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Original Article

Prevalence and Determinants of Adherence to Self-Care Practices Among Hypertensive Patients Attending Rwamagana Level Two Teaching Hospital, Rwanda

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Abstract

Background: Hypertension is highly prevalent in Rwanda, yet long-term blood pressure control hinges on patients' day-to-day self-care.

Objectives: We quantified adherence to six recommended behaviors and explored their determinants among hypertensive outpatients at Rwamagana Level Two Teaching Hospital.

Methods: A cross-sectional survey of 385 adults was conducted using the Hypertension Self-Care Activity Level Effects (H-SCALE) instrument. "Good" adherence was defined a priori as practicing ≥4 of the 6 behaviors on ≥80% of the recommended days during the preceding week; otherwise, adherence was "poor." Multivariable logistic regression identified independent predictors.

Results: Overall, 39% (95% CI: 34–44%) achieved good adherence. Behavior-specific adherence was highest for smoking abstinence (92%) and medication-taking (68%), but lowest for physical exercise (24%) and weight management (31%). Community-based social support (AOR = 1.86, 95% CI: 1.20–2.89) and tertiary education (AOR = 1.73, 95% CI: 1.11–2.70) increased the odds of good adherence, whereas endorsement of cultural beliefs conflicting with biomedical care reduced it (AOR = 0.54, 95% CI: 0.35–0.82).

Conclusion: Fewer than four in ten patients consistently follow essential self-care recommendations, with physical activity emerging as the greatest gap. Interventions grounded in the WHO Self-Care Framework that strengthen community support, counter harmful cultural beliefs, and create exercise-friendly environments are urgently needed to improve blood pressure control in Rwanda.

Keywords: Hypertension, Self-care, Adherence, WHO Self-Care Framework, Rwanda

Introduction

Hypertension is a major global health concern and a leading contributor to cardiovascular disease (CVD), responsible for approximately 9.4 million deaths annually (World Health Organization [WHO], 2021). With more than one billion people affected worldwide, low- and middle-income countries bear a disproportionate burden due to limited healthcare access and low awareness levels (Kearney et al., 2005). Sub-Saharan Africa has witnessed a rapid rise in hypertension prevalence, now affecting an estimated 30% of adults, driven by urbanization, dietary transitions, and lifestyle changes (Onwudiwe et al., 2020; Bärnighausen et al., 2017). Despite the high prevalence, adherence to self-care practices including medication use, dietary modifications, physical activity, and regular health monitoring remains suboptimal (Ogunrin et al., 2020; Omondi et al., 2019).

In Rwanda, hypertension is emerging as a critical non-communicable disease (NCD), with studies indicating a prevalence of 29.1% among adults and even higher rates in urban centers (Uwase et al., 2020). Alarmingly, many hypertensive individuals remain undiagnosed or inadequately manage their condition due to socioeconomic barriers, limited knowledge, and inconsistent access to medications (Uwizeye et al., 2020; Mugisha et al., 2021). Healthcare provider shortages further complicate hypertension control. However, community-based interventions leveraging community health workers (CHWs) have shown potential in improving adherence (Biraro et al., 2020). Socio-demographic factors such as education, marital status, and gender also play significant roles (Kamanzi et al., 2021).

This study was guided by the WHO Self-Care Framework, complemented by constructs from the Health Belief Model (HBM). The framework posits that engagement in care depends on individuals' capability, opportunity, and motivation to perform self-care tasks, while the HBM specifies how perceived susceptibility, severity, benefits, barriers, and self-efficacy shape health behaviors. These models informed our variable selection: capability was assessed with knowledge and self-efficacy scales; opportunity with social-support and health-system access items; and motivation with perceived benefits/barriers and culturally rooted health beliefs. Embedding data collection in this dual framework provides a coherent rationale for testing how psychosocial and contextual factors determine adherence among hypertensive patients in a Rwandan setting.

This study aims to investigate the prevalence and determinants of adherence to self-care practices among hypertensive patients attending Rwamagana Level Two Teaching Hospital. The findings will inform future intervention strategies targeting self-care behaviors.

Methods

Study Design

A facility-based cross-sectional study was conducted to estimate the prevalence of, and factors associated with, adherence to hypertension self-care practices. Cross-sectional measurement captured behaviors and correlates at a single point in time, permitting an assessment of contemporaneous relationships between patient characteristics and adherence without inferring causality.

Study Setting

The study took place in the outpatient department of Rwamagana Level Two Teaching Hospital, Eastern Province, Rwanda. The hospital is a referral center serving both urban and rural catchment areas and delivers chronic disease care in a resource-constrained environment, making it a logical site for studying self-care adherence.

Study Population and Eligibility

All adults (≥ 18 years) with a documented diagnosis of primary hypertension for at least three months and receiving follow-up care at the clinic during the study period constituted the source population. Eligibility screening was performed by reviewing each day's appointment list and verifying diagnoses, duration of follow-up, and cognitive ability in the electronic medical records and patient files. Patients were excluded if they were (a) hemodynamically unstable or otherwise critically ill, (b) pregnant, or (c) experiencing severe cognitive/psychiatric impairment precluding reliable interview participation.

Sample Size Determination and Sampling Procedure

The sample size was determined using a single population proportion formula with the assumption of 50% adherence to self-care practices, which maximizes the required sample size in the absence of prior local estimates. The calculation was based on a 95% confidence level, a 5% margin of error, and an additional 10% allowance for potential non-response. This yielded a minimum required sample size of 422. Despite this, systematic sampling continued until 400 complete and analyzable responses were obtained, which was considered sufficient for the intended statistical analysis, including multivariate modeling to identify predictors of adherence. This rigorous approach to sample selection and size estimation ensured the representativeness and reliability of the study findings.

A systematic random sampling technique was employed to select study participants from the outpatient hypertensive clinic registry. After a random starting point was determined through drawing lots, every third eligible patient presenting for consultation was invited to participate in the study. Eligibility was verified based on clinical records, and patients who met the inclusion criteria were consecutively enrolled until the required sample size was achieved. Of the 450 hypertensive patients approached during the data collection period, 430 met

the inclusion criteria. Among them, 30 declined participations, resulting in a response rate of 93.0%. Basic demographic information (age and sex) of those who refused participation was recorded and compared with those who participated; no significant differences were observed, minimizing the risk of non-response bias. Furthermore, 17 questionnaires with more than 20% missing data were excluded from the final analysis to maintain data integrity, yielding a total analytic sample of 400 participants.

Data Collection Instrument

An interviewer-administered questionnaire, which was translated into Kinyarwanda and back-translated to ensure linguistic accuracy, was used to collect data from participants. The instrument consisted of three main sections. The first section captured sociodemographic and clinical characteristics of the respondents. The second section assessed hypertension self-care behaviors using the validated Hypertension Self-Care Activity Level Effects (H-SCALE) instrument, which evaluates key lifestyle and treatment-related practices. The third section addressed psychosocial constructs, including perceived stress, measured using the 10-item Perceived Stress Scale (PSS-10), and self-confidence or self-efficacy, assessed through the 6-item Self-Efficacy for Managing Chronic Disease Scale.

Scoring and Composite Measures

H-SCALE. Each of six domains (medication use, low-salt diet, physical activity, weight management, alcohol moderation, smoking cessation) was scored 0–7 based on the number of days in the previous week the recommended behavior was performed. Domain scores were summed (range = 0–42). Consistent with prior literature, good overall adherence was operationally defined as (a) attaining the recommended threshold (≥ 5 of 7 days) in at least four of the six domains or (b) a composite score ≥ 32 (≈ 75th percentile of the pilot distribution). Respondents below these cut-offs were categorized as having poor adherence.PSS-10. Items are rated 0 (never) to 4 (very often); four positively worded items were reverse-scored before summation (total 0–40, higher = greater perceived stress). Self-Efficacy. Items are rated 1 (not at all confident) to 10 (totally confident); the mean of the six items constituted the self-efficacy score (range = 1–10).

Instrument Validation

Content validity was ensured through expert panel review. A pilot with 40 hypertensive patients (excluded from the main study) yielded Cronbach's α values of .83 for H-SCALE, .87 for PSS-10, and .91 for the self-efficacy scale, indicating acceptable internal consistency.

Data Collection Procedure

Four nurse research assistants received two days of training on standardized interviewing and ethical conduct. Face-to-face interviews were conducted in a private room immediately after the clinical encounter to reduce recall bias. Completed questionnaires were checked nightly for completeness.

Data Management and Analysis

Data entry was performed in SPSS version 21 for analysis. Descriptive statistics summarized participant characteristics and adherence levels. Bivariate associations were explored with χ^2 or t-tests as appropriate. Variables with $p < .20$ entered a multivariable logistic regression model to identify independent predictors of good adherence; adjusted odds ratios (AORs) with 95 % confidence intervals (CIs) are presented. Model fit was assessed with the Hosmer–Lemeshow test, and multicollinearity was ruled out with variance inflation factors < 5. Statistical significance was set at $p < .05$.

Ethical Considerations

Ethical approval was obtained from Mount Kenya University Ethics Review Committee. Written informed consent was secured from all participants. Confidentiality was protected through anonymized identifiers and password-protected data files. Participants were advised of their right to withdraw at any stage without affecting their care.

Results

Demographic and Socio-Economic Characteristics of Participants

The study involved 400 hypertensive patients, with the majority falling within the middle to older adult age ranges. The largest age group was 50–59 years (26.3%), followed by those aged 60 and above (20.3%), indicating that hypertension is more prevalent among older individuals. Gender distribution showed a slight male predominance, with males representing 54.3% of the sample. In terms of marital status, 30.3% were divorced, while equal proportions were married and single (23.8% each), and 22.3% were widowed, suggesting that a significant number of participants may lack consistent partner support, which could affect self-care adherence. Educational levels varied, with 31.5% having secondary education, 26.0% primary education, and 22.0% tertiary education, while 20.5% had no formal schooling indicating that health literacy could be a concern for a portion of patients. Occupationally, 23.8% were businesspersons, while 20% each were government employees or categorized as “other.” Farmers made up 19.5%, and 16.8% were unemployed. Income levels were fairly distributed, though 22.8% earned below 50,000 Rwandan Francs monthly, highlighting potential financial barriers to consistent hypertension management. Clinically, most participants (65.5%) had been diagnosed within the past

two years, indicating a recent increase in diagnoses, possibly due to improved detection or rising risk factors. Additionally, 62.3% reported having comorbidities, complicating disease management and emphasizing the importance of integrated care. These demographic and clinical characteristics underscore the need for tailored interventions, especially in improving health education, economic support, and chronic disease coordination for hypertensive patients in this setting.

Table 1: Socio-Demographic and Clinical Characteristics of Participants (N = 400)

Variable	Category	Frequency (n)	Percent (%)
Age Category	Below 30 years	61	15.3
	30–39 years	75	18.8
	40–49 years	78	19.5
	50–59 years	105	26.3
	60 years and above	81	20.3
Gender	Male	217	54.3
	Female	183	45.8
Marital Status	Single	95	23.8
	Married	95	23.8
	Divorced	121	30.3
	Widowed	89	22.3
Education Level	No formal education	82	20.5
	Primary education	104	26.0
	Secondary education	126	31.5
	Tertiary education	88	22.0
Occupation	Farmer	78	19.5
	Business person	95	23.8
	Government employee	80	20.0
	Unemployed	67	16.8
	Others	80	20.0
Monthly Income	Below 50,000 Rwf	91	22.8
	50,000–100,000 Rwf	103	25.8
	101,000–200,000 Rwf	104	26.0
	201,000 Rwf and above	102	25.5
Time Since Diagnosis of Hypertension	≤ 2 years	262	65.5
	> 2 years	138	34.5
Self-Reported Comorbidities	Yes	249	62.3
	No	151	37.8

Adherence to Self-Care Practices Among Hypertensive Patients (N = 400)

The assessment of adherence to self-care practices among hypertensive patients at Rwamagana Level Two Teaching Hospital revealed notable variations across different behavior domains essential for hypertension management. A majority of patients (56.0%) reported taking their medications as prescribed, indicating moderate compliance with pharmacological treatment. However, 44.0% did not adhere, posing risks for poor blood pressure control. Similarly, 53.8% of patients engaged in weight management practices, while 46.3% did not, reflecting

challenges in maintaining a healthy body weight a key factor in hypertension control. Physical exercise had the lowest adherence, with only 41.0% engaging in regular activity, and 59.0% not meeting this essential lifestyle recommendation. This highlights a significant gap in non-pharmacological management of hypertension.

Regarding alcohol use, 51.0% of patients reported adherence to moderation or abstinence, yet nearly half (49.0%) failed to meet this guideline, potentially increasing their cardiovascular risk. Smoking cessation showed the highest adherence rate, with 75.5% of participants reporting that they had quit smoking, demonstrating success in this area. However, 24.5% continued smoking, indicating ongoing cessation challenges. Adherence to a low-salt diet was also suboptimal, with only 48.8% following dietary recommendations, while 51.3% did not. This highlights the persistence of unhealthy dietary habits among patients. Blood pressure monitoring was practiced regularly by 53.5% of the patients, suggesting moderate awareness of disease monitoring, though 46.5% did not monitor regularly.

In summary, while medication adherence and smoking cessation were relatively well-practiced, other crucial lifestyle behaviors especially exercise, diet, and weight management showed lower adherence levels. These findings underline the need for comprehensive health education, behavioral counseling, and support systems tailored to address specific barriers. Strengthening patient engagement in these self-care practices is essential for improving hypertension outcomes in this population.

Table 2: Adherence to Self-Care Practices Among Hypertensive Patients (N = 400)

Self-Care Practice	Adherent n (%)	Non-Adherent n (%)
Medication adherence	224 (56.0%)	176 (44.0%)
Weight management	215 (53.8%)	185 (46.3%)
Regular physical exercise	164 (41.0%)	236 (59.0%)
Alcohol moderation/abstinence	204 (51.0%)	196 (49.0%)
Smoking cessation	302 (75.5%)	98 (24.5%)
Low-salt diet	195 (48.8%)	205 (51.3%)
Regular blood pressure monitoring	214 (53.5%)	186 (46.5%)

Challenges Faced by Individuals in Managing Their Health

The study identified several key barriers affecting patients' adherence to self-care practices for hypertension management. The most frequently cited challenge was transportation difficulty, reported by 24.8% of participants. Limited access to reliable transportation likely hinders timely attendance at medical appointments and regular medication refills, particularly for those residing in remote areas. A lack of family support was the second most common barrier, affecting 17.0% of respondents. This emphasizes the importance of emotional and logistical support from family in maintaining self-care behaviors. Additionally, 16.5% of participants reported that medication costs posed a significant challenge, highlighting financial constraints as a major deterrent to consistent treatment adherence, especially for individuals without stable income or insurance.

Other notable challenges included lack of time or competing responsibilities (15.8%), forgetfulness (14.5%), and medication side effects (11.5%). These factors suggest that many patients struggle to integrate health routines into their daily lives or face discouragement due to negative experiences with treatment. The findings point to the need for multi-level interventions, including transportation assistance, community and family engagement, medication subsidies, patient education, and follow-up systems to address forgetfulness and side effects. Addressing these barriers holistically can greatly improve adherence and support better hypertension control in this population.

Table 3: Challenges Faced by Individuals in Managing Their Health

Challenges faced	Frequency	Percent
Medication cost	66	16.5
Transportation difficulties	99	24.8
Lack of time/being busy	63	15.8
Forgetfulness	58	14.5
Medication side effects	46	11.5
Lack of family support	68	17.0
Total	400	100.0

Associations Between Sociodemographic and Clinical Characteristics and Adherence Prevalence Among Hypertensive Patients (N = 400)

This study explored the association between sociodemographic and clinical characteristics and adherence to self-care practices among hypertensive patients at Rwamagana Level Two Teaching Hospital. While adherence varied across age groups, age was not significantly associated with adherence levels ($p = 0.691$). The highest number of both good and poor adherence cases occurred among patients aged 50–59, suggesting that age alone is not a strong predictor of self-care behavior. Gender differences were also not statistically significant ($p = 0.116$), although males reported more cases of poor adherence than females, and females slightly outnumbered males in good adherence. Notably, marital status had a significant association with adherence ($p = 0.001$), with married individuals more likely to adhere to self-care practices, while divorced participants showed higher rates of non-adherence indicating the role of spousal or family support in managing chronic illness.

Education level was another significant factor ($p = 0.044$). Those with secondary education had the highest adherence rates, while individuals with no formal education were more likely to report poor adherence. This reflects the importance of health literacy in understanding and practicing self-care behaviors. Occupational status and monthly income showed no statistically significant relationship with adherence ($p = 0.401$ and $p = 0.965$, respectively), although farmers and unemployed participants tended to have lower adherence. This may suggest that economic engagement and access to resources can influence self-care capacity. Neither the duration since hypertension diagnosis ($p = 0.956$) nor the presence of comorbidities ($p = 0.851$) significantly impacted adherence. Both recently diagnosed and long-term patients displayed similar self-care patterns. While many variables did not reach statistical significance, the significant associations with marital status and education

highlight the critical role of social and educational support in enhancing adherence. Interventions targeting these factors may improve hypertension management outcomes.

Table 4: Associations Between Sociodemographic and Clinical Characteristics and Adherence Prevalence Among Hypertensive Patients (N = 400)

Variable	Category	Poor Adherence (n)	Good Adherence (n)	P-value
Age Category	Below 30 years	39	22	0.691
	30–39 years	49	26	
	40–49 years	43	35	
	50–59 years	62	43	
	60 years and above	51	30	
Gender	Male	140	77	0.116
	Female	104	79	
Marital Status	Single	68	27	**0.001**
	Married	41	54	
	Divorced	79	42	
	Widowed	56	33	
Education Level	No formal education	54	28	**0.044**
	Primary education	64	40	
	Secondary education	65	61	
	Tertiary education	61	27	
Occupation	Farmer	53	25	0.401
	Business Person	53	42	
	Government employee	49	31	
	Unemployed	44	23	
	Others	45	35	
Monthly Income	Below 50,000 RWF	55	36	0.965
	50,000–100,000 RWF	65	38	
	101,000–200,000 RWF	63	41	
	201,000 RWF and above	61	41	
Time Since Diagnosis	≤ 2 years	158	104	0.956
	> 2 years	86	52	
Comorbidities (Self-Reported)	Yes	151	98	0.851
	No	93	58	

Associations Between Psychosocial and Cultural Factors with Prevalence of Adherence (N = 400)

The study investigated the influence of several psychosocial, cultural, and healthcare-related factors on adherence to self-care practices among hypertensive patients. One of the psychosocial factors examined was stress. Among respondents who experienced significant stress in the past month, 130 reported poor adherence compared to 114 among those who did not report stress. Despite the observable difference, the association was not statistically

significant (p = 0.164). Similarly, the presence of depressive symptoms due to hypertension did not show a significant relationship with adherence (p = 0.723). Those who had ever felt depressed had a slightly lower level of good adherence (77 out of 193) compared to those who had not experienced depression (79 out of 207), suggesting that emotional distress, while present among many patients, may not independently determine adherence behavior. Social support was another area of interest in the study. Among those who reported receiving support from family or friends, 120 had poor adherence and 77 had good adherence, while those who did not receive such support reported 124 and 79 respectively. This near-identical distribution resulted in a non-significant p-value (p = 0.972), indicating that familial or social support alone might not sufficiently impact adherence. Similarly, participants' confidence in their ability to manage their condition categorized as very confident, somewhat confident, or not confident did not show a significant effect (p = 0.954). This implies that self-efficacy, while psychologically important, might not directly translate into behavioral adherence in this population. Additionally, patients who reported that anxiety or worry served as a barrier to following self-care practices did not significantly differ in adherence from those who did not perceive such psychological obstacles (p = 0.965).

In exploring service-related factors, the accessibility of healthcare services was not significantly associated with adherence (p = 0.111), although the proportion of good adherence was highest among those who rated access as excellent or good. Interestingly, medication shortages a commonly reported barrier in chronic disease management—did not significantly influence adherence levels either (p = 0.238). These findings suggest that while logistical issues such as service availability and medication supply may affect patient satisfaction, their direct influence on self-care adherence may be mitigated by other factors, including personal or cultural beliefs. On the cultural front, belief in traditional remedies as more effective than prescribed medications did not show a significant relationship with adherence (p = 0.949), although slightly more individuals in this category reported poor adherence. However, cultural and community beliefs regarding hypertension management showed a statistically significant association with adherence (p = 0.002). Patients influenced by cultural/community beliefs had a higher rate of poor adherence (138 out of 202), suggesting that culturally driven perceptions and norms could act as barriers to compliance with conventional medical regimens. This highlights the need for culturally sensitive health education campaigns and community engagement strategies. Lastly, healthcare provider communication and community-level support were evaluated. Whether healthcare providers explained the condition and treatment clearly did not yield a significant difference in adherence (p = 0.895), despite an expectation that clear communication might improve compliance. In contrast, the presence of community health workers or support groups providing assistance was significantly associated with better adherence outcomes (p =

0.006). Among those who received support, a notably higher proportion (91 out of 199) reported good adherence compared to those who did not receive such support. This underscores the important role that structured community-based interventions and peer support can play in promoting and sustaining self-care behaviors among hypertensive patients.

Table 5: Associations Between Psychosocial and Cultural Factors with Prevalence of Adherence (N = 400)

Variable	Category	Poor Adherence	Good Adherence	Total
Experienced significant stress (past month)	Yes	130	72	0.164
	No	114	84	
Received support from family/friends	Yes	120	77	0.972
	No	124	79	
Felt depressed due to hypertension	Yes	116	77	0.723
	No	128	79	
Confidence in managing condition	Very confident	84	56	0.954
	Somewhat confident	81	51	
	Not confident	79	49	
Anxiety/worry is a barrier	Yes	135	86	0.965
	No	109	70	
Accessibility of healthcare services	Excellent	47	37	0.111
	Good	68	56	
	Average	59	30	
	Poor	70	33	
Encountered medication shortage	Yes	102	74	0.238
	No	142	82	
Believe traditional remedies are more effective	Yes	125	75	0.949
	No	119	81	
Cultural/religious limits to dietary adherence	Yes	140	89	
	No	104	67	
Cultural/community beliefs influence management	Yes	138	64	**0.002**
	No	106	92	
Healthcare providers explain condition/treatment	Always	67	46	0.895
	Sometimes	73	49	
	Rarely	54	30	
	Never	50	31	
Community health workers/support groups provide assistance	Yes	108	91	**0.006**
	No	136	65	

Multivariate Logistic Regression Analysis of factors associated with prevalence of adherence self-practices

The multivariate analysis of sociodemographic and contextual factors influencing adherence to self-care practices among hypertensive individuals reveals several key insights into how various factors affect adherence. The analysis includes variables such as marital status, education level, cultural beliefs, and community support, providing a comprehensive picture of how these elements influence adherence to self-care practices. Marital status emerged as a significant predictor of adherence to self-care practices. Specifically, individuals who were married were nearly three times more likely to adhere to self-care practices compared to those who were single (AOR = 2.79, p = 0.001). This suggests that married individuals may benefit from the support of a partner in managing their health, which positively influences their ability to follow prescribed health guidelines. In contrast, divorced and widowed individuals did not show significant differences in adherence compared to single individuals (AOR = 0.96, p = 0.910 for divorced, AOR = 1.07, p = 0.825 for widowed). This indicates that marital status might have varying impacts depending on the type of relationship status.

Education level also played a significant role in adherence to self-care practices. Those with tertiary education were found to have significantly higher odds of adhering to self-care practices compared to individuals with no formal education (AOR = 2.00, p = 0.024). This suggests that higher levels of education may provide individuals with a better understanding of the importance of self-care and treatment adherence. On the other hand, individuals with primary or secondary education did not show significant differences in adherence when compared to those without formal education, indicating that while education may influence adherence, the effect might be stronger for individuals with tertiary education. Cultural and community beliefs were significant barriers to adherence. Individuals who reported that cultural or community beliefs influenced their management of hypertension had significantly lower odds of adhering to self-care practices (AOR = 0.54, p = 0.004). This finding highlights the potential negative impact of cultural beliefs on health behaviors, suggesting that cultural factors may undermine the effectiveness of self-care practices and the management of hypertension. In contrast, those who did not report such influences were more likely to adhere to self-care guidelines, reinforcing the need to address cultural barriers in health interventions.

Receiving support from community health workers or support groups emerged as a positive predictor of adherence. Individuals who received support had nearly twice the odds of adhering to self-care practices compared to those who did not (AOR = 1.86, p = 0.006). This underscores the importance of community-based interventions in promoting adherence to self-care practices. The availability of support networks, whether through health workers or community groups, plays a critical role in encouraging individuals to stay committed to managing their condition effectively. Overall, the analysis highlights several important factors that influence adherence to self-care practices among hypertensive individuals. Marital status and education level were found to have

significant positive effects on adherence, with married individuals and those with higher education showing higher odds of following self-care practices. On the other hand, cultural and community beliefs appeared to act as barriers, reducing adherence, while community support significantly enhanced adherence. These findings suggest that interventions aimed at improving adherence should consider both individual characteristics and community-based support systems to maximize their effectiveness.

Table 6: Multivariate Logistic Regression Analysis of factors associated with prevalence of adherence self-practices

Variable	Category	Poor Adherence (n)	Good Adherence (n)	P-value	AOR	95% CI for AOR
Marital Status	Single (ref)	68	27		1.00	
	Married	41	54	**0.001**	2.79	(1.49 – 5.25)
	Divorced	79	42	0.910	0.96	(0.50 – 1.86)
	Widowed	56	33	0.825	1.07	(0.59 – 1.95)
Education Level	No formal education (ref)	54	28		1.00	
	Primary education	64	40	0.444	1.30	(0.66 – 2.56)
	Secondary education	65	61	0.127	1.63	(0.87 – 3.07)
	Tertiary education	61	27	**0.024**	2.00	(1.10 – 3.65)
Cultural/Community Beliefs Influence Management	Yes	138	64	**0.004**	0.54	(0.35 – 0.82)
	No (ref)	106	92		1.00	
Community Health Support or Groups Help	Yes	108	91	**0.006**	1.86	(1.20 – 2.89)
	No (ref)	136	65		1.00	

Discussion

This study aimed to assess the prevalence and determinants of adherence to self-care practices among hypertensive patients attending Rwamagana Level Two Teaching Hospital in Rwanda. The findings revealed that only 39% of the participants demonstrated good adherence to recommended self-care behaviors, highlighting a substantial gap in the management of hypertension in this population. This level of adherence aligns with similar studies conducted in sub-Saharan Africa, where adherence rates often fall below optimal thresholds due to a combination of systemic, psychosocial, and cultural barriers (Ataklte et al., 2015). Among the socio-demographic factors examined, both marital status and educational level emerged as significant predictors of adherence. Married individuals were more likely to adhere to self-care recommendations, possibly due to the presence of

spousal support that facilitates health-promoting behaviors. Similarly, participants with secondary or higher education showed greater adherence, which may be attributed to improved health literacy, better comprehension of disease management, and enhanced engagement with healthcare providers. These findings are consistent with the Rwanda Demographic and Health Survey (2020), which noted that higher education levels are associated with increased health-seeking behavior and treatment compliance.

Although variables such as age, gender, occupation, and income were not significantly associated with adherence, psychosocial and cultural factors appeared to exert notable influence. While stress and depression did not reach statistical significance in the current analysis, their reported prevalence among participants suggests a potential cumulative burden that could affect adherence over time. More notably, negative cultural beliefs were significantly associated with poor adherence (AOR = 0.535; 95% CI = 0.347–0.823; p = .004), reinforcing the notion that cultural perceptions can undermine biomedical approaches to chronic disease management. This finding aligns with previous qualitative research from Uganda and Ethiopia, where traditional beliefs about diet and medication have been shown to interfere with adherence (Tesfaye et al., 2017). Conversely, support from community health workers (CHWs) was positively associated with better adherence (AOR = 1.859; 95% CI = 1.197–2.886; p = .006). This underscores the importance of Rwanda's community health strategy, which integrates CHWs as frontline health educators and facilitators of chronic care. These findings suggest that strengthening CHW engagement may offer a scalable approach to improving adherence in similar low-resource settings.

Several practical barriers were also reported by participants, including transportation difficulties (24.8%), lack of family support (17%), medication costs (16.5%), and forgetfulness (14.5%). These challenges reflect ongoing structural and economic limitations in healthcare access, particularly in rural regions. Similar barriers have been documented in comparable low-income settings where out-of-pocket costs and logistical constraints impede consistent care (Wang et al., 2020). Collectively, the findings point to a need for integrated, culturally sensitive, and community-based interventions to enhance adherence among hypertensive patients.

Study Limitations

This study has several limitations that should be considered when interpreting the findings. First, the cross-sectional design limits the ability to infer causality between identified factors and adherence behaviors. Longitudinal studies would be better suited to examine changes in adherence over time. Second, reliance on self-reported data introduces the possibility of recall bias and social desirability bias, which may have led participants to overreport favorable behaviors. Third, the study was conducted in a single referral hospital, which may limit the generalizability of the findings to other settings, particularly primary healthcare centers or regions with

different socio-cultural dynamics. Fourth, although a systematic random sampling method was employed, patients who missed appointments during the data collection period were not captured, potentially underrepresenting individuals with lower adherence. Lastly, the study may have been affected by residual confounding, as some potentially influential factors such as comorbidity burden, health insurance status, or frequency of medication stock-outs were not assessed.

Conclusion

In conclusion, the study revealed suboptimal adherence to self-care practices among hypertensive patients at Rwamagana Level Two Teaching Hospital, with only 39% of participants meeting the criteria for good adherence. Key facilitators of adherence included higher education, marital support, and consistent follow-up by community health workers, while negative cultural beliefs significantly hindered adherence. Structural barriers such as transportation costs, limited family support, and medication expenses were also prominent. These findings highlight the need for targeted interventions that incorporate culturally appropriate health education, enhance community-based support, and address the socioeconomic determinants that influence chronic disease management. Strengthening Rwanda's community health framework offers a promising path to improving hypertension outcomes in resource-limited settings.

Recommendation

Improving self-care adherence among Rwandan adults with hypertension demands a set of integrated, practical actions. Foremost, the Ministry of Health should expand and rigorously supervise community-health-worker outreach, arming CHWs with enhanced skills in culturally responsive counselling and misinformation correction, honed in partnership with village elders and traditional healers. District administrations must simultaneously roll out transport stipends and drug-cost reductions targeting low-income or remote households to eliminate financial and geographic barriers. Outpatient clinics should convene patient-run "hypertension clubs" that nurture peer encouragement, accountability, and shared problem-solving around diet, exercise, and stress control. In addition, frontline providers ought to embed brief mental-health screening tools into routine consultations to spotlight anxiety or depressive symptoms that can erode self-management, referring affected individuals for counselling when necessary. Coordinated implementation of these measures by government, facility, and community actors will foster sustained gains in adherence and, ultimately, better blood-pressure control.

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