How do people in Ga-Rankuwa Township understand high blood pressure?

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Abstract

Purpose: Hypertension is a common and important health problem. In spite of effective treatment being available, it is often poorly controlled. One reason for this is lack of compliance by patients with treatment because they do not feel ill. In recognition of the importance of the subjective aspects of patient care, this study sought to determine how people in Ga-Rankuwa Township understand high blood pressure.

Method: The study was conducted in Ga-Rankuwa, South Africa, a large black township, Northwest of Pretoria. Two main samples participated: people attending the major shopping complex known as Ga-Rankuwa City, and patients attending the local government health care facilities; namely: Ga-Rankuwa Hospital and 3 community-based clinics.

This study was part of a larger study done to determine whether patients could tell if their blood pressure was up. This part of the study consisted of an open-ended interview, using free attitude techniques that began by asking the participants in their language of choice "What is your understanding of high blood pressure?"

Results: A total of 1004 people participated (a response rate of 97%) ranging from 16 to 88 years in age.

Eleven interrelated themes were identified: lifestyle, symptoms, don't know, problems/stress/emotions, too much blood, people at risk, danger, physiology, chronic, environment and body heat. A model, integrating these themes is presented.

Conclusion: It would seem that the themes identify thoughts that come from two main sources: one being the participants' own understanding of high blood pressure based on personal beliefs and experiences, the other being patient education. The personal understanding can be expressed as body heat. Perhaps one practical message from this study is that when you next see a patient with elevated blood pressure, you should find out what is generating his or her heat!

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Introduction

High blood pressure is common, but in spite of effective treatment being available, it is often poorly controlled.[1,2] Compliance with treatment is thought to be a problem because people do not feel ill.[3] Health care providers often assume that patients do not understand high blood pressure and varying efforts are made to educate patients.[4] However, little attention has been paid to patients' thoughts, feelings and expectations about their blood pressure which are important, not only for compliance with management, but also for healing.[5]

This study was part of a larger study done in Ga-Rankuwa Township, that sought to answer the following three questions:

1. Can people tell if their blood pressure is up?
2. Is high blood pressure asymptomatic?
3. How do people understand high blood pressure?

The results concerning the first two questions were published five years ago.[6] This paper presents our findings in response to the third question.

Methods

The aim of the study was to learn what our population at risk[7] understood about high blood pressure. The study design involved both quantitative and qualitative methods each providing their own kind of understandings.[8] Participants participated in an interview that began with a free attitude component followed by a structured component and then had their blood pressures measured independently.

The context of the study was a large black township, 32 kilometres Northwest of Pretoria. The Department of Family Medicine has provided primary health care services for this population for the past 19 years. Ga-Rankuwa was previously part of Bophuthatwsana and the people are almost completely Tswana speaking. Those who visit for health care and shopping come from the nearby portions of the Odi District and Soshanguve. The sample was drawn from two main settings. The community-based site was the main shopping centre in the township known locally as Ga-Rankuwa City, chosen in order to make it possible for most members of the community to participate. The health facility-based sites were the 3 government community-based clinics in Ga-Rankuwa and Ga-Rankuwa Hospital, the main teaching hospital for the Medical University of Southern Africa. At the hospital, participants came from the two family practice units and the hypertension clinic. All persons aged 16 years and older were eligible to participate. At the shopping centre, signs were put up offering a free blood pressure check and all persons crossing the main foyer were asked to take part. At the health facilities, all eligible patients and staff were asked to participate.

The key variable studied was the participants' understanding of high blood pressure. We wanted to provide a context in which the participants could display their own thinking by speaking in their own way, in their own words about those aspects of the question that seem relevant to them. This required a research strategy that was relatively open and unstructured and that did not impose the preconceived responses[9] required by structured questionnaires. We chose open-ended interviews using the free attitude techniques of a single exploratory question, reflective summaries and clarification.[10] Our exploratory question was: "What is your understanding of high blood pressure?"

The interviews were conducted by three members of the research team, all of whom had been trained in the free attitude technique in order to develop the crucial attitude that Smalling refers to as "open-mindedness." [11] This requires an attitude of receptivity, an ability to be open to receiving impressions, listening with attention and respect, and an ability for "role-taking" whereby the researcher places himself imaginatively in the position of the other. The interviews were conducted in the participant's language of choice. Hand written notes, translated into English, were taken as the participant spoke in order to collect the data as nearly as possible in the respondent's own words.[12] These notes were then translated and read back to the participant in the original language to check their accuracy.

Qualitative analysis was done using the principles of "role taking" [13] and "immersion" [12] Statements were grouped into themes using the cut and paste method. The process was continued until there was "crystallisation" [12,14] of a picture or model. We aimed for a kind of "Munchhausen-objectivity" [15] which encompasses both internal validity and internal reliability. Smalling defines this kind of objectivity as "doing justice to the object of study." The researcher strives for objectivity by letting the "object" of the investigation speak without distortion.

Attention was paid to the following *ethical considerations*: informed verbal consent to take part in the study was obtained, respect and sensitivity were shown, confidentiality was assured and maintained and participants requiring follow-up were referred to their usual source of care for further management.

Results

Participant characteristics

Of the 1 035 people asked to take part in the study, 27 persons at the shopping centre, 3 patients at the hospital and no patients at the community-based clinics declined and one data form was incomplete such that 1 004 persons had a complete data set for a participation rate of 97%. The study involved people from all 11 national language groups.

The participant characteristics are shown in Table I. Table II shows the blood pressures taken after the interview.

Understanding high blood pressure

Eleven themes identified from the free attitude interviews are presented below with supporting direct quotations from individual interviews.

1 Lifestyle

This theme encompassed four sub-themes each concerning an aspect of behaviour thought to affect blood pressure.

(i) Diet

A poor diet was blamed for causing high blood pressure: *"The food we eat causes it," "Caused by bad eating habits."* It was suggested that we change the foods we eat: *"You must stop eating some foods," "You must eat a different type of food."*

Most commonly, participants listed things that should be avoided. For some this was onerous: *"Many things must be avoided."* The final list consisted of 8 kinds of food items: salt, sugar, fat, spices, hot food, sweet foods, acid/sour food, and water. Some made a point that only those with high blood pressure must avoid these things *"Sufferers to avoid,"* but most applied these prohibitions to everyone: *"No salt and spiced or fatty food," "Avoid sugar," "Avoid red meat," "Avoid bananas and sweet things," "No sour things like coke, tomatoes, sour porridge."*

Eating a healthy diet was expressed as: *"You must eat the right food"* or *"You "have to be selective in your eating habits."* Specific advice included: *"Eat only brown bread and brown mielie meal," "Take a lot of water," "Eat white meat," "Eat lots of vegetable and fruit."*

(ii) Obesity

Not only what you eat, but also how much you eat was identified as causing high blood pressure: *"Eating too much," "It is also how fat you are," "People with weight have hypertension."*

(iii) Smoking and alcohol

Smoking and alcohol were seen as causes of high blood pressure: *"Caused by alcohol and smoking"*. The solutions were straightforward: *"No alcohol," "Don't smoke."*

(iv) Exercise

On the one hand exercise was advocated: *"You must exercise a lot."* On the other hand, running, hard physical work, sports and sex were said to cause the blood pressure to go up: *"When you run, the blood pressure goes up," "Caused by heavy duty work," "Playing sports the blood pressure goes up," "Too much sex causes it."*

2 Symptoms

Altogether 17 symptoms were reported; namely: headache, dizziness, tiredness/fatigue, feeling hot, sweating, difficulty with breathing, palpitations, constipation, having a bad smell, swelling, loss of appetite, loss of vision, nose bleeds, sadness/depression, fainting, weight loss, and general malaise. Most of the time, high

Table I: Participant Characteristics, Ga-Rankuwa township, 1995. (N=1004)

Age:	Range 16-88 years Mean 40 years. SD 16 years.	
Sex:	Female.	62%
Marital Status:	Never married	37%
	Married	47%
	Separated/widowed/divorced	16%
Education:	Did not complete primary	19%
	Completed primary	47%
	Completed secondary	23%
	Completed higher education	11%
Health Education:	None	73%
Language Group:	Tswana	66%
	Northern Sotho	13%
	Zulu	6%
Site:	Community-based	57%
	Health-facility based	43%
Blood Pressure taken before:	Never taken	17%
	Taken within one year	68%
	Taken within five years	80%
Told BP before:	Never told	44%
	Told BP Normal	16%
	Told BP Low	2%
	Told BP High	38%
BP explained before:	No	75%
On treatment:	Never	65%
	Previously	10%
	At present	25%
Symptoms present at interview:	Yes	27%
Regular source of care:	Yes	56%

Table II: Blood Pressures, Ga-Rankuwa township, 1995. (N=1004)

	Range	Mean	SD
Systolic:	84 to 258	135	24
Diastolic:	50 to 178	87	14

Classification of the blood pressures according to the World Health Organization / International Society of Hypertension:

Normal	**71%**
Mild Borderline	**9%**
Mild	**9%**
Moderate and Severe	**7%**
Isolated Systolic	**4%**
TOTAL	**100%**

*Blood pressures were taken three times in the right arm with the patient seated, using a calibrated mercury baumanometer. The 1st and 5th Korotkoff sounds were used for systolic and diastolic pressures respectively.

blood pressure was seen as causing the symptoms: *"You sweat a lot,"* *"You can not breathe nicely,"* *"Causes you to swell a lot,"* *"You get tired very fast,"* *"Can cause you to smell,"* *"Causes you to faint."* But sometimes the symptom was expressed as the cause of high blood pressure: *"Caused by headache,"* *"Sometimes you have palpitations and this will make your BP go up."*

3 Don't Know

This theme expressed a lack of ideas or knowledge about high blood pressure: *"Don't know,"* *"No idea,"* *"I can't say,"* *"No knowledge about blood pressure,"* *"I understand nothing about it."*

4 Problems/Stress/Emotions

Problems of many kinds were emphasised as causes of high blood pressure: *"Too much problems cause it,"* *"It affects people with problems of living,"* *"Financial problems,"* *"You got problems in the house,"* *"Especially with children and husband"*.

Problems were closely related to stress: *"Caused by stress because of marital problems,"* *"Stress related to chronic illness of husband."* Working too hard was identified as a specific stressor: *"BP goes up when you work too hard,"* *"Not good to work too much."*

Problems were also often associated with emotions: *"Too much problems causes disturbances in the mind. You become short tempered and aggressive"* and high blood pressure was thought to be caused by emotions: *"It comes through the emotions."* Anger was one of the commonest emotions described: *"It is anger,"* *"Becoming fed up with someone."* But positive emotions, in excess, could cause high blood pressure too: *"When very happy,"* *"When very excited."* Not only could emotions cause high blood pressure, but high blood pressure could also cause emotions: *"Causes you to be short in temper,"* *"Causes aggression."*

5 Too much blood

This theme was most commonly expressed as: *"A lot of blood,"* *"A lot of blood in the body"* or as *"Big blood."* Often a cause for the excess blood was given, most commonly related to too few or too many children or to cessation of menses due to menopause or injectable contraceptives: *"Big blood because I have too many children,"* *"A lot of blood due to having few children,"* *"Too much blood after the periods stop,"* *"One has a lot of blood racing to the head because the injection stops the menses."* Other causes of too much blood were related to the heart, hard work, and diet: *"The heart is fast and causes more blood,"* *"A lot of blood caused by heavy duty work,"* *"The food you eat causes too much blood."*

6 People at risk

This theme identified certain groups of people as being at higher risk for getting high blood pressure. High blood pressure: *"Affects women the most"* and *"Most women are at risk."* It *"Attacks pregnant women,"* *"Women who are older with no children are at high risk"* and *"Older people are at high risk."* High blood pressure was also seen to be inherited: *"You get it from your parents."* There was also the perception that high blood pressure is a *"Disease of the nation,"* that: *"Everybody can get it."*

7 Danger

High blood pressure was viewed as dangerous: it caused many compli-cations and was potentially lethal: *"It is a very bad illness,"* *"It can kill you."* By far the commonest complication mentioned was stroke: *"It causes stroke and you die."* Other complications involved the heart, the kidneys and the eyes: *"It can make me get a heart attack,"* *"It causes kidney failure,"* *"It can make me blind."*

8 Medical Physiology

This term was chosen for those descriptions which fit, to some extent, a medical understanding of high blood pressure: *"Elevated blood pressure due to constricted blood vessels,"* *"The blood pressure on the veins is high and the heart has to press hard and that is why you get BP."* Some gave a physiological explanation of a complication of high blood pressure: *"Too much blood which wants to burst,"* *"Blocked blood vessels that result in a stroke."* Some understood it differently from the medical view, but you can see the connection: *"Blood clogged in the vessels due to salt intake."*

9 Chronic

High blood pressure as an *"illness"* or *"sickness"* that did not heal, was not curable, and needed lifelong treatment: *"It is a sickness that can be controlled,"* *"No cure. You will be on treatment for the rest of your life,"* *"Does not heal."*

10 The Environment

This theme concerned the weather and noise. Those with high blood pressure: *"Can not work when it is hot,"* *"Must avoid sitting in the heat,"* and should *"Avoid noisy places."*

11 Body Heat

This theme seemed to us to be the most powerful. Blood pressure was said to be: *"A measurement of body temperature."* The theme of body heat was expressed as: *"Too much heat in the body,"* *"When the body temperature is higher than it should be,"* and *"When the blood has exceeded its normal pressure, the body starts to overheat."* This heat was not dependent on the weather because you: *"Feel too much heat even if it is cold."* The main location of the heat was said to be in the blood: *"BP is when your blood is hot,"* *"It is blood which causes heat in the body."* The most obvious sign of body heat was sweat: *"When the body temperature is too high you sweat,"* *"It is when the blood is in a high temp that you sweat time and again."*

Intergration of the themes

A way in which the various themes can be integrated and related to each other is shown in Figure 1. Body heat is the central, integrating theme. Diet (especially hot or spicy foods) can increase the heat as do problems, stresses, and emotions. The heat is in the blood and thus is greater in those predisposed to more blood because of exercise or hard work or because of cessation of menstruation which prevents drainage. The increased heat produces a large number of symptoms and complications. A hot and noisy environment makes matters worse.

Differences among groups

Once we had identified the themes, we were interested to see if there were differences amongst various groups of participants. We wondered if there might be differences between those attending the shopping centre compared with those attending a health facility. As shown in Table III, five main differences were found: participants at the shopping centre were more likely to mention symptoms, people at risk and body heat, and less likely to say they did not know, or that high blood pressure was chronic.

We were also curious as to whether being on treatment for high blood pressure might make a difference. It did, as shown in Table IV. There was a significant difference for 8 out of the 11 themes. Participants who had never been treated for high blood pressure were more likely to say they did not know about high blood pressure than those who had been treated did. They were also more likely to mention symptoms and body heat. They were less likely to mention lifestyle, problems/stress/emotions, danger, or chronicity.

Table V shows the frequency of the various themes according to the specific sites controlled for the effect of treatment. Only the theme of lifestyle remained as a significant difference according to site, in that participants attending the shopping centre and the hypertension clinic were more likely to mention lifestyle (mainly diet) than those attending the community-based clinics or the family practice teams at the hospital.

Discussion

We had an excellent response rate and think our sample was a good one both with respect to size and representativeness of the population of Ga-Rankuwa. We found the open-ended interviews using free attitude techniques worked well, the exploratory question was easily understood and that conducting the interviews in the participant's language of choice helped them to relax and talk freely. The finding that 19% of our participants stated that they did not have any understanding of high blood pressure could have been because they really did not, because they did not feel

***Table III:** Percentage of participants mentioning each theme according to site. Ga-Rankuwa township, 1995*

Theme	Total Sample N=1004	Shopping Centre N=576	Health Facilities N=428	Chi-square* Df=1	P
Lifestyle	36%	39%	33%	3.54	0.0677
Symptoms	30%	35%	23%	16.79	0.0000
Don't know	19%	17%	22%	3.92	0.0477
Problems / Stress / Emotions	18%	17%	19%	0.49	0.4844
Too much blood	13%	11%	15%	2.63	0.1046
People at risk	9%	11%	6%	5.23	0.0221
Danger	9%	9%	9%	0.00	0.9504
Physiology	5%	4%	6%	1.46	0.2271
Chronic	4%	2%	6%	15.8	0.0000
Environment	0.8%	1.2%	0.2%	1.89	0.1601
Body Heat	17%	21%	11%	16.64	0.0000

*Yates corrected chi-square for 2x2 tables

***Table IV:** Percentage of participants mentioning each theme according to treatment. Ga-Rankuwa township, 1995*

Theme	Total Sample N=1004	Never treated N=648	Treated before N=100	Treated at present N=256	X^2 Df=2	P
Lifestyle	36%	30%	47%	45%	24.47	0.0000
Symptoms	30%	37%	22%	13%	54.48	0.0000
Don't know	19%	22%	10%	14%	12.99	0.0015
Problems/Stress/Emotions	18%	14%	28%	24%	19.60	0.0000
Too much blood	13%	11%	14%	17%	6.49	0.0389
People at risk	9%	9%	13%	9%	1.73	0.4206
Danger	9%	6%	13%	15%	19.73	0.0000
Physiology	5%	6%	0%	6%	4.31	0.1158
Chronic	4%	2%	1%	8%	20.84	0.0000
Environment	0.8%	0.9%	1.8%	0%	2.11	0.3471
Body Heat	17%	22%	14%	5%	38.34	0.0000

comfortable enough to share their ideas or because they were in a hurry. The interviews were successful in providing data that no preconceived schema of ours would have anticipated.

The 11 themes described points to a rich mixture of thoughts about high blood pressure that would seem to come from two main sources: one being patient education: the other being the participants' own understanding of high blood pressure based on personal beliefs and experiences.

The participants who had been or were still on treatment demonstrated the effect of patient education, which was evidenced most directly in the themes of lifestyle, danger, physiology and chronicity. The quotations from these participants give us the opportunity to learn about how they have interpreted attempts to educate them. Understandably a greater percentage of those not on treatment said they had no idea than those on treatment, but the fact that 14% of those presently on treatment for hypertension said that they had no understanding of high blood pressure may well reflect something about how we handle patient education.

The participants who had never been on treatment for high blood pressure were the least likely to have had patient education and thus their descriptions were the least likely to be contaminated by it. Their understanding was stated mainly in terms of symptoms and body heat.

The integrating theme of body heat fascinates us. Remember when we were taught that hypertension had nothing to do with tension. We know better now. Perhaps the message here is that when you next see a patient with elevated blood pressure, you should find out what is generating his or her heat!

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Table V: Percentage of participants mentioning each theme according to treatment. Ga-Rankuwa township, 1995

Theme	Total on treatment at present N=256	Shopping Centre N=80	Ga-Rankuwa clinics N=52	Family Practice N=76	Specialist HT clinic N=48	X^2 Df=2	P
Lifestyle	45%	45%	29%	38%	67%	15.95	0.0011
Symptoms	13%	15%	14%	11%	9%	0.67	0.8806
Don't know	14%	13%	17%	16%	9%	2.12	0.5472
Problems/ Stress/Emotions	24%	21%	22%	30%	18%	2.93	0.4032
Too much blood	17%	15%	17%	20%	13%	1.29	0.7303
People at risk	9%	10%	6%	9%	11%	0.88	0.8294
Danger	15%	18%	6%	18%	13%	4.89	0.1801
Physiology	6%	8%	6%	3%	9%	2.36	0.5012
Chronic	8%	6%	6%	7%	17%	5.65	0.1301
Environment	0%	0%	0%	0%	0%	0	NS
Body Heat	5%	4%	5%	5%	5%	0.38	0.9445

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