

Full title: A qualitative study of patients' and carers' perspectives on factors influencing access to hypertension care and compliance with treatment in Nigeria

Short title: Factors influencing access to hypertension care and compliance with treatment

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Abstract

Objective: We explored patients' and carers' perspectives on factors influencing access to hypertension care and compliance with treatment.

Methods: This was a qualitative study using in-depth interviews with hypertensive patients and/or family carers receiving care at a government-owned hospital in north-central Nigeria. Eligible participants were patients who had hypertension, receiving care in the study setting, were aged 55 years and over and had given their written/thumbprint consent to participate in the study. An interview topic guide was developed from the literature and through pre-testing. All the interviews were held face-to-face by a member of the research team. This study was conducted between December 2019 and February 2020. NVivo version 12 was used to analyze the data.

Results: A total of 25 patients and 13 family carers participated in this study. To understand the barriers to compliance with hypertension self-management practices, three themes were explored, namely: personal factors, family/societal factors, and clinic/organization factors. Support was the key enabling factor for self-management practices which were categorized to emerge from three sources namely: family members, community and government. Participants reported that they do not receive lifestyle management advice from healthcare professionals, and do not know the importance of eating low-salt diets/engaging in physical activities.

Conclusions: Our findings show that study participants had little or no awareness of hypertension self-management practices. Providing financial support, free educational seminars, free blood pressure checks, and free medical care for the elderly could improve hypertension self-management practices among patients living with hypertension.

Keywords: hypertension; self-management practices; qualitative study

Introduction

Hypertension (HTN) prevalence and control is an increasing public health challenge among people of African descent [1]. In sub-Saharan Africa, the increasing prevalence of hypertension has largely been attributed to an increasingly ageing population and the globalisation of lifestyle[2]. Fewer than one-third of hypertensive patients in some countries, especially those with modern healthcare systems, obtain ideal control of their blood pressure despite the wide range of therapy choices available for the management of hypertension [3]. Self-management practices are those activities people undertake to create order, discipline, and control in their lives [4]. Through effective self-management practices, patients make themselves healthy by engaging in moderate exercises at least three times a week, achieving a healthy weight, and engage eating habits [5]. In addition to hypertensive medications, therapeutic lifestyle changes are highly recommended for hypertensive patients [6] and are effective as a first-line treatment for patients with pre-hypertension [7].

Major behavioural modifications for hypertensive patients as recommended by the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7) are weight reduction, dietary management, alcohol restriction, smoking cessation, exercise, stress management, and medication adherence [8]. Weight reduction is important for patients whose body mass index (BMI) is greater than 30 kg/m² [9]. Weight reduction can be achieved through balancing the diet and regular aerobic exercise [10].

Dietary management involves eating a diet low in salt, calories, cholesterol, and saturated fat while eating more fruits, vegetables, and grains [11]. Evidence shows that diet modifications can help achieve optimum control of blood pressure [11] and moderate sodium intake can lower blood pressure in hypertensive patients [12]. A study found that a reduction in sodium intake of not more than 2.4 mg per day reduced the systolic blood pressure by 2-8 mmHg in

hypertensive patients [13]. Other studies showed that participation in physical aerobic exercise for at least 30 minutes a day and at least 150 minutes in a week can lead to a reduction of systolic blood pressure by 4-9 mmHg [14-16].

In our previous study [17], more than 50% of patients living with hypertension were not adherent to their medications, did not eat low-salt diets or engage in physical activities or weight management practices. Therefore, we explored patients' and carers' perspectives on factors influencing access to hypertension care and compliance with treatment.

Methods

This study is reported following the Consolidated Reporting of Qualitative Studies (COREQ) guidelines [18]. See checklist in Supporting Information.

Study design and participants

We conducted a qualitative study using in-depth interviews with hypertensive patients and/or family carers receiving outpatient care at a hypertension clinic located within a government-owned hospital in north-central Nigeria. Purposive sampling was used to recruit patients living with hypertension and/or their family carers, aged 55 years and above and had given a written/thumbprint consent to participate in the study.

Setting and Service

This study was conducted within the Internal Medicine Department of a government-owned hospital in north-central Nigeria. The hospital serves as a referral centre for other secondary and primary healthcare facilities within and outside the north-central geopolitical zone in Nigeria.

Participant recruitment and data collection

Potential participants were informed about the study during their clinic visit by a member of the clinic staff. Participants were then approached by a member of the research team when attending their monthly clinic appointment. They signed a written consent form or witnessed verbal consent if they were willing to participate (including consent to use an audio recording device). An interview topic guide was developed from the literature and through pre-testing. All the interviews were held face-to-face with a member of the research team experienced in conducting qualitative interviews. Field notes were made after each discussion. Each interview lasted about 30 minutes. Patients anthropometric measurements were extracted from their case notes. This study was conducted between December 2019 and February 2020.

Data analysis

The audio recording of all interviews was transcribed verbatim by two members of the research team (BO-UK and MOA) experienced in analysing qualitative data. Interview transcripts were analysed using thematic analysis [19]. Descriptive statistics (frequency, percentage, and mean) were applied to the quantitative responses on sociodemographic characteristics using Statistical Program for Social Sciences (SPSS) v. 25 [20], while NVivo version 12 [21] was used to analyse qualitative data.

Ethical considerations

This study received ethical approval from the Health Research and Ethics Committee, Federal Medical Centre Lokoja, Kogi State, Nigeria (FMCL/MED/115/Vol.II/461). The aim of the research and interview methods were explained to the participants. All the participants received written information about the study and gave both verbal and/or written consent to participate

according to the procedures of research ethics clearance. All personal identifiers were removed during analysis, and responses from the participants were treated with confidentiality.

Results

Participants' socio-demographic characteristics

A total of 25 patients and 13 family carers participated in this study. Four (16%) of the patients do not have a formal education, 23 (92%) have had hypertension for more than five years, and 20 (80%) have their blood pressure uncontrolled. Table 1 shows the socio-demographic characteristics of the patients who participated in this study.

Family carers' socio-demographic characteristics

A total of 10 (77%) of the family carers were 36 years of age or older; 9 (69.2%) were females, and 12 (92.3%) had a formal education. Table 2 shows the socio-demographic characteristics of the family carers who participated in this study.

Study Themes

Six key themes emerged for barriers and facilitators for effective self-management of hypertension. For barriers, these include: personal factors, family/societal factors and clinic factors; while for facilitators, these include: support from family members, support from community and support from the government. Table 3 presents a detailed list of themes and sub-themes that emerged from the data.

Barriers to hypertension self-management practices

Personal variables: Most of the participants reported that they did not know that there were behavioural changes that could improve their blood pressure:

“I have had this illness for over eight years, and no one has ever mentioned to me that there are things I could do on my own to improve my condition...” [Patient participant, 001]

“I did not know that there is a connection between smoking and high blood pressure... No one told me that” [Patient participant, 017]

“...my father reduced drinking alcohol because he could not afford it any longer except I buy it for him... I will reduce buying alcohol for him...” [Family carer participant, 009]

One of the family carers reported that she did not know that eating a low amount of salt could improve blood pressure:

“I knew that sprinkling salt on already cooked food was not healthy, but I didn’t know that ... [name of patient]... should also avoid high-salt foods too...” [Family carer participant, 001]

Inadequate financial capacity/ability to pay for medications, laboratory investigations, and booking appointments commonly hindered patient self-management efforts. Some participants reported that they were torn between buying food or paying for medication because of their limited financial capacity. One of the participants reported that it was almost impossible to prepare his food separate from that of his household due to double food expenditure/increased household expenses. As a result, he is left with no choice other than to eat what the household eats:

“I make low sales from my business, and I struggle to feed... I just eat what everyone else in the family is eating” [Patient participant, 002]

“I have not been able to buy my medications because the government has not paid my pensions in the last four months...” [Patient participant, 003]

“...I cannot afford to eat restricted diets. I tried it sometime last year and I ran out of cash before month end...” [Patient participant, 004].

“...it’s expensive being on a restricted diet, isn’t it? I cant afford some of the things the doctors say I should eat...” [Patient participant, 018]

Family carers reported that they struggle financially with providing the medication and diet needs of their loved ones:

“I am not able to afford all of my father’s medications, so I only pay for the ones I can afford...” [Family carer participant, 002]

“I have my family to feed too. I cannot afford to place my mom on restricted diet...” [Family carer participant, 010]

“...The doctor told me to start taking (a particular brand of milk). That is very expensive. I cannot just afford it...” [Patient participant, 023]

Only a few of the patients and family carers reportedly knew what systolic and diastolic blood pressure meant and the importance of having a regular blood pressure check. Poor patient and family carer knowledge on the importance of regular clinic visits, blood pressure readings and how they influence changes in medication choices and doses was identified as one of the barriers to hypertension self-management practices. One of the participants reported that she only has a blood pressure check when she falls ill and gets admitted to the hospital:

“The doctor just writes my refill prescription and I collect my medications from the pharmacy... he does not even bother to check my blood pressure most times, and when he does checks it, (...the doctor’s name..) does not even tell me the values. So I don’t know if my BP readings are normal or high...” [Patient participant, 002]

“I always buy (patient’s name) medications from the chemist. I wrote the drugs on my diary, so before her medication finishes, I go to the chemist and buy another one that will last about a month or two”. [Family carer participant, 003]

A few of the participants reported that having more than one chronic illness makes it difficult to prioritise treatment and management for only one:

“...My mom has asthma and hypertension. Sometimes I struggle trying to decide whether to buy her inhaler or her antihypertensives”. [Family carer participant, 004]

“...I also have diabetes, and I spend most of my savings on going to the chemist to check my blood sugar level...I was admitted last month for hyperglycemic coma so the doctor said I should be checking my blood sugar every weekend...” [Patient participant, 005]

“...[patient’s name] antihypertensives are more expensive than her antidiabetics. Whenever I am struggling with finances, I get her antidiabetics first...then wait till month end when I get paid to buy her BP drugs...” [Family carer participant, 005]

Participants reportedly had poor perception of what exercise is and where it should be performed. Some of them reported that finding time for exercise sounded unrealistic and claimed they were busy with either work or business:

“I have to open my shop by 9 am...I don’t want to lose my customers so I don’t think I have time to exercise...” [Patient participant, 006]

“I am a government worker, and I am expected to be in the office by 8 a.m...most days, I get home by 7 p.m...all thanks to traffic” [Patient participant, 001]

“...I don’t have time for exercise, ...I am always busy...” [Patient participant, 007]

Family and society factors: Little or no emotional and financial support with daily living from family members was regarded as one of the barriers to compliance with hypertension self-management practices:

“I have had this hypertension for over 7 years, and no one, not even my husband, has ever given me money for my medications...I struggle to feed the kids all by myself and most times I don’t have money to afford my medications...” [Patient participant, 008]

“...no one cares about my condition...no one cares for me..” [Patient participant, 008]

“...my sibling does not contribute to my mother’s welfare, ...I am the only one catering for her needs including her drugs...” [Family carer participant, 006]

“...no one is helping me take care of my mom. I give (patient’s name) any food I cook for my children...” [Family carer participant, 011]

Some of the participants reported that with the recent security challenges in Nigeria, it was impossible to take a walk or leave their houses to exercise. Most of them reported that they would prioritise their safety over having to exercise 3 or 4 times a week:

“My dad is always indoors except he has a clinic appointment...We don’t allow him to take a walk outside. Something bad might happen to him...” [Family carer participant, 012]

When asked if they had exercise machines at home or if they could register at a gym to help them work-out, most of the participants reported that their income could not afford them registering for gym classes or owning exercise machines:

“...I tried registering in a gym last year, ...the monthly fees were more than half of my monthly salary...” [Patient participant, 009].

“...if I get a free gym membership, I would be happy to work out a few times a week...” [Patient participant, 010].

Clinic factors: Some participants reported that they did not receive any education/information/sensitisation on the need for behavioural modifications from health professionals. They explained that they had limited contact times with health professionals who often use this time to write or refill their prescriptions:

“...with the long queue at the pharmacy, and a few pharmacists around, I sometimes have to even ask the pharmacist to explain to me how to take my medication...” [Patient participant, 009].

“...We often get less than 10 mins to spend in the doctor’s office...a lot of people are waiting outside...” [Family carer participant, 007].

“...no one has ever mentioned to me that I needed to lose some weight. I know I'm fat, but I had no idea losing weight could help my blood pressure.” [Patient participant, 011]

“I go to each clinic appointment with my mom... No one has given us any advice on lifestyle management. Not the doctor, not the nurse, and not the pharmacist too...” [Family carer participant, 013]

Some of the participants reported that their doctor always insists on a particular brand of antihypertensives, and most times, the hospital pharmacy do not stock this brand:

“...(name of doctor) always insists I buy...(name of the brand). This drug is expensive and the hospital pharmacy claims they don’t stock it. My NHS is with...(name of the hospital)... but I always end up buying my BP drugs in the ...(name of community pharmacy). I am supposed to pay 10% for my drugs but I end up paying 100%...” [Patient participant, 012]

“...(doctor’s name) always insist I buy a particular brand of my drug. There are cheaper brands but I don’t know why he insists on the expensive one...” [Patient participant, 019]

Facilitators of hypertension self-management practices

Financial support: Most of the participants reported that financial support to pay for part or all of their medication costs will increase compliance with hypertensive medications:

“I do not feel happy when I run out of my medications...I am happy to take my medications regularly if my husband can help me with medication costs once in a while... [Patient participant, 013]

“...When my son was alive, he used to help me buy my medications...I lost him last year, and since then, things have never remained the same” [Patient participant, 019]

Support from the community: Participants agreed that they get to check their blood pressure free for only during outreach programmes organised by churches, community pharmacies, and non-governmental organisations. The participants reported that the community had a gym built and managed by the councillor. This provided free gym membership for those who were aged 50 and above, however, the gym was closed down during the Covid-19 pandemic. One of the patient participants suggested that if the community can assist in creating subsidised opportunities/avenues for exercise or undertaking physical activities, she will prioritise exercise and staying fit:

“I want to go to the gym and register as a member, but...it is very expensive. I always desire to keep fit and exercise regularly, but then...i. I can't afford it...” [Patient participant, 014]

“If only the government could provide me with a free blood pressure measurement kit, my blood pressure is irregular, and I spend 200 naira each time I go to (name of community pharmacy) to check it.” [Patient participant, 015]

Most participants who are retired from active service lamented that they are not adherent to their medications because of the government's inability to pay their pensions:

“I have not received my pensions for the last 4 months... I am struggling to eat well. I depend on my children for most of my financial needs...” [Patient participant, 010]

“...I have not been paid any pension since I retired last year in July. I don't have money to buy my drugs; talk less about eating restricted diets” [Patient participant, 022]

Restructuring the healthcare system so that elderly patients could receive free medical care, especially those with chronic illnesses, was also reported as one of the facilitators of hypertension self-management practices:

“...if only the government can make healthcare free for the elderly or those that are not working...it is difficult to be on a lifetime medication when you are not working...how much is my pension?” [Patient participant, 016]

“I am soliciting for government assistance...I can no longer bear the financial burden of my mother’s illness...” [Family carer participant, 008].

“...When I was working at (company’s name), we had access to free healthcare. I always had my medications refilled without having to pay for it...” [Patient participant, 021]

Discussion

This qualitative study aimed to explore the barriers and facilitators to compliance with hypertension self-management practices. Poor knowledge about hypertension, changes surrounding behavioural risk factors, lack of finances, and lack of emotional and financial support were identified as the barriers to compliance with hypertension self-management practices. The provision of sensitisation campaigns or health talks during hypertension clinics, free healthcare for the elderly or unemployed, regular payment of pensions and gratuities, and financial support from family members were reported as the facilitators of compliance with hypertension self-management practices. This study provides information on perceived challenges to adhering to hypertension self-management practices.

Less than half of the patients admitted that they were not adherent to the antihypertensive medications, and lack of finances was identified as a contributing factor. Our findings are comparable to studies done in Africa, which reported low medication adherence among hypertensive patients [22]. Paying out-of-pocket for medications and laboratory tests can promote medication non-adherence among patients with chronic illnesses [23]. Studies have shown that non-adherence to prescribed medications is the leading cause of poor control of blood pressure, exposing patients to target organ damage and increased cardiovascular risk [24,25]. Most of the patients were not adherent to low-salt diets. One of the contributory factors

identified from this study could be poor knowledge of the disease itself. There is need for sensitisation campaigns in communities to educate the population on the need for eating low salt diets. This finding is comparable to a recent study which reported that most hypertensive patients found it difficult to maintain low salt diets and follow the Dietary Approaches to Stop Hypertension (DASH) plan [26]. In recent years, it has been identified that one of the major challenges in the prevention and management of hypertension is the recognition of the importance of systolic blood pressure [27], hence the need for this to be part of health talks in hypertension clinics. It has been observed that patients who are aware that elevated BP levels can lead to a reduction in life expectancy are more compliant with their hypertensive medications and follow-up visits [28]. Evidence shows that knowledge about systolic blood pressure has been identified as one of the independent predictors of blood pressure control [29].

Participants reported poor adherence to physical activity due to the absence of a convenient workout location in the area. This shows that the study participants had a poor perception of what exercise is and where it can be performed. There is need for sensitisation health talks to emphasise that physical activity is not limited to gyms or sports complex, and that daily brisk walk to market, farm, office and home are part of engaging in physical activity. It has been established that a safe, walkable, and aesthetically pleasant physical environment can positively encourage patients to engage in physical activity [30,31]. Therefore, to improve the participation of these patients in physical activity, there is a need for environmental planning and policy change. Most importantly, there is the need for the provision of security by the government, which should be part of fundamental human rights. The WHO has recommended at least 30 minutes of physical activity per day for five days per week to prevent and/or control high blood pressure [16]. All the patients in this study were either overweight or obese. Losing at least 5% to 10% of body weight can help improve blood pressure [32]. The study finding

that health professionals do not provide adequate sensitisation of the importance of body mass index on hypertension control highlights the urgent need for sensitising health professionals on the importance of communication regarding health behavioural modifications.

The development and implementation of educational intervention programs [22], as well as the use of trained community-oriented resource persons [33], have been used to raise awareness and improve knowledge, perception, behaviours, attitudes, and practises that will reduce hypertension in Nigeria. However, more sustained strategies to improve hypertension care, such as affordability of treatment costs, improved health-seeking behaviour, the inclusion of hypertension treatment in primary healthcare functions, and adequate infrastructures, are highly recommended.

Strengths and limitations of the study

This is one of the first studies to look at the barriers and facilitators of hypertension self-management compliance among hypertensive patients in Nigeria. These findings contribute to the growing body of evidence that supports how families, society, and healthcare institutions can improve compliance with hypertension self-management practices.

The narratives of a sample of participants are represented in the qualitative data obtained through in-depth interviews, which means they may not be more broadly representative. Additionally, Nigeria's healthcare systems might be different from those available in other countries, therefore the context might differ; most of the healthcare provided in Nigeria is paid out-of-pocket.

Research and clinical implications

Our findings show that there is a need for physicians as well as other healthcare professionals to improve their communication patients living with hypertension. Patients, when equipped with adequate knowledge, can actively take part in self-management. In addition, patients with hypertension should have access to free blood pressure checks, education, and counselling in all government-owned hospitals. Educational intervention programmes should be designed and implemented by all tertiary hospitals and specialist centres.

Qualitative interviews with healthcare professionals could be considered in future studies to understand their perspectives on the barriers and facilitators of compliance with hypertension self-management practices.

Conclusion

Lack of awareness of hypertension self-management practices, poor knowledge about hypertension, financial constraints, and lack of emotional support from family members were all identified as barriers to compliance with hypertension self-management practices. Providing financial support, free educational seminars, free blood pressure checks, and free medical care for the elderly were seen as facilitators to compliance with hypertension self-management practices.

Data availability statement

The datasets generated during and/or analysed during the current study are not publicly available due to privacy or ethical restrictions but are available upon reasonable request from the corresponding author.

Authors' contributions

BO-UK, MOA, and CVU devised the study and developed/refined the main conceptual ideas. BO-UK and MOA led the study protocol development, ethical application, and gaining

approval, with input from CVU. BO-UK undertook recruitment and data collection. MOA and CVU provided support for study conduct, data collection and analyses. BO-UK worked on the interview analyses. BO-UK and MOA drafted the manuscript. All authors helped refine and re-draft the manuscript and approved the final version.

Ethics approval and consent to participate

This study received ethical approval from the Health Research and Ethics Committee, Federal Medical Centre Lokoja, Kogi state Nigeria (FMCL/MED/115/Vol.II/461). We ensured that each participant received written informed consent, understood its contents, and then accepted to take part in the study before having them sign it.

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Table 1: Socio-demographic characteristics of patients (N = 25)

Variables	n (%)
Age (in years)	
55-65	11 (44.0)
66-75	9 (36.0)
>75	5 (20.0)
Gender	
Male	10 (40.0)
Female	15 (60.0)
Occupation	
Civil servant	3 (12.0)
Self-employed	6 (24.0)
Unemployed	2 (8.0)
Retired	14 (56.0)
Educational Qualification	
No formal education	4 (16.0)
Primary	2 (8.0)
Secondary	3 (12.0)
Tertiary	16 (64.0)
Duration of hypertension	
1-5	2 (8.0)
6-10	8 (32.0)
11-15	6 (24.0)
>15	9 (36.0)
Family history of hypertension	
Yes	17 (68.0)
No	8 (32.0)
Control of hypertension	
Controlled	5 (20.0)
Uncontrolled	20 (80.0)
BMI*	
Overweight	3 (12.0)
Obese	22 (88.0)

*BMI = body mass index

Table 2: Family carers' socio-demographic characteristics

Variables	n (%)
Age (in years)	
< 35	3 (23.0)
36-45	5 (38.5)
>45	5 (38.5)
Gender	
Male	4 (30.8)
Female	9 (69.2)
Occupation	
Civil servant	5 (38.5)
Self-employed	6 (46.2)
Unemployed	2 (15.3)
Retired	0 (0.0)
Educational Qualification	
No formal education	1 (7.7)
Primary	3 (23.1)
Secondary	5 (38.4)
Tertiary	4 (30.8)
Relationship with patient	
Child	4 (30.8)
Partner	7 (53.8)
Relative	2 (15.4)

Table 3: Study Themes and sub-themes

Themes	Sub-themes
Barriers to hypertension self-management practices	
Personal factors	Lack of awareness of the importance of self-management practices
	Poor knowledge about hypertension
	Financial constraints
	Care-burden placed on family carers
	Presence of a co-morbidity
	Busy schedules
Family and society factors	Lack of support from family
	Security challenges
Clinic factors	No health education from healthcare professionals
	Unavailability of certain antihypertensives
Facilitators of hypertension self-management practices	
Support from family members	Financial support
Support from the community	Educational seminars and free blood pressure checks
Support from the government	Payment of pensions and gratuity
	Free medical care for the elderly