consumes foods high in sodium, high in fat, and high in carbohydrates. Hypertensive patients who have an unfavorable diet can be caused by their lack of knowledge about the right ingredients and frequency of meals consumed every day. Previous studies have shown that raising awareness about hypertension among the general public can help reduce the prevalence of the disease. Patients with hypertension can benefit greatly from education and changes in attitudes and practices regarding the disease's prevention, management, and treatment, as when patients understand their condition, they are more likely to make behavioral changes that help the effectiveness of their treatment.²¹ However, from this study, it appears that many people with hypertension ignore the ingredients and types of food consumed.

This study has limitations, namely (1) not using a control group, making it difficult to determine the effectiveness of the treatment in the form of booklet media given to respondents. (2) The data collection process did not match the predetermined schedule because the respondents did their jobs at home.

Conclusion

Providing nutrition education through booklets can increase knowledge about diet in hypertensive patients. The knowledge score of hypertensive patients has increased due to treatment in booklet media. Hypertensive patients are advised to pay more attention to the type, ingredients, and frequency of eating every day so that blood pressure can be well controlled. Health workers should be encouraged to improve health promotion efforts regarding hypertensive patient's diets. For further research, it is recommended to add a control group so that the effectiveness of the treatment given can be known

References

1. Mills KT, Stefanescu A, He J. The global epidemiology of hypertension. *Nat Rev Nephrol.* 2020;16(4):223–37.
2. Beaney T, Schutte AE, Tomaszewski M, Ariti C, Burrell LM, Castillo RR, et al. May Measurement Month 2017: an analysis of blood pressure screening results worldwide. *Lancet Glob Heal.* 2018;6(7):e736–43.
3. van Oort S, Beulens JWJ, van Ballegoijen AJ, Grobbee DE, Larsson SC. Association of cardiovascular risk factors and lifestyle behaviors with hypertension: a mendelian randomization study. *Hypertension.* 2020;76(6):1971–9.
4. WHO. Hypertension [Internet]. 2023. Available from: <https://www.who.int/news-room/fact-sheets/detail/hypertension>
5. Kemenkes RI. Hasil Utama Riset Kesehatan Dasar. 2018.
6. Casmuti C, Fibriana AI. Kejadian hipertensi di wilayah kerja puskesmas Kedungmundu Kota Semarang. *HIGEIA (Journal Public Heal Res Dev.* 2023;7(1):123–34.
7. Hamzah B, Akbar H, Langingi ARC. Analisis hubungan pola makan dengan kejadian hipertensi pada lansia. *J Heal Sci Gorontalo J Heal Sci Community.* 2021;5(1):194–201.
8. Sistikawati HI, Fuadah IW, Salsabila NA, Azzahra AF, Aesyah A, Insyira I, et al. Literature Review: Hubungan Pola Makan dengan Kejadian Hipertensi. *Media Kesehat Masy Indones.* 2021;20(1):57–62.
9. Rachmasari SI, Mardiana M. Penggunaan Media Booklet Dalam Konseling Gizi Terhadap Skor Pengetahuan, Sikap, Asupan Natrium Dan Kalium Pada Pasien Hipertensi. *J Nutr Coll.* 2022;11(2):143–53.
10. Trisnadewi IMSAW, Ni Putu Wiwik Oktaviani, Seri Asnawati Munthe, Victor Trismanjaya Hulu, Indah Budiastutik AF, Radeny Ramdany RJF, Tania POA, Baiq Fitria Rahmiati, Sanya Anda Lusiana, Baiq Fitria Rahmiati, Sanya Anda Lusiana SS. Metodologi Penelitian Kesehatan [Internet]. 2021
11. Hulu VT, Sinaga TR. Analisis Data Statistik Parametrik Aplikasi SPSS DAN STATCAL: Sebuah Pengantar Untuk Kesehatan [Internet]. 1st ed. Medan: Yayasan Kita Menulis; 2019
12. Hulu V, Kurniawan R. Memahami Dengan Mudah Statistik Nonparametrik Bidang Kesehatan Penerapan Software SPSS dan STATCAL. Jakarta: Kencana; 2021.
13. Gonidjaya JJ, Que BJ, Kailola NE, Asmin E, Titaley CR, Kusadhiani I. Prevalensi Dan Karakteristik Penderita Hipertensi Pada Penduduk Desa Banda Baru Kabupaten Maluku Tengah Tahun 2020. *PAMERI Pattimura Med Rev.* 2021;3(1):46–59.
14. Diasri E, Martiana T, Paskarini I, Widarjanto W, Pitayani DSK. Pengaruh Karakteristik Pengrajin Gerabah Terhadap Kejadian Hipertensi Di Desa Karanganyar. *J Penelit Kesehatan" SUARA FORIKES"(Journal Heal Res Forikes Voice)".* 2024;43–7.
15. Tambuwun AA, Kandou GD, Nelwan JE. Hubungan karakteristik individu dengan kepatuhan berobat pada penderita hipertensi di Puskesmas Wori Kabupaten Minahasa Utara. *KESMAS J Kesehat Masy Univ Sam Ratulangi.* 2021;10(4).
16. Ningsih DPS, Effendi SU, Salim HK. Karakteristik penderita hipertensi di Puskesmas Telaga Dewa Kota Bengkulu. *J Ilmu Kedokt dan Kesehat.* 2022;9(2).
17. Gaol RL, Simbolon FN. Gambaran Karakteristik Pasien Hipertensi di Rumah Sakit Umum Full Bethesda Medan Tahun 2021. *J Online Keperawatan Indones.* 2022;5(1):30–7.
18. Pakhri A, Chaerunnimah C, Rahmiyati R. Edukasi Gizi terhadap Pengetahuan dan Kebiasaan Jajan pada Siswa SMP Negeri 35 Makassar. *Media Gizi Pangan.* 2018;25(1):77–83.
19. Azizah SN, Kurniasari R, Harianti R. Pengaruh Edukasi Gizi melalui Media KIE Gizi terhadap Pengetahuan Hipertensi pada Penderita Hipertensi: Literature Review. *Media Publ Promosi Kesehat Indones.* 2023;6(5):807–13.
20. Utami APD, Kurdanti W, Suryani I. Boodidash (booklet diet DASH) dapat memperbaiki pengetahuan, asupan serat, dan tekanan darah pasien hipertensi di puskesmas gamping I. *J Nutr.* 2020;22(2):69–77.
21. Laila W, Nurhamidah N, Angelia R. Konseling Gizi Dengan Media Buku Saku Hipertensi Terhadap Pengetahuan Dan Kepatuhan Diet Pada Pra Lansia Penderita Hipertensi. In: *Prosiding Seminar Kesehatan Perintis.* 2022. p. 50–9.