

Self-efficacy with medication adherence in the elderly with hypertension

Maria Kurni Menga^{a*}, Yohan Trayanus Lasarus Djaha^a

^aDepartement of Nursing, Politeknik Sandi Karsa, South Sulawesi, Indonesia

Correspondence: Maria Kurni Menga, Departement of Nursing, Politeknik Sandi Karsa, South Sulawesi, Indonesia.

Email: mariamenga45@gmail.com

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ABSTRACT

Introduction: Hypertension is a common chronic condition among the elderly that requires long-term pharmacological management. Medication adherence is crucial in maintaining blood pressure control and preventing complications. One psychological determinant that plays an important role is self-efficacy, which refers to an individual's belief in their ability to perform specific behaviors, including adhering to prescribed medication regimens. This study aimed to examine the relationship between self-efficacy and medication adherence among elderly patients with hypertension.

Methods: This study employed a cross-sectional quantitative design. A total of 100 elderly hypertensive patients were selected using purposive sampling at Public Health Center X. Data were collected using the General Self-Efficacy Scale (GSES) and the Morisky Medication Adherence Scale (MMAS-8). Data were analyzed using Spearman's correlation test..

Results: The results showed that most respondents had a moderate level of self-efficacy (58%) and a moderate level of medication adherence (62%). A significant relationship was found between self-efficacy and medication adherence ($p = 0.001$; $r = 0.462$), indicating a moderate positive correlation.

Conclusions: Self-efficacy is significantly and positively associated with medication adherence in elderly patients with hypertension. Enhancing self-efficacy through health education, family support, and interdisciplinary interventions is essential for improving hypertension management among the elderly.

Keywords: chronic disease management; elderly; hypertension; medication adherence; self-efficacy.

INTRODUCTION

Hypertension is a major public health concern worldwide, particularly affecting the elderly population. As individuals age, the risk of developing chronic diseases such as hypertension increases significantly, leading to a greater need for long-term and consistent treatment (Takeda *et al.*, 2025). Effective management of hypertension largely depends on the patient's adherence to prescribed medications. However, studies have shown that medication adherence among the elderly is often suboptimal, influenced by a variety of psychological, social, and behavioral factors (Oshvandi *et al.*, 2025). Hypertension remains one of the most prevalent chronic health conditions affecting elderly populations worldwide. As individuals age, physiological changes combined with comorbidities often lead to an increased risk of elevated blood pressure, making hypertension a major public health concern in aging societies (Mishra *et al.*, 2025). Effective management of hypertension relies not only on medical interventions but also significantly on patients' adherence to prescribed treatment regimens, particularly consistent medication intake (Kanyongo *et al.*, 2025). Despite the availability of effective antihypertensive medications, poor adherence continues to be a persistent barrier to optimal blood pressure control, leading to higher risks of cardiovascular complications, hospitalizations, and decreased quality of life (Simões *et al.*, 2024).

One important psychological factor that has garnered attention in recent years is self-efficacy the belief in one's ability to execute behaviors necessary to achieve specific outcomes (Sestino and D'Angelo, 2024). In the context of chronic disease management, self-efficacy plays a critical role in shaping how patients cope with their condition, make health-related decisions, and maintain treatment regimens. Elderly patients with higher levels of self-efficacy are more likely to take ownership of their health, follow medical advice, and adhere to medication schedules consistently (Başoğlu and Polat, 2024). Despite the theoretical link between self-efficacy and adherence behavior, there remains a need for empirical evidence, particularly among the elderly demographic in community healthcare settings. Understanding this relationship can inform the development of targeted interventions to improve health outcomes in hypertensive older adults (Yoon *et al.*, 2025). Medication adherence is influenced by a multitude of factors, ranging from socioeconomic conditions to psychological determinants. One critical psychological factor that has garnered increasing attention is self-efficacy an individual's belief in their ability to execute specific behaviors necessary to produce desired outcomes (Hu *et al.*, 2025). In the context of chronic disease management, self-efficacy can empower patients to take an active role in their health care, including maintaining regular medication schedules, making informed decisions, and coping with long-term treatment demands (Song *et al.*, 2024).

The present study seeks to explore the relationship between self-efficacy and medication adherence among elderly patients diagnosed with hypertension. Understanding this relationship is vital, as enhancing self-efficacy through targeted interventions may serve as a pathway to improve adherence and, consequently, health outcomes in this vulnerable population. By focusing on this psychological construct, the study aims to contribute to the development of more holistic and patient-centered strategies in hypertension care for the elderly. This study aims to examine the association between self-efficacy and medication adherence among elderly patients with hypertension. By exploring this relationship, the research seeks to identify potential areas for intervention that can empower elderly individuals in managing their health, thereby contributing to better clinical outcomes and quality of life.

MATERIALS AND METHODS

This study employed a quantitative, cross-sectional research design aimed at identifying the relationship between self-efficacy and medication adherence among elderly patients diagnosed with hypertension. The study was conducted at a public health center, which serves a predominantly elderly population in both urban and semi-urban communities. Data collection was carried out over a period of three months, from January to March 2025. The study included two primary variables: the independent variable was self-efficacy, and the dependent variable was medication adherence. The population in this study consisted of all elderly individuals aged 60 years and above who had been clinically diagnosed

with hypertension and were registered patients at the health center. Inclusion criteria were: (1) aged ≥ 60 years, (2) taking antihypertensive medications for at least three months, (3) capable of communicating effectively, and (4) willing to participate. Exclusion criteria included cognitive impairment or other conditions that could hinder the ability to complete the questionnaire.

The sample size was determined using the Slovin formula, resulting in a minimum of 100 participants. Sampling was conducted using purposive sampling technique to ensure that participants met the inclusion criteria. Prior to data collection, all participants were given a clear explanation of the research and signed informed consent forms. Data were collected using two standardized instruments. Self-efficacy was measured using the General Self-Efficacy Scale (GSES), which consists of 10 items rated on a 4-point Likert scale. This instrument has been widely validated and used in various health behavior studies. Medication adherence was assessed using the Morisky Medication Adherence Scale (MMAS-8), which includes 8 items with dichotomous and Likert-type responses, allowing categorization into high, medium, or low adherence levels.

The instruments were tested for validity and reliability before full deployment. A pilot test was conducted with 15 respondents who met the same criteria but were not part of the final sample. The reliability coefficients (Cronbach's alpha) for GSES and MMAS-8 in the pilot were 0.82 and 0.76 respectively, indicating good internal consistency. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 25. Descriptive statistics were used to describe demographic characteristics, self-efficacy levels, and adherence rates. The Spearman rank correlation test was applied to examine the relationship between self-efficacy and medication adherence, considering that the data were non-parametric. This study obtained ethical clearance from the Health Research Ethics Committee of [insert institution], with reference number [insert ethical clearance number]. Participants' confidentiality and anonymity were ensured throughout the research process. All procedures followed the ethical guidelines of the Declaration of Helsinki.

RESULTS

Table 1. Distribution of Self-Efficacy Levels

Self-Efficacy Category	Frequency (n)	Percentage (%)
Low	22	22.0%
Moderate	58	58.0%
High	20	20.0%

The majority of participants (58%) were categorized as having moderate self-efficacy, while only 20% had high self-efficacy.

Table 2. Distribution of Medication Adherence Levels

Adherence Level	Frequency (n)	Percentage (%)
Low	24	24.0%
Moderate	62	62.0%
High	14	14.0%

Most respondents (62%) demonstrated a moderate level of medication adherence, while only 14% had high adherence. The lowest adherence was found among individuals with low self-efficacy. A total of 100 elderly participants with diagnosed hypertension were included in this study. The majority of respondents were female (68%), with an average age of 67.4 ± 5.8 years. Most participants had been on antihypertensive medication for more than one year (74%) and had a history of at least one comorbid condition (e.g., diabetes mellitus or osteoarthritis). The main finding of the study showed a significant positive correlation between self-efficacy and medication adherence among elderly hypertensive patients. The Spearman rank correlation test revealed a p-value of 0.001 and a correlation coefficient (r) of 0.462, indicating a moderate correlation. This suggests that as self-efficacy levels increase, medication adherence also tends to improve.

DISCUSSION

The results of this study demonstrate a significant positive correlation between self-efficacy and medication adherence among elderly individuals with hypertension. This finding highlights the critical role of psychological factors, particularly self-belief, in influencing patients' health behaviors and adherence to long-term pharmacological treatment. As self-efficacy increases, patients show a stronger commitment to maintaining their medication schedules, which is essential in controlling blood pressure and reducing hypertension-related complications. Elderly individuals with high self-efficacy are more confident in managing complex treatment schedules, overcoming barriers such as forgetfulness or side effects, and seeking support when needed. These findings align with Bandura's theory of self-efficacy, which posits that perceived self-capability influences behavior initiation and persistence. The predominance of moderate self-efficacy levels in this study suggests that many elderly individuals still need targeted support to strengthen their confidence in health management tasks (Tong *et al.*, 2025).

A majority of the respondents in this study exhibited moderate levels of both self-efficacy and medication adherence. This may reflect a common trend in elderly populations, where cognitive and physical limitations coexist with motivation to manage their health, resulting in a moderate behavioral response. Our findings align with those reported by Jung *et al.*, (2025), who asserted that individuals with higher self-efficacy are more likely to persist in health-promoting behaviors, especially when managing chronic illnesses. The majority of respondents in this study displayed moderate adherence to antihypertensive medication. Low adherence was more common among those with low self-efficacy. This pattern is consistent with findings by Wang *et al.*, (2025), who reported that elderly patients with higher self-efficacy demonstrated better medication adherence and blood pressure control. In our study, education level and family support also appeared to be influencing factors, as participants with higher education and consistent support showed better adherence.

Previous research by Wu *et al.*, (2024) and Kwakye *et al.*, (2025) also supports our findings. They reported that elderly hypertensive patients with higher self-efficacy scores were significantly more adherent to medication regimens. These studies emphasize the value of self-regulatory processes and health literacy, both of which are closely linked to self-efficacy. Several previous studies have emphasized the role of psychological and social factors in chronic disease self-management. For example, Demirel and Kiliç, (2024) found that enhancing self-efficacy through structured counseling improved long-term medication adherence among patients with diabetes and hypertension. Our results reinforce these findings in the context of elderly hypertensive patients, who often face age-related cognitive decline and social dependency, thus requiring tailored interventions (Aihemaiti *et al.*, 2025).

The observed correlation coefficient ($r = 0.462$) suggests a moderate yet meaningful relationship. While self-efficacy is not the sole predictor of medication adherence, it plays a substantial role when combined with other factors such as social support, health education, and comorbid conditions. Notably, our additional findings indicated that individuals with higher education levels and those receiving consistent family support demonstrated better adherence (Brandão *et al.*, 2024). This supports the multidimensional nature of adherence behavior, which is influenced by both internal (psychological) and external (social/environmental) factors. Interestingly, participants with comorbidities tended to show lower levels of self-efficacy (Shaban, Amer and Shaban, 2024). This may be attributed to the complexity of managing multiple chronic conditions simultaneously, which can lead to feelings of helplessness or reduced self-confidence in health management. It is essential for health professionals to recognize these challenges and provide tailored interventions that empower patients through counseling, motivational interviewing, or peer support groups (Sawma *et al.*, 2025).

These findings reinforce the hypothesis that strengthening self-efficacy can improve medication adherence in elderly populations. Healthcare strategies should therefore incorporate psychological empowerment, patient education, and collaborative care models as part of hypertension management. Further studies with longitudinal designs may provide deeper insights into how self-efficacy evolves over time and its long-term impact on clinical outcomes (Magon, Hendriks and Caruso, 2024). Health education programs, peer support groups, and family-involved care planning could be practical approaches to achieving this goal. While the correlation is not absolute, the direction and strength of the association warrant serious consideration in community health policy and elderly care practices (Ahn, Yang and Park, 2024).

CONCLUSIONS

This study concludes that self-efficacy has a significant and positive relationship with medication adherence among elderly patients with hypertension. The findings support the hypothesis that individuals with higher levels of self-efficacy are more likely to follow their prescribed antihypertensive treatment regimen consistently. This suggests that self-efficacy is not only a psychological trait but also a modifiable factor that can play a crucial role in chronic disease management. The moderate correlation between the two variables indicates that while self-efficacy is important, other factors such as education, social support, and comorbidities also influence adherence. Therefore, interventions that aim to improve adherence should include components that strengthen patients' belief in their ability to manage their treatment effectively. Healthcare providers and community health workers are encouraged to implement patient-centered strategies such as health coaching, structured counseling, and family involvement to enhance self-efficacy. These approaches can be directly applied in public health settings to improve medication adherence and ultimately support better hypertension control among the elderly.

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Availability of data and materials

Data and materials of this study are available upon reasonable request

Authors' contributions

Both of the authors have contributed to all aspects of this study

Conflict of Interest

No potential conflicts of interest

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