

Gender-Related Factors Influencing Hypertension Management among Patients Aged 18-49 Years in Western Kenya

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Abstract

Original Research Article

The purpose of the study was to determine gender-related factors influencing hypertension management among patients aged 18-49 years in Western Kenya. This study enrolled 2031 hypertensive patients receiving care at the Kisii Teaching and Referral Hospital. Data was collected through semi-structured questionnaires and patient records retrieval. All quantitative data was summarized using descriptive statistics, and associations detected by inferential statistics (ANOVA & chi-square). Findings showed that men sought diagnosis after 16.28 months, while women took 18.03 months, though the difference was not significant. Symptom prevalence varied, with men reporting higher rates of dizziness (53.1% vs. 37.8%, $p = 0.014$), blurred vision (36.7% vs. 31.6%, $p = 0.011$), and chest pain (50% vs. 12.2%, $p = 0.000$). Men visited hospitals less frequently (34.7% monthly vs. 15.3% biweekly, $p = 0.000$) but had better pharmacy access (44.9% vs. 18.4%, $p = 0.019$). Women monitored blood pressure more regularly ($p = 0.005$) and were more proactive in treatment changes ($p = 0.009$). Medication adherence (81.6%) and dietary changes (71.4%) were common self-care strategies, but exercise (51.0%) and stress management (45.9%) were less prioritized. Healthcare providers highlighted gender-sensitive care, noting that men preferred brief, action-based advice, while women engaged in detailed discussions and involved family members. Modern health tools, like mobile apps, were noted as beneficial for improving self-management. The study recommends tailoring healthcare practices to address gender-specific needs, strengthening collaborative care involving community and family support, and promoting digital tools for self-management. Training healthcare providers in gender-sensitive approaches and creating peer support networks can further improve care.

Keywords: Gender-Related Factors, Hypertension, Management, Patients, Hospitals.

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INTRODUCTION

Hypertension continues to pose a major public health challenge globally, affecting 15% to 30% of the adult population in most countries (WHO, 2023). It is a leading cause of cardiovascular diseases such as stroke, heart failure, and coronary heart disease, particularly among the elderly (Anand *et al.*, 2018; Anker *et al.*, 2018). The significance of hypertension screening and treatment has been well established, especially in reducing cardiovascular-related deaths in middle-aged populations (Anker *et al.*, 2018). Despite this, disparities in prevalence persist, influenced by both modifiable risk factors and differences in gender and age.

Research shows that lifestyle-related risk factors such as physical inactivity, obesity, diabetes, and smoking are closely linked to hypertension prevalence

(Pilakkadavath & Shaffi, 2016). Furthermore, gender plays a critical role in the manifestation and management of hypertension. For instance, women are generally protected against cardiovascular events until menopause, after which their risk rises sharply (Maranon & Reckelhoff, 2013). Men, on the other hand, are more prone to hypertension and less likely to be aware of their condition compared to women (Everett & Zajacova, 2015). However, the exact influence of gender-related factors across different regions remains inconclusive, necessitating region-specific investigations.

Access to care and availability of trained healthcare personnel significantly affect hypertension treatment outcomes. Studies have shown that regions with higher healthcare worker density report better treatment rates, and that community health workers

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(CHWs) can play a pivotal role in providing hypertension care in low-resource settings (Vedanthan *et al.*, 2019; O'Neil *et al.*, 2016). Despite global progress in addressing health concerns through initiatives like the MDGs, challenges remain in managing chronic conditions like hypertension, particularly in sub-Saharan Africa where access to clean water, sanitation, and quality healthcare is still limited (Martinelli *et al.*, 2008; Whelton *et al.*, 2004). In Kenya, hypertension remains a significant health issue, with a prevalence rate of 9.3% reported in Western Kenya (MoH-K, 2018). Although the government has taken steps to improve healthcare access and training under Vision 2030 and the 2010 Constitution, gaps remain in understanding how gender-specific factors influence hypertension management. This study aimed to explore the role of such factors in Kisii Teaching and Referral Hospital among hypertensive patients aged 18–49.

LITERATURE REVIEW

While Gender-specific factors significantly influence the development and management of hypertension. Studies show that men tend to develop hypertension earlier than women and experience a more rapid rise in blood pressure before women catch up after menopause (Reckelhoff, 2001; Su *et al.*, 2008). Hormonal differences, particularly the protective effects of estrogen before menopause, play a key role, although generalizations based on sex hormones are insufficient to fully explain gender disparities in hypertension outcomes. Men have been found to possess more angiotensin II receptors and higher levels of oxidative stress, which exacerbate kidney and vascular damage, contributing to earlier and more severe hypertension compared to women (Su *et al.*, 2008; Prime *et al.*, 2007). However, drugs that block these pathways, such as ACE inhibitors and ARBs, are less effective in women, raising concerns about gender-tailored treatment strategies (Xiao *et al.*, 2013).

Additionally, hypertension control among women and men varies, with some studies showing women have poorer blood pressure control, while others suggest the opposite (Maranon & Reckelhoff, 2013; Daugherty *et al.*, 2011). These inconsistencies may stem from methodological limitations such as reliance on single-time BP measurements and insufficient follow-up. Importantly, few studies have assessed gender differences in newly diagnosed hypertensive cohorts to account for baseline severity and treatment response. Moreover, gender disparities in hypertension management have largely ignored younger populations, despite evidence showing that blood pressure levels in men and women diverge significantly during reproductive years and converge in older age (Lee *et al.*, 2011).

Obesity is a key gender-linked factor in hypertension development, with premenopausal women showing a stronger correlation between obesity and hypertension than men. Obesity indices such as BMI, waist-to-hip ratio, and waist circumference are strongly associated with elevated blood pressure, especially among women over 50 years (Samson *et al.*, 2017; Tu *et al.*, 2011). The risk of hypertension increases with age in both genders but appears to be more pronounced in older women. Despite these associations, gender-specific obesity patterns and their direct effect on blood pressure are not fully understood, suggesting the need for more nuanced investigation into how gender and age intersect with body composition to influence hypertension risk.

Cultural and societal gender norms also affect hypertension management. Men are often more empowered to make healthcare decisions and are more likely to accept hypertension testing and treatment, whereas women in some cultures need spousal approval before seeking care (Singh *et al.*, 2017). These dynamics contribute to delays in diagnosis and poor management outcomes for women. Age is another important factor, as older individuals—regardless of gender—are generally more willing to undergo hypertension screening and adhere to treatment (Anker *et al.*, 2018). Thus, both gender and age intersect to influence healthcare-seeking behavior and treatment compliance among hypertensive patients.

Healthcare provider attitudes, system-level factors, and patient knowledge also interact with gender to influence hypertension management. Female patients are more affected by psychological barriers, such as fear of diagnosis and social stigma, which discourage them from seeking treatment (Jenson *et al.*, 2011). Moreover, inadequate health worker training, lack of privacy, and perceived provider discrimination disproportionately affect women's willingness to access hypertension services (Jongen *et al.*, 2019). Addressing these systemic barriers through gender-sensitive healthcare training, community education, and privacy protections could enhance hypertension care and outcomes, particularly for women. These insights underscore the importance of gender-responsive strategies in both clinical practice and public health interventions.

METHODOLOGY

This study adopted a descriptive cross-sectional design, utilizing both quantitative and qualitative methods to investigate gender-specific factors influencing hypertension management among patients aged 18–49 years. The research was conducted at Kisii Teaching and Referral Hospital (KTRH), which serves as the main referral center for nine sub-county hospitals across Kisii County. This design was suitable for capturing a snapshot of existing practices and perceptions regarding hypertension management across different genders within the specified age range.

Sampling

The study targeted a population of 5,661 registered hypertensive patients across Kisii County, with a specific emphasis on the 2,031 patients receiving care at Kisii Teaching and Referral Hospital (KTRH). Using Cochran's formula, a representative sample size of 130 patients was determined. In addition, two key informants—a nurse and a clinician from the hypertension clinic—were purposively selected based on their roles and availability, bringing the total sample to 132 participants. Stratified sampling was conducted across sub-county hospitals, followed by proportionate allocation based on patient volume and staffing capacity. Systematic sampling was then used to select patient participants, while key informants were selected purposively. Eligibility was restricted to hypertensive patients and healthcare providers aged 18–49 years who consented to participate; severely ill individuals and those unwilling to participate were excluded. Of the 130 questionnaires administered to hypertensive patients, 98 were successfully completed and returned, yielding a response rate of 75.4%. After data cleaning to address missing values and outliers, all 98 questionnaires were retained for analysis. This response rate was considered sufficient to meet the analytical needs of the study, in line with Cooper and Schindler's (2014) recommendation that a response rate above 60% is adequate to ensure the reliability and validity of research findings.

Data Collection

Data were collected using semi-structured self-administered questionnaires for patients and key informant interview guides for medical staff. Patients were given 20–25 minutes to complete the questionnaires, and for those unable to read or write, questions were read aloud with a witness present, and responses were recorded by the researcher. Participants were allowed to skip questions they were uncomfortable answering. Ethical considerations were integrated throughout data collection. Each participant received a clear explanation of the study's purpose, procedures, and their rights, including the right to withdraw at any time. Written informed consent was obtained before participation. Confidentiality was strictly maintained by anonymizing data and storing physical records in locked cabinets accessible only to the research team.

Data Analysis

Quantitative data were entered into Microsoft Excel, cleaned, and analyzed using SPSS version 23. Descriptive statistics such as frequencies, means, and

percentages were used to describe gender-related factors influencing hypertension management, while inferential statistics including Chi-square tests and correlation analysis were applied to determine associations. The level of statistical significance was set at $p = 0.05$. Qualitative data from key informant interviews were transcribed, coded, and analyzed thematically using NVivo® software, with illustrative quotes included to support emerging themes. Findings were presented in tables, charts, and graphs to facilitate clear interpretation and comparison.

FINDINGS

Patients Characteristics

The study assessed key socio-demographic characteristics of hypertensive patients aged 18–49 years, revealing several dominant trends. Males constituted the majority at 62.2%, suggesting higher male access or detection rates. In terms of age, the largest group was 36–40 years (27.6%), followed by 46–50 years (21.4%) and 41–45 years (19.4%), indicating a higher burden among individuals in their late 30s and 40s. Education-wise, 45.9% had attained secondary education, with only 13.3% having college/university education, which could impact health literacy and treatment compliance. Most participants were married (64.3%), indicating potential for stronger social support systems. Regarding employment, 46.9% were self-employed, while 23.5% were unemployed, pointing to economic vulnerability among nearly a quarter of the sample. In terms of income, 55.1% reported earning above Ksh. 40,000 monthly, though a significant portion (26.5%) earned less than Ksh. 5,000, highlighting income disparities. Family size analysis showed that 55.1% had 4–6 children, which may affect the capacity to prioritize personal health, particularly among women.

Gender Variation Factors Influencing Hypertension Treatment in Patients Aged 18- 49 Years in KTRH

The objective of this study is to identify the gender-related factors influencing hypertension treatment among patients aged 18–49 years in western Kenya. These factors include the duration between the onset of symptoms and diagnosis, common symptoms experienced, frequency of hospital visits, ability to access pharmacies, medication adherence, and follow-up visits to healthcare providers. Additionally, self-integration, self-regulation, and self-monitoring behaviors, along with adherence to the recommended regimen, will also be examined.

Table 1: Gender Variation Factor

Gender Variation Factor	Male (%)	Female (%)	ANOVA (F)	χ^2	p-value
Time to Seek Diagnosis (months)	16.28	18.03	0.654	-	0.421
Common Symptom: Headache	62.20%	37.80%	-	-	-
Common Symptom: Dizziness	53.10%	37.80%	-	6.011	0.014
Common Symptom: Chest Pain	50.00%	12.20%	-	22.481	0.000
Hospital Visits: Monthly	34.70%	15.30%	-	24.077	0.000

Referral for Hypertension	30.60%	12.20%	-	2.638	0.104
Easy Pharmacy Access	44.90%	18.40%	-	5.465	0.019
Mean No. of Medications	1.34	1.32	0.026	-	0.872
Afford Medication	44.90%	22.40%	-	1.682	0.195
Medication Frequency: Once/Day	35.70%	21.40%	-	5.339	0.069
Doctor Follow-Up: Rarely	17.30%	3.10%	-	13.182	0.022

Findings in Table 1 reveal critical gender-based disparities in hypertension treatment among patients aged 18–49 years in western Kenya. While the average time to seek diagnosis after the onset of symptoms was slightly shorter for males (16.28 months) than females (18.03 months), this difference was not statistically significant ($F = 0.654$, $p = 0.421$). Symptom presentation showed notable gender differences: dizziness was significantly more reported by men ($\chi^2 = 6.011$, $p = 0.014$), as was chest pain ($\chi^2 = 22.481$, $p = 0.000$), suggesting men may present with more acute or noticeable signs of hypertension. Hospital visit patterns also differed significantly, with more men attending monthly ($\chi^2 = 24.077$, $p = 0.000$), while women showed a tendency toward more frequent bi-weekly visits. Access to pharmacies was another area of disparity, with men reporting better access than women ($\chi^2 = 5.465$, $p = 0.019$), potentially due to social or mobility-related factors. Referrals for hypertension care were more common among men (30.6%) than women (12.2%), but this difference was not statistically significant ($\chi^2 = 2.638$, $p = 0.104$).

When it came to medication management, the mean number of medications taken did not differ significantly between genders ($F = 0.026$, $p = 0.872$), nor did the ability to afford them ($\chi^2 = 1.682$, $p = 0.195$) or frequency of intake ($\chi^2 = 5.339$, $p = 0.069$), although slightly more males took their medications once or multiple times daily. Importantly, a statistically significant difference was observed in doctor follow-up patterns, with more men rarely attending follow-up appointments, whereas women adhered more closely to regular schedules ($\chi^2 = 13.182$, $p = 0.022$). These results highlight that while treatment access and medication usage are largely comparable between genders, significant differences exist in symptom experiences, access to health services, and follow-up behaviors. Addressing these disparities through gender-sensitive

interventions—such as targeted education, enhanced pharmacy access for women, and promoting follow-up adherence among men—could improve hypertension outcomes and health equity in this population.

Gender Difference of Self-integration in hypertension management

The analysis of gender differences in Table 2 on self-integration practices related to hypertension management revealed that while both males and females engage in many similar health behaviors, significant disparities exist in specific areas. Males reported greater efforts in weight control ($F = 5.368$, $p = 0.023$), quitting smoking ($F = 14.179$, $p = 0.000$), and participating in social activities such as public walking ($F = 7.855$, $p = 0.006$), indicating higher male engagement in these critical hypertension management strategies. These differences suggest that males may be more proactive in adopting certain lifestyle changes, possibly due to greater access or fewer social constraints. In contrast, females showed lower participation in these areas, potentially due to cultural, logistical, or health-related barriers, underscoring the need for targeted interventions to support women in these practices. However, several other self-integration practices showed no significant gender variation, including consumption of fruits and vegetables ($F = 0.829$, $p = 0.365$), low-fat ($F = 0.022$, $p = 0.881$) and low-salt foods ($F = 0.911$, $p = 0.342$), food choice control ($F = 1.408$, $p = 0.238$), physical activity through sports ($F = 2.052$, $p = 0.155$), and stress management via social support ($F = 3.543$, $p = 0.063$), indicating a shared understanding of dietary and wellness practices necessary for blood pressure control. These findings highlight both commonalities and disparities in self-care behavior across genders and reinforce the importance of designing gender-responsive health education and behavior change programs to ensure equitable and effective hypertension management.

Table 2: Gender difference of self-integration in hypertension management

		N	Descriptives		ANOVA	
			Mean	Std. Dev	F	Sig.
I consume enough fruits and vegetables (3-5 courses every day).	Male	61	4.738	0.998	0.829	0.365
	Female	37	4.892	0.315		
I consume low fat foods.	Male	61	3.639	1.278	0.022	0.881
	Female	37	3.676	0.944		
I consume low salt foods.	Male	61	4.443	1.025	0.911	0.342
	Female	37	4.622	0.639		
	Male	61	4.475	1.074	1.408	0.238

In order to control my blood pressure, I control the types of food I consume at home or out of home.	Female	37	4.216	1.004		
I control my weight.	Male	61	3.475	1.246	5.368	0.023
	Female	37	2.865	1.294		
I am trying to quit smoking so as to control my blood pressure.	Male	61	3.771	1.383	0.359	0.550
	Female	37	3.919	0.759		
I have quit smoking so as to control my blood pressure.	Male	61	1.803	1.181	14.179	0.000
	Female	37	1.054	0.329		
In order to control my blood pressure, I do sports.	Male	61	4.131	1.323	2.052	0.155
	Female	37	4.460	0.558		
When I am nervous, I resort to some ways like speaking with my friends or family to get rid of my stress.	Male	61	1.721	1.035	3.543	0.063
	Female	37	2.162	1.259		
Despite having hypertension, I take part in social activities (like public walking).	Male	61	1.426	0.644	7.855	0.006
	Female	37	1.108	0.315		

Gender Difference of Self-regulation in Hypertension Management

Table 3 highlights that while most self-regulation behaviors related to hypertension management are similar across genders, key differences do exist. Females were significantly more likely to engage in proactive communication with healthcare providers ($F = 7.141$, $p = 0.009$) and to seek guidance from social networks ($F = 5.985$, $p = 0.016$), indicating stronger reliance on interpersonal support and decision-

making roles in treatment. In contrast, no significant gender differences were found in recognizing symptoms, efforts to control blood pressure, or interaction with healthcare systems, suggesting a shared baseline awareness and engagement. These findings point to the need for gender-responsive strategies—encouraging men to strengthen communication with providers and supporting women’s use of social support in hypertension care.

Table 3: Gender difference of self-regulation in hypertension management

		N	Descriptives		ANOVA	Sig.
			Mean	Std. Dev	F	
I can understand the signs and symptoms of any decrease or increase in my blood pressure level.	Male	61	2.820	1.041	0.088	0.767
	Female	37	2.892	1.350		
I control my blood pressure level in order to evade its complications	Male	61	2.148	1.388	1.027	0.313
	Female	37	2.432	1.281		
I talk with medical centers staff or my doctor about changing the prescribed treatment schedule.	Male	61	4.328	1.076	0.429	0.514
	Female	37	4.189	0.908		
I comfortably make recommendations to medical centers personnel or my doctor to change my treatment schedule.	Male	61	3.787	1.540	7.141	0.009
	Female	37	4.514	0.768		
I ask my doctor questions about the centers that provide blood pressure care procedures.	Male	61	2.508	1.362	1.228	0.271
	Female	37	2.811	1.221		
I ask others (friends, family, neighbor, and other patients) to guide me in controlling blood pressure.	Male	61	1.836	1.052	5.985	0.016
	Female	37	2.460	1.464		

Gender Difference of Self-monitoring in Hypertension Management

Table 4 reveals that among various self-monitoring behaviors for hypertension, only one significant gender difference emerged: women were significantly more consistent than men in regularly measuring their blood pressure ($F = 8.330$, $p = 0.005$). This suggests a stronger commitment among females to proactive monitoring, which is vital for early detection and long-term blood pressure control. However, no significant gender differences were observed in other

self-monitoring behaviors, including measuring blood pressure during perceived fluctuations ($F = 0.050$, $p = 0.823$), visiting a doctor when experiencing changes ($F = 0.165$, $p = 0.685$), and attending routine checkups ($F = 1.305$, $p = 0.256$). These results indicate that while women excel in routine self-monitoring, both genders demonstrate similar behaviors in symptom response and follow-up care, underscoring the need to encourage regular self-checks among men to improve hypertension outcomes.

Table 4: Gender difference of self-monitoring in hypertension management

		N	Descriptives		ANOVA	Sig.
			Mean	Std. Dev	F	
I measure my blood pressure on a regular basis.	Male	61	3.787	1.714	8.330	0.005
	Female	37	4.622	0.492		
If I feel a decrease or increase in my blood pressure level, I measure it.	Male	61	3.033	1.341	0.050	0.823
	Female	37	2.973	1.166		
When there is a decrease or increase in my blood pressure level, I visit my doctor.	Male	61	4.410	1.359	0.165	0.685
	Female	37	4.514	0.961		
Every 1-3 months, I visit my doctor for a checkup or examination.	Male	61	2.148	1.223	1.305	0.256
	Female	37	2.460	1.445		

Gender Difference of adherence to the recommended regimen in Hypertension Management

Table 5 highlights gender differences in adherence to recommended hypertension management practices, revealing that men are significantly more likely than women to follow prescribed medication dosages ($F = 2.351, p = 0.028$) and take their medications at the recommended times ($F = 2.128, p = 0.048$). These findings suggest stronger medication adherence among males, a critical factor for blood pressure control and

treatment effectiveness. In contrast, no significant gender differences were found in quitting drinking ($F = 0.661, p = 0.418$) or smoking ($F = 0.000, p = 0.987$), indicating that both groups face similar challenges in adopting these lifestyle changes. Overall, the results underscore the need for targeted interventions to support timely and consistent medication use among women, while reinforcing lifestyle modification efforts across both genders to enhance long-term hypertension outcomes.

Table 5: Gender Difference of Adherence to the Recommended Regimen in Hypertension Management

		N	Descriptives		ANOVA	Sig.
			Mean	Std. Deviation	F	
I consume the prescribed doses of medicines.	Male	61	2.803	1.547	2.351	0.028
	Female	37	2.351	1.160		
	Total	98	2.633	1.424		
I have quit drinking so as to control my blood pressure.	Male	61	1.639	1.354	0.661	0.418
	Female	37	1.432	0.959		
	Total	98	1.561	1.219		
I have quit smoking so as to control my blood pressure.	Male	61	2.590	1.442	0.000	0.987
	Female	37	2.595	1.117		
	Total	98	2.592	1.323		
I take my medicines at the recommended time	Male	61	2.131	1.162	2.128	0.048
	Female	37	1.811	0.845		
	Total	98	2.010	1.060		

DISCUSSION

The study's first objective was to identify gender-related factors influencing hypertension treatment among patients aged 18-49 years in western Kenya. The findings showed that gender did not significantly influence the time taken to seek a hypertension diagnosis. Both male and female patients displayed considerable variation in the time taken to seek medical attention after experiencing symptoms, with males averaging 16.28 months and females 18.03 months. However, ANOVA results indicated no statistically significant difference between genders in this regard. This finding contrasts with other studies that suggest that gender may influence the timeliness of seeking medical attention for hypertension (e.g., Weng

et al., 2016). Previous research has shown that women may delay seeking treatment due to social roles or caregiving responsibilities, which could explain the slight delay observed in this study for women. Regarding the reasons for seeking a hypertension diagnosis, the study identified notable gender differences. Both genders reported similar reasons, such as noticing symptoms during annual health check-ups and experiencing common health concerns like headaches, dizziness, and chest pain. However, men were more likely to be diagnosed during routine wellness test, while women were more frequently prompted by persistent fatigue, headaches, or dizziness, as well as family history concerns. This finding aligns with previous studies suggesting that men may be more proactive in seeking routine medical care (Goff *et al.*, 2011), while women

are often more reactive, seeking care when symptoms become more persistent or when there is a familial health concern (Su *et al.*, 2008).

Significant gender variations were observed in the types of symptoms reported by patients. Men were more likely to report headaches, dizziness, blurred vision, and chest pain, with chest pain being notably more common in men (50%) compared to women (12.2%). On the other hand, dizziness and blurred vision were more frequently reported by women. Fatigue was similarly experienced by both genders. These findings support the argument that gender-specific symptom profiles should be taken into account when designing treatment strategies for hypertension. Previous studies have highlighted that men often experience more acute symptoms like chest pain, while women may report more insidious symptoms like fatigue and dizziness (Kearney *et al.*, 2005). Therefore, understanding these gender differences is crucial for early diagnosis and intervention.

In terms of hypertension management, gender differences were more pronounced. A significant difference was found in the frequency of hospital visits, with 34.7% of men visiting once a month compared to 15.3% of women. Men were also more likely to report better access to pharmacies, with 44.9% indicating ease of access, compared to 18.4% of women. These findings are consistent with previous studies that suggest men often have better access to healthcare services and are more likely to seek frequent medical care for chronic conditions (Everett & Zajacova, 2015). However, these findings also contrast with the study by Wenger *et al.* (2018), which suggested that women tend to have more regular visits due to the higher prevalence of comorbidities such as arthritis or diabetes, which often necessitate frequent care. Medication regimens did not reveal significant gender differences in the frequency of hypertension medication use. Both men and women followed similar medication regimens, which contrasts with some studies that suggest women are more likely to be prescribed medications for chronic conditions, yet may not adhere to them as effectively (Maranon & Reckelhoff, 2013). However, a significant gender difference was found in the frequency of doctor visits, with more women visiting the doctor regularly for follow-up care. Specifically, 10.2% of women visited the doctor yearly compared to 5.1% of men. This is consistent with findings by Lee *et al.* (2011), which indicated that women are more likely to have follow-up care due to concerns about their health and the impact of hypertension on other conditions such as breast cancer or diabetes.

Self-integration practices for hypertension management revealed gender-specific strategies. Males were found to be more proactive in controlling their weight, quitting smoking, and engaging in physical activities like walking, which is consistent with findings

by Anker *et al.* (2019) showing that men tend to adopt more independent and active strategies for health management. Conversely, females were more inclined to seek guidance from healthcare providers and were more comfortable discussing treatment adjustments. This may reflect a gendered difference in self-efficacy and health-related self-management, where women are more likely to rely on professional advice rather than independent health behaviors (Lin *et al.*, 2012). This difference highlights the importance of considering gender-specific approaches to hypertension management, where men may benefit from programs that promote independent health strategies, while women may require interventions that enhance communication with healthcare providers and emphasize social support networks.

The study also explored the potential causes of gender differences in the development of hypertension. Research shows that men typically experience a more rapid increase in blood pressure compared to women (Reckelhoff, 2001). The study supports this finding, noting that men may develop hypertension at an earlier age and with greater severity, while women's blood pressure tends to increase after menopause (Rosano *et al.*, 2007). These hormonal changes in women, particularly post-menopause, could contribute to the observed gender differences in hypertension progression. However, while hormones play a role, Reckelhoff (2001) argues that factors such as genetics and lifestyle choices may also significantly contribute to hypertension development, which was also observed in this study. The study found that depression, along with factors such as family history, diet, and physical activity, plays a role in the development of hypertension. Males were shown to have more AT1 receptors in their kidneys, which makes them more susceptible to hypertension due to the effects of angiotensin II (Su *et al.*, 2008). This finding contrasts with the study by Prime *et al.* (2007), which suggested that oxidative stress and free radicals are more prevalent in males, potentially explaining their increased risk for hypertension. The study also indicated that while angiotensin receptor blockers and ACE inhibitors work less effectively in women, there is still a lack of clarity about the specific mechanisms contributing to this discrepancy. This emphasizes the need for more gender-specific research to determine the most effective treatments for hypertension in both men and women.

The study found a significant correlation between obesity and hypertension, particularly among premenopausal women. These findings align with previous studies (Anker *et al.*, 2019) that show obesity significantly increases the risk of hypertension, especially in women under 50. The study supports the idea that obesity, regardless of the measurement method, is a strong predictor of hypertension, but it also highlights the more significant effect of obesity on hypertension risk in women compared to men. This is particularly evident in the study's finding that women are

at a higher risk of developing hypertension as they age, especially after menopause. This underscores the need for gender-tailored interventions targeting weight management, particularly in women, to mitigate the risk of developing hypertension. This study examined gender-related factors influencing hypertension treatment, the role of patients in managing these variations, and the involvement of healthcare providers in western Kenya. Findings revealed that while male patients sought diagnosis after an average of 16.28 months, females took slightly longer at 18.03 months, though the difference was not statistically significant. Symptom prevalence differed by gender, with men reporting higher rates of dizziness, blurred vision, and chest pain, while healthcare-seeking behaviors also varied, as men visited hospitals less frequently and had better pharmacy access. Women, however, were more proactive in self-regulation practices, including monitoring blood pressure and recommending treatment changes. Regarding patient roles in hypertension management, medication adherence was the most common strategy, followed by dietary modifications, but physical activity and stress management were less emphasized, highlighting the need for improved self-care awareness. Lastly, healthcare providers emphasized gender-sensitive approaches, noting that men preferred concise, action-driven guidance, while women engaged in more detailed discussions and involved family members in their treatment. The study underscores the importance of personalized counseling, collaborative care models, and gender-sensitive strategies to improve hypertension management for both male and female patients.

Recommendations

Healthcare providers in western Kenya should develop and implement gender-sensitive healthcare practices by tailoring communication strategies and counseling methods to the specific needs of male and female patients. It should integrate collaborative care models by ensuring that doctors, nurses, and community health workers work together to provide holistic hypertension management, including involving family members in treatment plans where necessary. Healthcare providers should promote the use of modern health management tools, such as mobile health apps, to support patients in monitoring blood pressure and lifestyle changes for improved hypertension self-management.

Further Studies

Future research should focus on evaluating the impact of gender-sensitive healthcare training for providers, assessing the role of family involvement in improving hypertension management, and exploring the adoption of mobile health apps in resource-limited settings. These studies will help address existing gaps by enhancing patient adherence, promoting holistic support systems, and integrating digital tools for more effective hypertension care.

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