

## IN BRIEF

- 1 98% of practitioners in this survey had undergone training in the measurement of blood pressure.
- 1 GDPs do not want to be involved in screening for hypertension.
- 1 Most practitioners are keen on professional education about hypertension.

# Blood pressure measuring equipment in the dental surgery: use or ornament?

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**Objective** To survey the attitudes, knowledge and practice of general dental practitioners (GDPs) with regard to hypertension in dental patients and to assess opinion with regard to the concept of screening.

**Setting** General dental practice.

**Subjects and Methods** GDPs via a postal survey. To achieve an acceptable level of accuracy, at least 196 responses were required.

**Results** Out of 300 questionnaires, 207 were returned (69% response rate). Most practitioners (98%) had received training in the measurement of blood pressure. Only 4.8% measured blood pressure routinely and this figure rose to 9.2% in patients with a known history of hypertension. Only 27.1% felt that the involvement of dentists in screening for hypertension was a good idea but 85.3% thought that education of practitioners about hypertension would be valuable.

**Conclusion** Most GDPs thought that education of practitioners about hypertension was a good idea. They did not, however, want to be involved with screening of patients for hypertension.

The aim of this study was to survey the attitudes and practices of general dental practitioners (GDPs) in the Northern Region of England with regard to various aspects of hypertension, including the concept of screening patients for hypertension by dentists. In some parts of America, dentists are encouraged to screen all their adult patients for hypertension.<sup>1</sup> Hypertension is an important but usually asymptomatic clinical condition. Dentists are one group of healthcare professionals who see patients with hypertension that may be undetected, untreated or inadequately treated. Hypertension has been shown to be the most common systemic disease found in elderly dental patients<sup>2</sup> and may be exacerbated by both the anticipation of dental treatment as well as the treatment itself.<sup>3</sup>

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## METHODS

In this prospective study, questionnaires were sent out to a random sample of GDPs contracted to provide NHS dentistry with Health Authorities in the North East of England. Practitioners on a Specialist List were identified from the Dentist's Register and were excluded from the study with the aim of targeting practitioners carrying out 'general' dental treatment in primary care. Non-responders to the questionnaire were mailed a reminder. It was calculated that with a sample of 196 subjects the probability of the responses for this sample being within 7% of the total national population of GDPs would be 95%\*. Three hundred questionnaires (Appendix I) were sent out with the aim of achieving at least 196 responses. In a pilot study, the questionnaire took no longer than 10 minutes to complete.

## RESULTS

Of 300 questionnaires mailed out, 207 were returned completed (a 69% response rate). There was a wide range of years since qualification of the practitioners (3–31 years). About half (46.9%) of the practitioners had either past or current experience of working in hospital practice (Table 1).

Table 1 Responses to Hypertension Questionnaire

| Question  | Response   |
|---|------------|
| 1. Years in practice  | 3–31 years |
| 2. Hospital position (present/past)                                     | 46.9%      |
| 3. Teaching about BP measurement  |            |
| Dental School   | 62.8%      |
| Postgraduate  | 20.8%      |
| Both  | 14.5%      |
| Never   | 1.9%       |
| 4. Specific questioning about hypertension                              | 85%        |
| 5. Possession of equipment to measure BP                                | 82.1%      |
| 6. Routine measurement of BP  | 4.8%       |
| 7. Measurement in hypertensives   | 9.2%       |
| 8. Practitioners using IV sedation                                      | 41.1%      |
| 9. Practitioners checking BP before sedation                            | 89.4%      |
| 10. Practitioners feeling that education about hypertension a good idea | 85.3%      |
| 11. Practitioners feeling that screening a good idea                    | 27.1%      |

\*For example, if 50% of all GDPs measure blood pressure and repeated samples of 196 practitioners are taken, in 95% of samples of this size the proportion detected will be between 43% and 57%.

Nearly all practitioners (98.1%) had received training in the measurement of blood pressure and 62.8% had received this at dental school. Most practitioners enquired about raised blood pressure (85%) whilst taking a medical history and only slightly less (82.1%) possessed equipment capable of measuring it. Despite this however, only 4.8% of practitioners reported measuring blood pressure routinely and this figure rose to 9.2% when assessing patients with a known history of hypertension. Intravenous sedation was used by 41.1% of practitioners in this survey and of those practitioners using sedation, 89.4% reported carrying out a pre-sedation blood pressure check.

Most practitioners (95.7%) gave a reasonable figure for what might be accepted as a 'normal' blood pressure and of these, 70.7% correctly stated that a range of values around 120 mm of mercury over 80 mm of mercury are acceptable. Diuretics and beta blockers were named by 82.1% and 77.8% of practitioners respectively and were by far the best known drugs used in the treatment of hypertension.

Only 27.1% felt that the involvement of dentists in screening for hypertension was a good idea but 85.3% thought that education of practitioners about hypertension would be valuable.

## DISCUSSION

Except when sedating patients (where blood pressure measurement is mandatory<sup>4</sup>) most of the dental practitioners surveyed did not make a habit of taking a blood pressure reading, even though many possessed the necessary equipment and expertise and knew what 'normal' is. Many stated that a lack of a fee on the NHS was the cause of this reluctance, but there may be more deep seated reasons as well. Other possible reasons for not taking blood pressure measurements include not being sure what to do if an abnormal reading is found, fear of hostility from patient or physician for straying outside a professional boundary and not seeing its relevance to the practice of dentistry.<sup>1</sup> However, a majority of practitioners felt that education of dentists about hypertension was a good idea. About one third of practitioners who did not own equipment for measuring blood pressure still felt that such education was desirable. Hypertension or its treatment may produce adverse effects on various organ systems and management of the dental needs of these patients may require modification of routine treatment<sup>5</sup> highlighting the importance of the condition to the dentist.

In the USA, professional boundaries can be more blurred. In one study of USA community dentists<sup>6</sup> 26% of practitioners measured blood pressure on all new patients. An American GDP survey<sup>1</sup> showed 33.5% of respondents carrying out routine blood pressure measurement. The American dental literature has held a long-standing debate about screening for hypertension by dental practitioners.<sup>7,8</sup> The consensus amongst USA practitioners (unlike in this survey) generally favours a move towards the screening of all patients, but the USA practitioners accept that there are potential pitfalls as well as benefits. One further potential problem referred to in the American literature<sup>7</sup> (as well as those outlined above) is the criticism that the dental environment is unsuitable for measuring blood pressure since many patients find it threatening (thus

increasing the likelihood of 'white coat hypertension'). Criticisms of 'white coat hypertension' have also been levelled at the general medical practice environment, however. It has been recognised for over 50 years that blood pressure measured in the patient's home is lower than that recorded by a doctor in the surgery.<sup>9</sup> A review of previous studies has shown that false positive high blood pressure readings were no more common when taken in a dental surgery compared with other clinical settings.<sup>7</sup> For a blood pressure to be diagnosed as truly elevated, the measurement should be confirmed on at least three occasions as the reliability of measurements is improved if repeated measurements are made.<sup>10</sup>

Given that diagnosing and treating hypertension reduces morbidity and mortality, and that dentists could 'screen' their patients for hypertension, are the professional-cultural barriers too high for this to happen in the UK? Probably yes, since lines of professional demarcation may reflect differences in the UK and USA healthcare systems themselves. In the USA, a privately funded, privately provided system, it is 'every man for himself' and prevention is better (and cheaper) than cure. In the UK, there is less incentive to detect hidden disease (the state run system existing to some extent as a safety net).

So it would appear that blood pressure measuring equipment in many dentists' surgeries is more ornament than use. Rather than screening for hypertension, a more important consideration is that dentists consider measuring blood pressure in patients with a history of hypertension in order that safe patient management can be achieved.

Most GDPs in this study thought that education about hypertension was a good idea but did not want to be involved in any form of screening. This contrasts with the attitudes of USA dentists where opposition to regular blood pressure measurement in the dental environment is minimal.

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Appendix I Blood pressure measurement in a primary dental care setting. Confidential Questionnaire

1. How many years have you been in practice? ..... years

2. Have you held/do you hold a hospital position?  
Please tick  
I have held a hospital position in the past  - Specialty .....

I hold a hospital position now  - Specialty.....

3. Were you taught how to measure blood pressure  
Please tick  
a) At Dental School?

b) As a postgraduate?

c) Both?

d) Not taught at all?

4. Do you specifically ask about blood pressure when taking a medical history?  
Please tick  
Yes

No

5. Does your surgery have equipment for measuring blood pressure?  
Please tick  
Yes

No

6. Do you routinely measure blood pressure on your patients?  
Please tick  
Yes

No

7. Do you measure blood pressure if there is a history of hypertension?  
Please tick  
Yes

No

8. Do you use intravenous sedation?  
Please tick  
Yes

No

9. If yes, do you check a patient's blood pressure before administering sedation?  
Please tick  
Yes

No

10. Do you think education of dental practitioners in the measurement of blood pressure is a good idea?  
Please tick  
Yes

No

11. Do you think that screening of dental patients by dental practitioners for hypertension is a good idea?  
Please tick  
Yes

No

12. What do you consider to be a 'normal' blood pressure in a fit 70 Kg adult.  
Please write freehand

13. What medications are you aware of for the treatment of hypertension?  
Please state any known drugs by name, class or in any way you wish.

Thank you very much. Please return the questionnaire in the pre-paid envelope.