



## THE RELATIONSHIP BETWEEN FAMILY SUPPORT AND SOCIAL SUPPORT WITH DIET ADHERENCE OF HYPERTENSIVE PATIENTS

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### ABSTRACT

**Introduction:** Hypertension is an escalating global health issue, with diet playing a critical role in its management by limiting salt and saturated fat intake while increasing the consumption of fruits, vegetables, and fiber. However, low patient compliance often leads to unstable blood pressure and increases the risk of complications such as stroke, heart disease, and kidney failure. This study aims to analyze the relationship between family support, social support, and diet adherence among hypertensive patients. **Methods:** This study employed a descriptive survey approach with a cross-sectional research design, conducted among hypertensive patients at the Margorejo Pati Health Center. A total of 40 participants were selected using purposive sampling techniques. Data were collected using a Family Support Questionnaire, a Social Support Questionnaire, and a Hypertension Diet Adherence Questionnaire. The Spearman Rank Correlation test was used to determine the relationship between the variables. **Results:** The bivariate analysis revealed a strong correlation between family support and diet adherence among hypertensive patients, with a  $p$ -value of 0.000 ( $p \leq 0.05$ ) and a correlation strength of  $r = 0.979$ , indicating a very strong and positive relationship. Additionally, social support was significantly associated with diet adherence, with a  $p$ -value of 0.000 ( $p \leq 0.05$ ) and a correlation strength of  $r = 0.912$ , demonstrating a very strong positive correlation. **Conclusions:** The findings indicate that both family and social support are strongly and positively correlated with the dietary adherence of hypertensive patients. Based on these findings, it is recommended to enhance family involvement in patient dietary management.

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### INTRODUCTION

Hypertension, commonly known as high blood pressure, is a chronic condition that significantly increases the risk of cardiovascular diseases, kidney failure, and stroke. It occurs when systolic blood pressure exceeds 140 mmHg and diastolic blood pressure exceeds 90 mmHg, as measured in at least two separate evaluations (Suciana et al., 2020). Despite its life-threatening risks, hypertension often progresses without noticeable symptoms, earning it the label "silent killer" (Tumanggor et al., 2022). Many individuals are unaware that they have hypertension until complications arise, making early prevention and lifestyle management crucial.

One of the most pressing challenges in managing hypertension is low patient adherence to dietary recommendations. Dietary control plays a key role in blood pressure management by limiting sodium intake, reducing saturated fat, and

increasing the consumption of fiber-rich foods such as fruits and vegetables. However, many hypertensive patients fail to maintain a proper diet, leading to poor blood pressure control and increased risks of severe complications. Various factors contribute to this lack of adherence, including insufficient knowledge, low motivation, economic constraints, and limited support systems. Among these factors, the presence of family and social support is one of the most significant in ensuring adherence to dietary guidelines (Amelia, 2020). However, studies examining the direct impact of family and social support on dietary compliance among hypertensive patients remain limited.

Hypertension is a global health issue affecting 1.13 billion people worldwide. According to the World Health Organization (WHO, 2018), nearly two-thirds (66%) of hypertensive patients



live in low- and middle-income countries, where access to healthcare and preventive strategies is often inadequate. This high prevalence contributes to increased mortality rates and places a significant burden on healthcare systems. In Indonesia, hypertension is a major public health concern. Based on the Riskesdas 2018 survey, the prevalence of hypertension among adults aged 18 years and older is 34.1%, with only 8.4% of cases diagnosed by doctors. The report also indicates that 37.57% of the population in Central Java suffers from hypertension, with a higher prevalence among women (40.17%) compared to men (34.83%). The number of hypertension cases continues to rise each year, increasing the risks of complications such as stroke, heart failure, and kidney disease.

One of the most effective yet underutilized strategies in controlling hypertension is dietary modification. Studies have shown that adhering to a hypertension-friendly diet significantly reduces blood pressure levels and prevents severe complications (Iqbal & Handayani, 2022). However, despite the availability of dietary guidelines, many patients struggle with compliance, making this a key issue in hypertension management.

Hypertension management generally involves two main approaches: pharmacological therapy and non-pharmacological interventions. Pharmacological treatments include Angiotensin-Converting Enzyme (ACE) inhibitors, Angiotensin Receptor Blockers (ARB), Calcium Channel Blockers (CCB), and diuretics (Yusuf & Boy, 2023). While medications effectively control blood pressure, they are not a long-term solution if not accompanied by proper lifestyle modifications.

Among non-pharmacological interventions, dietary management is one of the most important aspects of hypertension control. A hypertension-friendly diet includes reducing sodium intake, limiting saturated fats, increasing fiber intake, and consuming more fruits and vegetables. Research has shown that patients who follow these dietary recommendations experience better blood pressure control and a reduced risk of severe complications. However, adherence remains a challenge due to several factors, including a lack of knowledge, limited motivation, and insufficient family and social support.

Family support plays a crucial role in ensuring that patients maintain a proper diet. Family members can provide emotional encouragement, assist with meal planning, and monitor dietary habits (Friedman, 2010). Similarly, social support from friends, healthcare providers, and community groups fosters a sense of accountability and motivation (Sarafino & Smith,

2010). Studies have confirmed a strong relationship between family support and dietary adherence (Sari et al., 2020). However, research that integrates both family and social support variables in dietary compliance among hypertensive patients remains limited (Sapwal et al., 2021).

Given the high prevalence of hypertension and the challenges associated with dietary adherence, strengthening family and social support systems is crucial to improving patient compliance. Several strategies can be implemented to enhance dietary adherence among hypertensive patients. First, family-based interventions should be promoted, including educating family members about the importance of diet in controlling hypertension, encouraging them to participate in meal planning and preparation, and providing consistent emotional support to patients. Families play a key role in reinforcing healthy eating behaviors, making it easier for patients to adhere to dietary guidelines.

Second, community and social support initiatives should be strengthened. Healthcare providers can establish support groups for hypertensive patients, where individuals can share experiences and receive guidance on dietary management. Additionally, public health campaigns focusing on hypertension prevention and dietary compliance can increase awareness and improve adherence rates. Community-based nutrition education programs can also provide practical guidance on healthy eating within different socioeconomic contexts. Finally, integrating family and social support into healthcare strategies can be an effective long-term approach. Healthcare providers should involve families in patient consultations, emphasizing the role of social and family support in improving dietary adherence. Government and community programs should also facilitate affordable access to healthy foods, particularly in lower-income populations, where dietary compliance is often hindered by financial constraints.

This study aims to analyze the relationship between family support and social support with dietary adherence among hypertensive patients at the Margorejo Health Center. By understanding how these support systems influence dietary adherence, effective intervention programs can be developed to enhance hypertension management and reduce long-term health risks for hypertensive patients.

## **MATERIALS AND METHODS**

This study was conducted at Margorejo Health Center, Pati, Central Java, Indonesia, during

the period of March–April 2024. Participants in this study met the following criteria: willingness to participate as respondents, hypertensive patients undergoing examination at the Margorejo Health Center, patients with systolic blood pressure exceeding 140 mmHg and diastolic blood pressure exceeding 90 mmHg, and those aged between 45 and 55 years. Participants were excluded from the study if they had complications leading to decreased consciousness, refused to participate, or were uncooperative. To collect data, researchers distributed questionnaires to the study subjects.

The researcher reviewed the completeness of the questionnaires filled out by the study subjects before proceeding with data entry. Three measurements were used: the respondent characteristics questionnaire (including name, age, gender, last education, and occupation), the family support questionnaire (which consisted of 20 questions with response options of Never [1], Sometimes [2], Often [3], and Always [4]), and the social support questionnaire (also containing 20 questions with the same scoring system). The hypertension diet adherence questionnaire

included 12 questions with answer options of Disagree [1], Less Agree [2], and Agree [3]. These three questionnaires were tested for validity and reliability, showing strong and consistent results.

This study employed a descriptive survey method with a cross-sectional design. The research simultaneously studied and collected data on the causes, risks, and impacts of the cases relevant to the research subject (Notoatmodjo, 2018). The study was conducted with 40 hypertensive patients, selected using a purposive sampling technique. Purposive sampling is a non-probability sampling method where participants are selected based on specific criteria relevant to the study. Data analysis was performed using SPSS version 23. A bivariate analysis, utilizing the Spearman rank correlation test, was conducted to evaluate the relationship between family and social support and the Dietary Sodium Restriction Questionnaire (DSRQ), which assesses adherence to a hypertension diet. A significance level of  $p < 0.05$  was established for all statistical tests. The research was conducted under ethical clearance number 019/KE/01/2024.

## RESULTS

**Table 1.** Characteristics of Respondents Based on Age, Gender, Education, and Occupation in Hypertensive Patients at Margorejo Health Center, March–April 2024

Age	Frequency (F)	Percentage (%)
45	1	2.5
46	4	7.5
47	3	10.0
48	6	15.0
49	3	7.5
50	8	20.0
51	5	12.5
52	3	7.5
53	4	10.0
54	3	7.5
Gender	Frequency (F)	Percentage (%)
Man	10	25.0
Woman	30	75.0
Education	Frequency (F)	Percentage (%)
Elementary School	9	22.5
Junior High School	4	10.0
Senior High School	26	65.0
Undergraduate	1	2.5
Occupation	Frequency (F)	Percentage (%)
Housewife	16	40.0
Private sector employee	12	30.0
Self-employed	2	5.0
Farmer	6	15.0
Trader	3	7.5
Village official	1	2.5
<b>Total</b>	<b>40</b>	<b>100</b>

Table 1 shows the distribution of respondents based on their age. The majority of respondents are concentrated in the 50-year-old age group, with 8 respondents (20%). Most respondents were women (75.0%) and high school graduates (65.0%). The majority were housewives (40.0%), followed by private sector employees (30.0%) and other occupations.

**Table 2.** Characteristics of Respondents Based on Family Support in Hypertensive Patients at Margorejo Health Center, March–April 2024.

Family Support	Frequency (f)	Percentage (%)	Blood Pressure Level (mmHg)
High	23	57.5	140–150/90–95
Current	9	22.5	150–160/95–100
Low	8	20.0	>160/>100
<b>Total</b>	<b>40</b>	<b>100</b>	

Table 2 reveals that the majority of respondents, totaling 23 individuals (57.5%), reported high levels of family support, while a smaller proportion, 8 individuals (20.0%), indicated low levels of family support.

**Table 3.** Characteristics of Respondents Based on Social Support in Hypertensive Patients at Margorejo Health Center, March–April 2024.

Social Support	Frequency (f)	Percentage (%)
High	21	52.5
Current	12	30.0
Low	7	17.5
<b>Total</b>	<b>40</b>	<b>100</b>

According to Table 3, the data indicates that the majority of respondents, totaling 21 individuals (52.5%), exhibit a high level of social support, while a smaller proportion, comprising 7 individuals (17.5%), report a low level of social support.

**Table 4.** Characteristics of Respondents Based on Dietary Compliance in Hypertensive Patients at Margorejo Health Center, March–April 2024.

Dietary Adherence	Frequency	Percentage (%)
High	23	57.5
Current	6	15.0
Low	11	27.5
<b>Total</b>	<b>40</b>	<b>100.0</b>

As presented in Table 4, the majority of respondents, comprising 23 individuals (57.5%), demonstrate high dietary adherence, while a smaller proportion, totaling 11 individuals (27.5%), exhibit low dietary adherence.

**Table 5.** Analysis of the Relationship between Family Support, Social Support, and Dietary Adherence of Hypertensive Patients at Margorejo Health Center, March–April 2024.

Family support	Dietary adherence	
	R	0.979
	P	0.000
	N	40
Social support	Dietary adherence	
	R	0.912
	P	0.000
	N	40

Table 5 illustrates that both family support and social support have a strong and positive correlation with dietary adherence in hypertensive patients. Among the respondents, high family support was associated with better dietary adherence, with a Spearman rank correlation of  $r = 0.979$  and  $p = 0.000$  ( $p \leq 0.05$ ), leading to the acceptance of  $H_a$  and rejection of  $H_o$ . Similarly, high social support was correlated with high adherence, with a correlation of  $r = 0.912$  and  $p = 0.000$  ( $p \leq 0.05$ ). These findings indicate that both family and social support play a crucial role in improving dietary adherence among hypertensive patients.

## DISCUSSION

### Respondent Characteristics Regarding Blood Pressure in Hypertension Patients

The findings of this study indicate that the average age of hypertensive patients was 50 years, which aligns with existing literature suggesting that an age-related decline in cardiovascular function contributes to the increased prevalence of hypertension (Nurhayati, 2023). An increase in age

is directly proportional to a decline in the cardiovascular system, which subsequently contributes to a higher incidence of hypertension. This finding is consistent with the results of a study by Hidayah (2022), which states that, with increasing age, blood vessel stiffness occurs due to the thickening of vessels and the narrowing of arterial walls caused by the accumulation of

collagen in the muscle layer, leading to hypertension.

Regarding gender differences, the study reveals that the majority of respondents were women (75.0%), a pattern consistent with previous research that links higher hypertension prevalence in women, particularly postmenopausal women, to hormonal changes (Falah, 2019). Estrogen, which offers protective cardiovascular benefits by increasing High-Density Lipoprotein (HDL) levels and preventing atherosclerosis, declines with menopause, consequently heightening the risk of hypertension (Manurung, 2018). These findings highlight the need for gender-specific health education programs, particularly targeting women in the pre- and postmenopausal stages, to promote hypertension prevention and dietary adherence strategies.

In terms of educational background, most respondents had a high school education (65.0%), a factor that may facilitate better comprehension of health education and dietary recommendations (Nekada et al., 2020). Higher education levels are generally associated with greater health literacy, enabling individuals to interpret medical advice more effectively and adopt healthier lifestyles (Lu et al., 2015). In general, lower education levels tend to make it more challenging for individuals to understand and act on medical advice. However, for individuals with lower educational attainment, targeted educational interventions emphasizing simple and actionable dietary guidelines could improve compliance with hypertension management strategies.

Occupationally, the majority of respondents were housewives (40.0%), followed by private sector employees (30.0%). The high proportion of housewives in this study may suggest limited physical activity, increased stress, and economic constraints, all of which are contributing factors to hypertension (Amelia, 2020). As stated by Amelia (2020), a sedentary lifestyle and chronic stress are significant contributors to the development and worsening of hypertension. Given this context, community-based health programs aimed at integrating stress management techniques and accessible physical activity routines for housewives may be beneficial in reducing hypertension risks. Household responsibilities often lead to sedentary behaviors and emotional stress, which can exacerbate hypertension symptoms. Therefore, integrating stress management techniques and promoting physical activity for housewives could be an effective strategy to mitigate hypertension risks.

The findings of this study underscore the multifactorial nature of hypertension, where age,

gender, education, and occupation collectively influence the prevalence and management of the condition. While biological factors such as aging and hormonal shifts are non-modifiable, education and lifestyle interventions present significant opportunities for improving dietary adherence and hypertension control. Therefore, this study reinforces the importance of targeted health education, gender-specific awareness programs, and socioeconomic considerations in developing more effective hypertension management strategies.

### **Description of Family Support**

Based on the research findings, the majority of respondents reported high levels of family support. A total of 23 respondents indicated that family support in the emotional support domain—such as family members reminding clients when they violate dietary restrictions for hypertension—was rated highly. Emotional support, which involves attention or affection from family members towards an individual suffering from illness, has a significant impact on the patient's recovery rate. Emotional support serves as an incentive for patients to adhere to their diet, encouraging them to follow a hypertension-friendly diet (Friedman, 2010). Respondents' enthusiasm for adhering to the diet may increase when their families provide emotional support. This is due to respondents' perception that their family understands and cares for them. Family support can take various forms, such as acceptance of the sick individual, positive behaviors, and attitudes. Family members who are always willing to help when needed also form a reliable support system (Sapwal et al., 2021). According to the researchers, family support can provide motivation for hypertensive patients to comply with their prescribed diet. Hypertensive patients without family support are less likely to adhere to the dietary recommendations, making family support a crucial factor in ensuring compliance with a hypertension diet.

### **Descriptive Social Support**

Based on the research findings, the majority of respondents reported high levels of social support. A total of 21 respondents indicated that social support in the information support domain—such as "I often receive information related to diet patterns from people around me"—was rated highly. Informational support refers to assistance provided in the form of feedback, guidance, or advice for an individual. The informational support received by patients can enhance their compliance with a hypertension diet,

as the available support helps patients obtain the necessary information to follow the diet properly. Emotional support, on the other hand, involves empathy, concern, positive feedback, comfort, peace, and feelings of being loved by close individuals, which can stimulate personal growth. Providing informational support to patients can motivate them to adhere to a hypertension diet, as it equips them with the knowledge needed for compliance (Sarafino & Smith, 2010). Information support is crucial for hypertensive patients, as it helps them understand and follow a healthy diet. With adequate informational support, patients can more easily comply with a hypertension diet and maintain their health (Tiwi & Cahyaningrum, 2022). Social support encompasses various forms of help or assistance from individuals or groups, including emotional, informational, instrumental, and appraisal support, and can be obtained from family, friends, or the community. Social support plays an essential role in improving both mental and physical health. In the context of health, social support helps individuals stay motivated to lead a healthy lifestyle or adhere to treatment (Aliffatunisa et al., 2021). Social support from various sources—such as community organizations, friends, family, and even partners—contributes to well-being and health. More specifically, there is a proven correlation between adequate social support and emotional health, physical health, cognitive function, and recovery from illness. Additionally, the positive influence of social support includes reducing stress levels caused by the patient's illness.

### **Description of Hypertension Diet Adherence**

The research findings show that 23 respondents with hypertension at the Margorejo Health Center adhered to the hypertension diet. A hypertension diet is a strategy that can help lower and maintain normal blood pressure. Dietary adherence refers to the extent to which a person consistently follows a prescribed meal plan, either for health purposes or for managing a medical condition. Hypertension diet adherence specifically refers to how consistently a person follows the recommended diet to manage high blood pressure (Darmani & Mato, 2020). Both pharmacological and non-pharmacological therapies are used in the treatment of hypertension. The DASH (Dietary Approaches to Stop Hypertension) diet is a non-pharmacological treatment method that emphasizes low-fat foods and foods rich in fruits and vegetables (Telaumbanua & Rahayu, 2021). A hypertension diet is another non-pharmacological method that is useful for controlling and regulating blood

pressure (Adzra, 2022). The findings of this study align with those of previous studies (Nita & Oktavia, 2018; Sari et al., 2020), which revealed that the majority of respondents adhered to their hypertension diet. The study reported a p-value of 0.000, indicating a significant correlation between self-motivation and dietary compliance among individuals with hypertension. Based on these results, the researcher concludes that dietary compliance among hypertension patients in the Margorejo Health Center work area is relatively high. This conclusion is further supported by the respondents' questionnaire results, which reflect high adherence to the hypertension diet criteria.

### **Descriptive Relationship Between Family Support and Social Support on Dietary Adherence of Hypertension Patients**

The association between family support and dietary adherence among hypertensive patients at the Margorejo Health Center was analyzed using Spearman's rank correlation, yielding a correlation coefficient of 0.979 and a p-value of 0.000 ( $p < 0.05$ ). Similarly, the relationship between social support and dietary adherence was also examined, resulting in a Spearman's correlation coefficient of 0.912 and a p-value of 0.000 ( $p < 0.05$ ). These findings indicate that hypertensive patients demonstrate greater adherence to dietary recommendations when both family support and social support are strong. According to Niven (2008), family and social support play a crucial role in alleviating anxiety related to specific illnesses, which can, in turn, reduce or even eliminate instances of non-compliance. This support often serves as a motivating factor for improving adherence. When family and social support are optimized, adherence to dietary guidelines for managing hypertension is likely to improve. Moreover, social and family support are critical determinants of compliance, highlighting the importance of family members offering greater assistance in minimizing non-adherence to prescribed diet programs. Studies have shown that when family members collaborate, they are more likely to adhere to medical recommendations, including dietary plans (Tumenggung, 2019). The findings of this study are further corroborated by research conducted by, Sari et al. (2020) in the work area of the Pancur Health Center, Lingga Regency, where a significant correlation was found between family support and dietary compliance among hypertensive patients, with a p-value of 0.000 ( $p < 0.05$ ). The study's findings indicate that increased social and family support is positively correlated with higher levels of compliance, especially among individuals with

hypertension, in following a hypertension-specific diet. These results align with the understanding that supportive relationships play a critical role in promoting adherence to medical recommendations. As stated by Niven (2008), anxiety due to certain diseases can be reduced with the support obtained from social or family networks. The presence of this support can reduce the rate of non-compliance and is often used as motivation by individuals to achieve the expected compliance rate. Optimally provided social or family support is highly likely to increase adherence to the hypertension diet.

## CONCLUSIONS

The research findings indicate that both family support and social support play a significant role in influencing adherence to dietary patterns among hypertensive patients. These forms of support are crucial for enhancing dietary compliance in hypertensive patients. Support encompasses emotional, informational, instrumental, and evaluative aspects related to following a healthy diet. Therefore, it is essential for family and community members to provide adequate support to individuals with hypertension to help them adhere to the recommended diet for their health. Additionally, it is recommended that individuals with hypertension increase their awareness, encouraging families to become more active in supporting hypertensive patients. This includes providing accurate information about the hypertension diet and emphasizing the importance of adhering to the recommended dietary guidelines. Patients should be encouraged to communicate openly with their family members regarding their dietary needs. Families should aim to create a supportive environment where patients feel comfortable following the diet.

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## AUTHORS' CONTRIBUTIONS

Conceptualization and supervision: Hesti Norma Sari, Satriya Pranata, Khoiriyah Khoiriyah, and Warsono; Methodology: Satriya Pranata and Hesti Norma Sari; Data collection: Hesti Norma Sari; Data analysis: Satriya Pranata, Khoiriyah Khoiriyah, and Warsono; Investigation and writing: Hesti Norma Sari.

## CONFLICT OF INTEREST

The authors declared no conflict of interest.

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