

The knowledge and beliefs of hypertensive patients attending Katleho District Hospital in Free State province, South Africa, about their illness

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Introduction: Hypertension is a common chronic condition. A sound understanding of people's beliefs is required in this regard. Usually, poor compliance and decisions by patients to stop taking conventional treatment and to use complementary remedies and traditional remedies arise from poor knowledge of hypertension. The complications of hypertension in non-adherent patients are a concern at Katleho District Hospital. This study sought to explore the knowledge of and beliefs held by patients attending Katleho District Hospital in Virginia on hypertension.

Method: An exploratory descriptive qualitative study was conducted on hypertensive patients attending the outpatient department of Katleho District Hospital. Ten key informants were purposively selected. The exploratory question asked of participants was: "Could you please explain to me your beliefs on, and what you understand about, high blood pressure?" Themes were identified manually and ideas grouped using the cut and paste method.

Results: Five themes were identified, namely correct knowledge about hypertension, incorrect knowledge of hypertension, lack of knowledge regarding hypertension, beliefs about it and misconceptions about it. There were 19 subthemes. Participants demonstrated good knowledge of hypertension, its causes, symptoms and management. However, beliefs and misconceptions influenced their interpretation and response to hypertension.

Conclusion: This study highlights the importance of understanding patients' knowledge and beliefs in order to forge relationships that promote optimal care and compliance with treatment.

Keywords: knowledge of hypertension, lay beliefs, misconceptions, stress

Introduction

Hypertension is a common chronic condition. A sound understanding of people's beliefs is required in this regard.¹ The health belief model and patients' beliefs and knowledge are of importance, particularly as alternative medicine is widely practised.² Usually, poor compliance and decisions by patients to stop taking conventional treatment and to use complementary remedies and traditional remedies arise from poor knowledge of hypertension.^{3–8}

Low adherence results from poor doctor patient communication and patient beliefs that there is no sound reason for them to permanently remain on antihypertensive treatment, based on their perceptions of their health status.^{9,10} The complications of hypertension in non-adherent patients are a concern at Katleho District Hospital. Patients' poor understanding of hypertension is based on their personal lay beliefs and lack of knowledge. People understand hypertension to be an excess of blood in the body in Ga-Rankuwa.¹¹

Good knowledge of hypertension motivates patients to participate in lifestyle modifications, such as weight loss, alcohol reduction, regular aerobic exercise and increased consumption of fruit and vegetables.^{12–14} Petrie et al demonstrated that patients' perceptions of their illness accounted for a significant proportion of the variance between clinical disease severity and outcome.¹⁵ Certain beliefs should be viewed as maladaptive because they act as barriers to adherence or predict higher levels of disability and reduced quality of life. The Health Belief Model (HBM) incorporates preventive health behaviour, sick role behaviour (adherence) and clinic use (visiting a healthcare professional). According to the HBM, these concepts account for people's readiness to act.¹⁶

According to the self-regulatory model, adherence is regarded as a specific problem with a focus on coping strategies. Patients determine whether or not the proposed treatment is in line with what they believe about their illness before deciding whether or not to comply with it.¹⁶ Patients also assess the success of their treatment and may not continue with it if they perceive it to be unsuccessful.

This study sought to explore knowledge of and beliefs held by patients attending Katleho District Hospital in Virginia on hypertension. The population of the town was estimated to be 122 502. There are five government clinics. A study on the beliefs of patients with hypertension has not been conducted in this setting.

Method

An exploratory descriptive qualitative study was conducted on hypertensive patients attending the outpatient department of Katleho District Hospital in Virginia, Free State. Ten key informants were purposively selected from the available 615 hypertensive patients. There were 615 patients on the register of hypertensive patients attending the outpatient department. Participants were purposively selected to provide rich and in-depth information. The selected study participants had had hypertension for more than two years and were perceived to have insight into their condition. The level of control of the hypertension was not considered when selecting the study participants.

A skilled research assistant conducted free attitude (one on one) interviews with each participant in the language chosen by the participant. A second research assistant took field notes and

Table 1: Summary of themes, subthemes and quotations

Theme number	Theme	Subtheme	Quotation
1	Correct knowledge of hypertension	Hypertension is incurable	"They say it is lifetime condition; it only gets better."
		Pregnancy causes hypertension	"I think it was caused by my pregnancy. My blood didn't flow well."
		A poor diet and lifestyle cause hypertension	"Oh. All these things cause high blood: salt, beers, cigarettes, fat meat."
		Hypertension can be inherited	"My biological mother was hypertensive and sometimes these things are inherited."
		Hypertension can be caused by stress	"Thinking hard and talking to yourself too much, as well as stress."
		Compliance with treatment is important	"Once you are told that you are hypertensive, you must comply with the treatment and take it accordingly."
		Lifestyle modification is important for controlling hypertension	"To control blood pressure, you can take a walk and do exercises, as well as get yourself out of a difficult situation and socialise with other people."
		The symptoms of hypertension can be reduced by resting	"I don't really know, sister, what is happening, and by that time when I don't want to talk to people, I fall into a deep sleep," and "I wake up better and then manage to talk to people."
2	Incorrect knowledge of hypertension	Hypertension is a lifelong condition	"They say it is lifetime condition; it only gets better."
		Incorrect causes of hypertension	"But eating a lot of sugar, perhaps sweet tea, drinks that make my blood pressure high," and "My child was not in the placenta. She was just in the stream of blood."
3	Lack of knowledge about hypertension	Incorrect advise about hypertension	"Somebody told me not to do anything in the morning," and "They said I must not sweep."
		Some participants lacked knowledge of hypertension	"I truly don't know what it (high blood pressure) means," "I just take it like any other illness because I just suffer from it without any reason" and "Nobody knows anything about this illness, truly speaking, nobody."
4	Beliefs about hypertension	Traditional and herbal remedies are useful in controlling hypertension	"The elders told me that it (aloe) reduces high blood."
		Hypertension is a curable condition	"I believe that high blood can be cured."
		Spiritual activities improve hypertension	"And I am always better when I come from church because I like it, and it is better than when I am alone at home."
		Hypertension changes people's behaviour	"I don't really know, sister, what is happening. It is like madness, and by that time, when I don't want to talk to people, I really feel like sleeping and fall into a deep sleep."
		People can tell when their blood pressure is high	"Yes. Blood pressure was high because I was having a terrible headache."
5	Misconceptions about hypertension	Misconceptions exist with regard to the knowledge of, explanations about and the consequences of hypertension	"What kind of illness is high blood? People say it is the flow of blood" and "My nerves were also stiff and painful at the back of my head."

noted nonverbal cues during the interview. The entire interview was audiotaped. Interviews were continued until saturation was reached (after 10 interviews).

The exploratory question asked of participants was: "Can you please explain to me your beliefs and what you understand about high blood pressure?"

During the process, facilitation, clarification and reflective summary helped to encourage and verify participants' responses. The interviews continued until saturation was reached.

A trained research assistant transcribed the audiotaped data verbatim in Sesotho. A trained linguist translated the data from Sesotho to English. Another independent research assistant translated the interviews back from English to Sesotho and a comparison was made for consistency and reliability. Field notes were used to triangulate the data obtained in the interviews. Themes were identified manually by colour coding and ideas grouped using the cut and paste method. An integrated list of emerging themes was developed.

Credibility was enhanced by the use of two research assistants with knowledge of and experience in the analysis of data in qualitative research. Triangulation was performed using reliable data collection methods of interviewing, field notes and validation of the data captured by audiotape. Field notes from observations supported the data and consolidated the credibility of the study. The use of an independent external coder who coded the transcripts and the triangulation, using reliable sources, increased the dependability and confirmability of the study.

Ethical approval was obtained from the Research Ethics and Publications Committee of the University of Limpopo (Medunsa Campus), MP 15/2006. Permission to conduct the study was obtained from the hospital management of Katleho District Hospital. Written consent was obtained from participants prior to the commencement of each interview. Confidentiality and anonymity were maintained.

Results

Themes emerging from the interviews were summarised and are reported in Table 1.

Knowledge of hypertension

People's knowledge of hypertension included the following:

- *Hypertension is a lifelong incurable condition:* Most people knew that hypertension is incurable: "They say it is lifetime condition; it only gets [controlled]".
- *Hypertension is caused by hard physical work:* "Somebody told me not to do anything in the morning" and "They said I must not sweep".
- *Pregnancy causes hypertension:* "I became pregnant and started to be sick"; "It was discovered at the clinic with my first-born pregnancy and I started to take treatment there" and "I think it was caused by my pregnancy. My blood didn't flow well".
- *Hypertension is an inherited disease:* One participant stated that genetics play a role in hypertension: "My biological mother was hypertensive and sometimes these things are inherited".
- *Thinking hard, frustrations and stress cause hypertension:* Almost all of the participants believed that thinking hard, and having to endure stress and frustration were causes of elevated blood pressure. Control was seen to be achieved only when problems of living were managed, resulting in decreased blood pressure.

These views were expressed in different ways: "Thinking hard and talking to yourself too much, as well as stress"; "When you are thinking hard in time of problems"; "Because after dropping out of school, I started to think hard"; "This illness is caused by thinking hard"; "People say it is because of hard thinking"; "Because my mother is sick I keep on thinking, and I don't have money, it really makes me think hard"; "I was stressed up by my husband at that time. We fought a lot and I really experienced difficulties at that time. Sometimes I felt tired. I could not even stand up. I felt like I was having a heart problem"; "Even my children were no longer quiet. They kept on asking me to leave, and even now I can't tell you why did I stay in such an abusive marriage"; and "He moved out and my children were so relieved. He was a pensioner, but he couldn't give me money".

- *Problems in life cause hypertension:* Four participants believed this to be so. They expressed this as follows: "From my perspective, this (high blood pressure) caused by problems"; "I am an orphan and I completely don't know my mother. My father died when I was seven years old. Do you understand how miserable my life was?"; "The other thing that is frustrating me is my girl child. She got married and her marriage is problematic"; and "When you are having this problem you need to avoid painful things or bad feelings. For instance, if you have attended a funeral, when you come back your blood pressure is high because of those painful feelings".
- *Salt, fat and smoking cause hypertension:* The following ideas were stated by almost all of the participants: "I have heard people saying it is caused by salt, fat"; "Oh. All these things cause high blood: salt, beers, cigarettes, fat meat"; "I believe it is caused by overweight, fat, salty food that I am eating"; "I can say that the cause of high blood pressure can be stress" and "Hypertension is like the disorder that is being caused by cholesterol".
- *Diet, exercise and weight control improve hypertension:* Some participants showed that they were aware that diet, exercise and weight control were important in hypertension control: "Sometimes, I lose two kilos and become alright"; "During the day, I eat fruit and at night a little of full meal, maybe a spoon of porridge and vegetables"; "To control blood pressure, you can take a walk and do exercises, as well as getting yourself out of a difficult situation and socialise with other people"; "As I am overweight like this, it means it is not going to get controlled" and "I manage to exercise".
- *Adherence is essential in the control of hypertension:* The importance of adherence to treatment was emphasised: "Once you are told that you are hypertensive, you must comply with the treatment and take it accordingly".

- *The symptoms of hypertension can be reduced by resting:* Participants agreed that keeping quiet and sleeping helps to reduce blood pressure and the symptoms of stress: "I don't really know, sister, what is happening, and by that time when I don't want to talk to people, I fall into a deep sleep". One of them reported that she felt life was much better having woken up: "I wake up better and then manage to talk to people"; while another said: "Yes, because always when I wake up, I feel better".

Headaches and intolerance of others, perceived to be due to elevated blood pressure, disappeared after sleeping.

Incorrect knowledge of hypertension

Incorrect knowledge of hypertension was linked to various erroneous beliefs:

- *A belief that spiritual interventions improve hypertension:* Participants described the important role of prayer and holy water in controlling hypertension symptoms: "I am always better when I come from church because I like it, and it is better than when I am alone at home"; "She used to take me there. They could pray for me and give me water" and "I used that water for my painful headaches".
- *A belief that traditional and herbal remedies are useful in controlling hypertension:* "The elders told me that it (aloe) reduces high blood"; and "I am drinking aloe in the morning daily ... people have advised me to drink aloe". One participant explained: "There was a lady who made a traditional medicine for me. It helped me a lot, but I could not continue using it because it was expensive. I drink it in the morning and afternoon. It looks like dye, but with water taste. When I stopped taking it, my sickness started again". Because he trusted this treatment, he continued to take it, even though he didn't know its name: "I am just drinking. I don't know its name. I forgot it. But it is sold by small bottles".
- *A belief that hypertension is a curable disease:* Some participants held the belief that hypertension could be cured: "I believe that high blood can be cured".
- *A belief that hypertension changes people's behaviour:* Some participants believed that a state of mind that they referred to as "madness" resulted from elevated blood pressure: "I don't even want to talk to people. I feel like keeping quiet and be alone"; "When I am like that, I don't even feel like greeting people"; and "I don't really know, sister, what is happening. It is like madness, and by that time, when I don't want to talk to people, I really feel like sleeping and fall into a deep sleep".
- *A belief that people can always tell when their blood pressure is high:* Participants felt that they were able to tell when their blood pressure was high from the symptoms that they were experiencing: "Yes. Blood pressure was high because I was having a terrible headache"; "I am somehow feeling dizzy sometimes"; "I also have a pain on my head. I can't even put anything on the head, I am always like that and I am often bleeding"; "Ache, mama! I am not really fine about it. Lately, I feel dizzy"; "I even collapsed"; "Some other times, my head is paining, with my eyes tearful and painful"; "I could not turn the head, and I went to the municipality clinic where I was diagnosed as hypertensive until now"; "It is up when I have painful headache" and "I was always having uncontrollable headache and dizziness".

Lack of knowledge (ignorance) about hypertension

Participants who had been living with hypertension for more than five years still lacked knowledge on hypertension: "I truly don't know what it (high blood pressure) means"; "I truly don't know what causes it"; "I just take it like any other illness because I

just suffer from it without any reason"; "I have forgotten other things beside the pills"; "It is, I have forgotten them"; "I don't want to lie, I have never asked"; "I have never asked" and "I have said I'm just considering it as any other ordinary sick".

Misconceptions about hypertension

There were misconceptions about hypertension too, particularly with regard to causes and explanations pertaining to the symptoms: "What kind of illness is high blood? People say it is the flow of blood"; "My blood didn't flow well"; "My child was not in the placenta. She was just in the stream of blood" and "My nerves were also stiff and painful at the back of my head".

There was also a misconception that too much sugar increases blood pressure: "But eating a lot of sugar, perhaps sweet tea, drinks that make my blood pressure high".

Discussion

The main findings of this study were that participants had good knowledge of hypertension, its causes, symptoms and management. However, beliefs and misconceptions influenced their interpretation and response to the illness.

With regard to knowledge of hypertension, dietary habits, lifestyle, heredity factors, pregnancy and stress were correctly identified as possible causes of elevated blood pressure. This is consistent with available scientific evidence that fatty food, a salty diet, sedentary lifestyle, pregnancy, stressful lifestyle and smoking are key risk factors for the development of hypertension.¹⁷ Steptoe and Willemsen demonstrated that blood pressure may also persistently increase over a long period in response to a wide range of stressful situations, including stress at work.¹⁸ The Whitehall II cohort study showed that systolic and diastolic blood pressure were greater in participants reporting diminished control over their jobs than in those reporting the opposite, independent of sex, employment grade, body mass index, age, smoking status and physical activity.¹⁹

Food that is high in carbohydrates and fat was identified by participants in this study as a significant contributor to the development of hypertension. Hypertensive patients in developed countries were found to have similar knowledge of the causes of hypertension to that of the participants in this study, unlike those in resource-constrained countries who had poor knowledge of hypertension.²⁰

Some participants also had correct knowledge that hypertension is a lifelong condition and cannot be cured. They also expressed the importance of treatment compliance when attempting to control hypertension, although this study did not explore compliance. A family history of hypertensive disease was identified as a key risk factor in the development of hypertension. This is in agreement with the findings of family studies that demonstrated that hypertension was more frequent in the first-degree relatives of patients with primary hypertension.²¹

It has also been demonstrated that black children with a family history of essential hypertension manifest greater increases in total peripheral resistance, leading to greater increases in blood pressure in response to the cold pressor test and the mental stress of playing a video game.^{22,23} It was found in the study by Shaikh et al that more than 70% of their participants were aware that stress, high cholesterol and obesity were risk factors for hypertension. More than 50% of the respondents in the study were unaware of non-modifiable risk factors, such as male gender (88.2%), increasing age (60.0%) and a positive family history of cardiovascular disease (50.9%). The findings of Shaikh et al were

similar to those in a study that was carried out in Germany, where overall knowledge of the risk factors was good, but few people were aware of the association between physical activity (58%) and hereditary factors (48%) in hypertension.²⁴ Knowledge of predisposing risk factors is vital in the modification of lifestyle behaviour conducive to optimal cardiovascular health.

Studies have highlighted that a good understanding by patients of their condition is important in the management of chronic illnesses.²⁵ The World Health Organization explained that poor adherence to prescribed medicines was the most important cause of uncontrolled blood pressure and accounted for three quarters of patients failing to achieve optimum hypertension control.²⁶ Jiang et al observed that higher hypertension knowledge led to higher awareness and control.²⁷ Lack of knowledge about hypertension was the reason for the inadequate treatment thereof in most people.²⁸

Incorrect knowledge about the causes of hypertension, that included red meat, foetal products in the bloodstream and the flow of blood during pregnancy, was prevalent with regard to some of the participants in our study. It was shown in a survey in Ga-Rankuwa township north of Pretoria that people understood hypertension to be an excess of blood in the body.¹¹ This could influence the way people perceive the treatment that they receive and future compliance.

Participants in this study correctly identified several factors relating to the control of hypertension. Exercise, resting and minimising stress were deemed to help control blood pressure. One participant knew that exercise helps to control blood pressure and walks long distances daily in line with the JNC7 recommendation that hypertensive patients should engage in regular aerobic physical activity, such as brisk walking, at least 150 minutes per week.¹⁷ Regular aerobic exercise, such as brisk walking for at least 30 minutes per day, most days of the week, has been reported to reduce systolic blood pressure by 4-9 mmHg.¹⁴ Participants in this study highlighted the importance of diet in controlling hypertension. Previous studies have described a similar effect with a proper diet. Dietary sodium intake reduction to less than or equal to 6 g sodium chloride per day has the potential to reduce systolic blood pressure by 8 mmHg.²⁹

The beliefs of patients about disease play an important role in determining the management and control thereof. This study highlighted some important beliefs that determined how patients responded to hypertension. Petrie et al showed that patients' perceptions of their illness, e.g. beliefs about the causes, likely duration and consequences, accounted for a significant proportion of the variance between clinical disease severity and outcome.³⁰ These authors also suggest that certain beliefs may be viewed as maladaptive in that they act as barriers to adherence or predict higher levels of disability and reduced quality of life. Beliefs about illness and medicines are interconnected. Aspects that do not directly relate to compliance influence it indirectly. Beliefs about specific medications and about hypertension are predictive of compliance. Information on health beliefs is important in achieving concordance and may be a target for intervention to improve compliance.³¹

This study found that based on symptoms, patients reported that they could always tell when their blood pressure was high. The previously mentioned Ga-Rankuwa study also suggested that people could tell if their blood pressure was raised.¹¹ A USA study reported that self-predictions of blood pressure by hypertensive patients were strongly associated with reported symptoms.³²

The belief that it is always possible to tell when blood pressure is elevated could motivate patients to seek treatment early, but it could also result in delays with regard to seeking treatment and could reduce compliance when their blood pressure is high but there are no symptoms.

Lay beliefs, such as the ones identified by participants in this study, can influence the help-seeking behaviour and management of patients suffering from hypertension. This finding is similar to that in a report that lay beliefs that seemingly reflect the culture of communities influence responses to hypertension.³³ In 2008, Fongwa et al described a number of beliefs that are not consistent with adherence. These include patients not knowing what hypertension is; the notion that working overtime damages valves, and thus causes hypertension; stressors, such as taking care of children and grandchildren, contributing to uncontrolled blood pressure; hypertension medication believed to be addictive and the belief that prayers or communication with God are critical to the management of hypertension.³⁴

Other studies have demonstrated that the problem of low compliance with treatment by patients with hypertension could be explained by patients being inadequately informed about the disease and their belief that there is no sound reason for them to permanently remain on antihypertensive treatment.^{9,31} The use of alternative traditional therapies, either separately or concomitantly with Western medicine, is firmly rooted in the beliefs of the community. In varying contexts, a significant proportion of hypertensive patients attending health facilities and receiving conventional treatment also use complementary and alternative therapies.^{4-7,35}

Misconceptions about hypertension also play a role in patients' behaviour with regard to the disease. One participant expressed hopelessness because of the misconception that no one reliably knew what hypertension was. Instances in which the causes of hypertension are unknown could give rise to an incorrect impression that no one knows about the condition.

The use of prayer and holy water in alleviating hypertension symptoms is rooted, and is a practice that is seemingly well established in the general population. This study confirmed this practice. The use of aloe (a green and bitter mixture) to control hypertension was another practice that was revealed in this study. Respondents identified rest, including sleep and being in a quiet place, as important factors in the control of their hypertension.

Limitations of this study

This was a qualitative study so the findings should not be generalised beyond the study population. However, the study findings are transferable to a population that has similar characteristics to this sample.

Conclusion

This study found that participants from this rural community of South Africa had reasonably good knowledge about hypertension, but that this knowledge was significantly influenced by beliefs and misconceptions about the illness. The study highlights the importance of physicians understanding patients' knowledge and beliefs in order to forge a relationship that promotes optimal care and compliance with treatment. Therefore, it is recommended that a patient-centred approach should be adapted to address patient concerns, views and health beliefs about the illness. Every

effort must be made to impart the correct knowledge about hypertension and to jointly plan care in a respectful and non-judgemental manner.

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