Patients’ evaluation of the appropriateness of their hypertension management—A qualitative study


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Abstract

Background: The existing appropriateness measures for prescribing used in the United States and the United Kingdom use clinical attributes. Treatment and care from a patient’s perspective need to be evaluated in terms of whether they are more likely to lead to an outcome of a life worth living, in social, psychological, and physical terms. However, it is unclear whether patients specifically evaluate their prescribed medication and treatment. If so, do they use only clinical attributes or a combination of clinical and nonclinical attributes?

Objectives: The aim of this study was to explore if patients evaluated their hypertension management, and if they did, investigate what attributes were involved in the evaluation.

Methods: Semistructured interviews, which focused on personal experiences of hypertension and its management were undertaken with patients (n = 28). The aim of the interviews was to obtain, in a narrative format, the experiences, beliefs, and information that patients considered important when discussing the management of hypertension. Data analysis used a constant comparative method.

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Results: All patients considered their hypertension management regimen appropriate, but were able to mention only 2 categories of attributes to justify their decision (the relationship with their General Practitioner and lowering of their blood pressure). Further series attributes were mentioned by the patient during the course of their interview; these attributes were considered to be involved in their evaluation. These implicit attributes were categorized as anxieties and concerns regarding treatment and diagnosis, explanation of the consequences of treatment, choice of antihypertensives, and the side effects experienced.

Conclusions: Patient’s evaluation of appropriateness was constructed from both explicit and implicit attributes. Implicit attributes, those not consciously known to the patient still, could be involved in the process of evaluating hypertension, its treatment, and care. Although the nonmedical attributes that are considered by patients can be categorized, it has to be remembered that it is the inherent meaning held by each individual patient involved when an evaluation is made.

Keywords: Hypertension management; Appropriateness; Patient-centered care; Qualitative

1. Background

Modernizing the United Kingdom’s National Health Service to ensure patients receive the most effective care pathways, has in part involved a series of National Service Frameworks. Most National Service Frameworks are based on evidence-based guidelines, which have been established from systematic reviews and meta-analyses of randomized, controlled clinical trial data. This ensures that the recommended treatments for specific medical conditions (for example, hypertension and asthma) are based on current, valid, and reliable research findings.

Both the National Service Frameworks and other guidelines derived from evidence-based medicine provide a statement of what should happen in practice. This has lead to the operationalization of appropriateness for various medical treatments. Consequently, this has given impetus to the need for appropriateness evaluations because of the increasing evidence about the high number of treatments that do not conform to the established guidelines. For example, in the management of hypertension patients’ blood pressure, values often are not controlled satisfactorily and/or they discontinue treatment, despite the wide range of effective antihypertensive medicines. Research suggests that this unsatisfactory control is related partly to the low adherence to antihypertensive medication and partly to the inadequate treatment of hypertension. The rationale for using appropriateness evaluations in a primary care setting is to encourage the use of evidence-based clinical practice, standardize service delivery, and determine if prescribing improves or deteriorates.
Appropriateness measures for prescribing have been devised both in the United States and the United Kingdom. In the United States, the Medication Appropriateness Index (MAI) takes into account multiple dimensions of prescribing in a variety of settings and conditions. At the level of the individual patient, the MAI evaluation of regularly scheduled medications involves several dimensions (attributes), including drug indication, directions, and dosage; drug-drug interactions and drug-disease interaction; and effectiveness, expense, practicality, duplication, and duration. Prescribing decisions that did not conform to the stated dimensions are considered inappropriate. Similarly in the United Kingdom, Cantrill et al developed a “measure for appropriate prescribing,” which used 10 indicators (attributes). These indicators take a clinical standpoint and incorporate the patient’s clinical profile. Of these 10 indicators (see Fig. 1), 2 are related to cost of the prescribed medication and others are related to prescribing dimensions noted in the British National Formulary. While this “measure” acknowledges that General Practitioners (GPs) have clinical autonomy, any

1. The indication for the antihypertensive was recorded and upheld in the British National Formulary (BNF).
2. The reason for prescribing an antihypertensive of limited value was recorded and valid.
3. Compared with alternative treatments in the same therapeutic class, which were just as safe and effective, the antihypertensive prescribed was either one of the cheapest or a valid reason was given for using an alternative.
4. A generic product was prescribed if one was available
5. If any potentially hazardous drug-drug combination was prescribed, a note was recorded to indicate the prescriber’s awareness of the hazard.
6. If the total daily dose and/or frequency of dose were outside the range stated in the BNF, a reason was noted in the records.
7. If the duration of treatment was outside the ranges stated in the BNF, the prescriber gave a valid reason.
8. Any contraindications were noted.
9. Patient’s medication was reviewed within the previous 12 months.
10. Prescribing for hypertension adhered to the evidence-based guidelines in the BNF.

Data from Cantrill, JA, Sibbald, B and Buetow, A. Indicators of the appropriateness of long term prescribing in general practice in the United Kingdom: consensus development, face and content validity, feasibility, and reliability. Quality in Health Care 1998; 7: 130-135.

Fig. 1. Attributes of clinical appropriateness.
variation from the established guidelines requires the prescribing GP to make a record in the patient’s medical notes to explain their reasoning. To broaden the use of appropriateness measures of prescribing in general practice in the United Kingdom, Britten et al\textsuperscript{18} combined the indicators for the MAI and the “measure for appropriate prescribing” with the objective of identifying possible relationships between aspects of appropriateness and patient outcomes.

The development of both the MAI and “appropriateness measure” has been the stimulus for a number of research studies. These studies have explored the factors that influence prescribing decisions and the evaluation of the appropriateness or inappropriateness of prescribed medication in general practice.\textsuperscript{19-21} However, very few of these studies have highlighted the patient’s perspective per se. Those studies that have done so, concentrate on the differences between health care professionals and patients. For example, Volume et al\textsuperscript{21} in a study of elderly patients and their prescribed medications, suggest that elderly people rank the clinically defined criteria for appropriateness, as defined by MAI, differently than do health care professionals. The study’s inherent assumption was that people use the same attributes as health care professionals to evaluate their prescribed medication. This may not be so, because the social psychology and sociology literature considers that the health and associated experiences of people are interwoven into their lives.\textsuperscript{22}

Persons other than health care professionals think about health and illness on several levels—they can appear as individual experiences and/or have considerable social significance.\textsuperscript{23} Consequently, health and illness are socially patterned and an individual’s social position may have an important bearing on the individual’s experience and how the symptoms are experienced.\textsuperscript{24} Treatment and care, from a patients’ perspective, need to be evaluated in terms of whether they are more likely to lead to an outcome of a life worth living, in social, psychological, and physical terms.\textsuperscript{25} Patients undertaking an evaluation of their care and treatment are therefore more likely to include both clinical and nonclinical attributes, for example, patient-centered outcome measures, states of physical, emotional, and social health, quality of well-being, and patient satisfaction as well as those that affect a patient’s experiences and care, for example, pain and anxiety.\textsuperscript{26,27} However, it is unclear if patients specifically evaluate their prescribed medication and treatment. If so, do they use only clinical attributes or a combination of clinical and nonclinical attributes? Previous research involving Q-methodology does suggest that patients are able to rank aspects of their hypertension management.\textsuperscript{28,29} However, it is unclear if the patient’s evaluation is undertaken naturalistically or is a consequence of the ranking nature of the Q-method.

The aim of this study was to explore if patients evaluated their hypertension management, and if they did, investigate what attributes were involved in the evaluation.
2. Methods

This study involved semistructured interviews with patients who had been diagnosed with hypertension. Ethical approval was obtained from the Local National Health Service Research Ethics Committee and the University’s Committee on the Ethics of Research on Human Beings.

2.1. Setting and participants

General Practitioners (personally known to the researcher) from 5 medical practices situated in a city in the East Midlands of England, were contacted by telephone to inquire about their willingness to participate in this study. Two medical centers, Barnstaple and Jacksdale (pseudonyms), agreed to be involved in the study. Each had between 12,000 and 15,000 registered patients, employed more than 5 full-time GPs and had main and branch surgeries at different areas of the city. Each medical center held dedicated hypertension clinics run by practice nurses at both the main and branch surgeries.

2.2. Inclusion and exclusion criteria

Inclusion criteria were established to ensure, as far as possible, that the experiences noted by patients could be associated only with primary hypertension and its management. Patients were included in the study if they had been diagnosed with hypertension and were able to communicate their experiences to the researcher in English. Patients were excluded if they were residing in a residential or nursing home and/or diagnosed with other medical conditions, the symptoms of which would impinge on their experiences of hypertension. These medical conditions were asthma, diabetes, rheumatic disease (excluding when required regimens), gout, renal impairment, stroke, impaired sight, human immunodeficiency virus, cancer, secondary hypertension, and those with acute anxiety, depression, and/or other mental health problems.

2.3. Recruitment

The main process of recruiting patients to the study was by forwarding a study information pack to every fifth patient from a list of patients who met the inclusion criteria (n = 1,012). The list of patients was generated from the computerized records of each medical practice. Each information pack explained the purpose of the research, the requirements of the participants, the place of study, and an informed consent form was enclosed. In addition, study information packs were displayed at the participating medical practices to encourage patients to nominate themselves for inclusion into the study. Patients who met the inclusion criteria were purposively sampled to
maximize diversity, ensuring that the experiences of patients with different personal and treatment characteristics were included. The personal and treatment characteristics were age, sex, duration of treatment, and the number of antihypertensives prescribed.

2.4. Data collection

Semistructured interviews with patients focused on their personal experiences of hypertension and its management. Each audiotaped interview, which lasted for approximately 45-60 minutes, took place in the patient’s home to ensure that their answers were not unduly influenced by a medical setting. The aim of these interviews was to obtain, in a narrative format, the experiences, beliefs, and information that patients considered important when discussing the management of hypertension. After completing each interview, brief notes in the form of a research journal were written by the researcher regarding the context and situation of the interview, as well as the description of the number of people present. The interviewing of patients continued until the interviews consistently produced themes and concepts that replicated those already determined, ie, theoretical saturation.30

All identifying phrases and words were removed at the transcribing stage. Each participant received a copy of the transcript of their interview and a letter asking them to review and amend the transcript, if they wished. Any alterations and/or additions were seen as retrospective clarifications of the interview data and subject to subsequent analysis. The principles and procedures of the Data Protection Act 1998 were followed.

2.5. Interview guide

The interview guide was developed from a compilation of questions informed from the current research literature. The resulting questions were formulated into open-ended questions, probes, and prompts, which were used throughout the interview to encourage the interviewee to converse. Questions were evaluated both thematically and dynamically, by the authors, to ensure that they related to the aim of the study.

Each interview began with the same opening question “How did you discover you had high blood pressure?” This gave the respondents the chance to narrate their thoughts on the subject. As the interview progressed, various questions from the interview guide were used to encourage the patient to describe their experiences of hypertension in more detail. In addition, questions, verbal probes, and prompts were used to determine any meanings that the experience might have had for the patient. This aspect of the interview was guided by the patient’s experiences and the expertise of the interviewer to obtain rich and comprehensive descriptions. The latter part of the
interview guide focused on the patients’ evaluation of their prescribed anti-hypertensives and their consideration of the appropriateness of their hypertension management at the time of their interview. The final version of the interview guide (see Fig. 2) was piloted with 3 patients.

**Condition and its treatment**

1. Can you give me a brief history of the high blood pressure?
   How it came to be recognised? What treatment you have and are receiving?
   Do you feel better for taking the medication? In what ways?

2. Had you had your blood pressure taken at anytime before this?
   Was there any reason for this? Any particular reason why you went to the GP at that time?
   Any tests or examinations taken at that time?

3. Did you experience the symptoms, (name some) before you knew what they were due to.

4. When do you begin to experience these symptoms?
   Do you cope with some before going? What was sequence of these symptoms?

5. What promoted you to go to the GP?
   Did you decide to go yourself or persuaded into by family member?
   Who did you see nurse/GP? What did they do and say?

6. What did they actually say? Did they explain things to you? Did this make sense to you?
   Were you given any leaflet? Did you use other sources? What were they?

7. What treatment did they suggest? Relaxation, dietary advice, medication.
   Was this treatment explained to you? How it affects or alters the high blood pressure?
   How long did you try each for? What is the doctor trying to achieve, do you think?

8. How did you respond to these suggestions? Did they help?
   Could they have given you some different information that you would have found helpful?

9. What was you expecting from the GP? How did they deal with the situation?
   Were your anxieties dealt with?
   What could they have said to help at that time you now have found out about?

10. Any idea why this/these tablet(s) were chosen?
    Any explanation given to how they reduce blood pressure?
    Where told of any side effects that you might experience?
    Have you experienced any of these?

11. Since starting these tablets have you had to change them?
    For what reasons? What has replaced it? Repeat questions above?

12. Have you had to add other tablets? Why was that?
    What did the GP say when he wanted to add 2nd tablet?
    Did s/he explain how this new tablet worked and why s/he wasn’t replacing the other one?
    What do you think about taking several tablets for the same condition?

13. Have you stopped any other medications? Or started any for other conditions?

14. How long have you been on this specific medication now?

15. How do you feel about having this high blood pressure? Physically, emotionally, mentally.

16. Does your high blood pressure affect your everyday life? If so, in what ways?
    Has it changed what you can do?

17. Has the idea of having high blood pressure made them change aspects of their life, at work, at home, with friends?

18. Has the idea of having high blood pressure influenced how you consider yourself?

19. Did being diagnosed with “high blood pressure” make you consider how you spend your life?
    What you can/can’t do? What your life is going to be like?

20. Has the medication affected these thoughts also?

21. Does the medication you are taking affect what you can do?

Fig. 2. Interview schedule.
2.6. Data analysis

Data analysis was completed using NUDIST™ software. To ensure that each participant’s experience of hypertension was retained during the analytical process, a constant comparative method was used. This analytical procedure was chosen because it is sensitive to, and able to retain individual processes, interpersonal relationships, as well as those between individuals and other social aspects.

The analysis of data using a constant comparison method involves several processes that are designed to maintain the groundedness of the
approach. Grounded refers to the condition of any emergent themes and concepts are developed from the data and not from predetermined hypothesis or formulations. Another aspect of this method is the interrelated nature of sampling and data collection. The initial data analysis of the interview transcripts was used to further direct data collection or purposive sampling. The first stage in the analysis of the interview transcript involved open coding, in which the data were broken open to identify categories. Segments of the transcript or concepts, identified as being relevant, were labeled with a recognizable description of the item or activity under construction. As the coding of the transcript continued, the list of concepts rapidly increased. The second stage of the analysis involved the categories being amalgamated into categories by a process of axial coding. During this process, the categories were refined and developed, and any relationships explored. In some cases, this resulted in the identification of new categories, which, in turn, required the sampling of specific patients so that the category was further defined and understood.

The process was repeated for other interview transcripts, each analysis being informed by the analysis of those transcripts that precede it. In the third stage of this approach, the axial codings from each analysed transcript were systematically compared (constant comparative method). This comparison for similarities and differences between axial codings encouraged the identification of the properties of the core categories as well as their links and relationships with other categories. During this time, the researcher was developing hypotheses about the properties of the categories and the relationships between them. In so doing, these hypotheses were tested, revised, and the theory elaborated. Each stage of the analysis was grounded in the original data.

Mind-maps (see Fig. 3) were constructed for each respondent, using the relevant coding, to indicate how the individually relevant themes and categories were interrelated. In addition, a pen portrait of each participant was achieved by combining the individual’s mind-map with the relevant entries in the research journal. A pen portrait (see Fig. 4) is a descriptive account of what is considered by the researcher to be meaningful. Taking a holistic view of each patient gave the researcher an opportunity to understand the interrelationship of the data and the possible meaning that the data had for each patient. This gave a more in-depth picture of the feelings, concerns, and motivations of each participant.

Establishing a mind-map and a pen portrait for each interviewed patient overcame some of the fragmentation of data that occurs when using a constant comparative approach. Fragmentation of data is inherent in a computer-assisted qualitative data analysis, which use strategies that are dependent on coding the data and using codes to retrieve analytically significant segments of data. This invariably leads the researcher to possibly overlook the “form” of the data. Two of the authors independently checked the initial stages of the analysis and reviewed the mind-maps and pen portraits.
Fig. 3. Example of mind-map.
Pen Portrait: Alice

Prescribed medication – not worried about information relating to hypertension. Medication suits her – in that it does not interfere with life activities continue; and it fits in with the experiences of ‘significant others.’ Only problem with medication is in dispensing of different brands – uncoated tabs bitter taste.

Not all symptoms discussed with nurse/GP – does not want loads of tablets. Not happy taking too many tablets -- very cautious, even with alternative medicines.

She has no time to be ill, or does not want to spend time being ill. Sees herself as coping – has several coping strategies to overcome events, etc., for example, keeping herself busy at all times – doesn’t notice gushing in the ears. Coping seems to be related to how ‘bought up’ – historical/cultural

Tried to lose weight (a stone) – suggested by physician but is happy with her ‘shape’—does go the weight watcher weekly (social)

Paradoxically if she diets, cuts down on certain foods (milk/cheese) that could make her less healthy, – calcium in the bones, etc. in later life.

External/internal standards – Uses external standards to decide if she is up to standard. These include family history ages of mother/father when they died and an aunt in her late 80s who is still alive. Or friends on similar medication and/or of similar age.

Family very much interwoven into her life – role of mother is still very apparent. Not in children’s day to day life – but she helps out with charity work, which is connected to their professions. She is still at the center of the family – looks after grandson (5yrs old) during school holidays and daughter still lives at home.

Health – seems happy not to consider (defensive?) future health states too much – except for ‘excuse’ over dieting (bones) and has smear test regularly. Consideration of health is related to age and ability to get on with things she chooses to do. This is also compared with family and friends. Sees illness as an aspect of life – just one of many – (family, life activities) by keeping busy it will not overtake your life to detriment of the others.

Typified by symptoms all 3 were pushed to one side because of more ‘important’ things that were happening at the time – death of daughter’s partner in road accident and then husband’s death.

Coping strategies – Exercise first thing in morning
Doesn’t sit for long – always busy doesn’t notice ‘gushing in the ears’

Personality – seen as a very independent person, very robust, able to cope, a strong person. Very little bothers her, what will be will be. Cross that bridge when we get to it. Family matters to her – gives her things to do/activities.

Fig. 4. Example of a pen portrait.

Quotations from the transcribed interviews are included in the reported findings to give an impression of the interviewee’s conversation and to illustrate the points raised. They remain as quoted in the phraseology of the individual patient. This was done to ground the findings and subsequent discussions in the words of those being interviewed. Each quotation is
identified by the respondent’s pseudonym, age at time of the interview, and duration of treatment.

3. Findings

3.1. Participants’ details

Of the 232 information packs posted to patients with hypertension or displayed in the waiting rooms of each medical center, 88 (38%) replies were received. Sixty-three (27%) indicated a willingness to participate in the study, and the remainder (11%) declined. Twenty-eight patients (12 females and 16 males) were purposively selected—their average age was 59 years (ranging from 20 to 78 years) and their average duration of treatment of hypertension was 10 years (ranging from 6 months to 30 years).

3.2. Patient’s appropriateness evaluation

All 28 patients who were interviewed found questions regarding evaluation of their antihypertensive medication and the concept of appropriateness difficult to grasp. When participants were asked what they thought about their medication, most patients replied that they looked to their GP to decide if their prescribed medication was correct and effective. They considered that they did not have the necessary medical knowledge and expertise to be able to complete such an evaluation. This was different for patients who were prescribed only one antihypertensive to control their blood pressure, because they did not have anything with which to make the comparison.

I have no experience of anything else so yes [appropriate] I suppose so. They are easy to take. The word appropriate to me indicates that you have some experience of other things and you can make a choice about it. I can’t really make that choice since I have only experienced this one type of medication. I don’t want to try several [other antihypertensives] only to find that the first one was the best for me. He [GP] seems happy that it is working. He is the expert, I am happy to believe him.
—Margaret, aged 57 years; diagnosed 18 months.

Others either had no symptoms of hypertension at the time of the diagnosis or were unable to remember, because they had been taking prescribed antihypertensives for a number of years.

I don’t know I’ve got it [high blood pressure]. It doesn’t bother me. So I suppose I never think of it at all. Just get on with me life, if it wasn’t for the 2 tablets you know—Albert, aged 77 years; diagnosed 7 years.

A few people noted that it was not a matter of evaluating just the medication and treatment but also the effect of that treatment on themselves.
One person considered that it was quality of life that was important, not just the lowering of blood pressure.

*To be honest I think I would like to live a shorter life with a glass of wine than without. It’s quality of life not necessarily quantity*—Barbara, aged 60 years; diagnosed 9 years.

Changing medication gave some patients a standpoint from which they could begin to evaluate their current antihypertensive medication.

*Oh no, looking back on them [previously prescribed antihypertensives], only because I now take the lisinopril. At the time, I wouldn’t have been able to say. Having taken the calcium things [calcium channel blockers], they were even worse*—Pauline, aged 56 years; diagnosed 14 years.

Those patients who had changed their medication because of side effects or because of an inadequate reduction in blood pressure reflected that at the time they were taking the previous medication they thought that it was appropriate. It is only when they had a different medication, which effectively reduced their blood pressure and/or they had a better side effect profile, that they could begin to evaluate the appropriateness of their previous medication. Even when asked to consider previous medication that had proved to be unsuitable, they still considered it appropriate, just less appropriate than their current medication.

These findings indicate that appropriateness was an unfamiliar concept to patients and that all patients considered their hypertension management regime “appropriate.” To justify this statement, patients mentioned the effectiveness of their medication and their relationship with their GP. Some patients highlighted these statements with references to the experiences that they had already spoken about earlier in their interview (see explicit attributes below). However, analysis of the patient interviews suggests that a number of attributes for the evaluation of appropriateness were present even though they were not explicitly mentioned by patients when justifying their reasoning. These implicit attributes were categorized as anxieties and concerns regarding treatment and diagnosis, explanation of the consequences of treatment, choice of antihypertensives, and the side effects experienced (see Fig. 5).

3.3. Patient’s explicit attributes

3.3.1. Relationship with their GP

Most people interviewed said that they thought they had a good relationship with their GP. Most mentioned that their GPs were particularly attentive, listened to their medication problems, and were happy to change medication because of side effects that they, the patient, considered unacceptable.
I have to mention that I trust him [Dr Blackshaw] completely, he is a very good man to talk to. Put it this way, he’ll waste time talking to you—John, aged 70 years; diagnosed 7 years.

Although patients considered their GPs easy to talk to, they also perceived them to be extremely busy and did not have the time to talk about patients’ anxieties regarding the management of hypertension. Consequently, patients were reluctant to make an appointment just to talk about their concerns regarding the antihypertensive treatment. For this reason, patients were happy to be given information leaflets by their GPs; however, they still had specific concerns that remained unanswered. Some people were happy not to disturb the balance between information-seeking and taking up their GP’s time. They preferred to investigate other avenues of information regarding specific questions. Even with this level of trust, most respondents considered that more time should be devoted to explaining more about medication, the causes of high blood pressure, and the consequences of not being treated.

Although I have spoken to him about various things over the years you know they do seem very busy these doctors, perhaps overloaded with paper work. I think that rather than having time to look at the patient they are busy form filling—Henry, aged 69 years; diagnosed 8 years.

3.3.2. Lowering blood pressure values

All interviewees had regular blood pressure checks at their surgery by either a practice nurse or GP. The monitoring of patient’s blood pressure levels gave them an indication of how their condition was progressing. To assess this, patients used 3 different sources of information, all inherent during the monitoring process. These sources include the time interval between blood pressure measurements, the blood pressure readings, and the nonverbal behavior of the health care professional.

Patients considered the time interval significant, for them it was one way of perceiving the importance of the medical condition.

No, they would never say I could tell when my blood pressure was up because they would tell me to come back the following week. At one
point, I was more or less going every week—Pam, aged 53 years; diagnosed 5 years.

Patients with longer intervals between blood pressure readings interpreted this to mean that their condition was controlled, and their antihypertensive medication was achieving its goal. It also signaled their return to normality. Most people interviewed did not know their blood pressure readings and were not concerned about finding them out. They were aware of 2 figures being mentioned but not aware of their value or meaning.

No, he [GP] just says he is happy with it. I mean if he told me a reading, it wouldn’t mean anything. I think he said 160 over something—Thomas, aged 76 years; diagnosed 24 years.

The patients’ main concern was the interpretation, by the health care professional, of their blood pressure measurement relative to the ones taken previously. Most were content for their GP to interpret the readings, by telling them that it was “okay,” “as before,” “lower/higher than last time.”

I can’t even remember but he told me what was normal for my age and what was the target and as far as I know, we’ve achieved it—Russell, aged 52 years; diagnosed 10 years.

Some would not ask their GP for their blood pressure reading if it was not voluntarily given. Others would more happily rely on the nonverbal messages that are given by their GPs. For example, a smile or nod of the head was interpreted by the patient, as “everything is okay.” A frown was interpreted as some detrimental change in their blood pressure levels. Others, particularly those who had experienced problems controlling their blood pressure, required more information and were more likely to retain a written record of the actual blood pressure readings.

I mean he used to show me all the readings because obviously I was interested and I said ‘where are we today?’ Whereas some people didn’t want to know the readings. He used to turn the machine around and read it out and I became more involved, which I liked as well. He used to say where we are and I said oh that’s great—Donald, aged 56 years; diagnosed 3 years.

3.4. Patient’s implicit attributes

3.4.1. Anxieties and concerns regarding treatment and diagnosis

All the respondents felt surprise or shock at being diagnosed with high blood pressure. Anxiety regarding the effect of hypertension and its consequences on their life as well as feelings related to memories of family that had previously been diagnosed. The feelings experienced by the patient varied according to their age, how the high blood pressure was discovered, and
the duration of treatment. Older interviewees seemed to accept that the discovery of hypertension is just another consequence of getting older.

Well, when you are 77 you take these things as they come, you almost expect things to be going wrong. You put them down to old age, don’t you?—Albert, aged 77 years; diagnosed 5 years.

For younger respondents being diagnosed seemed to induce some anxiety regarding health issues and the sudden realization that they had changed from “normal to not-normal.”

I was somewhat worried because I’m in my late 30s, which I think is very young age to have something that is quite so serious. Yes I was a little worried about the future, but I’m young enough to survive if anything was to happen. To be honest, you think that you are indestructible and you think that things aren’t going to change much—Paul, aged 39 years; diagnosed 3 years.

Although all people were surprised to be diagnosed with high blood pressure, some, whose parent(s) had been diagnosed with high blood pressure, were particularly surprised to have high blood pressure because they considered themselves very different to their parents. They considered themselves different because they led a different lifestyle, took more exercise, or were not overweight in comparison to their parent(s).

My father was quite a bit overweight but I’ve not got to that point. I’m just fortunate I don’t have to watch [my weight]. I don’t have a problem. Everyone can over-eat and under-exercise, can’t they but I don’t seem to have that problem—Russell, aged 52 years; diagnosed 10 years.

Although initially surprised, other people were on reflection more accepting “of the inevitable.” These people considered their personal characteristics, such as age and personality, or the way they had lived or were living a stressful life as factors that would provoke hypertension. Many were noted not to be overly surprised because of their family’s medical history or their resemblance to a particular family member. Others reflected on their life, associating certain aspects of their personality (such as temper) and characteristics with having a predisposition to high blood pressure.

For still others, anxiety centered on memories of family members with the condition or perceptions of the possible consequences of hypertension. For those with family-related memories, the anxiety was increased if one or more of the family members had died as a consequence of hypertension.

Yes, my mother had it [blood pressure] and it was very high. She ended up going to the infirmary because they could never control it. That threw me in a panic because my mother died of a brain hemorrhage from it.—Sally, aged 56 years; diagnosed 28 years.
One patient (Matt, aged 20 years, diagnosed 6 months) had particular anxieties regarding obtaining work, this led to difficulties with finance and socializing. The lack of information and conflicting information from Matt’s GP and hospital doctors, regarding the management of hypertension and the consequences that it may have on his life, did not help his anxiety. This caused him to be more reflective and moody, which had an effect on his relationship with his partner and son. He puts this down to his anxieties and inability to talk about them, which were increased by the conflicting information that he received.

3.4.2. Explanations of the consequence of treatment

Very few of those interviewed were sure of the consequences or treatment of high blood pressure at the time of the initial diagnosis. For others, it was the perception of the consequences of high blood pressure that increased the anxiety levels.

> If the blood pressure remains high, you can get a stroke that is always in the back of your mind. When you are first told about the high blood pressure—that thought remains in your mind for quite a while—Albert, aged 77 years; diagnosed 5 years.

Older interviewees appeared to have more faith in their GP and asked fewer questions, passively accepting that their GP was doing the right thing for them. In comparison, the younger patients were more likely to ask questions to their GP. However, at the time of diagnosis both groups were primarily concerned with getting their blood pressure under control rather than asking questions. It was only after their blood pressure became controlled that they began to require more information. A possible explanation of this variation is that older patients, who have been diagnosed for a long time, may feel that they know about the condition or do not desire additional information, whereas the younger patient may be eager to obtain information.38

Many patients had been given leaflets about hypertension at the time of their diagnosis. Other information sources used by patients were practice nurses, hospital personnel, pharmacists, and the media (eg, television, newspapers, magazines). Just after diagnosis, patients were more likely to read information leaflets. Patients also obtained information from other people with hypertension either to answer a specific question or as a source of general information. Others looked to other sources such as the Internet or medical literature.

3.4.3. Choice and number of antihypertensives

All patients remarked that they had not been involved in the choice of antihypertensive medication that they were initially prescribed. They were all surprised by this question, most remarking that they had not the
knowledge or expertise to decide on such a subject, even if they had been
given a choice. However, a few of those who had been prescribed antihyper-
tensives for some time remarked that they would like to have been given an
explanation, using nonmedical terms, regarding blood pressure and how the
medication they were taking affected their blood pressure.

*More explanation, yes! What the blood pressure means? What the read-
ings are and what they mean? I think they should explain what it all
means, it would make more sense then*—Ellen, aged 72 years; diagnosed
20 years.

Several patients (n = 10) did have concerns regarding the number of an-
tihypertensives that they took. For example, Alice was adamant that she
should only have one antihypertensive medication to control her high blood
pressure because of the possibility of interactions. These possible interac-
tions were not just related to those between prescribed medications but with
other things, for example, food, vitamin, herbal supplements. To illustrate
this she spoke of a friend who had been taking a prescribed antihypertensive
and had taken a herbal supplement on another friend’s recommendation.
The hypertensive friend was later admitted to the hospital with a very severe
skin reaction, which “still continues to flare-up.” In Alice’s mind, her
friend’s skin reaction was the direct result of taking the combination of an-
tihypertensive medication and the herbal supplement. This validated Alice’s
inference that a number of tablets, of whatever kind and strength, “do not
mix well.”

On the other hand, some GPs had explained to their patients that it was
better to take several low-dose antihypertensives than a higher dose of one,
because it reduced the risk of side effects. These patients were aware of the
benefits and had no concerns regarding the number of antihypertensive
medications they took.

Only 2 people (Matt and Richard) had been diagnosed with hypertension
and had not been prescribed any medication at the time of the interview.
Matt (aged 20 years) was undergoing investigations at the hospital. How-
ever, the decision not to prescribe medication for the condition was causing
Matt some anxiety (as noted earlier). In contrast, Richard (aged 55 years)
who was diagnosed with borderline hypertension 3-4 years ago, had seen
his GP once a year, and was happy not having to take medication. He con-
sidered his lifestyle to be the most effective way of controlling his hyperten-
sion.

Alice, Matt, and Richard’s attitudes toward the prescribing of antihyper-
tensives varied. Alice was happy with only one antihypertensive, Matt was
anxious waiting for pharmacological treatment to begin, and Richard was
very satisfied with nonpharmacological measures to control his hyperten-
sion. Each attitude was formed from their life experiences and life cir-
cumstances, which is similar to the findings of Benson and Britten.39

They noted that people’s attitudes to prescribed antihypertensives have
little to do with the pharmacology of actual or potentially prescribed antihypertensives.

3.4.4. Side effects experienced

Almost a quarter of the people interviewed said they had not experienced any side effects. The majority reported either one or more side effects that they considered as being attributable to their antihypertensive medication. These side effects included the unacceptable urgency to pass urine after taking a diuretic, tiredness, impotence, skin irritation, gastric upset, breathlessness, swollen ankles, anxiety, thinning hair, disturbed sleep patterns, hot flushes, pain in the joints, leg cramps, and irritating cough. Not all side effects were reported to the patient’s GP; the side effects that were considered transient, those that occurred only occasionally, or those that were considered “very mild” were not considered “important enough to trouble” the doctor. These minor or transient side effects included the urgent need to pass urine when first taking a diuretic, or mild and/or intermittent skin irritations.

*Other than the occasional itching, which I never have reported to the doctor as I don’t consider it severe enough. It doesn’t bleed or anything just a mild skin irritation, just a minor inconvenience*—Steven, aged 62 years, diagnosed 2.5 years.

Very few patients said they had been told by their GP that they might experience some side effects, at the time of the initial diagnosis. This could have been because they had not been told or that they had forgotten they had been told. Most of the information that patients remembered about the side effects of medication was obtained either from the patient information leaflet or from family and friends who had related their own experiences of hypertension. Most people considered the information on side effects, from whichever source, as helpful.

Patients reacted to major side effects in a number of ways, depending on their severity. This usually resulted in a consultation and the antihypertensive being changed or a reduction in the frequency or strength of the prescribed antihypertensive. Some patients, who had particularly extreme or unpleasant experiences of side effects and had to change medication because of it, expressed anxiety regarding the choice of alternative antihypertensive agent and its possible side effects. For those people it was important that their GPs took time to listen to their concerns.

*I’ve always felt he has had time for me. I’ve gone in and explained I’ve got this side effect and he’s said okay. He’s not the sort of doctor who sits writing notes while he’s talking to you, he likes to sit and listen, and say right what I think we need to do is this and so on. He [GP] has explained it to me, so I feel better in that respect*—Donald, aged 56 years; diagnosed 3 years.
There was no consistency regarding the reporting of similarly experienced side effects. For example, the unacceptable urgency to pass urine after taking a diuretic was considered by Albert to be a transient side effect and for Russell a reason to change medication. For Albert, these initial transient side effects indicated that the medication was working, reassuring him that his blood pressure level was also reducing. This had the additional effect of reducing his initial anxieties surrounding the diagnosis. Russell responded to the same side effect in a very different way. He considered the frequent need to urinate as inconvenient and embarrassing, which brought about a change in medication.

_I had some diuretics at one time and I couldn’t stop going for a pee! So yes that was a bind, at best inconvenient and at worst highly embarrassing!_— Russell, aged 52 years; diagnosed 10 years.

Impotence was a concern expressed by 3 male interviewees (Andrew, John, and Harold). All 3 noted that they had come across the problem only after taking the medication. They remarked that no health care professional had mentioned to them the possibility of this side effect occurring.

_I'm 67 going on 68, so I'm not a young man. I realised I'd become impotent and [after] hearing and reading things I put it down to the atenolol. I asked him [GP] about coming off it. He said yes we can do that, we can find a replacement and he took me off it for initially a month. But a month hadn't gone by and I was having all sorts of problems with the next [antihypertensive]—_Andrew, aged 67 years; diagnosed 15 years.

Each man had different experiences to recount, which affected each respondent in different ways and to varying degrees. Harold (aged 73 years) mentioned the condition in writing, as an addition to his transcript. It is surmised that he did not wish to give any further details or discuss the topic during the interview. John remarked that if he had known in those early days he would have delayed starting the antihypertensive treatment. He was so upset by this side effect that several years earlier he had convinced his GP to take him off the antihypertensive medication so that he could “function” better. John said that he was devastated and extremely reluctant to return to antihypertensive medication even when he was advised to by his GP when his blood pressure began to rise.

After various changes in both the type and strength of a number of antihypertensives, Andrew returned to the previous strength of antihypertensive medication. Both Andrew and his wife considered it better to have his blood pressure under control and not to concern themselves about the lack of sexual relations between them. Although Andrew and his wife had made this decision together and were both aware of its implications, he still considered that his “inability” was having a psychological effect on him and the intimacy of his relationship.
4. Discussion

The findings indicate that patients may not be familiar with the concept of appropriateness in terms of their prescribed medication or medical care. All patients considered that this term referred to their prescribed medication being suitable. However, they did not consider themselves “medically knowledgeable” and consequently, any evaluation of prescribed medication and treatment was better determined by their GP. Clearly, this reflects the trust that patients have in their GP, as they are perceived to have the necessary training, experience, and expertise to make such decisions.

The findings suggest that patients may be unable to describe the management of their hypertension, without reference to their life experiences. Hypertension was considered by some patients to be associated with various changes in their well-being. These associations were usually the cause of a visit to their GP. They are considered by Cantillon et al.\textsuperscript{40} to be used by patients, in part, to evaluate the effectiveness of any prescribed medication. These associations develop from the unique experiences of individual patients, by a process of bricolage.\textsuperscript{41} These associations, whether experiential or reflexive, were not in line with current clinical reasoning and are used by some patients to determine if their antihypertensive medications remained effective. As long as these associations remained controlled, patients considered that their blood pressure was also under control. This may be one reason why people do not always take their medication as prescribed.

The findings suggest that patients may not look at the long-term implications of hypertension when evaluating their medication. Rather, a short-term view that involves their expectations and abilities may be the norm. Evaluating their health in this way encompasses a number of attributes including their age and the medical condition(s) that brought about their parent’s death. If they decided that they were up to this norm then they considered themselves healthy. Conversely, illness was seen as an ongoing inability to function at this ideal. These findings resonate with the work of Benson and Britten,\textsuperscript{39} in which they conclude that patient ideas regarding their medication and treatment are derived from considerations unrelated to the pharmacology of their prescribed medication. Similarly, patients weigh up their own ideas regarding the pros and cons of a treatment and may or may not disclose all these ideas to their GP.

The initial diagnosis of high blood pressure can potentiate real fears within patients. These fears relate to suddenly having a medical condition and becoming aware of its consequences, when minutes before there were none. Additionally, they are expected to take action and change long-standing habits.\textsuperscript{42} As confidence in the ability of their medication to reduce blood pressure to a more satisfactory level grows, their anxieties lessen. These fears are based on a mixture of the past, present, and future. They usually involve their family history and the sudden realization that they, themselves, have
changed from being “normal” to being “not normal.” These fears can be particularly strong for younger patients who have never had to consider the possibility of health problems. For older patients, their fears are normally allayed by referring their condition to the aging process. As Abraham noted, patients, at the time of the initial diagnosis, need time to process information, decide what advice they need, and what to conclude from this information to decide on their course of action.43

Each patient’s attitude was formed from their life experiences and life circumstances, which is similar to the findings of Benson and Britten.39 They noted that people’s attitudes to prescribed antihypertensives have little to do with the pharmacology of actual or potentially prescribed antihypertensives. On the other hand, some GPs had explained to their patients that it was better to take several low-dose antihypertensives than a higher dose of one, because it reduced the risk of side effects. These patients were aware of the benefits and had no concerns regarding the number of antihypertensive medications they took. This illustrates the conclusions drawn by Leaman and Jackson,44 who indicated that GPs who fully informed their patients of the benefits of various treatment regimens would encourage those patients who wished to use the information, to make individualized treatment decisions.

The high evaluation that the interviewed patients placed on their relationship with their GP may not be usual, as the patient had self-selected themselves and nominated named GPs. The patients had been requested to nominate a GP who had been involved in their hypertensive treatment suggesting that the patient was able to form a relationship with a particular GP. This GP would, over a period of time, accumulate a variety of medical and personal information as well as an understanding of the patient’s health needs. The existence of this personal relationship, according to Kearley et al.45 is one that patients value highly.

The patients’ appropriateness evaluation was very individualistic involving both explicit and implicit attributes. Explicit attributes, usually 1 or 2, may be those that come to mind quickly, for example, lowering blood pressure even though most patients were not aware of blood pressure targets. Although up to 2 attributes were consciously noted by patients who took part in the study, when justifying their statement of receiving an appropriate treatment, the remaining attributes, whether inaccessible or implicit, still remained involved in determining people’s intentions and actions.36-49 Furthermore, as the experiences of hypertension are woven into a person’s life, some of the attributes used in the patient’s evaluation of appropriateness may be considered by that patient to be mundane.50 As noted by Conner,51 these mundane attributes are not always intentionally or consciously deliberated on. It is possible that the implicit attributes remain inaccessible, to the patient, when talking with their GP. This may come about because of the framing of questions and the desire on the part of the patient not to ask questions that “waste” the health care professional’s time. However, these implicit attributes are both
important and involved in future decisions that patients may make regarding their treatment and care, for example, Alice and John’s decisions to stop and start medication to enjoy their life, respectively, Sally’s wrongly held beliefs, or Pauline’s anxieties regarding treatment.

The research was based on the work done at 2 medical centers in a city in the East Midlands of England, which limits the generalizability of the study. However, as the study concerns itself with the individual patient perspective and their particular case, generalizability is not a major concern. Nevertheless, the findings from the study are not necessarily restricted to its participants, because of the diversity of patients incorporated in the sampling procedure.

Although the study has identified a number of attributes that patients use in their evaluation of their hypertension management, there may be others that remain hidden from the researcher. For example, there are reports of general libido changes, not just impotence, with a number of antihypertensives. Female participants may have had other worrying side effects that they feel unwilling to share with a male researcher. Conversely, more attributes may have been noted by the story than would be the case with other randomly selected participants.

The ability to generalize from the programme of work is limited for 2 reasons. The first involves the specific location and period of time in which data collection took place. The second reason involves the small number of patients interviewed. Both of these facts constrain the generalizability of the results to a wider audience.

An investigation of the influence of ethnicity on patients was also excluded, because there are biological differences in neuropeptide and cardiovascular responses to stressors that influence the development of hypertension, as well as cultural and societal differences, across different races. The exclusion of individuals who could not hold a conversation in English is also a recognized limitation of this study. It is possible that they not only have different needs, expectations, anxieties, and concerns but also different temporal orientations to those who did take part in the study.

5. Conclusion

Patients’ evaluation of appropriateness may be constructed from both explicit and implicit attributes, which are made up of both medical and nonmedical criteria. Implicit attributes, those not consciously known to the patient still could be involved in the process of evaluating hypertension, its treatment, and care. Although the nonmedical attributes that are considered by patients can be categorized, it has to be remembered that it is the inherent meaning held by each individual patient that is involved when an evaluation is made. This makes each evaluation unique to the person undertaking an evaluation of the hypertension management regimen. These attributes, whether explicit or implicit evaluations, and the reference points against which the patient evaluates, are all subjective.
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References


