



RESEARCH ARTICLE

Self-efficacy, family support, and diet adherence in hypertension at Bestari Health Center

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ABSTRACT

Background: Hypertension is a major public health problem worldwide. Adherence to a low-salt diet is essential for blood pressure control. Self-efficacy and family support are known to influence dietary adherence. This study aimed to analyze the relationship between self-efficacy and family support with low-salt diet adherence among hypertension patients in the working area of Bestari Primary Health Center.

Method: A quantitative descriptive study with a cross-sectional design was conducted. The population comprised 98 hypertension patients registered at Bestari Primary Health Center in December 2023. Total sampling was used, including all 98 patients. Data were collected using validated and reliable questionnaires measuring self-efficacy, family support, and low-salt diet adherence. Data were analyzed using univariate analysis (frequencies and percentages) and bivariate analysis using the Fisher exact test ($\alpha = 0.05$).

Results: Most respondents were male (52.0%), aged 36-45 years (34.7%), had senior high school education (51.0%), and worked as self-employed (48.0%). Low self-efficacy was found in 79.6% of respondents, lack of family support in 59.2%, and non-adherence to low-salt diet in 77.6%. Bivariate analysis showed significant associations between self-efficacy and low-salt diet adherence ($p = .014$; OR = 4.091, 95% CI [1.413, 11.847]) and between family support and low-salt diet adherence ($p = .025$; OR = 3.365, 95% CI [1.251, 9.053]).

Conclusion: There is a significant relationship between self-efficacy and family support with low-salt diet adherence among hypertension patients in the working area of Bestari Primary Health Center. Patients with low self-efficacy and lack of family support had higher risks of non-adherence. Strengthening patient self-efficacy and family involvement in dietary management is recommended.

Keywords: hypertension, self-efficacy, family support, low-salt diet adherence

Introduction

Hypertension is a significant global health challenge because it can trigger premature death worldwide.¹ World Health Organization (WHO) data showed a global hypertension prevalence affecting over a quarter of the world's adult population, with projections steadily increasing toward 2030. Of these, the majority reside in low- and middle-income developing countries compared to developed nations.² Regionally, some of the highest burdens and steepest increases in prevalence have been documented across developing regions, particularly within the African continent.¹ According to updated global health assessments, an estimated 1.28 billion adults aged 30–79 years worldwide suffer from hypertension, with the vast majority living in low- and middle-income countries. Nearly half (46%) of these patients are entirely

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unaware of their condition.³ Although a portion are diagnosed and treated, poor control rates mean that hypertension remains a leading primary cause of premature death globally.^{1,3}

In Indonesia, the 2023 Indonesian Health Survey (*Survei Kesehatan Indonesia* [SKI]) confirmed that the prevalence of hypertension among citizens aged ≥ 18 years remains critically high across both genders.⁴ Regional data from the North Sumatra Health Office (*Dinas Kesehatan Sumatera Utara*) highlights a rising annual trend in cases, with a substantial gap remaining between the total number of cases and those actively receiving standardized healthcare services.⁵ Medan City, as a major urban hub, has similarly reflected these fluctuating but continually high case numbers over recent monitoring cycles.⁶

Self-efficacy plays a pivotal role in improving patient adherence to low-salt diets.⁷ This occurs because high self-confidence strengthens behavioral intentions, linking positive health attitudes, subjective norms, and perceived behavioral control directly with actual dietary adherence.⁸ Another major factor influencing the ability of hypertensive patients to follow stringent dietary programs is family support. The family's role is crucial as a reinforcing factor that improves patient adherence to recommended lifestyles, while providing vital monitoring to prevent complications and assist in healthy dietary selection.⁹

Reducing dietary sodium intake is a cornerstone strategy for controlling blood pressure.¹⁰ A patient's long-term ability to maintain this diet is heavily mediated by underlying beliefs, attitudes, and personal self-efficacy.⁸ High self-efficacy motivates individuals to sustain healthy behaviors, undergo regular clinical screening, and restrict daily salt intake, whereas low self-efficacy serves as a primary psychological barrier to effective self-management.¹¹

Empirical studies confirm this relationship; patients presenting with high self-efficacy exhibit significantly greater adherence to low-salt regimens compared to those with low self-efficacy.¹² Furthermore, robust clinical evidence demonstrates that strong family support correlates with a massive upward shift in dietary compliance, showing that patients who receive active family encouragement are multiple times more likely to successfully stick to their recommended hypertensive diets compared to those lacking a strong domestic support system.⁹

Although many studies have examined low-salt diet compliance in hypertensive patients, the dominant predictive factors remain highly variable across different demographics.¹² Previous research has frequently isolated individual factors like self-efficacy or social support rather than evaluating their concurrent impacts. Additionally, much of the existing literature focuses predominantly on geriatric populations, leaving a critical gap in data regarding productive age groups (20–65 years) who face unique occupational stressors. Within the working area of urban clinics like the Bestari Primary Health Center, local health registries show consistently high patient counts despite active public health campaigns. Preliminary community interviews suggest that proximity to bustling commercial hubs like Pasar Petisah results in heavy trader populations whose demanding work schedules lead to health neglect, highlighting the urgent need to evaluate how concurrent self-efficacy and family support influence low-salt diet compliance within this specific productive workforce.

Method

This was a quantitative descriptive study with a cross-sectional design, examining the relationship between independent variables (self-efficacy and family support) and the dependent variable (low-salt diet adherence) at a single time point. The study was conducted in the working area of Bestari Primary Health Center, Medan, in April 2026.

The population comprised all hypertension patients registered at Bestari Primary Health Center in December 2023, totaling 98 patients. Total sampling was used, including all 98 patients as respondents. Inclusion criteria: (1) hypertension patients willing to complete the questionnaire; (2) aged 20–65 years; (3) able to read and complete the questionnaire. Exclusion criteria: (1) patients unwilling to participate; (2) patients with complications such as diabetes or coronary heart disease; (3) patients with congenital abnormalities. Primary data were collected using structured questionnaires on self-efficacy, family support, and low-salt diet adherence. Secondary data were obtained from the health center and previous research journals.

Self-efficacy was defined as the patient's belief in their ability to understand or perform actions supporting hypertension management. Measured using a questionnaire with ordinal scale, categorized as low self-efficacy (score 0–5) or high self-efficacy (score 6–10). Family support was defined as the form of attention from family members living with the hypertension patient to support the low-salt diet, including

informational, appraisal, instrumental, and emotional support. Categorized as not supportive (score 0-5) or supportive (score 6-10). Low-salt diet adherence was defined as the patient's behavior in following the low-salt diet. Categorized as non-adherent (score 0-5) or adherent (score 6-10).

Univariate analysis described frequency distributions of respondent characteristics and main variables. Bivariate analysis used the chi-square test, but because the data were not normally distributed ($p < 0.05$ on Kolmogorov-Smirnov test), the Fisher exact test was used with $\alpha = 0.05$. Data were processed using SPSS v.26.

Results

A total of 98 respondents participated. The majority were male (52.0%), aged 36-45 years (34.7%), Muslim (39.8%), Javanese (41.8%), with senior high school education (51.0%), and working as self-employed (48.0%) (Table 1).

Table 1. Distribution of respondent characteristics (N=98)

Characteristic	Category	Frequency (n)	Percentage (%)
Sex	Male	51	52.0
	Female	47	48.0
Age (years)	25-35	28	28.6
	36-45	34	34.7
	46-55	20	20.4
	56-65	16	16.3
Religion	Islam	39	39.8
	Catholic	20	20.4
	Protestant	23	23.5
	Hindu	8	8.2
Ethnicity	Confucianism	8	8.2
	Javanese	41	41.8
	Chinese	21	21.4
	Batak	36	36.7
Education	Junior high school	5	5.1
	Senior high school	50	51.0
	D3/S1 (Diploma/Bachelor)	43	43.9
Occupation	Self-employed	47	48.0
	Private employee	24	24.5
	Driver	4	4.1
	Housewife	8	8.2
	Laborer	13	13.3
	Unemployed	2	2.0

Table 2 shows that the majority of respondents had low self-efficacy (79.6%), lack of family support (59.2%), and were non-adherent to low-salt diet (77.6%).

Table 2. Distribution of self-efficacy, family support, and low-salt diet adherence (N=98)

Variable	Category	Frequency (n)	Percentage (%)
Self-efficacy	Low	78	79.6
	High	20	20.4
Family support	Not supportive	58	59.2
	Supportive	40	40.8
Low-salt diet adherence	Non-adherent	76	77.6
	Adherent	22	22.4

The Fisher exact test showed a significant association ($p = .014$). Among respondents with low self-efficacy, 83.3% were non-adherent; among those with high self-efficacy, 45.0% were adherent. The odds ratio (OR = 4.091, 95% CI [1.413, 11.847]) indicates that patients with low self-efficacy had approximately 4 times higher risk of non-adherence compared to those with high self-efficacy (Table 3).

A significant association was also found ($p = .025$). Among respondents with lack of family support, 86.2% were non-adherent; among those with supportive families, 35.0% were adherent. The OR of 3.365 (95% CI [1.251, 9.053]) indicates that patients without family support had approximately 3.4 times higher risk of non-adherence compared to those with family support (Table 3).

Table 3. Bivariate relationships between self-efficacy, family support, and low-salt diet adherence (N=98)

Variable	Category	Non-adherent n (%)	Adherent n (%)	Total	p-value	OR (95% CI)
Self-efficacy	Low	65 (83.3)	13 (16.7)	78	.014	4.091 (1.413-11.847)
	High	11 (55.0)	9 (45.0)	20		
Family support	Not supportive	50 (86.2)	8 (13.8)	58	.025	3.365 (1.251-9.053)
	Supportive	26 (65.0)	14 (35.0)	40		

Discussion

The majority of respondents were male. Hypertension is more common in men, possibly due to lifestyle factors such as alcohol consumption and smoking, which increase blood pressure. However, healthy lifestyle behaviors such as reducing salt, eating vegetables and fruits, choosing low-fat foods, dieting, losing weight, and regular exercise do not differ between men and women; they depend on the individual.¹³ Most respondents were aged 36–45 years. Older age increases hypertension risk due to cell aging, changes in blood vessel structure, and atherosclerosis.¹⁴ However, this can be prevented with a healthy lifestyle from a young age.¹³ Most respondents had senior high school education. Higher education is associated with higher self-efficacy and better self-care behavior.¹⁵ Most worked as self-employed. Sedentary work can lead to weight gain and increased blood pressure.¹⁶

The high rate of low self-efficacy among respondents aligns with evidence linking low self-belief to poor dietary adherence, as a lack of goal consistency and self-motivation leaves patients highly vulnerable to environmental temptations.¹⁷ This vulnerability is further compounded by a widespread lack of family support, a critical deficit since families serve as the primary source for reinforcing health concepts; factors such as insufficient care time, minimal intensive attention, and economic constraints often prevent families from providing healthy food or motivating patients.¹⁸ Consequently, a substantial majority of respondents were non-adherent to recommended sodium restrictions, a behavior heavily influenced by a complex matrix of education, knowledge, motivation, and personality.¹⁹ Statistical analysis confirms that self-efficacy is significantly associated with low-salt diet adherence, as higher self-efficacy helps maintain positive health behaviors, whereas lower self-efficacy—driven by patient busyness and low motivation—subverts dietary control.^{16,17} Furthermore, the significant association between family support and dietary adherence underscores that active family involvement is absolutely essential for managing hypertension and fostering long-term compliance.²⁰

This study used total sampling, ensuring all eligible patients were included. Validated and reliable instruments were used. However, limitations include the cross-sectional design, which prevents causal inference; reliance on self-reported adherence, which may be subject to social desirability bias; and the single health center setting, limiting generalizability. The study did not assess objective blood pressure measurements or other potential confounders such as medication use or duration of hypertension. Future studies should use longitudinal designs and objective adherence measures.

Health workers at Bestari Primary Health Center should strengthen interventions that enhance patient self-efficacy, such as goal-setting, skill-building, and positive reinforcement. Family-based interventions, including family education sessions and practical guidance on low-salt cooking, should be integrated into hypertension management programs. Routine monitoring of dietary adherence should involve family members as co-managers. At the policy level, local health authorities should develop community-based programs that address both individual and family-level determinants of dietary adherence.

Conclusion

This study found that most hypertension patients at Bestari Primary Health Center had low self-efficacy (79.6%), lacked family support (59.2%), and were non-adherent to low-salt diet (77.6%). There were significant relationships between self-efficacy and low-salt diet adherence ($p = .014$; OR = 4.091) and between family support and low-salt diet adherence ($p = .025$; OR = 3.365). Patients with low self-efficacy and lack of family support had substantially higher risks of non-adherence. Strengthening patient self-efficacy and actively involving families in dietary management are essential strategies to improve adherence and blood pressure control.

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