

Original Research Article

Community Perceptions of Traditional and Pharmaceutical Hypertension Treatments in Vrymans Erven, Berbice, Guyana

Abstract

This study explores the integration of traditional and pharmaceutical remedies in managing hypertension in the rural Berbice community (Vrymans Erven), New Amsterdam, Guyana. **Expanding the use of these remedies means evaluating** their effectiveness, relevance to the culture, and barriers to patient adherence. Through qualitative research methods, this paper explores hypertensive patients' views, attitudes, and self-reported use of herbal medicine in conjunction with conventional pharmaceuticals.

The methodology involved semi-structured interviews with residents of New Amsterdam, Berbice, focusing on their preferences for managing hypertension using either pharmaceutical drugs or traditional remedies. Purposive and snowball sampling techniques were employed to gather diverse perspectives, ensuring diverse perspectives from ten hypertensive individuals. Thematic analysis was performed on the insights of ten participants, which were recorded and transcribed and helped reach data saturation.

The findings demonstrated a bifocal reliance on both pharmaceutical medicines and conventional therapies. The former was appreciated for its effectiveness, while the latter was preferred for its naturalness and safety. Many interviewees adopted a blended method of treatment by using both approaches depending on the availability, the assessment of the outcome, and cultural constructs. The findings also highlighted conceptual categories such as health-seeking behaviour, including regular self-monitoring and the role of education in blood pressure control. Concepts included overreliance on medication for quick symptomatic relief, use of herbal medicine as an adjunct for safety and cultural basis, and active case management, including self-monitoring. The availability and affordability of treatments and patient education and awareness greatly influenced treatment options. Adverse effects of conventional medicines, however, were some of the reasons for using herbal medicine.

The implications speak to a disjuncture between traditional knowledge and contemporary medicine in rural hypertension management. They point to the necessity of healthcare systems properly considering perspective in expanding the scope of treatment strategies to ensure compliance. This study aids in addressing the gap in nested strategies of hypertension initiatives in poor resource areas and informs the formulation of culturally appropriate health policies. Including bigger and more diverse samples is essential to incorporate additional investigation for the generalizability concerns.

Keywords: Herbal, Hypertension, Remedies, Pharmaceutical

Introduction

Hypertension, or high blood pressure, is a pervasive health challenge identified by the World Health Organization (WHO) as blood pressure readings exceeding 140/90 mmHg. Globally, an estimated 1.28 billion adults between the ages of 30 and 79 are afflicted by this condition, predominantly in low- and middle-income countries (LMICs) where healthcare infrastructure and awareness are often insufficient (World Health Organization, 2023). Surprisingly, such experiences leave a salient space in diagnosis and public health teaching in a sense that among these participants, half of them do not even know that they are hypertensives. In addition, only a

small portion is given satisfactory pharmacological management, which increases the risk of dying from cardiovascular diseases even further.

The severity of uncontrolled hypertension necessitates a comprehensive approach to mitigate its impact not only on public health but also on economic stability across nations. International health agendas aim for a significant reduction in hypertension prevalence by 2030. Yet, the path is fraught with challenges, including enhancing healthcare delivery and the scalability of treatment options in resource-strapped settings (World Health Organization, 2023).

For many rural and marginalised populations, indigenous knowledge systems are key to health care at the primary level. Prevalently, these are herbal teas, dietary supplements, and physical therapies, which are culturally ingrained and herbal solutions handed down through the ages. Research indicates that up to 80% of individuals in some regions utilise herbal remedies to manage their hypertension, independently or alongside pharmacological treatments (Azizah et al., 2021; Tabassum and Ahmad, 2011). These treatments are favoured due to their perceived compatibility with the human body and fewer side effects than synthetic drugs.

On the other hand, drug therapies are lauded due to their standardization and advanced efficacy. Antihypertensive drug therapy, which is the hallmark of clinical practice and modern medicine, is increasingly diverse and includes a range of medications (WHO, 2023). Even so, access to such interventions is frequently inhibited in LMICs by socioeconomic constraints, logistical issues, and the absence of consistent healthcare participation.

The concurrent utilization of medicinal herbs and pharmacological agents showcases a novel paradigm in the management of hypertension across various cultural settings. Historical accounts and contemporary studies reveal a rich tapestry of medicinal plant use across various cultures, attesting to their enduring role in health and wellness (Ekor, 2014). Despite the scepticism sometimes cast by the biomedical community due to the lack of standardised testing protocols, many regions have documented substantial patient recovery rates using plant-based remedies, affirming their place in holistic health strategies (WHO, 2023).

Further, the worldwide distribution of high blood pressure shows an upward trend because of changing lifestyles and urbanisation, and it is estimated that the prevalence will increase from 26 % to 29 % by the year 2025 (De Wet et al., 2016). Such a situation creates significant strain on already-constrained health systems to cope and be creative in the ways certain diseases are managed.

This article is based on a study that investigates the combination of everyday medicine and pharmaceutical drugs in treating and managing hypertension in low- and middle-income countries. Such investigation is targeted at determining the efficacy, the cultural context, and the obstacles to these remedies to ensure that compliance and accessibility are optimized. Using qualitative research methods, including in-depth semi-structured interviews, the article examines

the perceptions, attitudes and experiences of rural Berbice, Guyana, hypertensive patients who self-treat their condition with herbal medications.

The article analyses different aspects of the history, preparation, dose, mode of administration and therapeutic value of the traditional remedies. This multidimensional effort intends to explain in detail how these remedies are utilized in people's daily health routines and their relevance in managing hypertension. The observations made are hoped to serve as the initial step of understanding, which will be incubated for future research initiatives. They will also inform the development of health therapies that honour cultural traditions but capitalize on scientific evidence at the same time.

The purpose of the paper is to investigate the potential of combining traditional medicines and pharmaceuticals in managing hypertension, their value, customs and the problems of improving use and compliance in low- and middle-income countries. By using a comparative approach to conventional and current practices, this work hopes to identify the role and mechanisms for optimal management of hypertension while being culturally sensitive and competent in assessing evidence-based efficacy. The intention is to assist in the worldwide efforts to reduce the effects of this silent killer to enhance the health status of the most disadvantaged populations for a longer time.

Methods

Study Design

This article applied a qualitative approach to determine respondents' views in New Amsterdam towards traditional remedies or the use of pharmaceuticals in the treatment of hypertension. While quantitative studies emphasize addressing the risk factors, this qualitative study explored the cultural and other personal preferences that determine the choice of treatments to be used. Qualitative research, known for its interpretative, inductive nature, allowed for an in-depth exploration of participants' perspectives and experiences, making it ideal for examining the relationship between culture and treatment preferences (Hackett & Strickland, 2018).

Sampling Approach

Participants were selected using a mixture of purposive and snowball sampling, targeting individuals with rich insights into hypertension management (Naderifar et al., 2017). This non-probability method ensured the inclusion of diverse voices from the community, including men and women from various sectors, such as local churches, the general community, and academic professionals from the University of Guyana residing in rural areas. Snowball sampling was

employed, where initial subjects recommended further candidates, thus enriching the research with varied perspectives (Biernacki and Waldorf, 1981).

Data Collection and Sample Size

Data collection was conducted through semi-structured interviews to achieve saturation with an estimated ten participants. From November 20 to December 8, 2023, each interview that was undertaken lasted between fifteen to thirty minutes. The time frame of the interviews was preceded by a pilot test phase that extended from November 6 to 17. Written consent to audio records the interview sessions was taken, alongside making it very clear that participation was entirely voluntary, and participants could withdraw at any instance of their desire. The audio was later transcribed, and a thorough comparison between the audio and the interviews transcripts was made to ensure accuracy. Following each interview, a detailed reflexive diary was maintained where non-verbal cues and thoughts were documented to enhance the data's quality.

Inclusion and Exclusion Criteria

Inclusion Criteria:

1. People with a diagnosed medical history of hypertension by a health care provider.
2. A resident of Vrymans Erven, New Amsterdam, Berbice.

Exclusion Criteria:

1. Individuals diagnosed with secondary hypertension.
2. Those not using any form of remedy to manage hypertension.

Instrumentation and Data Collection

The research utilised an interview guide containing open-ended questions developed from the literature review. These questions covered a broad range of topics, including types of remedies used, their sources, access, preparation, administration, personal preferences, effectiveness, and underlying reasons for their use. This guide was pilot-tested with two volunteers who met the inclusion criteria to refine questions and adjust the interviewing technique. The pilot interviews were integrated into the main study since the guide remained consistent (Van Teijlingen & Hundley, 2001).

Data Sources

The study engaged participants from various communities within New Amsterdam, Berbice, such as Vrymans Erven and the Ebenezer Lutheran Church, as well as academic professionals from the University of Guyana. This region, rich in cultural diversity and located away from the capital, provided a unique setting for exploring hypertension management practices among its 17,329 residents.

This methodological approach ensured a comprehensive understanding of the local context and cultural dynamics influencing hypertension management, thereby contributing valuable insights into the integration of traditional and pharmaceutical remedies.

Results

Table 1: Outline of Scientific Rigors Applied to the Study

Criteria	Strategies
Accountability	Researchers maintain clear and detailed documentation of the research process, including data collection methods, data analysis, and decision-making processes. Regular meetings were held to review the study's progress and to ensure adherence to ethical standards and research protocols.
Dependability	An audit trail was established, where all decisions and changes in the research process were logged and justified. This includes recording the rationale for methodological choices, changes based on initial findings, and responses to unforeseen challenges.
Confirmability	Data triangulation was employed to corroborate findings across multiple sources and types of data, such as quantitative data from blood pressure measurements and qualitative data from patient interviews. Peer debriefing sessions were conducted to scrutinise the data analysis process.
Transferability	Detailed descriptions of the research context, participant characteristics, and study setting are provided, allowing others to evaluate the findings' applicability to other contexts. Each interview was reviewed as a case study to enhance understanding of the results in specific environments.
Reflexivity	Researchers engaged in self-reflection to identify and mitigate potential biases stemming from their personal backgrounds, values, and experiences. The research team documents and discusses regular reflections to ensure that interpretations and conclusions are critically assessed.

The interviewee's approaches and preferences towards managing hypertension are shown in this table 2. It can be said that there is an over-dependence on doctors' prescriptions because of the feeling that medication is effective and trusted. However, there is a point of substantial reliance on traditional medicine, especially as an adjunct therapy. The occurrence of such themes as integrated approaches and ongoing health surveillance emphasises the action-oriented behaviour

of some patients with this condition, which suggests that these are relevant issues for all healthcare providers in this field when formulating and debating treatment strategies with patients.

Table 2: Themes and Subthemes derived after the Final Coding of the Data

Major Theme	Sub-Themes	Description of Sub-Themes	Frequency
1. Preference for Pharmaceutical Remedies	<i>1.1- Reliance on prescribed medication for effective management</i>	Participants express trust and reliance on medications prescribed by healthcare professionals for managing hypertension.	8
	<i>1.2- Trust in medical advice and healthcare systems</i>	Participants strongly trust the advice and treatment plans provided by medical professionals.	
	<i>1.3- Perceived immediacy and efficacy of pharmaceuticals</i>	Medications are valued for their quick and effective control of hypertension symptoms.	
2. Use of Traditional Remedies	<i>2.1- Supplemental use of herbal or natural remedies</i>	Herbal remedies are used in addition to or in place of pharmaceutical treatments, often based on cultural or personal preferences.	7
	<i>2.2- Historical or cultural influence on treatment choices</i>	Choices in remedies are influenced by familial practices and cultural heritage, reflecting a deeper tradition of natural medicine.	
	<i>2.3- Perceived naturalness and safety of traditional remedies</i>	Natural remedies are perceived as safer and more aligned with nature, contributing to their preferred use.	
3. Integrated Approach to Treatment	<i>3.1- Combining pharmaceutical and traditional remedies</i>	Participants often use a combination of both medical prescriptions and natural treatments to manage their hypertension.	5
	<i>3.2- Adjusting treatments based on symptoms and effectiveness</i>	Adjustments in treatment methods are made based on personal experiences of effectiveness and symptom management.	
4. Health Monitoring and Self-Care	<i>4.1- Proactive health monitoring (e.g., blood pressure self-monitoring)</i>	Regular monitoring of blood pressure and other health indicators is common, allowing participants to manage their condition actively.	4

	<i>4.2- Importance of lifestyle factors in managing hypertension</i>	Lifestyle adjustments such as diet, exercise, and stress management are integral to hypertension management.	
5. Accessibility and Availability	<i>5.1- Importance of having medications and remedies readily available</i>	Easy access to both pharmaceuticals and herbal remedies is essential for ongoing management of hypertension.	3
	<i>5.2- Economic considerations related to treatment affordability</i>	Cost of treatments plays a role in treatment choices, with considerations of both affordability and value.	
6. Education and Awareness	<i>6.1- Influence of health education on treatment choices</i>	Educational background and access to health information influence the selection and use of hypertension treatments.	3
	<i>6.2- Seeking information from multiple sources</i>	Participants often seek information from various sources, including doctors, the internet, and community knowledge.	
7. Experiences with Side Effects	<i>7.1- Concerns about and management of side effects from medications</i>	Side effects from medications lead to adjustments in treatment plans or medication types.	2
	<i>7.2- Adjusting medication due to adverse effects</i>	Participants change their medication regimen in response to adverse effects, seeking alternatives that minimise discomfort.	
8. Use and Preparation of Traditional Remedies	<i>8.1- Traditional or herbal remedies and their preparation</i>	Participants outlined traditional or herbal remedies, their preparation and administration	4

Table 3: Demographic Characteristics

Description		<i>N</i>
Gender	Male	1
	Female	9
Level of Education	Tertiary	3
	Secondary	4
	Primary	3
Ethnicity	Afro-Guyanese	5

	Amerindian/ Indigenous	1
	Mix	3
	Indo-Guyanese	1
Duration of hypertension	5-10 years	4
	More than 10 years	6

Preference for Pharmaceutical Remedies

Participants express trust and reliance on medications prescribed by healthcare professionals for managing hypertension. They show a strong trust in the advice and treatment plans provided by medical professionals. Pharmaceutical medications are valued for their quick and effective control of hypertension symptoms.

P6: *"I use medication. I don't want it to just fly up just like that if I don't use the tablet. So I prefer to use the medication, I feel safe that way."*

P8: *"I strictly use the pharmaceuticals, the medication."*

P10: *"It's very good because it gives me an immediate reaction... It's very helpful because sometimes, you know, When you take the medication, you see a result in a couple minutes time."*

P3: *"I am one who was never really fond of medicines. Growing up in a Guyanese society, instead of taking a tablet, your mother might say, drink this, boil this bush or something, you understand?"*

P5: *"Well, they say they have a lot of side effects. You know, I would only drink it if it calls for it, if it's extreme need, but I try to keep away from that."*

Use of Traditional Remedies

Herbal remedies are used in addition to or in place of pharmaceutical treatments, often based on cultural or personal preferences. Choices in remedies are influenced by familial practices and cultural heritage, reflecting a deeper tradition of natural medicine. Natural remedies are perceived as safer and more aligned with nature, contributing to their preferred use.

P7: *"You must use a lot of cucumber. That is very good in itself. I tried two salads that I used to keep and juice, cucumber juice, put in the fridge and drink it."*

P10: *"Well, just that you know, that's available. You know, I rather than going to bed with a headache, also, you know, I take natural remedies. Like garlic also, you know, a crack of garlic also. And if anything, sometimes a little lemon juice, lemon juice, you know, it's not that I prefer it. It's just, you know, the need at the time."*

P5: *“Drink plenty of water. Actually, I used to take the medication every day, but then after I find out about the side effects, I ease it off and pay attention to the diet. And also garlic, you know, use a lot of garlic.”*

P3: *“Some people might say karela bush, bitter aloes, sorrel, all these kind of home remedies”*

P4: *“I blend my cucumber, ginger, every morning and drink.”*

Integrated Approach to Treatment

Participants often use a combination of both medical prescriptions and natural treatments to manage their hypertension. Adjustments in treatment methods are made based on personal experiences of effectiveness and symptom management.

P5: *“I drink plenty of water... And particularly not cold water. And, fresh air. Avoid sweets.”*

P10: *“But, you know, sometimes it's, you know, after drinking the medication, taking the doctor's medication, I still feel a little dizziness in my head and I would like take a feg of garlic, chew a feg of garlic or sometimes I use a little lime juice and that really does help me.”*

P3: *“In Guyana, like I said, they always have something for something. Like if you drink karela bitters or whatever, boil lime and salt. Just to give an example. In Guyana, they always had like stuff that you can use for something instead of using something pharmaceutical.”*

P4: *“In terms of exercising, using cucumber, I think it works, you know. I think the traditional remedy works.”*

P2: *“I think both because sometimes, just before, I know that I had high blood pressure when I feel that I'm not feeling well and when I started to feel sick, not really sick, but my neck used to hurt and I just wanted to sleep all the time, somebody told me I must grate the cucumber. It was an old lady, she told me to grate the cucumber and squeeze the juice out and take it. And I did. And when I finished, like in half an hour or so, I'd feel relieved.”*

Health Monitoring and Self-Care

Regular monitoring of blood pressure and other health indicators is common, allowing participants to manage their condition actively. Lifestyle adjustments such as diet, exercise, and stress management are integral to hypertension management.

P6: *"Every time I measure my pressure, pressure normal. I have my own machine."*

P10: *"Yes, we have a blood pressure monitor here. And we test your blood pressure. When you feel the symptoms, you know, you test it and you'll see if it's high or low."*

P3: *"Something that really has a lot to do with your blood pressure is your diet. And the question I, you didn't ask me about my diet, but that also, it has a lot to do with your salt intake, your sodium intake, your potassium intake."*

P7: *"I try to. I use a lot of fruits. I don't like to fry much fry things. Like foods, I try to eat more steam, and, I walk."*

P7: *"Since I found out that I have high pressure. I like to write everything, I have date, month, everything. Was in 2016, that's the first time I realized that I have high pressure. I'm going to measure my high pressure because I have terrible headache. That is what put me to go and measure at the pharmacy. And the pharmacist jump me when he say was 144 over 82."*

Accessibility and Availability

Easy access to both pharmaceuticals and herbal remedies is essential for ongoing management of hypertension. The cost of treatments plays a role in treatment choices, with considerations of both affordability and value.

P4: *"It's easier for me to access to. It's much easier for me to get to. I always have that."*

P8: *"Yes. I make sure I have it at all times."*

P6: *"Buy it over the counter."*

Education and Awareness

Educational background and access to health information influence the selection and use of hypertension treatments. Participants often seek information from various sources, including doctors, the internet, and community knowledge.

P9: *"Well, hypertension, as I learned about it, is a silent killer. They exactly Exact cause of hypertension can be difficult to diagnose."*

P10: *"Well, it's a doctor recommended him, you know, and after we finished the treatment from the doctor, we started to go to the pharmacy and repeat the treatment that we can take it every day."*

P6: *"Basically, when you use too much of sodium... The blood pressure go up, you can have a stroke. And other stuff..."*

P7: *"I know high blood pressure can lead to kidney failure once it's not monitored correctly. It could even lead to death."*

P5: *"It hardens your tissues. Is it tissue or your vein, something man. It can give you enlarged heart, different things."*

Experiences with Side Effects

Side effects from medications lead to adjustments in treatment plans or medication types. Participants change their medication regimen in response to adverse effects, seeking alternatives that minimize discomfort.

P6: *"First when I used to use another pill that used to happen. But I asked the doctor to change it and everything was okay."*

P10: *"Well, I don't have any side effects. Horrible, but I usually get a drug deal, pharmaceutical medicine. Can you repeat the last part? I usually get a dry cough, a dry cough. Yeah. With the tablets."*

These extracts reflect the diversity of opinions and practices among the interviewees concerning the management of hypertension. They reveal a blend of reliance on medical advice and an openness to traditional methods, underlined by personal experiences and accessibility issues.

Use and Preparation of Traditional Remedies

These excerpts highlight the participants' use and preparation of various herbal remedies to manage hypertension, reflecting a blend of traditional knowledge and personal experience in their healthcare practices.

P4: *"I blend my cucumber, ginger, every morning and drink."*

P3: *"Some people might say karela bush, bitter aloes, sorrel, all these kind of home remedies."*

P10: *"I rather than going to bed with a headache, also, you know, I take natural remedies. Like garlic also, you know, a crack of garlic also. And if anything, sometimes a little lemon juice, lemon juice, you know, it's not that I prefer it. It's just, you know, the need at the time."*

P7: *"You must use a lot of cucumber. That is very good in itself. I tried two salads that I used to keep and juice, cucumber juice, put in the fridge and drink it."*

P5: *"Drink plenty of water. Actually, I used to take the medication every day, but then after I find out about the side effects, I ease it off and pay attention to the diet. And also garlic, you know, use a lot of garlic."*

Discussion

Preference for Pharmaceutical Remedies

Both our study and those of Mphuthi et al. (2022), Ibrahim et al. (2017), and Osamor et al. (2010) reveal a firm reliance on pharmaceutical medications among participants. Our participants highly trust the efficacy and immediate effects of pharmaceuticals prescribed by healthcare professionals. This is corroborated by Ibrahim et al. (2017), who mentioned the pharmacological effectiveness that most participants reported, while a few mentioned their inclination towards CAM (Complementary and Alternative Medicine). In the same vein, Connell et al. (2005) witnessed an over-dependence on medications by blacks of Caribbean origin where the medical advice of doctors was cited as being an authoritative source, and the drugs were considered appropriate for the treatment of hypertension as the medications were reliable and often used. Such trust affirms that patients follow the treatment recommendations when they believe in their healthcare providers.

A qualitative investigation was performed utilizing 23 participants who were purposefully chosen from the community health clinic in Malaysia. Most of the participants exhibiting excessive suspicion went even further, practising self-medication by CAM while hiding their practices of self-administration from their physicians. (Lee et al., 2014). However, Tan et al. (2017) put forward a caveat: timing for medication, lifestyle, and other such spheres are also critical when it comes to adherence. This suggests that although the patients may claim medication adherence by taking the medication prescribed, they may run into multiple complications and factors outside that situation such as occupational or daily limits that can impede adherence.

Shamsi et al. (2018) advanced an entirely different view on pharmaceuticals than the one depicted in our findings. Seeking more of a critical and sceptical view regarding the issues of dependency and side effects, Shamsi et al. (2018) claimed to address the healthcare industry's concerns about the overuse of medications. Azizah et al. (2021) found concerns regarding moderate usage of drug medications. People were annoyed with the impact of drug remedies and, liked to use medication only in emergencies and sought non-drug therapies.

Use of Traditional Remedies

Our research shows that several individuals use herbal medication instead of practical pharmaceutical treatment. This coincides with Mphuthi et al. (2022) in which medicinal plants are frequently used since knowledge is usually inherited in the household. Likewise, Ibrahim et al. (2017) reported a considerable application of CAM in the form of herbal medications or dietary supplementation because of the traditional beliefs as well as an endorsement from friends and relatives. This corroborates the results by Connell et al. (2005) in which Caribbean respondents took "bush medicine" alongside doctor's prescriptions. Likewise, De Wet et al. (2016) observed that several members within the community, as well as family members, were sources of information on the efficacy of medicinal plants for hypertension, illustrating the culture's regard for the herbal medications.

Tan et al. (2017) report a similar utilisation of herbal medicines, though they also note a divide in acceptance among their participants, suggesting that exposure to and education about herbal treatments may influence their use.

Musinguzi et al. (2018) observed a similar pattern whereby the participants used herbal remedies, as they were easy to obtain and cheaper. A notable proportion of survey participants in the study by Osamor et al (2010) utilised CAM, some of them in combination with hospital care, presenting an integrative approach to addressing hypertension. This trend points to an integrative orientation to health where modern and traditional therapies are undertaken simultaneously, suggesting greater openness and incorporating alternate health approaches. Liwa et al. (2017) pointed out the adoption of herbal medicine as an alternative or adjunct to orthodox medicines by a section of the population, especially those who do not strictly adhere to drugs.

Integrated Approach to Treatment

Our participants frequently combined pharmaceutical and herbal treatments, adjusting their methods based on personal experiences. This integrated approach is supported by Mphuthi et al. (2022), where participants used medicinal plants and Western medications, and Ibrahim et al. (2017), who noted the concomitant use of pharmaceuticals and CAM among respondents. Musinguzi et al. (2018) also reported that patients using both modern and traditional treatments are influenced by their perceptions of efficacy and accessibility. In our findings, as well as those from Mphuthi et al. (2022) and Ibrahim et al. (2017), many patients use a combination of medicinal plants and Western medications. This practice is not merely about preference but often about maximising the benefits of each treatment modality. For example, while pharmaceuticals tend to have a rapid and identifiable impact on one's blood pressure, herbal medicine is believed to be more beneficial in the long run for one's health without the unpleasant effects of most prescribed medication. This fusion of treatment modalities indicates a more realistic practice for treating hypertension whereby patients devise and stick to their own treatment plans.

Health Monitoring and Self-Care

In our research, participants were instructed to manage their hypertension through self-care and regular blood pressure monitoring done at home. This is generally true for Mphuthi et al. (2022) and Ibrahim et al. (2017), whereby lifestyle modifications like diet and exercise were incorporated, and blood pressure was measured at regular intervals. This proactive approach enables timely adjustments to treatment regimens, thereby preventing complications. Moreover, Shamsi et al. (2018) discuss the role of lifestyle modifications—such as diet and exercise—in stabilising blood pressure, which are often identified and fine-tuned through regular monitoring.

Accessibility and Availability

Accessibility to treatments played a crucial role in our study's treatment choices. Mphuthi et al. (2022) and Musinguzi et al. (2018) found similar trends, with the availability and cost of treatments influencing the use of pharmaceuticals and herbal remedies. Patients are more likely to follow the treatment recommendations when antihypertensive drugs and health care resources are in abundance. On the other hand, in places where health services are lacking, patients use different alternatives, including herbal and traditional medicines, as noted in the works of Connell et al. (2005) and De Wet et al. (2016). Moreover, the price of hypertension medication is a vital part of the accessibility of these treatments. Some hypertensive patients avoid adhering to treatment plans because of the high prices of drugs and healthcare services. This issue is especially relevant to people with low incomes, where the pricing of medication can be exorbitant. Our results complement those of Ibrahim et al. (2017) and Osamor et al. (2010), where observed supply constraints led to poor adherence and increased consumption of other inexpensive remedies. Ibrahim et al. (2017) observed that participants used more CAM in their studies because of their cost and easy availability, while Osamor et al. (2010) showed that high CAM use among community members was also due to their inaccessibility.

Education and Awareness

It was noted in the study that educational level, as well as thorough accessibility to health information, primarily governed the treatment decisions. The effect of such education and knowledge indicators on the treatment was also noted by Mphuthi et al. (2022) and Ibrahim et al. (2017), who indicated that participants approached a variety of patients and members of the community to obtain information on the subject. The higher the level of education the patients have, the more they tend to understand what hypertension is and the various means of treating it. Educated patients search for better health outcomes and comply with their treatment recommendations. Thus, for instance, Mphuthi et al. (2022) and Ibrahim et al. (2017) report that many patients who hold a higher education are more likely to take pharmaceuticals combined with CAM, demonstrating some sophistication in their understanding of the advantages and disadvantages of modalities. It appears those who are less educated may have a scant understanding of the condition and so rely on traditional approaches and have reservations about pharmaceutical treatment. Osamor et al. (2010) also pointed to the role of cultural perceptions and education regarding the use of CAM.

Cultural background significantly influences how patients receive and interpret health information. For example, during the Caribbean community investigation conducted by Connell et al. (2005), it was apparent that day-to-day healthcare practices involved 'bush' medicine, a type of hypertension treatment. This sentiment accentuates the significance of custom-made health education strategies that are not just purely scientifically accurate but also honour and incorporate traditional beliefs and wisdom.

Experiences with Side Effects

Managing side effects was a common theme across our study and others. Participants in our study adjusted their medication regimens in response to adverse effects, similar to findings by Shamsi et al. (2018) and Azizah et al. (2021), where concerns about side effects led to modifications in treatment plans. Liwa et al. (2017) also reported that adverse effects influenced medication adherence and the use of alternative treatments. **Additionally, many participants believed that WM was not curative due to its associated side effects (Lee et al., 2014). Distinct perceptions were highlighted in the narratives by Connell et al. (2005), whereby participants controlled polypharmacy based on their individual experiences of side effects or their interpretation of normal blood pressure levels. Additionally, in Ghana, research by Adong (2019) identified the perceived effectiveness of antihypertensive drugs as a significant determinant of adherence. Most subjects voiced some doubts about the efficacy of their pharmacotherapy, wondering whether their treatment options were of any real benefit to their illness. Concerns about side effects further exacerbate this scepticism.**

Use and Preparation of Traditional Remedies

The study participants utilise a variety of local herbal remedies, including cucumber, garlic, lemon juice, and karela bush. Depending on individual preferences, these are typically made into juices, teas, and decoctions, suggesting a more customised approach to treating health crises (User's findings).

This personalised and more casual use of bush medicine is corroborated by **research by** Connell et al. (2005), which explored Caribbean people's use of 'bush' medicine. Medina, banana leaf, breadfruit leaf, and green papaya are examples of such herbal types, which people hope are not filled with pollutants as much as Western medication. More than their pharmacological effects, Connell et al. (2005) explain that such practices are also integrated into healing traditions and blood purification practices.

Likewise, De Wet et al. (2016) noted the systematic use of traditional plants such as Momordica balsamina to treat hypertension in South Africa. Their research stressed the innovation and relevance of this plant in clinical practice and proposed the coexistence of traditional practices with a proper approach regarding their role in hypertension treatment integration.

The use of alternative therapies alongside prescribed medications is a delicate process, as the findings of Mphuthi et al. (2022) show. According to this study, most patients with hypertension began herbal medication almost on the same day as they were diagnosed with the disease, which depicts the will to change their lifestyle.

Ibrahim et al. (2016) also sought to understand the tendency of patients and providers to combine CAM and conventional practices. The results suggested that the largest share of patients was found ready to accept herbal and vitamin supplements in addition to their conventional prescribed drugs. This is because it is regarded as a means of improving one's overall well-being and as a means of protection against the adverse effects of the medication. This study also drew

attention to a significant gap in communication, claiming that patients frequently did not disclose this use of CAM to their providers for fear of disapproval and for less time than was appropriate during consultations.

Together, these studies illustrate the widespread use of herbal medicine for hypertension in different cultures and locations and argue for more incorporation of indigenous knowledge in modern clinical practice.

Conclusion

As the results of several studies point out, an all-encompassing management plan for hypertension involves the combination of medications, herbal remedies, modifications in lifestyle, and regular health checks. It is observed that such treatment options are significantly shaped by the person's culture, accessibility, and history, thus bringing to light the necessity of adopting a well-rounded and culturally sensitive treatment plan. Healthcare practices and policymaking should be informed by studying these factors. Studies conducted in different locations have the same trend: many patients use and believe in herbal medicine because it is believed to be safer than other medicines due to its natural ingredients. Such practices should not only be viewed as medicine but as a form of culture imbedded in the community and handed down from generation to generation.

Limitations

Although typical for qualitative research, the small sample size (n=10) limits the generalizability of the findings. For the third point, as noted, this geographical limitation poses a challenge to generalising its conclusions and more research in different settings and contexts is necessary. However, Stakeholders highlight that location bias may occur if the snowball sampling technique is used more than once, with selected individuals representing only certain viewpoints or backgrounds among the volunteers.

Recommendations

Integrative Treatment: Patients' tendency to merge herbal medicine and pharmaceutical drugs calls for a more holistic healthcare approach that recognises and supports such practices. In such cases, clinicians should try to have their patients talk to them about the use of CAM.

Socioeconomic Barriers: The cost of care and medications also determine the decision to seek treatment. To achieve equity in health, more emphasis needs to be placed on this area.

Cultural Sensitivity: Health education messages should align with the intended target's cultural beliefs to avoid disbandment of the incorporation of modern approaches while infusing traditional beliefs. The programs should be more culturally centred, considering the traditional wisdom and philosophies surrounding treatment interventions.

Managing Side Effects: Patients' expectations should be adequately built around the medications and supplements that they are prescribed and their side effects so that adherence to the treatments and patient satisfaction are enhanced through active monitoring of side effect management.

Future Research: Similar herbal studies need to be performed across a wider population, which may lead to the identification of effective herbal treatments for hypertension. More interpretation regarding the insensitive will also be relevant.

Disclaimer (Artificial intelligence)

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

CONSENT AND ETHICAL APPROVAL

This study received Institutional Review Board approval for commencement and all ethical and administrative bodies. Written consent to audio records the interview sessions was taken, alongside making it very clear that participation was entirely voluntary, and participants could withdraw at any instance of their desire.

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