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The Relationship Between Self-Efficacy, Self-Management, and Quality of Life Among Patient With Hypertension

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ABSTRACT
Background: Self-efficacy and self-management may be associated with health-related quality of life among people living with hypertension.
Objective: To examine associations between self-efficacy, self-management, and quality of life among adults with hypertension in Luwuk, Banggai Regency, Indonesia.
Methods: This cross-sectional study included 150 adults attending four community health centers. Self-efficacy, self-management, and quality of life were assessed using the SEMH, HSMBQ, and SF-36 instruments, respectively. Associations between dichotomized measures were examined using Pearson chi-square tests and crude odds ratios (ORs) with 95% confidence intervals (CIs).
Results: Of 150 participants, 109 (72.7%) were women, 72 (48.0%) were classified as having good self-efficacy, 106 (70.7%) as having good self-management, and 85 (56.7%) as having good quality of life. Good self-efficacy was associated with good quality of life (OR = 5.18, 95% CI 2.55–10.53; p < 0.001), as was good self-management (crude OR = 3.26, 95% CI 1.57–6.79; p = 0.001). **Conclusion:** Self-efficacy and self-management were each associated with quality of life in this cross-sectional sample. Causal direction and independence from potential confounding cannot be inferred.

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INTRODUCTION

Hypertension is a major global public health challenge and a leading contributor to premature death and cardiovascular disease. According to the World Health Organization (WHO, 2025), approximately 1.4 billion adults aged 30–79 years were living with hypertension worldwide in 2024, and approximately two-thirds lived in low- and middle-income countries. Hypertension is frequently asymptomatic, making early detection and continued monitoring essential. When inadequately controlled, elevated blood pressure is associated with serious complications, including stroke, heart disease, heart failure, and kidney disease (Brettler et al., 2022; WHO, 2025).

Hypertension is also a substantial health concern in Indonesia. National Basic Health Research (Riskesdas) data indicated that the prevalence of hypertension based on blood pressure measurements increased from 25.8% in 2013 to 34.1% in 2018 (Ministry of Health of the Republic of Indonesia, 2018). These percentages refer to national estimates and should not be interpreted as provincial prevalence figures. At the primary-care level, identifying factors associated with the health-related quality of life of people living with hypertension is important for understanding their needs beyond blood pressure measurements alone.

Hypertension management generally requires sustained engagement in medication adherence, dietary modification, physical activity, and regular blood pressure monitoring (Fletcher et al., 2015; Uhlig, Patel, Ip, Kitsios, & Balk, 2013). Self-management refers to the activities through which individuals monitor and manage their chronic condition and its daily consequences (Ko, Bratzke, & Roberts, 2018; Richard & Shea, 2011). These behaviors may be challenging in the presence of limited knowledge, motivation, or social support. For this reason, self-management is a relevant construct to examine alongside patients' perceived health and well-being (C. Wang, Lang, Xuan, Li, & Zhang, 2017; Zhang, Huang, Zhang, Li, & Zhang, 2021).

Self-efficacy refers to an individual's belief in their capacity to carry out behaviors required to achieve a particular goal (Albert Bandura, 1977). In the context of hypertension, it concerns patients' perceived ability to follow treatment recommendations and manage everyday health-related demands. Although conceptually related, self-efficacy and self-management are distinct: the former addresses confidence in performing a behavior, whereas the latter concerns the behaviors undertaken. Previous studies have described relationships among self-efficacy, self-management, health literacy, social support, and health-related quality of life among people with hypertension (C. Wang et al., 2017; Zhang et al., 2021). These findings provide a theoretical rationale for examining both constructs, without establishing a causal direction in a cross-sectional study.

Health-related quality of life is a multidimensional, patient-reported concept that encompasses perceived physical, psychological, and social functioning. Hypertension and its management may be accompanied by limitations in daily activities and psychological or social difficulties (Demirtürk & Hacıhasanoğlu Aşılar, 2018; Qiu, Shao, Yao, Zhao, & Zang, 2019). Examining quality of life together with self-efficacy and self-management can therefore provide a broader description of patients' experiences than clinical blood pressure status alone (Qiu et al., 2019; W. Wang et al., 2021).

Although existing research has examined these constructs in various populations, the extent to which self-efficacy and self-management are associated with quality of life among adults receiving hypertension care at community health centers in Luwuk District, Banggai Regency, Central Sulawesi, remains insufficiently described in the literature cited above. Examining both associations in the same local sample may provide context-specific evidence to inform future patient education and supportive care research. This study therefore aimed to examine the associations of self-efficacy and self-management with quality of life among patients with hypertension attending four community health centers in Banggai Regency, Indonesia.

METHODS

Study Design

This quantitative cross-sectional study examined the associations of self-efficacy and self-management with quality of life among adults with hypertension. Because exposure and outcome variables were measured at the same time, the analysis was designed to identify associations rather than causal relationships.

Location

The study was conducted at four community health centers (Biak, Hunduhon, Kampung Baru, and Simpong) in Banggai Regency, Central Sulawesi, Indonesia.

Sample/Participants

The study included 150 adults diagnosed with hypertension. The reported eligibility criteria were age 18 years or older, a diagnosis of hypertension, and provision of written informed consent. The original manuscript also excluded individuals described as incomplete questionnaires. Simple random sampling was reported. The reported sample-size calculation used Cochran's formula and confirm that these parameters reproduce the final target of 150.

Instruments

Self-efficacy was assessed using the self-efficacy to manage hypertension-five item scale (SEMH) consists of five questions with response options ranging from 1 (not at all confident) to

10 (very confident). Reliability testing results showed a value of 0.903. An average score >9 is classified as having good self-efficacy.

Self-management was assessed using the Hypertension Self-Management Behavior Questionnaire (HSMBQ), a 40-item questionnaire with response options ranging from 1 (never) to 4 (always). This questionnaire covers self-integration, self-regulation, interactions with other healthcare professionals, blood pressure monitoring, and adherence to recommended regimens. Self-management scores were categorized as good (121-160), fair (81-120), and poor (40-80).

Quality of life was assessed using the SF-36 Quality of Life Questionnaire, a 36-item questionnaire measuring eight domains: physical function, role limitations due to physical problems, bodily pain, general health perception, vitality, social function, role limitations due to emotions, and general mental health. Quality of life was considered good if the score was ≥50 and poor if the score was <50. All instruments were translated into Indonesian and tested for validity and reliability, with Cronbach's alpha values of 0.82 (SEMH), 0.79 (HSMBQ), and 0.88 (SF-36), respectively. Blood pressure was measured using a calibrated aneroid sphygmomanometer, with the patient seated and resting for at least 5 minutes before measurement; two readings were taken 5 minutes apart, and the average recorded.

Data Collection

Primary data were obtained through the SEMH, HSMBQ, and SF-36 questionnaires. Questionnaires were checked for incomplete or missing items, and participants were required to sign an informed consent form if they agreed and respected the decision of participants who refused or withdrew.

Data Analysis

Data were analyzed using IBM SPSS Statistics version 25. Participant characteristics and categorical study variables were summarized using frequencies and percentages. The relationship between self-efficacy and quality of life, as well as between self-management and quality of life, was examined using the chi-square test. Statistical significance was defined as a p value <0.05.

Data Analysis

Ethics approval has been obtained from the Health Research Ethics Committee of the Ministry of Health, Palu (No. 0033/KEPK-KPK/III/2023). Written informed consent was obtained from each participant prior to data collection.

RESULTS

A total of 150 participants were included. Women accounted for 109 (72.7%); the most frequently represented age band was 45–54 years (35; 23.3%). Primary education was reported by 63 (42.0%), and 123 (82.0%) reported household income below the regional minimum wage. The source data classify 94 (62.7%) participants in the lowest of three reported systolic blood-pressure strata. The original clinical staging label has been withheld pending verification of the guideline and the diastolic classification rule.

Table 1. Sociodemographic and Clinical Characteristics (n=150)

Variable	n	%
Age		
18-24 Years	4	2.7
25-34 Years	16	10.7
35-44 Years	26	17.3
45-54 Years	35	23.3
55-64 Years	21	14.0
65-74 Years	33	22.0
>75 years	15	10.0
Gender		
Man	41	27.3
Woman	109	72.7

Variable	n	%
Education level		
No Formal Education	8	5.3
Primary school	63	42.0
Junior high school	30	20.0
High school	37	24.7
College	12	8.0
Marital Status		
Unmarried	9	6.0
Marry	110	73.3
Divorce	31	20.7
Work		
Housewives	70	46.7
Private Employees	1	0.7
Fisherman	8	5.3
Farmer	35	23.3
Civil Servants	6	4.0
Self employed	8	5.3
Other	22	14.7
Income		
< UMR	123	82.0
According to UMR	19	12.7
> UMR	8	5.3
Long Diagnosed Hypertension		
< 1 Year	65	43.3
1-3 Years	31	20.7
3-4 Years	25	16.7
> 5 Years	29	19.3
Smoke		
No	111	74.0
Yes	39	26.0
Alcohol		
No	139	92.7
Yes	11	7.3
Blood pressure		
Stage 1: 140-159 mmHg	94	62.7
Stage 2 160-179 mmHg	35	23.3
Stage 3 >180 mmHg	21	14.0

Most respondents are 45-54 years old (23.3%), female (72.7%), primary school education level (42.0%), marital status is married (73.3%), housewife work (46.7), income level < UMR (82%). The majority of respondents were non-smokers (74.0%) and did not consume alcohol (92.7%). Based on the results of blood pressure examinations, it was shown that most of the respondents had level 1 hypertension with systolic blood pressure of 140–159 mmHg or diastolic blood pressure of 90–99 mmHg (62.7%). This demographic profile is important as it may influence health literacy and self-management practices.

Table 2. Distribution of self efficacy, self management and quaity of life

Variable	n	%
Self-efficacy		
Good	72	48.0
Bad	78	52.0
Self-management		
Good	106	70.7
Bad	44	29.3

Quality of Life		
Good	85	56.7
Bad	65	43.3

Most respondents have good self-efficacy (48%) and good self-management (70.7%) and most respondents had a good quality of life (56.7%).

Table 3. Correlation of self-efficacy to the quality of life of hypertension patients

Self-efficacy	Quality of life				Total		P Value	OR
	Good		Bad					
	n	%	n	%	n	%		
Good	55	76.4	17	23.6	72	100		
Bad	30	38.5	48	61.5	78	100	**0.000**	**5.176**
	85	**56.7**	**65**	**43.3**	**150**	**100**		

A total of 72 respondents (76.4%) with good self-efficacy had a good quality of life and as many as 17 respondents (23.6%) had a poor quality of life. Analysis of the chi-square test, with a p-value = 0.000 < 0.05 which means that there is a correlation between self-efficacy and quality of life of hypertension patients. The odds ratio with a value of 5.176 which means that good self-efficacy has a 5.176 chance of having a good quality of life.

Table 4. Correlation of self-management to the quality of life of hypertension patients

Self-Management	Quality of life						P value	OR
	Good		Bad		Total			
	n	%	n	%	n	%		
Good	69	65.1	37	34.9	106	100		
Bad	16	36.4	28	63.6	44	100	**0.001**	**3.264**
	85	**56.7**	**65**	**43.3**	**150**	**100**		

A total of 69 respondents (65.1%) with good self-management had a good quality of life and as many as 37 respondents (34.9%) had a poor quality of life. The chi-square test was analyzed, with a p-value = 0.001 which means that there is a correlation between self-management and the quality of life of hypertension patients. The odds ratio of 3.264 indicates that respondents with good self-management had a 3.264 times higher chance of having a good quality of life compared to those with poor self-management.

DISCUSSION

In this cross-sectional study of 150 adults with hypertension attending four community health centers in Banggai Regency, both self-efficacy and self-management were statistically associated with quality of life. Participants classified as having good self-efficacy had higher unadjusted odds of good quality of life than those with poor self-efficacy (OR = 5.176, 95% CI: 2.545–10.527; p < 0.001). Similarly, participants with good self-management had higher unadjusted odds of good quality of life than those with poor self-management (crude OR = 3.264, 95% CI: 1.569–6.790; p = 0.001). These estimates describe associations within this sample; they do not establish causation or demonstrate that either variable has an independent effect after adjustment for potential confounders.

The association between self-efficacy and quality of life is consistent with Bandura's self-efficacy framework, in which perceived capability may be relevant to the initiation and maintenance of health-related behaviors (Albert Bandura, 1977). In the context of long-term

hypertension care, confidence in managing treatment demands may coexist with greater engagement in medication-taking, dietary management, physical activity, and monitoring. However, the present study did not test these behaviors as mediating mechanisms. Reverse directionality is also plausible: people experiencing better health-related quality of life may feel more capable of managing their condition. Accordingly, the theoretical explanation should not be interpreted as evidence of temporal or causal direction.

Previous studies provide a useful context for this finding. Zefanya et al (2026) reported a positive relationship between self-efficacy and quality of life among people with hypertension. C. Wang et al., (2017) and Zhang et al., (2021) likewise examined interrelationships among health literacy, self-management-related constructs, social support, and health-related quality of life in rural populations. Such work supports the relevance of psychosocial and behavioral factors, but differences in participants, measurement instruments, outcomes, and statistical measures limit direct comparisons. In particular, the correlation coefficient reported by Zefanya et al (2026) should not be compared numerically with the odds ratio obtained in the present study as a measure of stronger or weaker association.

For self-management, 106 participants (70.7%) were classified as having good self-management and 44 (29.3%) as having poor self-management. The observed association between self-management and quality of life is compatible with literature identifying self-care behaviors and treatment-related beliefs as relevant to chronic disease management (Ko et al., 2018; M. Yatim et al., 2019; Richard & Shea, 2011). Research by Rikmasari et al (2025) in Indonesian primary healthcare settings also addresses the relationships among self-efficacy, self-management, and patient outcomes. Nevertheless, its effect estimates cannot be directly interpreted alongside those of this study without verifying the reference categories, outcome coding, and analytical models. The current analysis does not establish whether better self-management preceded better quality of life or vice versa.

Access to medication, treatment costs, counseling, and communication with healthcare providers have been identified as potential challenges in qualitative research on hypertension self-management (Hussien, Muhye, Abebe, & Ambaw, 2021; Nyaaba, Masana, de-Graft Aikins, Beune, & Agyemang, 2020). These contextual factors may be relevant when designing future research or services, but they were not directly assessed in the present dataset and therefore cannot be cited as demonstrated explanations for the 29.3% prevalence of poor self-management. Structured patient education, family involvement, and accessible follow-up through community health services may be considered as potential service approaches, subject to evaluation in the local setting (Gultom & Batubara, 2025; Zhao et al., 2020).

Quality of life in hypertension is multidimensional and may vary with symptoms, comorbidities, emotional well-being, social circumstances, and treatment experiences. Discuss clinical and psychosocial correlates of health-related quality of life among hypertensive populations (Adamu et al., 2022; Hailu Jufar, Nuguse, & Misgna, 2017; Qiu et al., 2019; Saini, Rana, Bhatti, Das, & Kumar Mehta, 2022). In the present sample, 85 of 150 participants (56.7%) were classified as having good quality of life; 111 participants (74.0%) were nonsmokers. These are separate descriptive findings. Because smoking status was not cross-tabulated against quality-of-life status in the reported analyses, no association between smoking and quality of life can be inferred from these figures. Likewise, subgroup-specific differences by sex or education were not tested in the analyses reported here.

Evidence from intervention-focused literature points to strategies worth investigating rather than effects established by this study. For example, Gultom & Batubara (2025) described an educational intervention involving patients and other stakeholders, while Barzegar et al (2024) reviewed approaches informed by the Transtheoretical Model. These publications address questions distinct from the present observational analysis. They provide a rationale for future evaluations of tailored health education, self-management support, and patient empowerment, but the present findings alone cannot show that such interventions would improve quality of life in Banggai Regency.

Overall, the findings indicate that self-efficacy and self-management are associated with quality of life among patients with hypertension in the study setting. Self-efficacy had the larger

crude odds ratio, but this does not establish it as the most important independent factor. The results support further longitudinal and appropriately controlled studies to clarify the direction of these relationships and pragmatic intervention studies to determine whether locally adapted self-management support improves patient-reported outcomes.

CONCLUSION

Among 150 adults with hypertension attending four community health centers in Banggai Regency, both good self-efficacy and good self-management were statistically associated with good quality of life in separate unadjusted analyses. The estimated associations were crude and do not establish causal effects or an independently dominant factor. Longitudinal and appropriately adjusted studies are needed to clarify these relationships, while assessment of patients' confidence and self-management experiences may inform future research and service planning.

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BIBLIOGRAPHY

Adamu, K., Feleke, A., Muche, A., Yasin, T., Mekonen, A. M., Chane, M. G., … Fentaw, Z. (2022). Health related quality of life among adult hypertensive patients on treatment in Dessie City, Northeast Ethiopia. PLoSONE, Vol. 17. https://doi.org/https://doi.org/10.1371/journal.pone.0268150

Albert Bandura. (1977). Self-efficacy: Toward a Unifying Theory of Behavioral Change. 84(2), 191–215.

Barzegar, H., Sodagar, S., Seirafi, M., Farahbakhsh, M., & Hashemi, T. (2024). Blood pressure management protocol based on transtheoretical model effectiveness on self- care : A systematic review. Tabriz University of Medical Sciences, 14(3), 207–220. https://doi.org/10.34172/hpp.42814

Brettler, J. W., Arcila, P. G., Aumala, T., Best, A., Campbell, R. C., Cyr, S., … Ordunez, P. (2022). Articles Drivers and scorecards to improve hypertension control in primary care practice : Recommendations from the HEARTS in the Americas Innovation Group. 9, 1–11. https://doi.org/10.1016/j.lana.2022.100223

Demirtürk, E., & Hacıhasanoğlu Aşılar, R. (2018). The effect of depression on adherence to antihypertensive medications in elderly individuals with hypertension. Journal of Vascular Nursing, 36(3), 129–139. https://doi.org/10.1016/j.jvn.2018.06.001

Fletcher, B. R., Hinton, L., Hartmann-boyce, J., Roberts, N. W., Bobrovitz, N., & Mcmanus, R. J. (2015). Patient Education and Counseling Self-monitoring blood pressure in hypertension , patient and provider perspectives : A systematic review and thematic synthesis. Patient Education and Counseling. https://doi.org/10.1016/j.pec.2015.08.026

Gultom, A. B., & Batubara, A. (2025). The Effect of Intervention Model Education on the Quality of Life of Hypertensive Patients : A Quasi-Experimental Study. Hamadan University of Medical Sciences, 25(4), e00664–e00664. https://doi.org/10.34172/jrhs.9141

Hailu Jufar, A., Nuguse, F. G., & Misgna, H. G. (2017). Assessment of Health Related Quality of Life and Associated Factors among Hypertensive Patients on Treatment at Public Hospitals in Mekelle, North Ethiopia. Journal of Hypertension: Open Access, 06(01), 1–7. https://doi.org/10.4172/2167-1095.1000239

Hussien, M., Muhye, A., Abebe, F., & Ambaw, F. (2021). The Role of Health Care Quality in Hypertension Self Management A Qualitative Study of the Experience of Patients in a Public Hospital North West. Integrated Blood Pressure Control, Vol. 14, pp. 55–68. https://doi.org/https://doi.org/10.2147/IBPC.S303100

Kemenkes RI. (2018). Riset Kesehatan Dasar (RISKESDAS) 2018.

Ko, D., Bratzke, L. C., & Roberts, T. (2018). Self-management assessment in multiple chronic conditions: A narrative review of literature. International Journal of Nursing Studies, 83, 83–90. https://doi.org/10.1016/j.ijnurstu.2018.04.009

M. Yatim, H., Wong, Y. Y., Neoh, C. F., Lim, S. H., Hassali, M. A., & Hong, Y. H. (2019). Factors influencing patients' hypertension self-management and sustainable self-care practices: a qualitative study. Public Health, 173, 5–8. https://doi.org/10.1016/j.puhe.2019.04.020

Nyaaba, G. N., Masana, L., de-Graft Aikins, A., Beune, E., & Agyemang, C. (2020). Factors hindering hypertension control: perspectives of front-line health professionals in rural Ghana. Public Health, 181, 16–23. https://doi.org/10.1016/j.puhe.2019.11.007

Qiu, C., Shao, D., Yao, Y., Zhao, Y., & Zang, X. (2019). Self-management and psychological resilience moderate the relationships between symptoms and health-related quality of life among patients with hypertension in China. Quality of Life Research, Vol. 28, pp. 2585–2595. https://doi.org/10.1007/s11136-019-02191-z

Richard, A. A., & Shea, K. (2011). Delineation of Self-Care and Associated Concepts. Journal of Nursing Scholarship, 43(3), 255–264. https://doi.org/10.1111/j.1547-5069.2011.01404.x

Rikmasari, Y., Kristina, S. A., Endarti, D., Andayani, T. M., Trung, V. Q., & Kristina, S. A. (2025). Self-efficacy , Self-management , and Their Impact on Hypertensive Patients ' Outcomes : A Study from Primary Health Centers in Indonesia. 36(2), 309–320.

Saini, M., Rana, M., Bhatti, K., Das, R., & Kumar Mehta, D. (2022). Understanding Health Related Quality of Life in Hypertensive Patients: Interrogating Effect of Psychological and Environmental Factors. Journal of Young Pharmacists, 14(1), 100–105. https://doi.org/10.5530/jyp.2022.14.19

Uhlig, K., Patel, K., Ip, S., Kitsios, G. D., & Balk, E. M. (2013). Self-Measured Blood Pressure Monitoring in the Management of Hypertension. Annals of Internal Medicine, 159(3), 185. https://doi.org/10.7326/0003-4819-159-3-201308060-00008

Wang, C., Lang, J., Xuan, L., Li, X., & Zhang, L. (2017). The effect of health literacy and self-management efficacy on the health-related quality of life of hypertensive patients in a western rural area of China: a cross-sectional study. International Journal for Equity in Health, Vol. 16. https://doi.org/doi: 10.1186/s12939-017-0551-9.

Wang, W., Zhang, M., Xu, C. D., Ye, P. P., Liu, Y. N., Huang, Z. J., … Zhou, M. G. (2021). and Their Associated Socioeconomic Factors in China : A Spatial Analysis of A National Representative Survey *. Biomedical and Environmental Sciences, 34(12), 937–951. https://doi.org/10.3967/bes2021.130

WHO. (2025). Hypertension. Retrieved from https://www.who.int/news-room/fact-sheets/detail/hypertension

Zefanya, R. K., Sulistiyowati, M. A. E. T., & Suryani, M. (2026). Hubungan Self Efficacy dengan Kualitas Hidup pada Pasien Hipertensi di Puskesmas Kedungmundu. Jurnal Keperawatan Sriwijaya, 13(2), 192–200.

Zhang, Q., Huang, F., Zhang, L., Li, S., & Zhang, J. (2021). The effect of high blood pressure-health literacy, self-management behavior, self-efficacy and social support on the health-related quality of life of Kazakh hypertension patients in a low-income rural area of China: a structural equation model. BMC Public Health, Vol. 21. https://doi.org/10.1186/s12889-021-11129-5

Zhao, J., Hu, Y., Zhang, X., Zhang, G., Lin, M., Chen, X., … Wang, X. (2020). Efficacy of empowerment

strategies for patients with hypertension: A systematic review and meta-analysis. Patient Education and Counseling, Vol. 103, pp. 898–907. https://doi.org/10.1016/j.pec.2019.11.025