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Barriers to diagnosing and managing hypertension

A qualitative study in Australian general practice

Background

Elevated blood pressure (BP) is a major modifiable risk factor. However hypertension still remains underdiagnosed, untreated or suboptimally treated. This study aimed to identify and explore barriers to initiating medication and treating elevated BP to target levels in the general practice setting.

Methods

Six focus groups involving 30 clinicians were audio recorded, transcribed in full and analysed for common emerging themes using an iterative thematic analysis.

Results

After making the decision to commence treatment, medication initiation was relatively straightforward. Clinical uncertainty about true underlying BP, distrust of measurement technology, and distrust of the evidence underpinning hypertension management were expressed. Patient age, gender and comorbidity influenced treatment strategy. Related themes included perceived patient attitude, clinical inertia, and patient centred care. Systems issues included lack of resources and lack of time.

Discussion

The management of an asymptomatic chronic disease within a patient centred, encounter based primary care context can be challenging.

Key words: hypertension; guideline adherence; qualitative; general practice; antihypertensive agents/therapeutic use

Hypertension is prevalent in the community¹ and the most frequently managed problem in general practice.² High blood pressure (BP) is a leading cause of mortality and disease burden.³ Globally, it has been difficult to attain optimal hypertension treatment and control rates.^{1,4,5} Therefore, both the initiation of antihypertensive medication and the intensification of treatment to therapeutic goals in those with hypertension have been identified as evidence practice gaps.⁶ Identifying the barriers that prevent the best use of evidence is an important first step in designing an intervention to close that evidence practice gap.

Modifying physician behaviour by introducing evidence and clinical guidelines into routine daily practice is challenging,⁷ with few studies examining the basis for provider behavior. Clinical inertia is the recognition of a problem and the failure to act and it has been described as an issue in the management of patients with asymptomatic chronic illnesses such as hypertension, dyslipidaemia and diabetes.⁸

Previous studies have predominantly relied on quantitative methods such as surveys, administrative or medical record data. This study used a qualitative method to further explore the barriers to general practitioners commencing hypertensive patients on medication and treating to target.

Methods

A purposeful sampling method was adopted to capture 'information rich cases'.^{9,10} Four focus groups were conducted at a practice level within the Southern Division of General Practice

(Tasmania). Larger practices that had previously shown an interest in being involved in research were approached. Within each practice, GPs varied by age, gender, and experience. Two focus groups were organised with general practice registrars through an invitation sent via the regional training provider. Focus groups were conducted between June and July 2008, each consisting of 4–6 participants.

One author (FH) administered a short demographic survey to participants (*Table 1*) and facilitated all the focus groups. A standard preamble and schedule consisting of open-ended questions and key topics was used to stimulate conversation and guide discussion. This author was free to move outside the schedule if needed. Sessions were audio recorded and transcribed in full. The transcripts were then corrected and verified. General practitioners were reimbursed for their time.

Analysis

An iterative thematic analysis was used derived from the broader interpretive tradition in qualitative research.¹¹ Analysis was contemporary and ceased when no new issues emerged suggesting data saturation.¹⁰ The first author, FH (a registrar) and second author, EH (a sociologist) each read and independently identified a preliminary list of themes. Author FH re-read the transcripts and produced a shorter list of major themes; author EH agreed that the final list of themes was a credible interpretation of the data. This list of themes was presented to seven GPs not involved in the study to establish credibility with other GPs.¹²

Ethics approval was granted by the Human Research Ethics Committee (Tasmania) Network (approval number H9301) before commencement of the study.



Table 1. Demographics of the 30 participating GPs

	Gender		Age (years)				Practice location			Total
	Female	Male	26–35	36–45	46–55	56–65	Inner metro	Outer metro	Rural	
GP	12	7	1	10	7	1	8	11	0	19
Registrar	9	2	7	2	1	1	7	1	3	11
Total	21	9	8	12	8	2	15	12	3	

Sessions worked: a variable number of sessions were worked per week ranging from 3–10 (15 worked six or less sessions per week)

Results

Of the five general practices approached, one declined to participate. Overall 30 GPs and registrars took part.

Themes

The themes developed capture GPs' descriptions of why it is difficult to diagnose and manage hypertension (Table 2). Barriers to initiating treatment and treating to target were often discussed at the same time, with issues surrounding treatment to target dominating conversation (Figure 1). Once the decision to commence medication had been made, initiation was considered relatively straightforward. However, making the diagnosis and the treatment of patients to target BP levels was described as sometimes being difficult.

Clinical uncertainty about true BP values and distrust of the technology used to measure BP

Most participants expressed uncertainty regarding the accuracy and representativeness of individual BP readings taken in the clinic. There was concern about the variability of observed BP readings and the problems associated with the 'white coat effect'.

New automated BP measurement devices (OMRON HEM-907) had been distributed in 2007 to a large proportion of general practices. Participants expressed a lack of confidence in the new machines, questioning their accuracy and reliability. Finding an appropriately sized cuff was not a major issue, but there was a subgroup of patients for whom the large cuff is not large enough 'so I have to get tape to tape around it'. (Male GP, focus group 3, aged 56–65 years) Children's cuffs were often difficult to locate.

General practitioners described a process of 'mental adjustment' of BP readings. They were adjusted down to 'better represent' what was thought to be the patient's 'true' underlying BP. It also involved taking multiple readings and

accepting the lowest as the most representative. '...what I subconsciously do with the figure that I receive... there's a mental adjustment that I make for having taken it here (in the clinic) and what it would be like watching (television)... (Female GP, focus group 2, aged 36–45 years)

The uncertainty of BP readings taken in the clinic was addressed in part by taking manual readings and by the almost universal use of home or ambulatory BP monitoring. Home monitoring was predominantly utilised for diagnosis and less so for monitoring of therapeutic response. Each GP had their own personal preference for BP measurement devices. This extended to a debate about the usefulness and validity of 24 hour ambulatory BP monitoring. Concern was also raised about the cost and lack of access, particularly in rural areas. A few participants doubted how representative a 24 hour measure was compared with home monitoring.

Distrust of the evidence underpinning hypertension management

Rather than large gaps in knowledge and awareness of the management of hypertension, there was an element of distrust toward the evidence underpinning it. Participants had seen major changes in the evidence during their own careers, for example, 'systolic was previously 100 plus your age' (Female GP, focus group 6, aged 36–45 years) and 'diastolic was previously

considered more important'. (Male GP, focus group 6, aged 36–45 years) Questions were raised about the risk-benefit ratio for treating the elderly, 'are we adding years to their life?' (Female GP, focus group 6, aged 36–45 years)

Distrust was also reflected in comments such as 'targets are continually being revised lower and lower'. (Male registrar, focus group 4, aged 26–35 years)

Patient age, gender and comorbidity

For some patient groups, detection was an issue, whereas for other groups it was the management of established hypertension that was described as the challenge. The two extremes of the lifecycle, the young and the old, were felt to fall outside the limits of the available evidence. Children and adolescents were seen as a challenge and one that would increase in the future given the obesity epidemic. Poor detection was suspected: BP screening was not routinely performed in this age group, and guidance regarding 'normal values' was difficult to locate.

Participants were reluctant to initiate and treat to target in the elderly due to the witnessing of adverse events. The fear of the consequences of treating a person's hypertension was far greater than the fear of the consequences of not treating it.

'It only takes one broken hip to wipe it out. All that gain in cardiovascular risk'. (Female registrar, focus group 5, aged 26–35 years)

Table 2. Barriers to diagnosing and managing hypertension

- Clinical uncertainty about the true underlying BP and a distrust of the technology used to measure it
- Distrust toward the evidence underpinning the management of hypertension
- Patient age, gender and comorbidity
- Perceived patient attitude
- Clinical inertia
- Patient centred care
- Systems issues

The elderly were described as being at high risk of adverse events, even at low doses of medication and at defined target levels, particularly systolic targets. Side effects were deemed to be more severe and falls with subsequent hip fractures were of most concern.

‘Especially with elderly people I think the degree of postural hypotension they get going down to target levels is actually higher than in other groups...’ (Male GP, focus group 2, aged 36–45 years)

Men were described as difficult, particularly if young, busy, overweight, single or heavy consumers of alcohol. Men had low rates of attendance and when they did attend, often with acute injuries, BP may not be taken.

In terms of comorbidity, the main groups included: the anxious, those with another disease as the main focus of treatment, and renal patients with lower targets and difficult to manage side effects and interactions. Culturally and linguistically diverse populations were also seen as challenging.

Perceived patient attitude

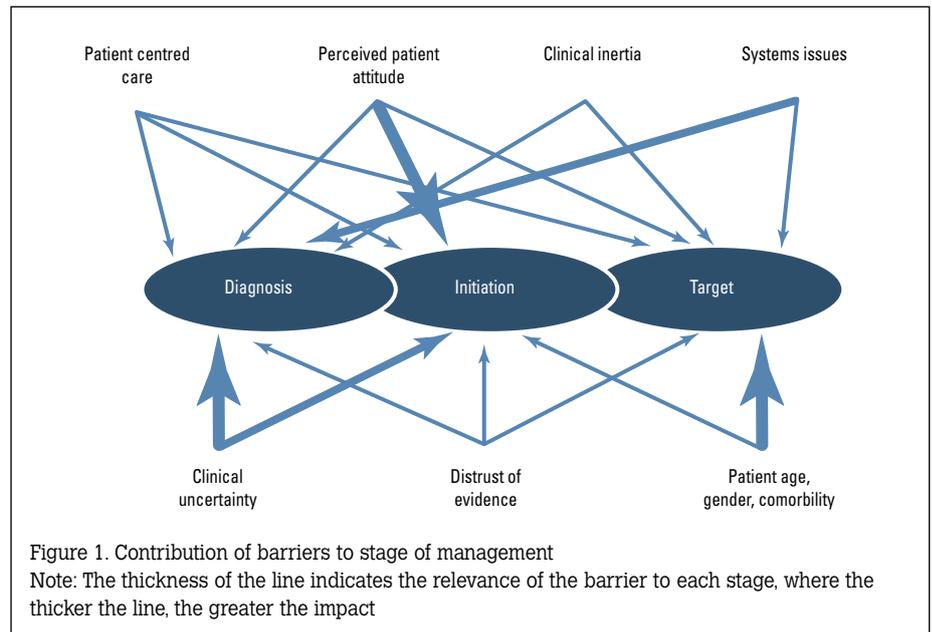
Patients were often described as being reluctant or unwilling to both commence antihypertensives and to adhere to treatment in the long term. Delay or failure to initiate was attributed to some patients preferring an initial trial of lifestyle modification, reluctance to take an additional medication, patient’s previous experience with side effects, a lack of understanding of risk, and a lack of persuasiveness by the GP. It was sometimes stated that patients felt overwhelmed by diagnoses and needed time to come to terms with them.

‘If you have a patient who’s encountered some side effects to the first medication, I think they are far less likely to be enthusiastic about the doctor experimenting with another medication’. (Male GP, focus group 2, aged 36–45 years)

Particularly with regard to making lifestyle changes, GPs described patients as often lacking the motivation to change and being reluctant to take responsibility for their own healthcare.

‘... patients don’t take responsibility, they feel they’ve got a medical problem and therefore they need a medical solution, and that’s the doctor’s job, so they don’t take ownership...’ (Female registrar, focus group 5, aged 36–45 years)

The medical literacy of patients was raised and concern expressed about how the



public perceives both the concepts of BP and cardiovascular risk.

‘And often it’s getting people back, they haven’t come in for their hypertension... they’re not convinced that it’s a problem and they don’t feel anything... Some people are quite interested in it but a lot of people frankly just aren’t...their perception of risk is skewed... we’re all worried about cancer but we’re far more likely to die of a heart attack’. (Female GP, focus group 2, aged 36–45 years)

Clinical inertia

Clinical inertia was evident in discussions around making a diagnosis, providing advice on lifestyle change and treating to target. Associated issues included a time poor environment, perceived patient attitude and difficulties encountered in a group practice: a few participants described reluctance to initiate treatment in ‘someone else’s patient’ despite repeated high BPs recorded.

‘... in our clinic we’ve got a lot of doctors, some patients don’t see a particular doctor and sometimes I’ve seen them and I say oh, your BP’s high and we go back and say oh, it was high 2 weeks ago, and we go back 3 months and oh, it was high 3 months before that, and they’ve seen a different doctor every time and the doctor says oh high, check again and query initiate’. (Female registrar, focus group 5, aged 26–35 years)

Most participants’ stated that their knowledge of lifestyle factors and how to manage them was adequate; the overriding

problem was the lack of success seen in practice. This led to a lack of motivation.

With regard to reaching target, waning motivation was also described as a ‘mental slowing down’. This was related to how close to target the patient’s BP was, the number of comorbidities they had, and the degree of polypharmacy.

‘I think the more medications they’re on too, it is harder to get down to that target level because you’re running out of range, you’re getting more side effects and you’re getting more interactions as well. I find that I mentally start to slow down... the more things you’ve tried and the more medications that they’re on’. (Male GP, focus group 2, aged 46–55 years)

Failure to reach target was further justified by discussing BP as a continuum, with small improvements viewed as a therapeutic success.

‘In my own mind I just sort of figure, well if their BP is below 140/80 it’s not too bad, and if they’re diabetic ideally you should be pushing it further down but I find I get a bit lazy once it reaches that sort of level and I’m less likely to pursue it’. (Male GP, focus group 2, aged 36–45 years)

Patient centred care

The GPs described a comprehensive, holistic approach to patient care. Participants stated they individualised the approach to hypertension management. Biomedical information was integrated with patient concerns and context.

Cost was viewed as a major barrier for some patients, particularly those who did not qualify for government healthcare benefits, and those whose partners and/or children were also taking multiple medications. Costs included medications, follow up GP visits, transport, investigations, and the hiring/purchasing of home monitoring. One practice located in a socioeconomically disadvantaged area, described financial costs and the role of stress and crises in their patients' lives as a major contributor to their decision making.

Systems issues

Systems issues identified included lack of resources and a lack of time. To monitor therapy more accurately, more automated machines for home monitoring and greater access to ambulatory BP monitoring were considered of need. Hypertension was viewed as a general practice area of speciality rather than a specialist area of care. However, practitioners found it difficult to identify specialists with a primary interest in hypertension management to refer to and identified timely access to specialists and allied health practitioners as an issue.

'And the difficult ones... who are already on two agents and still not controlled... I've got one who's on a calcium channel blocker and ACE inhibitor and still terrible BP, but he has diabetes and do I try a beta blocker, he can't have a diuretic because he has poor renal function. It gets really complicated... and they are a public patient and you try and ask the advice of a specialist and that takes 12 months'. (Female GP, focus group 1, aged 36–45 years)

Time was raised in all focus groups. The lack of time in consultations related to the complexity of managing hypertension; it was rarely treated in isolation of other risk factors or chronic disease. It also related to competing demands where doctor and patient agendas may not harmonise.

'Patients find it difficult to get an appointment and they come in with a list of five things'. (Female registrar, focus group 5, aged 36–45 years)

General practice registrars compared to GPs

Recent graduates sometimes lacked confidence and felt they had a deficit in knowledge and experience, particularly when dealing with an unfamiliar elderly patient with multiple comorbidities on multiple medications. However, even experienced

GPs expressed difficulties in keeping up with new clinical information. They felt they lacked experience and knowledge with the older anti-hypertensives and thus were reluctant to use them. The patients described as 'difficult' by registrars were similar to those described by the GPs.

Discussion

The implementation of evidence by GPs has been described as complex, fluid and adaptive.¹³ There were a number of barriers described that prevented the optimal management of hypertension. Trust and confidence were consistent underlying themes. There was a lack of confidence in the validity of clinical measurements of BP that may lead to observer bias. This finding is substantiated by a recent prospective cohort study that found that clinical uncertainty about the true BP value was the prominent reason why providers did not intensify therapy in diabetic patients with uncontrolled hypertension.¹⁴

Participants expressed distrust toward new technology introduced to measure BP, however, observer biases also occur when using standard mercury sphygmomanometers.¹⁵ These can be eliminated by adopting automated BP devices as shown by the CRAB study resulting in better BP management.¹⁶

Interestingly, distrust of automatic machines was limited to the clinic setting. As recommended, practitioners sought additional information in the form of home and ambulatory monitoring.¹⁷ This may reflect the belief that taking BP at home eliminates the 'white coat effect' or practitioners were looking for the lowest rather than the most representative reading. It must be kept in mind that the upper limit for 'normal' self measured BP (135/85 mmHg) allows for this effect.¹⁷

There was a lack of outcome expectancy when treating the elderly. This is supported by a qualitative study which examined the issues influencing GP management of hypertension in the elderly.¹⁸ The benefits of lowering BP in the elderly, including isolated systolic hypertension have been well documented in multiple randomised placebo controlled trials;¹⁹ recently including patients aged 80 years and over.²⁰

The study findings highlighted the belief that the very elderly are at risk from the side effects of pharmacotherapy due to medication interactions, related to their altered physiological responses

and concomitant disease.²¹ This is confounded by the fact that falls, hip fractures and postural hypotension are prevalent in the healthy elderly and increase with age, acute hospital and nursing home settings.^{22–26} There is a lack of randomised controlled trial data to prove the causal relationship between medication use and falls.^{21,27} In contrast, treatment trials in the elderly have reported fewer serious adverse events in the active treatment group ($p=0.001$) and preliminary analyses revealed no increase in postural hypotension.^{20,28}

Participants were also concerned that a fall secondary to the use of anti-hypertensives would result in a fractured hip. There is a lack of baseline data on fracture risk in patients with untreated hypertension.²⁹ Of interest, epidemiological and observational studies have shown that most cardiovascular drugs (nondiuretic and thiazide diuretics) actually reduce fracture risk by various direct and indirect mechanisms on bone remodelling.^{29–31}

Participants adopted a pragmatic approach to managing their hypertensive patients concordant with The Royal Australian College of General Practitioner's philosophy and foundations of general practice.³² The primary care practitioner balances the demands of disease specific evidence based medicine and the whole person approach where care is focused on the person, not the disease.³³ The Hippocratic oath demands: 'first do no harm', this was an issue taken very seriously when the balance between benefit and harm was deemed uncertain.

The decision not to commence or intensify treatment may be active rather than passive and led by the practitioner or patient. Perceived patient attitude is a well described phenomenon and particularly in the context of whole-person care becomes an important factor in management decisions.^{13,34} The doctor-patient relationship was a driving force in the way GPs managed hypertension. The establishment and maintenance of the relationship was believed to benefit the patient in the long term allowing for chronic disease management to occur over time.

There is a tension between preventive care where you cannot possibly measure a prevented or delayed event in an individual versus the witnessed impacts of treatments. General practitioners manage the practicalities of prioritising and goal setting when dealing with patients' immediate

issues and managing, multiple chronic illnesses and risk factors. The concept of competing demands is supported by a study that examined medical records from primary care consultations. Patients with more unrelated comorbid conditions were less likely to have their uncontrolled hypertension addressed during that visit.³⁵ However, primary care is a continuum. In a study of type 2 diabetics with a raised HbA1c, each additional patient concern reduced the likelihood of a medication change during that consultation, however, for each 1% increase in HbA1c level, the time to the next scheduled appointment significantly decreased.³⁶ Primary care was recognised as more than the sum of its disease care parts.³⁷

Limitations of this study

Participants were self selected and reimbursed and potentially not representative of all GPs. Transferability rather than generalisability is considered important in qualitative research.

The role of the researcher is rarely addressed in research.³⁸ The facilitator (a general practice registrar) being aware of the potential for influencing data collection and interpretation adopted a reflexive position. Triangulation was also used to improve rigour. A clear statement of the role of the facilitator was included in the preamble. The interview guide was used to minimise the impact on conversations. The authors who conducted the analysis have divergent backgrounds and disciplinary expertise. 'Member checking' was performed with an independent group of GPs to establish the degree of correlation between their views and the researchers' analysis.^{12,39}

Potential advantages of a doctor facilitating the 'naturally occurring'⁴⁰ groups of GPs: participants may have felt more comfortable talking freely without the need to modify medical terminology, speak openly and honestly of difficult patient management issues, and felt more able to challenge each other and clarify each others responses.¹⁰

The effect of the gender and workforce participation imbalance on the results is difficult to quantify and research in these areas is lacking. The Australian healthcare workforce continues to change with the proportion of female GPs increasing and full time practice decreasing.⁴¹

Some studies suggest that female physicians may place greater emphasis on preventive

care^{42,43} and provide an overall better quality of care, especially in risk factor management.^{42,44} This may reflect physicians' practice and communication styles as well as patients' preferences and expectations.⁴³

Previous quantitative studies exploring the barriers to hypertension treatment, showed no statistically significant associations between GP gender or professional experience.^{44,45}

Comparison with existing literature

Before the commencement of the study a literature review was conducted (papers included to February 2007). Twenty-two papers met the inclusion criteria that described 19 studies (unpublished). These papers were predominantly quantitative in approach measuring self report of knowledge, awareness and adherence to guidelines. Further quantitative papers have been published.^{14,45–47}

The initial review identified barriers such as: lack of knowledge regarding guidelines; adopting a higher BP threshold than guidelines, particularly for initiating and treating in the elderly; an associated lack of outcome expectancy in the elderly; an overestimation of care (self satisfaction), and perceived patient attitude.

Later questionnaire and cross sectional studies identified some of the barriers found in our study: lack of awareness and knowledge of guideline recommendations was a less frequently identified problem.^{45,47} General practitioners agreed that the negative impact on patient quality of life may outweigh the benefits of treatment.⁴⁵ Nicodeme et al⁴⁷ found that GPs often considered BP measurements were not representative and target BPs were adjusted according to the patients circumstances. An important difference found in our study was the emergence of distrust toward the evidence and technology surrounding HT management.

The authors believe that adopting a qualitative focus group approach allowed for a greater 'richness' of data to be collected. Closed question surveys can only gather opinion on predetermined barriers and doesn't allow for the discovery of new understandings, or the uncovering of why participants think in such a way.⁴⁸ This article goes some way to developing an understanding of some of those underlying reasons.

Implications for practice

Further research is required into the process of care to further develop the evidence base for hypertension management strategies. Research frameworks are needed which take into account the practicalities of patient management. Further education for GPs is required regarding the evidence for automated machines and the risks and benefits for treating the elderly. Greater patient education and public health initiatives around cardiovascular risk need to be considered. More systematic approaches to the integration of clinic and home measures of BP need to be promoted¹⁴ and incorporated into guidelines. Patients with complex conditions may benefit from greater GP-specialist care partnerships.

General practitioners need to find the balance between the biotechnical (ie. evidence) and biographical (ie. lived experience) ways of knowing,⁴⁹ to become more introspective and truly examine the reasons behind management choices.

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