Journal of Climate and Community Development
A Double-Blind, Peer-Reviewed, HEC recognized Y-category Research Journal
E-ISSN: 3006-7855 P-ISSN: 3006-7847

Impact of Gender on Hypertension Management: A Case Study of Sialkot

Nayab Anwar[1] Dr. Amjad Rehman Asghar[2] Haram Butt[3] Hifsa Syed[4] Prof. Dr. Yasir Nawaz Manj[5]

[1] MS Sociology, Government College Women University, Sialkot, Punjab, Pakistan.
[2] Incharge, Department of Sociology, University of Jhang, Punjab, Pakistan.
[3] MS Sociology, Government College Women University, Sialkot, Punjab, Pakistan.
[4] Abdul Wali Khan University, Mardan, Pakistan.
[5] Chairperson, Department of Sociology, Government College Women University, Sialkot, Punjab, Pakistan.

Corresponding Author: Dr. Amjad Rehman Asghar, **Correspondence through:** dramjadrehman@uoj.edu.pk

Vol. *5,* ***Issue*** *1, 2026*

Article Information

Received:
2026-03-07

Revised:
2026-04-29

Accepted:
2026-06-23

ABSTRACT

Hypertension has become a significant health issue. This study's main objective was to determine the impact of gender behaviour on hypertension management in District Sialkot. In this study, a cross-sectional research design was used. 385 respondents (male and female) were selected from ages 20 to 50 through purposive sampling from different hospitals: Barkat Hospital, Civil Hospital, Kiran International Hospital, Bashir Hospital, and Ali Memorial Hospital in Sialkot. Bem created the Bem Sex Role Inventory (BSRI), which measures gender behaviour, and Nargis Akhter created the Hypertension Self-Management Behaviour Questionnaire (HSMBQ), which measures self-management. For data analysis, the statistical software SPSS was used. Means, standard deviations, percentages, and frequencies were used to analyse the data. The results of the t-test indicated a significant relation between gender and hypertension management. The finding of the t-test indicated that the management of hypertension is p = .000. The management of hypertension is significantly related, as indicated by the Sig. (2-tailed) values in this case being .000 (p<0.05)'. There was a significant difference in hypertension management between the group of males and females (t (383) = -3.770, p = .000). The p-value is .000, which shows a statistically significant effect of the independent variable on the dependent variable. Gender behaviour has a 0.38% effect on hypertension management, which can be categorised as a small effect.

Keywords: *Gender, Hypertension Management, Gender Behaviour, Self-management, Pakistan.*

Citation: APA
Anwar, N., Asghar, A, R., Butt, H., Syed, H & Manj, Y, N (2026). Impact of gender on hypertension management: A case study of Sialkot, Journal of Climate and Community Development, 5(1), 253-264.

Introduction

Hypertension has grown to be a significant health issue. Globally, both the incidence and prevalence of hypertension continue to increase. Currently, 1.5 billion individuals worldwide suffer from high blood pressure. By 2025, there will be 413 million adults with high blood pressure, up from 333 million now. In Bangladesh, hypertension was one of the top 10 recorded causes of mortality, and its consequences accounted for around 4% of all fatalities. In Bangladesh, around 15 million adults suffer from hypertension (Khandaker & R. K., 2008). The World Health Organization (WHO) estimates that 1.28 billion people worldwide between the ages of 30 and 79 have hypertension. Less than half of these individuals with high blood pressure receive a diagnosis and treatment, and an estimated 46% have no idea that they have the illness. Although low- and middle-income countries bear a majority of the disease burden, the global rate of hypertension remained relatively stable between 1990 and 2019. In 2019, over one billion individuals, or 82% of the global population taking antihypertensive, lived in countries with low or middle incomes. According to the World Health Organization (2023), hypertension is one of the main causes of death worldwide. The incidence of cardiovascular diseases and associated aftereffects is increasing in tandem with the prevalence of hypertension, which can significantly burden healthcare systems (Tu et al., 2008).

In Pakistan, 24% of women and 34% of males suffer from hypertension. Men are more likely than women to have hypertension beyond the age of 35. Furthermore, it is believed that 12 million people in Pakistan suffer from hypertension. Additionally, it is estimated that 36% of people in the Rawalpindi Division and roughly 24.3% of those over the age of 18 have HBP. However, it has been claimed that 36% of people over 45 and 15% of those over 18 have been diagnosed with hypertension. Therefore, it seems to be growing quickly without being addressed or managed. In the realm of public health, it is thus turning into a serious health hazard (Shah et al., 2010).

For the treatment of hypertension, lifestyle changes, consistent adherence to medication schedules, and follow-up visits with nurses are essential. Disregarding prescriptions puts patients at risk for high blood pressure's detrimental effects, which include harm to important organs, including the heart, kidneys, and blood vessels. The healthcare system is further burdened by uncontrolled hypertension since it raises the expense of primary care and hospital treatments (Radhi MM et al., 2023). This study aimed to assess the role of social support as a mediating factor in the relationship between health literacy and medication adherence in individuals with hypertension. We examined the variables that affect medication adherence as well as the ways in which social support can assist patients in following their treatment regimens and maintaining their general health. Despite the fact that men and women benefit equally from antihypertensive medication, hypertensive women are less likely to meet prescribed blood pressure targets despite using antihypertensive medications at much higher rates (Gu et al., 2008).

One aspect of wellness is self-management, which focuses on meeting fundamental requirements to keep life safe and normal (Hengwattana, 2001). The key components of self-management include dietary and lifestyle changes, consistent use of antihypertensive drugs, and routine blood pressure checks. Antihypertensive drugs can help reduce symptoms and delay the development of hypertension-related problems. Lifestyle decisions such as smoking, excessive calorie and alcohol intake, and physical inactivity, together with genetic factors, contribute to hypertension, even though the precise causes remain unknown (Pazoki et al., 2018). According to estimates, between 20% and 30% of adults have hypertension, while over 50% of seniors have it. Because they have been shown to lower blood pressure (BP) and postpone or prevent its effects, antihypertensive drugs and lifestyle changes are utilized as treatment.

The ultimate objective of managing hypertension is to achieve ideal BP control and avoid associated problems. This means that people with hypertension may need to employ a variety of self-care techniques, including changing their lifestyle, taking their medications as prescribed, maintaining a healthy diet, quitting smoking, checking their blood pressure frequently, engaging in physical activity, and lowering their risk of developing problems. It is believed that these beneficial activities can prevent high blood pressure and its associated problems before they become serious. It would be difficult to implement such preventive measures in a country with limited resources like

Ethiopia, though, as the degree of self-care practice can be influenced by a variety of factors, such as age, gender, having a family history of hypertension, financial hardship, poor medication adherence, educational attainment, and inadequate disease knowledge (AlHadlaq et al., 2019). By participating in and executing the process of monitoring, maintaining, and avoiding high blood pressure, the family can help to prevent barriers to managing the condition. In addition, families can help patients with hypertension and decide how best to treat their condition (Boonyathee et al., 2021). In order to improve self-motivation and diet compliance, family support is especially crucial for those with hypertension.

The expectations, attitudes, and traits that are traditionally linked with being male and female are referred to as gender roles. Gender roles impact an individual's responsibilities, behaviours, and health-related decision-making. Both men and women need appropriate medicine, diet, exercise, and medical testing in order to manage their hypertension (Rumball-Smith et al., 2014). Due to differences in employment work hours, household responsibilities, childcare, and economic functions, gender roles may have an impact on the onset and treatment of hypertension. Work, housework, having children, and being the primary breadwinner in the household are examples of gender-role obligations that can cause financial and psychological stress, which may have an impact on blood pressure control. Due to the disparities in social and family roles, these factors will be different for men and women.

The aim of the study was to identify how gender behaviour impacts hypertension management in Sialkot. The area of our research is different from the previous research, as there is little or no research done specifically on the impact of gender on hypertension management in Sialkot. This study will fill this geographical gap.

Literature Review

Md Yasin et al. (2023) analyze that according to the 2019 Malaysian NHMS research, 29.7% of women had hypertension (95% CI: 27.98, 31.46). According to numerous clinical studies, women with hypertension responded better than males to antihypertensive medications such as beta blockers and diuretics in terms of blood pressure. Women's cardiovascular outcomes are improved when hypertension is well treated and controlled. Men have greater mean systolic and diastolic blood pressure, and they are more prone than women to acquire hypertension. Yasin et al. (2023) completed research on the gender difference in hypertension. In this research, the sample consisted of 611 patients who were the age of 35 to 70 years with hypertension. These findings show that there was no significant difference in the hypertension control status between genders.

Lindner et al. (2024) analyzed that, according to earlier data, among persons aged 18–39 and 40–59, men are more likely than women to have hypertension. However, in the age group under 60, men are less likely than women to have hypertension. It has been demonstrated that socioeconomic factors, such as educational attainment, have an impact on health, but sociocultural gender also has an impact. According to previous research, education may be a reliable indicator of a person's overall cardiovascular risk if they have hypertension. When considering adherence to treatment with hypertension medications, men and couples living together reported a higher percentage of days covered with antihypertensive treatment. Lindner et al. (2024) completed research on the impact of socioeconomic and gender variables on hypertension. In this research, the sample size was 74,655 who the patient of hypertension. This study used data from the European Health Interview Survey to conduct a cross-sectional investigation. These findings show that there was a significant relationship between socioeconomic and gender variables and hypertension.

KIM et al. (2020) analyse that, according to other research, gender differences exist in the management and treatment of hypertension. Thus, while designing future research, gender disparities should be taken into account (Ramirez & Sullivan, 2018). The two genders must be studied independently in order to obtain a thorough understanding of hypertension, as well as how to treat and manage it. However, little research has looked at the gender-based characteristics that influence hypertension therapy and control. Thus, this study was created to determine the factors influencing the management and treatment of blood pressure in South Korean young adults aged 19 to 44 years based on gender differences. This study is cross-sectional. The Korean National Health and

Nutrition Examination Survey provided the dataset for this secondary data analysis study. In this research, the sample size is 780 young adults. The results indicate a significant relationship between the management of hypertension and a number of gender-specific characteristics.

According to Akhter (2009), analyse that, a person with hypertension may experience serious problems if they are unable to control their blood pressure. The primary component of managing hypertension is pharmaceutical therapy. Pharmacologic Therapies: By managing hypertension, serious and potentially lethal outcomes can be prevented. The primary pharmacological types used to treat elevated blood pressure include diuretics, potassium antagonists, beta-blocking drugs, angiotensin-converting enzyme drugs, combined alpha and beta blockers, and vasodilators.

According to the National Population Survey (2017), Pakistan has a population of over 200 million (207,774,520), placing it in the category of LMICs. The persistent prevalence of hypertension in many people indicates that it is a difficult health issue in Pakistan. There is no precise, up-to-date information on the prevalence of hypertension across the country. The pooled prevalence of hypertension in Pakistan is 23.64%, according to a recent (2018) meta-analysis of all published research on the subject (Shah et al., 2018). In rural central Punjab, the age group over 60 had the highest prevalence of hypertension (60.9%). According to a different recent survey conducted in District Narowal, 15% of people in the 58–67 age range and 6% of people over 68 had hypertension. Saqlain et al. (2019) had done his research on examining medication adherence and related factors among older hypertensive patients. The PS power and sample size calculator was used to compute the sample size, which came out to be 260 patients. This study used a quantitative, descriptive, cross-sectional survey design. The study was carried out at Pakistan Institute of Medical Sciences (PIMS), a tertiary care hospital in Islamabad, the nation's capital, in the outpatient cardiac facility. Convenience sampling is a research technique. The results of this study demonstrate a strong, significant relationship between hypertension patients and medication adherence.

Khan et al. (2024) analyze that in previous research, particularly in Pakistan, gender differences in the prevalence of hypertension and its associated consequences continue to be an important but understudied topic. Males are paradoxically three times more likely than females to die from cardiovascular causes, despite the fact that hypertension is normally more common in men. It is impossible to ignore the complex interactions of modifiable risk variables. Remarkably, almost half of patients with hypertension have other risk factors, some of which can be treated. Khan S et al. (2024) completed their research on gender disparities and hypertension management. In this research, the sample size consisted of 960 patients, and the age of patients with hypertension was 18 years and above. This study uses a descriptive cross-sectional methodology to give an overview of the prevalence of hypertension and related risk factors among patients who visit the Jinnah Postgraduate Medical Center Karachi Outpatient Department of Medicine. In this research, the results are significant.

Ajani et al. (2021) analyze the literature that, due to a lack of extensive population-based surveys, the prevalence of hypertension in Pakistan is underreported. According to a cross-sectional survey, the prevalence of hypertension in Pakistan is estimated to be 26%, with the majority of patients living in metropolitan areas. Furthermore, the total prevalence of hypertension in Bangladesh, India, and Pakistan was shown to be approximately 40% by the Prospective Urban and Rural Epidemiology (PURE) study. Ajani et al. (2021) completed research on levels and predictors of self-care among Pakistani hypertensive patients. In this research, the sample size is 385 participants (male and female), and the age of hypertensive patients is 18 years and above. Two Karachi tertiary care hospitals served as the study sites. In this research, the results are significant at the levels and predictors of self-care among Pakistani hypertensive patients.

Overall, prior research indicates that managing hypertension may be significantly influenced by gender. According to Md Yasin et al. (2023), persons with hypertension exhibit gender related variations in their hypertension features. In the same way, research by Ajani et al. (2021) highlighted the possible impact of gender on blood pressure control, therapy, awareness, and adherence. Nevertheless, the evidence that is now available is inconsistent across many settings and

populations. To better understand the role of gender in managing hypertension, especially in the Pakistan setting, more research is therefore required. Despite previous studies, there is still insufficient data on how gender behavior affects the treatment of hypertension in Pakistan's District Sialkot. The current study aims to determine how gender behavior affects the management of hypertension.

Hypothesis

1. There is a significant relationship between gender behaviour and hypertension management.
2. There is a significant relationship between gender behaviour and medication adherence for hypertension management.
3. There is a strong relationship between gender behaviour and lifestyle modification for managing hypertension.

Theoretical Framework

Social Cognitive Theory

JE Lee et al. (2009) used the social cognitive theory in correlates of self-behaviours for managing hypertension among Korean Americans; then we used the theory in our research. A solid foundation for comprehending a person's self-care practices is provided by the social cognitive theory (Bandura, 1986). Bandura (1986) defined it as a dynamic, continuous process in which environmental elements (like social support) and personal factors (like biological, cognitive, and affective variables) interact and impact behaviour (like self-care behaviour). Prior studies have used the Social Cognitive Theory to analyse how people manage a number of chronic conditions, such as high blood pressure and osteoporosis. According to the Social Cognitive Theory, managing chronic illness through self-care takes place in a setting where both official medical professionals and unofficial social network members can offer assistance (Gallant & M.P., 2003). There is a significant, moderately positive link between social support and hypertension management and self-management, according to a recent assessment of the research.

Self-care behaviours for hypertension have been demonstrated to be influenced by personal characteristics. For instance, self-care behaviour for hypertension was predicted by older age, female gender, marital status, and shorter duration of stay in the US. Although the results are not conclusive, several researchers have considered hypertension belief and knowledge as possible correlates of hypertension self-care behaviour. Medication compliance and noncompliance did not differ in terms of health belief, according to Andreoli (1981). Similarly, no correlation was discovered between health attitudes, hypertension medication compliance, and awareness of hypertension. On the other hand, it was found that among hypertension patients, health belief was a significant predictor of drug compliance.

We combined key concepts from the social cognitive theory with additional elements from empirical research to fully investigate the correlates of hypertension self-care activities among Korean Americans. Based on the literature, we specifically included a number of personal factors (e.g., age, gender, marital status, job status, years in the United States, duration of hypertension, hypertension information, hypertension belief, and control of hypertension self-efficacy) and environmental factors (e.g., social support) to predict the hypertension self-care practices of hypertensive Korean Americans. With this information, healthcare providers can identify key characteristics that influence hypertension self-care behaviours and focus their attention on those that can be altered with appropriate nursing interventions.

According to social cognitive theory, gender is seen as a personal aspect that influences an individual's health attitudes, knowledge, self-efficacy, and outcome expectations. Health behaviors such as taking medications, eating a balanced diet, exercising, and monitoring blood pressure are influenced by personal characteristics. Effective management of hypertension is the outcome of healthy practices. Gender and personal factors, personal factors and behaviors, and behavior and managing hypertension are all related according to social cognitive theory.

Research Methodology

A quantitative cross-sectional research design represents the perfect approach for a study examining the connection between gender and hypertension management among patients with hypertension. The purpose of the study was to examine how gender behaviour impacts hypertension management. Purposive sampling was used as a sampling technique, and the data were

collected in Punjab, Pakistan's district of Sialkot. Purposive sampling, to put it another way, is the "on purpose" selection of units. This sampling method, sometimes referred to as judgmental sampling, relies on the researcher's discretion in identifying and selecting the participants, circumstances, or events that will provide the greatest amount of information to achieve the study's objectives. Participants were recruited from hospitals where patients had hypertension. A sample of 385 participants aged 20 to 50 and above from different hospitals, Barkat Hospital, Civil Hospital, Kiran International Hospital, Bashir Hospital and Ali Memorial Hospital in Sialkot, was chosen for this study by the researcher. Out of 400 patients, 385 completed the survey questions, hence making the response rate 96.25%, while 15 patients were not able to complete the questionnaire. This research includes men and women over the age of 20 to 50 who are already diagnosed with hypertension and undergoing treatment and are willing to be part of the research through informed consent; they will be included in the study. In this research, exclude men and women over the age of below 18 who have not been diagnosed with hypertension.

Ilkafah et al. (2017) carried out a quantitative study in which he used a cross-sectional research design to investigate the association between gender and hypertension management. The Hypertension Self-management Behaviour Questionnaire (HSMBQ), which was modified from Akhter (2010), was used to collect data. Purposive sampling was used across hospitals. The response rate was achieved, and the results cannot be generalised to other areas. Out of 400 patients, 385 completed the survey questions, hence making the response rate 96.25%, while 15 patients were not able to complete the questionnaire.

Measurements

Demographic Information

The first section of the questionnaire consisted of demographic information of the participants based on age, gender, education level, family type, family size, marital status, monthly average income, employment status, and family relationships. The second part of the questionnaire is based on the independent variable and dependent variable.

Bem Sex Role Inventory (BSRI)

Bem (1974) created the Bem Sex Role Inventory (BSRI), which measures gender behaviour. 8 items on a five-point Likert-type scale (1) Strongly Agree, (2) Agree, (3) Neutral, (4) Disagree and (5) Strongly Disagree make up Bems sex role. Every item on the scale has positive wording and a score between 5 and 1. According to the participants' understanding, the statements of the scale were self-corrected and brief in English to gain proper responses from the population.

Hypertension Self-Management Behaviour Questionnaire (HSMBQ)

Akhter (2010) created the Hypertension Self-Management Behaviour Questionnaire (HSMBQ), which measures self-management. 24 items on a five-point Likert-type scale (1) always, (2) often, (3) sometimes, (4) rarely, and (5) never, make up the Hypertension Self-Management Behaviour Questionnaire. Every item on the scale has positive wording and a score between 5 and 1. According to the participants understanding the statements of the scale were self-corrected and brief in English to gain proper responses from the population.

Data Analysis

The data analysis was conducted using the SPSS 20 package. The study employed weighted means, standard deviation values, descriptive statistics, and t-test analysis. Descriptive statistics that assess standard deviation were used in the investigation. To ascertain the effect of gender on the therapy of hypertension, a t-test analysis was employed. In order to learn more about each respondent and ascertain whether they fulfilled the survey's requirements, a demographic survey was incorporated into the study. Gender, age, marital status, average monthly income, work status, family size, kind, and relationship were all covered in the demographic study.

Ethical Consideration

The researcher followed all ethical guidelines to ensure the privacy, rights, and welfare of the participants. All participants' anonymity and confidentiality were strictly upheld; no personally identifiable information was shared. The researcher maintained the confidentiality of all participant data. There were no physical or psychological injuries to any of the individuals. They were provided information about the study and its aims and objectives. Participants' inquiries were thoroughly and honestly answered. An informed

consent form will be signed by each participant. Participants were aware that they were free to withdraw from the study at any time.

Pilot Study

The researcher conducted a small-scale study with 20 participants to test the research approach. In hospitals where patients have hypertension, the researcher performed pilot tests for reliability and validity. The results were reliable, showing that the methods work well. This pilot study helps to prepare for a larger study that can explore the research question more deeply. By improving data analysis, the researcher can get more accurate and meaningful results. Because the results are trustworthy, there is no confusion in the questionnaire. This small study shows promise for a bigger study that can provide valuable insights.

Table 1: *Cronbach Alpha Values*

Variable	Cronbach's Alpha	No of items
Gender Behaviour	.715	8
Hypertension Management	.878	24

N=385, α=Cronbach's Alpha

Reliability test show that the 'Cronbach's alpha' of the gender behaviour scale is 0.715. This is a good result and acceptable reliability, indicating that all 8 questions in the scale are well correlated and are measuring the same thing correctly. A result of more than 0.7 is evidence that the questionnaire is reliable and that it is indeed capable of effectively measuring gender behaviour. Reliability test show that the 'Cronbach's alpha' of the hypertension management scale is 0.878. This is a powerful result, indicating that all 24 questions in the scale are well correlated and are measuring the same thing correctly. A result of more than 0.8 is evidence that the questionnaire is more reliable and that it is indeed capable of effectively measuring hypertension management. The result is reliable and valid from pilot testing. The validity of the gender behaviour scale and hypertension management scale was investigated to see if it could quantify gender behaviour and hypertension management accurately. The validity of the scales was evaluated by examining the relationship between their scores. The ability of a questionnaire to measure what it is intended to measure is referred to as 'validity'. Validity was attained in this study since the questionnaire measured the intended concepts.

Table 2: *Description of Demographic*

Variables	Category	Frequency	Percentage
Gender of respondents	Male	175	45.5%
	Female	210	54.5%
Age of respondents	20 to 30	97	25.2%
	31 to 40	148	38.4%
	41 to 50	87	22.6%
	50 to above	53	13.8%
Marital status of respondents	Single	65	16.9%
	Married	318	82.6%
	Divorced	2	.5%
Monthly average income of respondents	50,000 – 60,000	52	13.5%
	61,000 – 70,000	39	10.1%
	71,000 – 80,000	44	11.4%
	81,000 – 90,000	71	18.4%
	91,000 _ above	179	46.5%
Employment status of respondents	Business owner	77	20.0%
	Self–employed	167	43.4%
	Unemployed	100	26.0%
	Part-time employed	38	9.9%
	Retired	3	.8%
Family type of respondents	Joint	114	29.6%
	Nuclear	271	70.4%
Family size of respondents’	3-7 members	281	73.0%
	8-12 members	80	20.8%
	13-18 members	24	6.2%
Family relationship of respondents	Good relationship	276	71.7%
	Fair	103	26.8%
	Not good	6	1.6%

N=385

Table 2 shows that most (54.5%) participants were female in this survey. Most of the respondents, aged 148 (38.4%), were in the 31 to 40 age group. According to the findings, 318 (82.6%) individuals are married, and 255 (97.7%) are married. The level of income per month, mostly of the 179 (46.5%) makes 91,000 and above per month. According to the findings, 167 (43.4%) are self-employed, and the most common family type is nuclear, 271 (70.4%). According to the findings, the majority,

281 (73.0%) of participants had a family size of 3-7 members. According to the findings, the majority of participants, 276 (71.7%), had a good relationship with their family.

Results and Discussion

Table 3: *Independent t test on impact of gender on hypertension management*

	Men		Women				
Variable	**M**	**SD**	**M**	**SD**	**t(383)**	**Sig.(2 tailed)**	**Mean differences**
Hypertension management	2.4381	.67098	2.6706	.53919	-3.770	.000	-.23254

Note, N=385, M= mean; SD= Standard deviation

Men= 175, Women= 210

The above table 3 shows that an independent t-test was used to compare the mean between the groups, male and female. The results show that men (M= 2.4381, SD = .67098) had a smaller mean score than women (M = 2.6706, SD = .53919). There was a significant difference in hypertension management between the group of males and females (t (383) = -3.770, p = .000). The mean difference between the groups, male and female, is -.23254. There is a substantial correlation between hypertension management and gender behavior, specifically male and female.

Gender behavior has a 0.38% effect on hypertension management, which can be categorized as a small effect. The p-value is .000, which means that there is a statistically significant effect of the independent variable on the dependent variable.

Discussion

A study investigated the impact of gender on hypertension management observed among ages 20 to 50+ in hospitals and online surveys in Sialkot, Punjab. Hypertension management was significantly different between men and women. However, the study identified differences in gender behaviour and hypertension management in men and women.

In this research, the result is significant, meaning that gender has a positive impact on hypertension management; medication adherence is mostly good for men and women; and lifestyle modifications are mostly good for both. In keeping with the findings of earlier studies that focused on the general population or older adults (Hales et al., 2017), this finding shows that the rates of therapy and management of hypertension among young people were lower for males than for females.

Despite prior research demonstrating insufficient levels of treatment and control in young adults as compared to older persons (Zhang & Moran, 2017), very few studies have looked at the treatment as well as management of hypertension in young adults by gender. Mostly positive connections with healthcare providers when they need them. In past studies, there was mostly a significant relationship, and in a past study, men were more affected by hypertension. The most frequent obstacles to using self-management support tools were financial limitations and care expenses. Added that a key component of programs for managing chronic diseases was continuous follow-up and support for self-care needs. The participants in this study could therefore be unable to regularly practice self-management.

Male and female gender have a significant impact on controlling hypertension. This study found a significant relationship between gender and hypertension management. Males and females have a positive impact on medication adherence for hypertension management. Both genders mostly take the medicine prescribed by the doctor, and then they easily manage the control of hypertension, but some do not take the medicine. Males and females have good relations with lifestyle modification for managing hypertension. For both genders, mostly lifestyle is good for hypertension control. They follow a good diet, choose less salt, and weight manage; then they can easily manage hypertension. But some do not choose less salt or weight management. Making the necessary lifestyle adjustments and rigorously adhering to the prescribed antihypertensive medication regimens are difficult for many people (Merai et al., 2016), especially young adults with hypertension. However, compared to their older counterparts,

young individuals have a higher chance of controlling their blood pressure through treatment.

The result highlights the urgency to address the impact of hypertension management. The t-test analysis indicated a significant relationship between gender and hypertension management. The mean of hypertension management for males is 2.4381, and the mean is 2.6706. The p-value for hypertension management is .000. The result is significant.

There may be a gender gap in the treatment of hypertension because men and women have different health habits and behaviours; it is possible that women are more likely than men to seek medical attention. The responses of males and females may be influenced by different societal influences and experiences. The ways that men and women express their emotions and behaviors may also be influenced by cultural differences. The difference between the two gender approaches to managing hypertension could also be attributed to cultural and family responsibilities. The finding shows that gender may have an impact on how hypertension is treated. The gender factors can be taken into consideration by nurses when educating and helping patients manage their blood pressure. It is important to interpret these results carefully, and these findings shouldn't be applied to all men and women.

Conclusion

The researcher has concluded in light of the information acquired from respondents. This study investigates how gender behaviour affects the management of hypertension (Evidence from District Sialkot) by examining two variables: the independent variable is gender behaviour, and the second dependent variable is hypertension management. This study was designed to be quantitative, with an emphasis on the survey method using an adaptable questionnaire. The findings of this study demonstrate that there is a significant relationship between gender behaviour and hypertension management. According to the findings, gender behaviour may play an important role in hypertension management.

Recommendations

The study's conclusions lead to the following recommendations:

- In order to examine the effect of gender on hypertension, the study employed a quantitative approach; however, a qualitative or mixed method might also be used.
- In this study, only 5 hospitals for data collection in Sialkot. But further studies can be conducted across all hospitals in Sialkot, Pakistan.
- This research included both genders, but further studies can be conducted with women only or men only.
- This research was included in a closed-ended study, but further studies can be held in an open-ended manner.
- This research conducted lifestyle diets and stress management, but further studies can be on exercise.

Conflict of Interest

The authors showed no conflict of interest.

Funding

The authors did not mention any funding for this research.

References

Andreoli, K.G. (1981). Self-concept and health beliefs in compliant and noncompliant hypertensive patients. *Nursing Research 30* (6), 323–328.

Ajani, K., Gowani, A., Gul, R., & Petrucka, P. (2021). Levels and predictors of self-care among patients with hypertension in Pakistan. *International Journal of General Medicine, 14*, 1023–1032. https://doi.org/10.2147/IJGM.S297770

AlHadlaq RK, Swarelzahab MM, AlSaad SZ, AlHadlaq AK, Almasari SM, Alsuwayt SS, Alomari NA. (2019). Factors affecting self-management of hypertensive patients attending family medicine clinics in Riyadh, Saudi Arabia. *J Family Med Prim Care.* 2019 Dec 10;8(12):4003-4009. doi: 10.4103/jfmpc.jfmpc_752_19. PMID: 31879650; PMCID: PMC6924233.

Akhter, N. (2010). *Self-management among patients with hypertension in Bangladesh.* (Master's thesis, Prince of Aongkla University, Thailand).

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Prentice-Hall, New Jersey. *International Journal of Nursing Studies, 47* (2010) 411–417

Bem, S. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology, 42*(2), 155-162.

Boonyathee S, Seangpraw K, OngArtborirak P, Auttama N, Tonchoy P, Kantow S. (2021). Effects of a social support family caregiver training program on changing blood pressure and lipid levels among elderly at risk of hypertension in a northern Thai community. *PLoS ONE 16*(11): e0259697. https://doi.org/10.1371/journal.pone.0259697

Gallant & M.P. (2003). The influence of social support on chronic illness self-management: a review and directions for research. *Health Education & Behaviour 30* (2), 170–195.

Gu Q, Burt VL, Paulose-Ram R, Dillon CF. (2008). Gender differences in hypertension treatment, drug utilization patterns, and blood pressure control among US adults with hypertension: data from the National Health and Nutrition Examination Survey 1999-2004. *Am J Hypertens. 21*(7):789–798. doi: 10.1038/ajh.2008.185.

Hengwattana, S. (2001). *Promoting self-care skills program for elderly with hypertension, at Tahpae hospital in Satun Province, Thailand,* Master degree Thesis (Adult Nursing), Prince of Songkla University.

Hales C. M., Carroll M. D., Simon P. A., Kuo T., & Ogden C. L. (2017). Hypertension prevalence, awareness, treatment, and control among adults aged ≥18 years—Los Angeles County, 1999–2006 and 2007–2014. *Morbidity and Mortality Weekly Report*, *66*(32), 846–849.

Ilkafah, Titi Iswanti Afelia, Nurul Anugrah Ridwan. (2017). Analysis of factors related to Self-Management Behavior (SMB) in hypertensive patients. *Advances in Health Science Research,* Volume *3.*

JE Lee, HR Han, H Song, J Kim, KB Kim, JP Ryu, MT Kim. (2009). Correlates of self-care behaviors for managing hypertension among Korean Americans: A questionnaire survey. *International Journal of Nursing Studies 47* (2010) 411–417.

Khandaker & R. K. (2008). *Observence of world hypertension day. Paper presented at the meeting of the Hypertension Committee*, National Heart Foundation Hospital & Research Institute (NFH&RI), Dhaka, Bangladesh.

KIM, Ji-Soo; KIM, Chul-Gyu. (2020). Gender differences in hypertension treatment and control in young adults. *Journal of Nursing Research 28*(3): p e88. doi: 10.1097/JNR.0000000000000359

Khan S, Naveed S, Ali Z, Batool W, Ahmed SM, Fatima M. (2024). Gender disparities in dietary and addiction-associated risk factors of hypertension: Insights from Karachi. *Pak Heart J*. 2024;57(01):57-62. DOI: https://doi.org/10.47144/phj.v57i1.2498

Lindner, S.D.; Gisinger, T.; Klimek, P.; Kautzky-Willer, A. (2024). Socioeconomic gender variables impact the association between hypertension and chronic health issues: Cross-sectional study. *J. Pers. Med.* 14, 890.

Merai R., Siegel C., Rakotz M., Basch P., Wright J., Wong B., & Thorpe P. (2016). CDC grand rounds: A public health approach to detect and control hypertension. *Morbidity and Mortality Weekly Report*, *65*(45), 1261–1264.

Md Yasin, M., Isa, M. R., Mat-Nasir, N., Ariffin, F., Abd-Majid, F., Palafox, B., & McKee, M., (2023). Gender difference in blood pressure control among low-income individuals (B40) with hypertension in Malaysia: The respond study. *J Pub Health Issue Pract 7*(1): 217. doi: https://doi.org/10.33790/jphip1100217

Pazoki R, Dehghan A, Evangelou E. (2018). Genetic predisposition to high blood pressure and lifestyle factors: associations with midlife blood pressure levels and cardiovascular events. *Circulation*. *137*(7): 653–661. doi: 10.1161/CIRCULATIONAHA.117.030898.

Radhi MM, Niazy SM, Abed SN. (2023). Individual-related factors associated treatment adherence among hypertensive patients. *Journal of Public Health in Africa.* 24.

Ramirez L. A. & Sullivan, J. C. (2018). Sex differences in hypertension: Where we have been and where we are going. *American Journal of Hypertension*, *31*(12), 1247–1254.

Rumball-Smith J, Nandi A, Kaufman JS. (2014). Working and hypertension: gaps in employment not associated with increased risk in 13 European countries, a ret-ropective cohort study. *BMC Public Health*. 2014; 14:1-6.

Shah SM, Luby S, Rahbar M, Khan AW, McCormick JB. (2010). Hypertension and its determinants among adults in high mountain villages of the Northern areas of Pakistan. *J Human Hyperten. 15*(2):107–112. doi: 10.1038/sj.jhh.1001131.

Shah, N.; Shah, Q.; Shah, A.J. (2018). The burden and high prevalence of hypertension in Pakistani adolescents: A meta-analysis of the published studies. *Arch. Public Health. 76*, 1–10.

Saqlain, M., Riaz, A., Malik, M. N., Khan, S., Ahmed, A., Kamran, S., & Ali, H. (2019). Medication adherence and its association with health literacy and performance in activities of daily livings among elderly hypertensive patients in Islamabad, Pakistan. *Medicina, 55*(5), 163. https://doi.org/10.3390/medicina55050163

Tu K, Chen Z, Lipscombe LL. (2008). Prevalence and incidence of hypertension from 1995 to 2005: a population-based study. *CMAJ.* 178:1429-35. 10.1503/cmaj.071283

WHO. (2003). *Adherence to long-term therapies: evidence for action. Geneva*: *World Health Organization.*

Zhang Y., & Moran A. E. (2017). Trends in the prevalence, awareness, treatment, and control of hypertension among young adults in the United States, 1999 to 2014. *Hypertension*, *70*(4), 736–742.