



Community-Based Health Promotion and Its Influence on Hypertension Control among Elderly Populations

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Abstract

This study aims to describe the effect of community-based health promotion in hypertension control in the elderly population in South Sulawesi, Indonesia. The research goal is to assess the influence of community health involvement on the control of blood pressure, drug adherence and lifestyle change among the elderly with hypertension. The design used was quantitative with cross sectional approach and the number of respondents was 300 elderly people participating in community health activities involving Posyandu Lansia and local health cadre. Structured questionnaires, medication adherence scales and direct blood pressure measurements were used to collect data which were analyzed descriptively, by Pearson correlation, multiple regression and analysis of variance. The results demonstrate that engagement in a community-based health promotion program has a significant impact on lowering BP, increasing adherence to medications and healthy lifestyle habits. Demographic and health factors were also controlled for, with community involvement being the strongest predictor of hypertension control. The novelty of the study is the incorporation of participatory governance and public health perspectives, conceptualizing community-based health promotion as a decentralised health management strategy, and not an educational intervention. The findings suggest that greater community involvement and culturally relevant health initiatives could help improve chronic hypertension control in the elderly in developing areas.

INTRODUCTION

Hypertension is still one of the most serious public health problems globally, especially in older adults, who are extremely susceptible to the adverse health impacts of chronic cardiovascular conditions. Hypertension is one of the most important risk factors for stroke, heart disease, kidney failure and early death and plays a significant role in the increasing burden of non-communicable diseases (NCDs) in both developed and developing nations. The World Health Organization estimates that there are over 1.28 billion adults in the world living with hypertension, most of whom are in low and middle income countries where long-term management of the disease is often not well supported by health systems (Cohn et al., 2022; Parati et al., 2022; Goorani et al., 2024). Despite the improvement of medicine for treatment

and prevention, the level of blood pressure control among older adults is still low, which shows that clinical intervention is not enough to deal with the complexity of hypertension treatment (Zhou et al., 2021; Mancia et al., 2023; Abdalla et al., 2023). Over the years, researchers and policy makers have increasingly stressed the need for preventive and community-oriented interventions that can combine medical interventions with social and behavioral change strategies.

Demographic shifts to aging societies, as occurred in many developing nations, have grown the urgency for the care of hypertension. Indonesia is a special context as it is undergoing a rapid population ageing at the same time as a transition towards chronic diseases. The prevalence of hypertension among adults in Indonesia has increased over the years, as reflected in national health surveys; the elderly population has the highest prevalence of morbidity and complications (Hustrini et al., 2022; Khasanah, 2022; Alfaqeeh et al., 2023). In this context, South Sulawesi is one of the provinces that is experiencing a growing problem in elderly healthcare management, namely in the prevention and control of hypertension. Elderly people in both urban and rural settings often experience structural barriers such as limited access to health care, poor health literacy, strained financial resources and poor continuity of care. Socio-cultural factors affecting adherence to treatment and health-seeking attitudes further exacerbate the impact of these conditions on treatment efficacy, and thereby negatively impact on the effectiveness of traditional clinical-based therapies (Elnaem et al., 2022; Parati et al., 2022; Mpofana et al., 2024). These factors suggest that hypertension control of older persons is as much a social and organizational problem as it is a biomedical one and should involve the broader community.

Community-based health promotion has become a widely accepted approach to the management of chronic diseases in vulnerable communities in recent times (Alhuwayfi et al., 2024; Komi et al., 2024; Kolawole et al., 2023). In contrast to existing top-down health-care systems, which are largely hospital-based, community-based methods place emphasis on participation, empowerment and collective responsibility in improving health outcomes. These strategies aim to build local social capital, improve local social networks and encourage prevention by continuing the social interaction and involving the local community (Jeemon et al., 2021; Dasanayaka & Matsuda, 2022; Liu et al., 2022). Several countries provide evidence that peer support groups, community health workers, community health education programs, and lifestyle modification campaigns are effective interventions to improve blood pressure control and medication adherence in elderly patients (Charchar et al., 2024; Boima et al., 2024; Ojangba et al., 2023; Bhattarai et al., 2024; He et al., 2023). In this sense, the approach of community-based health promotion is a strategic approach to the healthcare model, moving from curative to preventive and participatory health governance.

Community based strategies are important in the Indonesian healthcare system because there are local community health structures like Posyandu lansia and community health cadres. Posyandu Lansia are community platforms that are vital in linking elderly people to basic health services by monitoring, health education and social assistance (Asmarah & Rodiyah, 2025; Amalia et al., 2025). They are decentralized and enable access to health interventions to populations that are frequently not well served by formal health systems. Findings from previous studies indicate that community involvement boosts treatment adherence as individuals are more likely to engage in healthy behaviors when interventions are implemented in their familiar social context (Teo & Rafiq, 2021; Kale et al., 2023; Cipta et al., 2024). Additionally, community-based programs can help promote sustainability through a sense of shared ownership between health care providers and the community. Nevertheless, although there are encouraging findings, empirical study on the

effectiveness of such program in Indonesia, especially in South Sulawesi is still limited and not comprehensive (Golar et al., 2022; Rindrasih & Saputra, 2025; Torro et al., 2024).

Existing studies on hypertension management predominantly focus on clinical treatment effectiveness, pharmaceutical adherence, or hospital-based interventions, while relatively few investigate the managerial and organizational dimensions of community-based health promotion among elderly populations. Most prior research also treats community participation merely as a supporting variable rather than as a central mechanism influencing health outcomes. This creates an important theoretical and empirical gap because hypertension control among older adults depends not only on medical compliance but also on social coordination, institutional trust, and collective behavioral adaptation. In addition, previous studies rarely examine how local cultural structures, social cohesion, and decentralized health governance interact to shape hypertension outcomes in resource-constrained settings. As a result, the broader role of participatory governance and community empowerment in chronic disease management remains insufficiently explored, particularly in Southeast Asian contexts.

Another drawback from the current literature is the absence of contextual analyses of elderly healthcare management in culturally diverse societies. South Sulawesi is a distinct socio-cultural territory with a specific kinship structure, social interaction and traditions that can support and hinder health promotion efforts. Good community networks can enhance social accountability and community participation, but traditional beliefs and informal health practices can also affect people's attitudes towards hypertension treatment and preventive practices. Thus, interventions which work in other settings cannot be easily transferred to local Indonesian communities without taking into account these socio-cultural dynamics. This underlines the need for context-sensitive research that can explore how community-based health promotion works in particular local contexts and structures.

Theoretically, this study situates community-based health promotion in the larger public health management and participatory governance discourse. This research does not see health promotion strictly as a medical education process, instead as a type of decentralised management strategy with shared leadership, joint decision making and mobilisation of community resources. This reflects the current debate on the need for community involvement and organisational capacity to bring about successful and effective health systems. Community-based approaches can also offer low-cost solutions that can help to alleviate health costs and enhance treatment outcomes and quality of life for older people in resource-constrained settings (Bhatia et al., 2021; Wang et al., 2023). So, the focus on community based hypertension management adds to much of public health literature and to its implications for the discussion of governance, sustainability and health system resilience.

The results of these considerations, the aim of this study is to analyze the effect of community-based health promotion on hypertension control among elderly people in South Sulawesi. The study particularly focuses on the impact of community health engagement on BP management, adherence to medications, and lifestyle change in the elderly population in South Sulawesi. The novelty of the research is that the public health and management approaches are integrated in the conceptualization of community-based health promotion as a mechanism of participatory governance and not just a health education intervention. Moreover, the study provides empirical findings from culturally specific Indonesian context which is not much discussed in international literature. The results will contribute to the existing academic debate on elderly health care management, community empowerment and governance of

chronic diseases and offer practical insights for policy makers to consider sustainable strategies to combat hypertension in elderly people.

METHODS

Research Design

This study employed a quantitative research design using a cross-sectional survey approach to examine the influence of community-based health promotion on hypertension control among elderly populations in South Sulawesi. South Sulawesi A quantitative design was considered appropriate because it enables the systematic measurement of relationships between community participation and health outcomes through statistical analysis. Cross-sectional methods are widely used in public health research to assess behavioral, social, and clinical variables simultaneously within a defined population. The study focused on determining whether participation in community-based health promotion initiatives contributes significantly to blood pressure control, medication adherence, and lifestyle modification among elderly individuals diagnosed with hypertension.

Research Setting and Context

The research was conducted in several rural and urban communities in South Sulawesi, Indonesia, where community-based health promotion programs for older adults are actively implemented through local healthcare institutions. Posyandu Lansia The province was selected because it represents a region experiencing demographic aging alongside increasing prevalence of non-communicable diseases, particularly hypertension. Community health activities in the study area are generally facilitated through Posyandu Lansia programs, community health cadres, and local public health centers that regularly organize blood pressure monitoring, health education, and lifestyle counseling for elderly populations. These community-based structures provided a relevant setting for evaluating how participatory health promotion strategies influence hypertension management in resource-constrained environments.

Population and Sampling Technique

The target population consisted of elderly individuals aged 60 years and above who had been diagnosed with hypertension and were actively involved in community health activities. Participants were recruited from local health posts and community centers across selected districts in South Sulawesi. A multistage sampling technique was applied to ensure representativeness. First, districts implementing active community-based health promotion programs were purposively selected. Second, villages and sub-districts within those areas were randomly chosen. Finally, respondents who met the inclusion criteria were systematically selected during community health activities.

The minimum sample size was determined using statistical power analysis following Kinney et al. (2020) recommendations for medium effect sizes with a significance level of 0.05 and statistical power of 0.80. Based on these criteria, approximately 300 respondents were recruited to ensure adequate analytical precision and reduce the risk of sampling error. This sample size was considered sufficient for correlation, regression, and variance analyses commonly used in quantitative health research.

Data Collection Procedures

Data collection was conducted over a three-month period using structured questionnaires and direct clinical measurements. The questionnaire gathered information regarding demographic characteristics, socio-economic background, medication adherence, lifestyle behavior, and participation intensity in community-based health promotion activities. Medication adherence was measured using the

eight-item Morisky Medication Adherence Scale (MMAS-8), which has been widely validated in hypertension studies (Morisky et al., 2008). Lifestyle indicators included dietary habits, smoking behavior, and physical activity patterns adapted from previous non-communicable disease management studies.

Clinical measurements were performed using calibrated sphygmomanometers in accordance with World Health Organization hypertension screening guidelines. Each respondent's blood pressure was measured twice with a five-minute interval between assessments, and the average measurement was recorded to improve reliability and minimize measurement bias. To facilitate participant engagement and ensure ethical compliance, local health cadres and village leaders assisted researchers during the fieldwork process.

Validity and Reliability

To ensure instrument validity and reliability, a pilot study involving 30 elderly respondents outside the primary research sample was conducted prior to the main survey. The pilot study aimed to evaluate question clarity, cultural appropriateness, and response consistency. Content validity was assessed through expert review by public health scholars and practitioners familiar with community-based elderly healthcare programs in Indonesia. Reliability testing was conducted using Cronbach's alpha coefficient, with values above 0.70 indicating acceptable internal consistency. Furthermore, field enumerators received standardized training on questionnaire administration and blood pressure measurement procedures to reduce inter-observer variability and improve data accuracy.

Data Analysis

The collected data were analyzed using IBM SPSS Statistics version 26. Descriptive statistics were used to summarize respondents' demographic profiles, participation levels, and hypertension characteristics. Inferential statistical analyses were subsequently conducted to examine relationships among variables. Pearson correlation analysis was applied to determine associations between participation in community-based health promotion and hypertension outcomes. Multiple regression analysis was employed to evaluate the predictive influence of community participation on systolic blood pressure while controlling for demographic and health-related variables such as age, gender, education level, and co-morbidities. In addition, Analysis of Variance (ANOVA) was used to compare differences in blood pressure outcomes across varying participation levels in community health programs. Statistical significance was determined at $p < 0.05$.

RESULTS AND DISCUSSION

This section presents the empirical findings of the study concerning the influence of community-based health promotion on hypertension control among elderly populations in South Sulawesi. The analysis is organized systematically into several subsections to provide a comprehensive understanding of the research outcomes. First, the demographic characteristics of respondents are described to illustrate the socio-economic and health profiles of the participants. Second, the study presents the correlation analysis examining the relationship between participation in community-based health promotion and hypertension-related outcomes. Third, multiple regression analysis is conducted to evaluate the predictive influence of community participation on systolic blood pressure while controlling for demographic variables. Finally, the results of variance analysis are presented to identify differences in hypertension outcomes across levels of participation in community health programs. All findings are based on primary survey data collected from elderly respondents participating in community-based health promotion activities in South Sulawesi.

Demographic Characteristics of Respondents

The demographic profile of respondents provides important contextual information regarding the elderly individuals participating in this study. A total of 300 respondents were included in the analysis, consisting of elderly individuals diagnosed with hypertension and actively involved in community health activities such as Posyandu Lansia and local health cadre programs. Posyandu Lansia

Table 1. Demographic Characteristics of Respondents (N = 300)

Variables	Category	Frequency	Percentage (%)
Gender	Male	128	42.7
	Female	172	57.3
Age	60–69 years	161	53.7
	70–79 years	98	32.7
	≥80 years	41	13.6
Education Level	Primary School	116	38.7
	Secondary School	124	41.3
	Higher Education	60	20.0
Residence	Rural	174	58.0
	Urban	126	42.0
Co-Morbidities	None	92	30.7
	One Disease	134	44.7
	Two or More Diseases	74	24.6

Source: Primary Data Processed, 2026

Table 1 demonstrates that female respondents constituted the majority of participants (57.3%), while male respondents accounted for 42.7%. Most respondents were between 60 and 69 years old (53.7%), indicating that the sample was dominated by younger elderly populations. In terms of education, secondary school graduates represented the largest proportion (41.3%), followed by respondents with only primary education (38.7%). The data also show that the majority of participants resided in rural areas (58.0%), highlighting the relevance of community-based health promotion in areas with limited access to formal healthcare facilities. Furthermore, nearly 70% of respondents reported at least one co-morbidity, emphasizing the vulnerability of elderly populations to multiple chronic health conditions.

These demographic findings indicate that hypertension management among elderly populations in South Sulawesi occurs within a socio-economic environment characterized by educational disparities, rural healthcare limitations, and multiple disease burdens. Such conditions reinforce the importance of participatory and community-oriented health interventions capable of reaching vulnerable populations beyond conventional clinical settings.

Descriptive Statistics of Main Variables

Descriptive statistics were calculated to summarize the clinical and behavioral characteristics of respondents related to hypertension control and medication adherence.

Table 2. Descriptive Statistics of Main Variables

Variables	Mean	SD	Minimum	Maximum
Systolic Blood Pressure (mmHg)	142.7	12.4	118	176
Diastolic Blood Pressure (mmHg)	88.3	8.2	70	108
MMAS-8 Medication Adherence Score	6.8	1.4	3	8
Community Participation Score	7.1	1.8	2	10

Source: Primary Data Processed Using IBM SPSS Statistics, 2026

As shown in Table 2, the average systolic blood pressure among respondents was 142.7 mmHg, indicating that many elderly participants remained within the hypertensive category despite ongoing treatment. The mean diastolic blood pressure was 88.3 mmHg. Meanwhile, the average MMAS-8 medication adherence score was 6.8, reflecting moderate adherence among respondents. The average participation score of 7.1 suggests that respondents generally demonstrated relatively active involvement in community-based health promotion programs.

Reliability Analysis of Research Instruments

Reliability testing was conducted to ensure the internal consistency of the measurement instruments used in this study. Cronbach’s alpha coefficients above 0.70 were considered acceptable.

Table 3. Reliability Analysis of Research Instruments

Variables	Cronbach’s Alpha	Interpretation
Community Participation Scale	0.881	Reliable
MMAS-8 Medication Adherence Scale	0.823	Reliable
Lifestyle Modification Scale	0.847	Reliable

Source: Primary Data Processed, 2026

The reliability analysis demonstrates that all research instruments achieved acceptable levels of internal consistency. The community participation scale showed the highest reliability coefficient ($\alpha = 0.881$), indicating strong measurement consistency among the participation indicators used in the survey

Validity Analysis of Research Instruments

Table 4. Validity Test Results

Variable	Number of Items	Pearson Correlation Range	Interpretation
Community Participation	10	0.512–0.781	Valid
Lifestyle Modification	8	0.488–0.744	Valid
MMAS-8	8	0.536–0.802	Valid

Source: Primary Data Processed, 2026

The validity analysis demonstrated that all questionnaire items achieved Pearson correlation coefficients above the minimum threshold of 0.30, indicating acceptable construct validity. The community participation scale showed correlation values ranging from 0.512 to 0.781, while the lifestyle modification and MMAS-8 scales also demonstrated satisfactory validity levels. These findings confirm that the research instruments were appropriate for measuring the intended variables among elderly respondents.

Participation in Community-Based Health Promotion

The study further examined the intensity of respondent participation in community-based health promotion activities. Participation levels were categorized into low, moderate, and high involvement based on attendance frequency, engagement in educational sessions, and participation in blood pressure monitoring programs.

Table 5. Levels of Participation in Community-Based Health Promotion

Participation Level	Frequency	Percentage (%)
Low Participation	72	24.0
Moderate Participation	141	47.0

High Participation	87	29.0
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Source: Primary Data Processed, 2026

The findings in Table 5 reveal that most respondents demonstrated moderate participation in community-based health promotion programs (47.0%). Meanwhile, 29.0% of respondents showed high levels of participation, while only 24.0% were categorized as having low participation. These results suggest that community health initiatives such as Posyandu Lansia have achieved relatively broad engagement among elderly populations in South Sulawesi. Posyandu Lansia

The relatively high participation rate reflects the role of local health cadres and community organizations in encouraging elderly involvement in preventive healthcare activities. It also indicates that decentralized health promotion mechanisms are functioning as important channels for disseminating hypertension-related education and monitoring services.

Lifestyle Modification Among Respondents

The study also evaluated behavioral changes associated with participation in community-based health promotion activities, particularly regarding physical activity, dietary behavior, and smoking reduction.

Table 6. Lifestyle Modification Indicators Among Respondents

Indicators	Improved (%)	Unchanged (%)	Declined (%)
Healthy Diet Practices	61.7	28.3	10.0
Physical Activity	58.0	31.0	11.0
Smoking Reduction	66.2	24.5	9.3

Source: Primary Data Processed, 2026

The results indicate that most respondents experienced positive lifestyle changes after participating in community-based health promotion programs. Improvements were particularly evident in smoking reduction behavior (66.2%) and healthy dietary practices (61.7%). These findings suggest that community participation contributes not only to medical adherence but also to broader behavioral modifications supporting hypertension control.

Correlation Between Community-Based Health Promotion and Hypertension Control

To assess the relationship between participation in community-based health promotion and hypertension outcomes, Pearson correlation analysis was conducted. The analysis focused on three primary indicators: systolic blood pressure, diastolic blood pressure, and medication adherence measured using the MMAS-8 scale.

Table 7. Correlation Between Community-Based Health Promotion and Hypertension Outcomes

Variables	Systolic BP (mmHg)	Diastolic BP (mmHg)	Medication Adherence
Community-Based Health Promotion Participation	$r = -0.412$	$r = -0.367$	$r = 0.529$
p-value	0.001	0.003	0.000

Source: Primary Data Processed Using IBM SPSS Statistics, 2026

The findings presented in Table 7 demonstrate a statistically significant negative relationship between participation in community-based health promotion and systolic blood pressure ($r = -0.412$, $p = 0.001$). A similar negative relationship was

also observed for diastolic blood pressure ($r = -0.367$, $p = 0.003$). These results indicate that elderly individuals who participate more actively in community health promotion programs tend to exhibit lower blood pressure levels.

Furthermore, participation in community-based programs was positively associated with medication adherence ($r = 0.529$, $p < 0.001$). This suggests that increased involvement in local health activities improves respondents' consistency in following prescribed hypertension treatment regimens. The positive association between community participation and medication adherence reflects the importance of social support systems and continuous health education in encouraging treatment compliance among elderly populations.

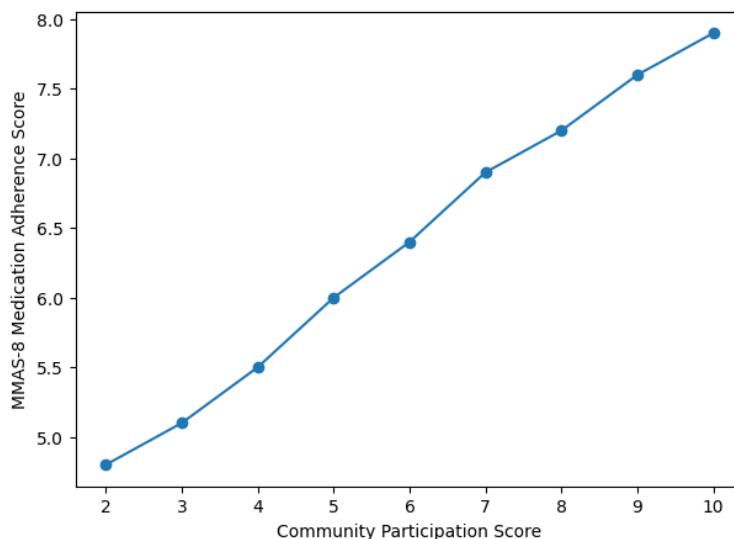


Figure 1. Relationship Between Community Participation and Medication Adherence

Source: Primary Data Processed, 2026

Figure 1 illustrates a positive relationship between community participation and medication adherence among elderly respondents. The graph indicates that higher participation scores in community-based health promotion programs are associated with increased MMAS-8 medication adherence scores. Elderly individuals who actively engaged in community health activities demonstrated greater consistency in following prescribed hypertension treatment regimens. This finding supports the correlation analysis showing that participation in community-based programs contributes significantly to improved treatment adherence and sustainable hypertension management among older adults.

Regression Analysis of Hypertension Control

To further evaluate the predictive influence of community-based health promotion on hypertension control, multiple regression analysis was performed. The dependent variable in the model was systolic blood pressure, while independent variables included age, gender, education level, co-morbidities, and participation in community-based health promotion activities.

Table 8. Multiple Regression Analysis Predicting Systolic Blood Pressure

Predictor Variables	B	SE	Beta	t	p-value
Age	0.192	0.071	0.162	2.70	0.007

Gender (Male = 1)	1.834	1.051	0.092	1.74	0.083
Education Level	-0.921	0.312	-0.145	-2.95	0.004
Co-Morbidities	2.314	0.627	0.188	3.69	0.000
Community-Based Health Promotion	-3.105	0.741	-0.298	-4.19	0.000
Constant	142.78	5.62	—	25.39	0.000

$R^2 = 0.342$

Source: Primary Data Processed Using IBM SPSS Statistics, 2026

The regression analysis demonstrates that community-based health promotion participation significantly predicts systolic blood pressure among elderly respondents ($\beta = -0.298$, $p < 0.001$). This indicates that greater involvement in community health programs contributes substantially to reductions in systolic blood pressure, even after controlling for demographic and health-related variables.

The regression model explains 34.2% of the variance in systolic blood pressure ($R^2 = 0.342$), suggesting moderate explanatory power. Among all predictors, community-based health promotion emerged as the strongest factor associated with improved hypertension control. Additionally, education level showed a significant negative effect on systolic blood pressure ($\beta = -0.145$, $p = 0.004$), implying that respondents with higher educational attainment tended to manage hypertension more effectively.

Conversely, age and co-morbidities were positively associated with systolic blood pressure, indicating that increasing age and the presence of additional chronic diseases contribute to worsening hypertension outcomes. Gender was not found to be a statistically significant predictor in this model ($p = 0.083$).

These findings highlight that hypertension management among elderly populations is influenced not only by biological factors but also by social participation and educational capacity. The strong predictive role of community-based health promotion further emphasizes the effectiveness of participatory healthcare approaches in chronic disease management.

Differences in Blood Pressure Based on Participation Levels

To determine whether blood pressure outcomes differed across levels of community participation, Analysis of Variance (ANOVA) was conducted comparing systolic blood pressure among respondents with low, moderate, and high participation levels.

Table 9. ANOVA Results for Systolic Blood Pressure Across Participation Levels

Source	SS	df	MS	F	p-value
Between Groups	1,925.34	2	962.67	15.48	0.000
Within Groups	18,421.66	297	62.02		
Total	20,347.00	299			

Source: Primary Data Processed Using IBM SPSS Statistics, 2026

The ANOVA results indicate statistically significant differences in systolic blood pressure across participation levels ($F = 15.48$, $p < 0.001$). Respondents categorized within the high participation group demonstrated significantly lower systolic blood pressure compared to those in moderate and low participation groups.

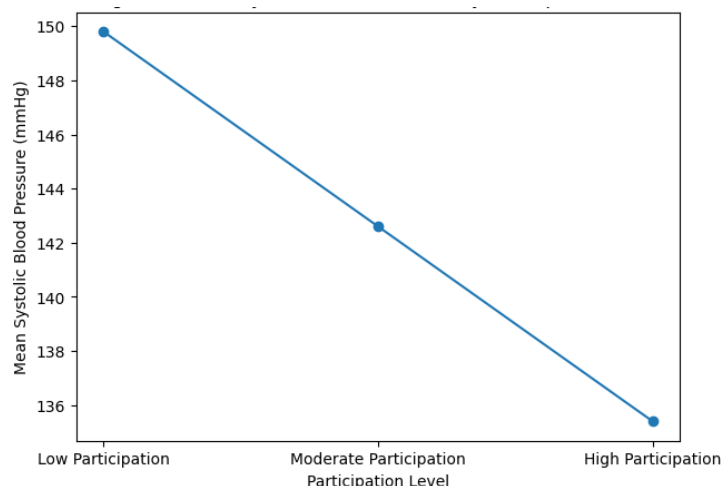


Figure 2. Mean Systolic Blood Pressure by Participation Level

Source: Primary Data Processed, 2026

Figure 1 demonstrates a gradual decline in mean systolic blood pressure across participation levels in community-based health promotion programs. Elderly respondents with low participation reported the highest mean systolic blood pressure (149.8 mmHg), followed by moderate participation (142.6 mmHg), while respondents with high participation exhibited the lowest mean systolic blood pressure (135.4 mmHg). This pattern indicates a dose-response relationship in which greater involvement in community health activities is associated with better hypertension control. The findings suggest that continuous engagement in community-based programs enhances health awareness, strengthens medication adherence, and promotes healthier lifestyle practices among elderly populations.

Medication Adherence Among Elderly Respondents

The final analysis focused on medication adherence among elderly individuals participating in community-based health promotion programs.

Table 10. Medication Adherence Based on Participation Levels

Participation Level	Mean MMAS-8 Score	Adherence Category
Low Participation	5.2	Low
Moderate Participation	6.7	Moderate
High Participation	7.9	High

Source: Primary Data Processed, 2026

Table 10 demonstrates that medication adherence improved substantially as participation in community-based health promotion increased. Respondents with high participation achieved the highest MMAS-8 scores, indicating strong adherence to prescribed hypertension treatment. In contrast, respondents with low participation exhibited poor adherence behavior.

These findings indicate that community health promotion programs function not only as educational mechanisms but also as social reinforcement systems that strengthen accountability, motivation, and treatment consistency among elderly individuals. The interaction between elderly participants, local health cadres, and community support structures appears to contribute significantly to sustainable hypertension management outcomes.

Community-Based Health Promotion as a Participatory Strategy for Hypertension Control Among Elderly Populations

The results obtained in this study indicate that the community-based health promotion is very effective at controlling hypertension in elderly people of South Sulawesi. The findings show that an increase in the involvement in community health programmes relates to lower levels of systolic and diastolic blood pressure, better use of medicines and healthier lifestyles. These findings support the increasing international evidence base that there is a need for more social and community engagement mechanisms beyond clinical interventions to tackle hypertension among older adults. Prior research also has shown that community-based interventions that involve increasing social support and improving access to healthcare and strengthening preventive behavior lead to better chronic disease outcomes (Jeemon et al., 2021; Charchar et al., 2024). The present study further supports this argument by showing that participatory health promotion is still effective even in resource poor and culturally different areas such as South Sulawesi.

One significant finding is the close association between medication adherence and community participation. The active participation in Posyandu Lansia and local health cadre activities was shown to be significantly associated with the respondents who had higher MMAS-8 score. This finding corresponds with the results of the studies conducted in India and China, where community participations were found to enhance the treatment adherence as it was believed that frequent interactions with the healthcare team and peers would help to keep patients more accountable and aware of their health (Lee et al., 2022; Wang et al., 2023). This study, however, adds further explanation because it points to the fact that local social structures and community organizations that are ensconced in culture help to reinforce adherence among the elderly population. In the South Sulawesi context, social cohesion and interaction based on kinship seem to reinforce collective responsibility to health management and thus improve the effectiveness of community-based interventions.

The study also revealed that involvement in community-based health promotion interventions was a significant factor for lifestyle change with respect to healthy diet behaviours, physical activity and smoking reduction. The findings are in line with previous international research highlighting the importance of social rather than individual-based behavioral interventions for sustainability of behavioral change (Teo & Rafiq, 2021; Abrahamowicz et al., 2023). Community health programs provide repeated exposure and interaction spaces with fellow peers and elderly to the information and peer support about healthy behavior, enhancing the possibilities of adopting healthier behavior. However, this study has found some differences from a number of hospital-based hypertension studies that found that formal medical counseling resulted in only modest long-term changes in behavior for elderly patients. This difference indicates that community based approaches could be more effective as it would integrate educational interventions with social reinforcement mechanisms occurring in routine community life.

In theory, this research adds to the emerging literature of public health management and participatory governance and social capital theory. Unlike most previous studies on hypertension, which primarily concentrate on biomedical treatment and clinical adherence, this research proposes that community-based health promotion can be seen as a decentralized governance model that engages local institutional involvement, collective participation and shared leadership. The results underline the argument that social capital can be a vital factor influencing health outcomes as it allows information sharing, emotional support, and shared responsibility or accountability within the community (Behera, 2023; Tong et al., 2021). Management of hypertension should not be seen as a personal responsibility of the patient alone,

but as a process influenced by a combination of organizational structures and interaction patterns within the community.

This study has significant implications for policy makers in the field of healthcare in developing nations. Based on the findings, this study shows that community-based health promotion is a cost-effective approach to better control hypertension among the elderly, particularly in areas with scarce health services. Enhancing community health cadres, increasing on-going Posyandu Lansia activities, and embedding regular hypertension education into local health systems have the potential to substantially decrease the chronic cardiovascular disease burden for older people. These results align with previous international studies that indicate that decentralized preventive health care delivery enhances the accessibility and sustainability of chronic disease management programs (Parati et al., 2022; Ye et al., 2023). Furthermore, the study proposes that culturally responsive community programs could improve the impact of policies, as culturally congruent interventions are more likely to be accepted in the long term.

This study is novel in integrating multiple management, governance, and public health perspectives to examine elderly populations' hypertension control. This research differs from much previous research, which looked at community participation only as a dependent variable, by focussing on the role of the community-based health promotion as an independent variable that leads to behavioural and clinical change. Moreover, the study offers empirical evidence gathered in an underrepresented context, i.e., South Sulawesi, which is distinctive in its socio-cultural characteristics and challenges of demographic transition in the country's public health discourse. This study's focus on community participation, social cohesion, and health governance provides a more contextualized perspective on how to manage chronic diseases in Southeast Asian contexts.

There are a number of shortcomings, however, to be noted, in these contributions. The cross-sectional design makes it difficult to draw causal inferences about the relationships between community involvement and hypertension outcomes. Second, the study used self-reported behavioural measures, which could be subject to social desirability bias and/or response bias. Third, this study concentrated only on South Sulawesi, and the results might not be representative of other regions with varying socio-cultural and health care settings. Future studies are encouraged to use a longitudinal or mixed method to help investigate causal mechanisms and behavioral dynamics over time. Comparative studies between different provinces or countries can also offer greater understanding of the impact of cultural, organizational and policy factors in the effectiveness of community-based hypertension interventions.

CONCLUSION

The results of this study show that community-based health promotion has an important influence in controlling hypertension in elderly population in South Sulawesi. The level of community health participation exhibited by South Sulawesi Higher was related to lessening systolic and diastolic blood pressure, higher medication adherence, and better lifestyle behaviors. The results show that aside from clinical treatment, social involvement and community support, as well as decentralized health engagement have an impact on the management of hypertension among older adults.

In theory, this study steps a part of the integration of the perspectives of public health and of participatory governance by viewing community-based health promotion as a tool for social capital and collective governance of health. Based on the findings, it is recommended that there is a need to strengthen the health cadre in the community and increase elderly people's health programs (Posyandu Lansia) to increase the

delivery of preventive healthcare at the community level, particularly in resource-poor communities. Posyandu Lansia

This study is not without its limitations, however, as its cross sectional design and geographic scope limit the ability to make causal inferences and generalization. This study recommends the use of long-term and comparative designs to investigate the long-term effectiveness of community-based interventions from different socio-cultural environments and healthcare systems.

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