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The Lived Experiences and Informal Caregivers' involvement in Self-management of Diabetic and Hypertensive Persons in Ibadan: A qualitative descriptive Study

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Abstract

Background: The informal-caregiver's involvement in the management of these ailments is key to reduction of negative outcomes in the incidence of diabetic and hypertensive morbidity and mortality in Nigeria. The success of the management of these conditions is shaped by the socio-cultural context of informal caregivers. This study explored the experiences of hypertensive and diabetic persons with self-management and involvement of their informal caregivers.

Method: Data were collected through 22 interviews of In-depth interviews with 14 patients, 5 informal caregivers, and 3 religious' leaders as key informants.

Result: The study revealed that many patients have inadequate knowledge of the causes and management of diabetes and hypertension, additionally, their understanding is often shadowed by superstitions, and misconceptions. Many direct informal caregivers lack adequate dietary knowledge and information that could help patients' well-being.

Conclusion: Thus, there is an urgent need for community engagement in the management of non-communicable disease in order to achieve sustainable health for all.

Keywords: Self-management; informal caregivers; community-engagement; diabetes; and hypertension

Introduction

Diabetes and hypertension constitute leading causes of morbidity and premature mortality globally[1] making it difficult to establish the exact number of people that are affected by either diabetes or hypertension; due to the seemingly increasing annual prevalence in low-income countries.[2] The prevalence of diabetes in Africa is over 70%, while that of hypertension is over 46%.[3] In sub-Saharan Africa, Nigeria tops the list of countries with high rate of diabetes patients. Furthermore, the number of Nigerians battling hypertension is also overwhelming; the implication of this is a devastating health crisis, especially, if preventive actions are not implemented.

Peoples' experiences and the untold effects of diabetes and hypertension have been established in many studies, more so, in middle income and high-income countries.[4] This suggests that successful self-management is key to living a healthy life, and the control and management of diseases. Self-management in diabetes and hypertension has proven to be an effective therapeutic option when carried out successfully.[5] Primarily, it involves the acceptance of the condition and the management of the

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condition within the socio-cultural context of the patient.[6]

Forouzi and Batool[2] point out that:
Self-care is an evolutionary process of development of knowledge or awareness by learning to survive with the complex nature of the disease in a social context or the individual's self-identified management abilities. [It is a] learned behavior composed of deliberate goals that direct actions that are perquisites by "knowing" and deciding. Through successful self-care, patients could decrease overall costs associated with care and their own rates of mortality and the morbidity. In contrast, neglecting self-care can have negative effects on body, mind and spirit and leave patients out of balance.[2]

This explanation reveals that everyday lived experiences and relations affect the self-management of diabetes and hypertension. Additionally, it portrays the fact that the socio-cultural environment plays a vital role in the success or failure of self-management strategies.[7] Furthermore, it is important to examine the knowledge of hypertensive and diabetic patients as regards the cause(s), symptoms, health and management-seeking mechanisms and the informal caregiver's involvement in patients' management.

Cooper et al[8] investigated the sexual well-being of men with Type-2 diabetics in Sub-Saharan Africa. The study revealed that though sexual dysfunction is a common complication for men with diabetes, their lived experiences seemed to be obscure in scholarship. The study also posited that many of these men had developed poor self-management practices. This was as a result of the low-self-esteem that stemmed from the loss of masculinity due to reduced sexual and emotional intimacy with their partners who were also caregivers in some cases. The well-being of these men was further affected by suspicions of infidelity, mutual mistrust, general unhappiness and the fear of losing partners' support.

In another study by Bokhor *et al*[5] established that there was a strong link between hypertensive patients' beliefs and self-management. In the words of Forouzi and Batool,[2] self-management involves "seeking information, being independent, being optimistic or pessimistic and trusting in God…[this] suggests that cultural and religious components could affect diabetic patients' self-care" (pp:171). In the same fashion, Airhihenbuwa and Iwelunmor[7] made it clear that a successful management and control of diabetes and hypertension will be achievable by "addressing the cultural dynamics that frame everyday management and self-care practices. Indeed, available evidence indicates that cultural influences play a critical role in shaping how individuals and families perceive, diagnose and manage the disease".[7] The point being emphasized here is that the social context that forms the basis for lived experiences of diabetic and hypertensive patients are germane to the successful management/reduction in the morbidity and mortality rates of diabetic and hypertensive individuals in Nigeria.[9]

Khandan et al[10] examined the lived experiences of mothers of diabetic children and established that the mothers of diabetic children face many challenges. Some of these are: social unwillingness to share the burden of care, remorse for neglecting care, annoying pre-occupations, emotional upheavals and frequent concerns about the child's future, financial difficulties, organizational bureaucratic problems; and diabetic complications (these complications are more pronounced in adults than in children). Unfortunately, in Nigeria, there is a dearth of information as pertains to the lived experiences of diabetic and hypertensive patients and how these influence their self-management practices. Thus, this study examines the lived experience of patients with diabetes and hypertension and how the everyday construction of realities, the socio-cultural environment and informal caregiver's involvements have shaped self-management.

Method

The qualitative study was conducted in Ibadan, the capital of Oyo State, Nigeria. The study's approach enabled an in-depth understanding of the 'lived experiences of diabetic and hypertensive individuals and the involvement of informal caregivers in self-management'.[11] Twenty-two (22) respondents, specifically, fourteen (14) patients and five (5) informal caregivers were recruited for In-depth interviews while three (3) religious leaders ([slam and Christianity] were recruited for Key Informant Interviews (KII). The socio-demographic information of all respondents who participated in this study is presented in Table 1 below. Two urban communities in Ibadan North Local government were purposively selected for this study, namely - Inu Koko and Aba Apata communities. Participants in the study were also purposively selected and had the choice of voluntarily participating or withdrawing from the study at any point. Each interview lasted for about 45–60 minutes.

Data for this study was obtained from people who had diabetes and hypertension or were closely associated with such individuals.[12,13] All those who were not affected by hypertension and diabetes, were not informal

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caregivers of diabetes and hypertensive patients, and were not willing to participate in the study were excluded. The KII guides for the interview were developed by a multidisciplinary team consisting of a health promotion expert, public health nurse, anthropologist, nutritionist, statistician, non-communicable diseases experts, primary care physicians, nurses and social psychologists. The topic guide for the study's IDI and KII covered the following domains:

1. Respondent's socio-demographic background
2. The contextual views of significant others
3. Health seeking behaviors of diabetic/hypertension patients
4. The Challenges of managing diabetes/hypertension
5. Dietary Patterns
6. Mental Health issues

The interviews were facilitated by three (3) teams (6 trained research associates cum qualitative research experts). Consent forms were provided for respondents and discussions were recorded and transcribed verbatim.

Results

Table 1: Participants' Socio-Demographic Information

Community	Age	Gender	Respondent Status	Marital Status	Education	Religion	Occupation
Aba Apata	52	Female	Hypertension	currently married	NCE	Christianity	Trader
Aba Apata	36	Female	Hypertension	currently married	Senior Secondary School Completed	Islam	Hairdresser
Inu Koko	50	Female	Hypertension	Married	Senior Secondary School Completed	Islam	Trader
Inu koko	27	Male	Informal caregiver	Single	ND (polytechnic)	Christianity	Shop Owner
Aba apata	46	Male	Alfa-muslim cleric	Married	Primary school	Islam	Alfa
Aba Apata	63	Female	Informal caregiver	Married	Tertiary	Christianity	Shop owner
Aba Apata	65	Male	Hypertension	Married	Tertiary	Christianity	Unemployed Retiree
Aba Apata	53	Male	Pastor	Married	NCE	Christianity	Pastor
Inu koko	57	Male	Pastor	Married	Tertiary	Christianity	Pastor
Inu koko	32	Male	Informal caregiver	Married	Tertiary	Christianity	Computer Engineer
Inu koko	65	Female	Hypertension	Widowed	No formal education	Islam	Trader
Inu koko	52	Male	Hypertension	Married	NCE	Islam	Muslim cleric
Aba Apata	58	Male	Stroke/Hypertension	Married	OND	Christianity	Retiree
Inu koko	52	Female	High Blood pressure	Married	NCE	Christianity	Teacher
Aba Apata	59	Male	Hypertension	Married	Senior Secondary School Completed	Christianity	Retiree
Inu koko	32	Female	Hypertension	Married	NCE	Christianity	Business woman
Aba apata	49	Female	Hypertension	Married	SSCE	Islam	Trader
Aba apata	65	Female	Diabetes	Widowed	Arabic Education	Islam	Former food seller
Inu koko	45	Female	Hypertension	Widowed	SSCE	Christianity	Trader
Inu koko	65	Female	Hypertension	Widowed	No formal education	Islam	Islamic Cleric
Aba apata	27	Female	Informal caregiver	Single	B.Sc	Christianity	Tutor
Aba apata	35	Female	Informal caregiver	Married	SSCE Completed	Islam	Trader

Audio recordings of interviews were transcribed verbatim and transcripts were analyzed with the Atlas Ti while the data analyzed were subjected to thematic analysis. Pre-defined themes were used to get the codes

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and identify the patterns. After coding and the generation of themes and sub-themes, two major themes emerged from the data, namely; the lived experiences of diabetic and hypertensive patients and informal caregivers' involvement in the self- management of diabetic and hypertensive patients in Ibadan.

Findings

Knowledge about the detection of hypertension

The respondents were told to discuss the causes of hypertension. Explanations derived from the interviews included - not getting enough rest, undue stress, and raised blood pressure otherwise known as high blood pressure.

One of the participants asserted:

The little I know about this (hypertension) is that maybe when someone doesn't have enough rest [pauses to get her thoughts together] …doesn't have enough time to rest well, maybe he/she is going through difficult times, it is possible for blood pressure to be high. But once someone sees the doctor and takes the drugs prescribed, it is possible that it comes back to normal
- (**Aba Apata, Ibadan**)

Modes of checking Hypertension

Almost all the participants stated that hypertension can be checked in the hospital. One of the participants also stated that self-detection can also be used to discover hypertension as shown in the excerpt below:
'Respondent goes into a short deep thought mode in a bid to put words together' Hmmm… In my case, health workers checked me. It was when they checked my blood pressure then that... [stops abruptly]. I was sick then; I was sick so I decided to go there since I could not go to the hospital. I was just using medications to get better. So when I got there, the blood pressure test was done for me that was when I was told that my blood pressure was a bit high. Then, I was given medications to use. After some months, I checked my blood pressure again and I was told I was okay. I always check my BP at the health center. The last time I checked, I was told my BP had gone down but that I should continue using my drugs all the same.
- (**Aba Apata, Ibadan**).

Health seeking options, management and coping mechanisms

Some of the health seeking options utilized by the participants are drug adherence, contentment, medical checks up to ascertain the state of health and adequate rest. Regular exercise was also mentioned as a health management strategy. One of the participants had the following to say:

The drugs were prescribed on a piece paper and I went to buy them myself in a drugstore
- (**Aba Apata, Ibadan**).

Two of the respondents also mentioned herbal treatment as a curative measure for hypertension. This is corroborated in the statement below:
I always go to the hospital but when I'm told about a herb that works, I usually use it. These are not exactly herbal concoctions, for example, I heard that Moringa leaves work, so I cook it and eat. Drugs were also prescribed for me and I have bought them - the ones I showed you. Also, one of my children who sells herbs prepares herbal concoctions for me which I drink. I also know that God is in control so I'll be alright
- (**Inu Koko, Ibadan)**

As regards seeking spiritual help from religious homes, a pastor said he always referred the affected patients to the hospital for treatments:
We pray because the bible says that "whoever seeks God believes that there is God" and so he or she believes that God can cure diseases. Diabetic and hypertensive individuals must go to the hospital to meet the endocrinologist. They have to take their drugs and also continue to pray. A diabetic patient is usually told to reduce his or her starch consumption. He or she will be told to eat meals such as boiled plantain and reduce sugar intake. They will also be told the type of food they can eat. They used to tell them not to eat Lafun (cassava flour) and food with high sugar contents."
- (**Inu koko, Ibadan)**

Another response sheds more light on health seeking options of diabetic and hypertensive participants as stated below:
Hmmm… My view on this is that individuals should ensure that the drugs they are given to use should be used. Also, once a person knows that he/she has an ailment that requires drug use, he/she should do what he/she is asked to do, rest and use the drugs. I have faith that the person *[pauses to get thoughts together]* that God will remove it."
- (**Inu Koko, Ibadan)**

As it pertains to the definition and causes of hypertension and diabetes, respondents could not give proper definitions of hypertension or diabetes, neither could they identify if they were communicable or non-communicable diseases. Also, as regards the causes of hypertension and diabetes, some of the respondents believe that overthinking and stress cause hypertension while diabetes was linked to dietary patterns. Also, it was

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mentioned that heredity, spiritual attacks and financial conditions could cause hypertension.

One of the respondents had the following to say:
I don't know if hypertension is a communicable disease as I feel it depends on how individuals manage their bodies while diabetes could be gotten from what we eat. So I don't think they are communicable diseases. I also believe strongly that diabetes is a hereditary disease. It is obvious that certain families develop these diseases at a particular age, and that is why I said some of these disease stem from spiritual causes.
- (**Pastor, Inu Koko, Ibadan**).

Dietary Pattern of Respondents
In the case of dietary patterns and lifestyles, the respondents made mention of the reduction in starchy food intake and proposed that diabetic and hypertensive people should not eat too early while others believed that patients should eat early to get the required energy (Okewumi and Akanle, 2021). Another respondent said she still took normal staple meals such as semolina (a combination of wheat and corn flour) and eba (cassava flour). Some respondents use bouillon cubes to prepare their meals while a male respondent from Inu Koko community mentioned that his salt and pepper intake had reduced to a large degree.

Most of the respondents eat fruits and vegetables regularly because these are accessible in their localities. One of the male respondents stated that he planted some fruits and vegetables in his small garden.
One of the participants also made a comment about the need for special diets.

This sickness makes one selective about meals. I liked taking tea in the morning, I could take tea every morning but I can't do that now because of this sickness. What I eat now is what animals eat (greens). In fact, I keep hearing 'don't eat red meat', 'don't take Eba' (cassava flour), 'don't put salt at all'. If I invite you to eat with me now you won't join me, I still use maggi (bouillon cubes) but not much, I don't use much salt too, you know hypertension does not allow for much use of maggi or salt.
- (**Aba Apata, Ibadan)**

A participant - a pastor also reiterated the need for healthy eating habits:
Diabetic patients should be advised to reduce their starch consumption. They should eat boiled plantain and must reduce their sugar intake. They must also be told the types of food to eat. I know they tell them not to eat lafun [cassava flour] and meals which have high sugar content.
- (**Pastor: Inu Koko, Ibadan)**

One of the respondents narrated how she got to know she had diabetes:
I went to the hospital to complain about my eyes. On getting there, I was referred to a doctor; I told them that I only had a complaint about my eyes but they insisted that I go for a test. The test revealed that I had diabetes. Then, I was given a prescription and instructed to report to the hospital. He (the doctor) told me to get a sample of my urine the following day before eating anything and to bring it over. Afterwards, I submitted the urine sample as instructed. A test was carried out, and at the end, I was instructed not to eat sweetened/sugary foods like carbonated drinks and banana. Asides, wheat and beans, I have also been encouraged to eat bean pudding, bean cakes, moinmoin (a bean product). Since then, I have strictly adhered to these things.
- (Aba Apata, Ibadan)

Challenges faced by Diabetic and Hypertensive Patients
Respondents were asked about the possible challenges hypertensive and diabetic patients were likely to face, these included; tiredness, insomnia, depression, constant headaches and an overactive bladder. It was also mentioned that some of these challenges could disrupt daily activities.

A respondent had the following to say as regards the challenges being faced:
One of the challenges I'm facing is lack of sleep, I constantly have headaches. When I got to the hospital, I was told that I should always have people around me because I will overthink if I isolate myself. And I have confirmed this - I have compared the life that I was living before now to my present lifestyle and I have seen that too much of thinking worsens my condition."
- (**Inu Koko, Ibadan)**

Another respondent also opened up about the detriment/s of his ailment:
"I do carpentry work. I am a carpenter. This ailment is difficult to cope with. Now, I cannot work."
- **(Inu Koko, Ibadan)**

Most of the respondents experienced depression when they found out that they had been diagnosed with hypertension. This is corroborated in the excerpt below:
"I was depressed because I was wondering why I had high blood pressure, I was wondering if I was overthinking? I still overthink now but I was just

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wondering about what was wrong with me. I was not happy that I had high blood pressure when it is not like I don't… I don't… or that I was overthinking, depressed. Then, God healed me; I was so happy when I got well.
- **(Aba Apata, Ibadan)**

One of the respondents opined that depression in individuals with either hypertension or diabetes could be linked to financial implications that are attached therewith:
Someone who doesn't have any money before this kind of sickness will definitely be depressed because he/she will be hungry. Signs of depression include the fact that the person will not be happy about anything including the things in his/her environment. Even the positive things will not interest such a person.
- (**Aba Apata, Ibadan**)

While probing the respondents about the health recovery associations/illness-related associations they belonged to, it was discovered that they only belonged to trade and religious associations. As regards the disclosure of their health status, most of the respondents claimed that they did not discuss their ailments with others, asides their close relatives since the ailments were not contagious. The socio-cultural beliefs of many of the respondents was also rooted in the assumption that there was a spiritual undertone to being hypertensive and/ or diabetic and the effect of this on body organs. The discussion so far pointed to the fact that self-management in diabetes and hypertension also revolved around informal caregivers, thus, the next section discussed the involvement of informal caregivers in the everyday relations and experiences of diabetic and hypertensive patients in Ibadan.

Informal Caregivers Involvement in the Management of Persons Living with Diabetics and Hypertension in Ibadan

After confirmed diagnosis of either diabetes and/ or hypertension, the management of the conditions and maintenance of a healthy lifestyle involves both patients and people around them who serve as informal caregivers. Two types of informal caregivers were identified in the study, namely; direct informal caregivers and indirect informal caregivers. Direct informal caregivers are spouses, children and other close family members, while indirect informal caregivers are neighbors, religious leaders and social/religious groups. Many of the participants have been able to manage their conditions as a result of the involvement of direct informal caregivers such as spouses and children. Direct informal caregivers monitored their patients' health status, ensured compliance with hospital appointments for check-ups and the timely use of medications. This was evident in the extract below:
"I have a child who is a nurse, she helps me with my drugs when I need to take them, but I don't need drugs at the moment. Yesterday, I used the drugs and that was why my blood pressure dropped to 130/80. This made me a little weak. I do not feel good whenever it drops. It is normal when it is at 130/140 but when it rises to about 150/160, then, it is too high. Whenever my daughter checks me, I know if l am to use my drugs or not. And she comes once or twice in a week."
- (**Inu koko, Ibadan**)

Another participant also spoke about her children's involvement in monitoring her health conditions and ensuring compliance with medication use as prescribed - in a bid to sustain proper self-management habits.
"My children are not merciless children, they try their best to take care of me. For instance, my daughter comes once or twice in a week. My eldest child is a teacher at Abadina, she calls me often to know if I have eaten and taken my drugs. I also visit them from time to time, in fact I just got back two days ago, you know they are educated people, and they know what an elderly person like me should eat/drink. They all monitor my condition."
- (**Inu Koko, Ibadan)**

Apart from the monitoring of health conditions and ensuring compliance with medication use as prescribed - it was also discovered that many of the participants, specifically, the males depended on their spouses to a large extent for the preparation of their meals. Therefore, these partners ensured that the meals were stripped of "harmful" ingredients that could harm their spouses. As such, the partners were largely responsible for meal preparations and the time for the meals. One of the participants had the following to say about his partner:
For now, she (wife) is my timetable and whatever she cooks is okay - that is, she is free to cook whatever, pleases her. Pap is one of the meals I take a lot. I often take pap in the morning. In the afternoon, it's whatever she prepares for me I eat. But, I take pap very often. Yesterday, for instance, she prepared rice. Whatever she prepares is what I eat. I don't have a timetable for meals, I simply eat whatever is prepared. Sometimes, in the afternoon, I take garri, at other times, I eat bread. At night, we may eat amala or semo with vegetable soup, waterleaf soup or okro. We take a lot of locust beans. My salt intake has also reduced drastically. Also, I don't take a lot of pepper anymore. She (wife) knows the quantity of salt to add to the soup. Before I developed this

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ailment, I would add salt to my dishes if the meal was not as tasty as I'd like, but now, I eat it the way it is cooked.
(Inu Koko, Ibadan)
Another participant also confirmed the involvement of his wife in the preparation of his meals, and in deciding what and when to eat.
My wife cooks the food we eat. I eat anytime, though, once I eat in the afternoon I can no longer eat in the night. If I eat it in the morning (though, this does not happen frequently), I'd probably eat around 11 o' am. Sometimes, I eat at noon, that is, if I don't eat in the morning. I often eat once in a day and what I eat most of the time is bread and beans or moin-moin. We use salt and maggi (bouillon cubes) minimally because we have heard that it must not be too much. I don't eat meals which have a lot of salt and maggi
- (**Inu Koko, Ibadan)**

As regards the financial needs of diabetic and hypertensive participants, support was often gotten from direct informal caregivers. Many participants receive financial support from their children, husbands, and close family members who ensure that the proper medication was available for the affected family member so as to prevent complications and untimely deaths. One of the participants affirms this in the extract below:
"There is nobody helping me financially but my children. I don't have anybody. As I stand, some people even come to meet me for help (even with my condition). I don't have anybody asides God and my children."
- (Inu Koko, Ibadan)

Another participant emphasized the support of direct informal caregivers in the management of hypertension as reflected in his statement below:
"My children are not in Nigeria, sometimes, when I tell them my drugs have finished, they send me money to buy more. My younger siblings also send me money for my medications. Sometimes, when I don't have enough drugs or I've not used a particular one in a while, I get such from my mother as we use the same drugs."
- (**Inu Koko, Ibadan)**

The significance of direct informal caregivers in financial assistance was also spelt out by a female participant who is also diabetic; she corroborated the stance on the link between direct caregivers and financial support:
"Daddy (her husband) helps me buy drugs. He helps me a lot - when I want to work, he also assists me. My children are not here; they are all in Lagos, and so he makes sure I have my drugs available at all times."
- (**Inu Koko, Ibadan**)

Another category of informal caregivers identified in this study are indirect informal caregivers, who are involved in helping diabetic and hypertensive participants in their social space achieve healthy self-management habits. These people are neighbours, religious leaders, social/religious groups, and friends. This category of informal caregivers give advice, organize health talks, offer free medical check-up and workshops, and also monitor diabetic and hypertensive patients in their environs. Some of the patients got their first medical diagnosis during the course of the free medical check-up organized by the community/religious organizations.

A respondent affirmed this in the excerpt below:
I'm in the women organization in the church, I have no other association other than that, sometimes, there are some programs in the church, we invite people like you (medical doctors) to come to church. When they come, they tell us about our health, sometimes, they check the eyes, BP and even perform other checks. There's someone living here who sells medications, sometimes, when I don't use the medications or can't get them, she gives me. There is also someone else here who has BP, anytime I don't have drugs, I can get some from her as we use the same drugs, she also gets some from me whenever she needs some
- **(Inukoko, Ibadan)**

Another response reiterates the support gotten from indirect caregivers:
I go for workshops organized by the Muslim community. For example, the one we had yesterday, had doctors in attendance. And that's how it works, they come for medical check-ups and also educate us about healthy eating, where we should be and things to do. Then, we apply everything we have to do
- (**Inukoko, Ibadan)**

In addition, another participant emphasized this in the excerpt below:
We are in a Muslim community and this Muslim community is the headquarters for clerics and non-clerics. This is where we often hold our meetings. We also have health talks and we invite doctors from UCH to sensitize us about hypertension, diabetes and other similar ailments; tests are then carried out. The doctors also inform us about the medications to use; they prescribe drugs for the people. We give them money sometimes, so they could get the drugs for us after undergoing tests, especially when "such results do not reveal a critical ailment. However, if it is a serious issue, the affected people are then referred to the hospital. Then, community members rise to support those who were referred to the hospital in their own little way. In

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this community, we partner with doctors from UCH and so we have access to them. In fact, whenever we want to organize anything that has to do with health, we simply invite them and they come.
- (**Muslim cleric, Ibadan)**

Emphasis was also placed on indirect informal caregivers' involvement in advisory capacity as shown below:
I have a neighbor who has hypertension. I have told him that if he uses his medications as prescribed he will be cured. I also believe that anyone who is ill should go to the hospital. So, anyone that has hypertension, diabetes or cancer should not practice self-medication but should go to the hospital for medical checks and the doctor's prescriptions. We will also help them with prayers. It is our prayers that will work with the drugs to make them effective. The affected persons must believe that God can cure illnesses, however, they must also go to the hospital to meet the endocrinologist; they must also take their medications.
(**Pastor, Inu Koko Ibadan)**

Indirectly, religious organizations also helped diabetic and hypertensive patients manage proper self-management habits as reflected in the extract below:
"The doctors used to come to screen our church members. In fact, they told us that once we are 40 years and above we should ensure that we eat more of fruits and vegetables. They come around once in two months or three months. They tell us that uncooked food is good for us. Also, we were encouraged to eat fruits and plantains, and you know, heeding to these instructions is helpful."
- (**Inu Koko, Ibadan)**

Indirect informal caregivers have contributed immensely to the successful self-management of diabetes and hypertension patients in the community. This was done by sensitizing them, creating social support which was not necessarily financial, but the creation of healthy socialization and collaborations with medical practitioners through the deployment of social capital.

Discussion

This study has shown that there were still gaps in knowledge as regarded the lived experiences of hypertensive and diabetic persons within the local context in Ibadan. Many people are yet to adopt routine medical check-up which as a vital aspect of a healthy lifestyle, and which also accounts for the late presentations of patients with non-communicable diseases in hospitals. The knowledge base of many adults in the study was low though majority of the respondents stated some of the causes of hypertension and diabetes. The actual definitions of these ailments were not well-stated. Evidently, the knowledge was still mixed with misconceptions and superstitions. The conclusion here is that there was a need for urgent and intense sensitization at the community level as it pertained to the causes, control and management of non-communicable disease.

As regards the control and management of these ailments, there was a need for an inclusive strategy as put forward by Airhihenbuwa et al.[7] The study revealed that patients' socio-cultural environments matter when it comes to self-management. All male participants depended on spouses for the preparation of meals. It was important to pay cognizance to the Yoruba family practice and the fact that diet was an important part of management in non-communicable ailments. Furthermore, it was expedient to educate informal caregivers on non-communicable diseases and to provide adequate information on the diet regimen of hypertensive and diabetic patients in order to achieve an effective management of these ailments. This tallied with the position of Khandan et al.[10]

During the course of the study, it was discovered that participants were familiar with the use of local herbs; this was in line with the scientific literature which debated the use of herbal and natural remedies in treating both ailments. Thus, it is evident in the study that the utilization of both complementary and alternative therapies thrives. Many of the participants and informal caregivers in this study partly attributed being diabetic or hypertensive to spiritual attacks; this supported the findings.[14] This also corroborated the position of Bokhour[6] which was that the understanding of beliefs as embedded in patients' social context would aid self-management and policy formulation.

Social support was crucial to the management of non-communicable diseases, as reflected in this study. Many participants received social support which in turn enhanced the access to knowledge, healthcare, and an adherence to medications and instructions through the support of immediate family members, neighbours, religious leaders and social groups. This also aligned with the stance of Airhihenbuwa and Legido-Quigley[7,1] that patients' socio-cultural contexts determined levels of adherence and self-management.

However, there were challenges faced by many diabetic and hypertensive patients, especially the males. In the traditional Yoruba setting, the wife oversees the meals, specifically, when and how meals are prepared. It was

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also the prerogative of the wife to care for and prepare meals for her husband.[15] In situations where the informal caregiver lacked adequate knowledge about the management of the condition in terms of dietary patterns, the patient might not get better. Therefore, it is important to involve informal caregivers in the management of diabetic and hypertensive patients.[10]

Additionally, this study revealed that community involvement in the management of non-communicable diseases would help in breaking the chain of secrecy and stigmatization that may exist in many societies. Also, the organization of health talks and workshops at community levels either by religious groups as it is done in community studies by Christian and Muslim groups, or by social groups as demonstrated by tenant/landlord associations. This would create more awareness which would help in achieving health for all. As emphasized by Galiatsatos et al,[16] informal caregivers cut across all cultures and were very important to the management of diabetes and hypertension, hence, they must be factored into health policies revolving round the management of non-communicable diseases.

Conclusion

The lived experiences of diabetic and hypertensive patients dictated the pattern and success of self-management; to a large extent, this depended on the socio-cultural environment and the availability of social support. Likewise, achieving the control and management of both diabetes and hypertension required the involvement of both medical and cultural apparatus (direct and indirect informal caregivers) in the society.

Declarations

Ethical consideration: Ethics approval and consent of participants were duly sorted. All ethical rules were duly observed during data collection and writing. This study was approved by the University of Ibadan/University College Hospital Ethical Review Committee, Nigeria and the assigned Reference Number is UI/EC/17/0410.

Authors' contribution: Omobowale MO, Oladunni O, Oladepo O, John-Akinola Y, Oluwasanu M, conceived the research idea; Oladunni O and Oluwasanu M collected the data. Omobowale MO, Oladunni O, Oladepo O, John-Akinola Y and Oluwasanu M, designed the analysis tools. Omobowale MO, Oladunni O, John-Akinola Y and Oluwasanu M contributed to the manuscript writing and Oladepo O reviewed the final draft for publication.

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