High blood pressure: public views and knowledge

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SUMMARY. After completing a screening for hypertension among patients aged between 45 and 54 in a group practice, a sample of both responders and non-responders to screening were surveyed to determine their attitude to screening and knowledge of hypertension.

The reasons for non-response were various, and 18 per cent felt screening to be unnecessary. There was little difference between responders (both hypertensive and non-hypertensive) and non-responders in their knowledge of hypertension, and they were well informed about related conditions and illnesses caused by hypertension. The majority were aware of some likelihood of the disease being symptomless, and 38 per cent thought no symptoms were likely to be caused by hypotensive drugs. They seemed aware that the treatment was long term, but only 14 per cent thought it would be life-long.

Introduction

THE effectiveness of treatment in patients with moderate and severe hypertension has been shown by several studies (Hamilton *et al.*, 1964; Freis, 1967 and 1970). However, the disease is usually asymptomatic, and while recent research (Heller and Rose, 1977) indicates that visits to general practitioners are not often used for blood pressure screening, it has also been suggested that it is a failure of doctors in taking action rather than in detecting hypertension which leads to poor community control of the disease (Heller, 1976; Heller and Rose, 1977). Other studies have indicated the difficulties of controlling high blood pressure by hypotensive drugs and the problems of patient acceptance of treatment (Wilbur and Barrow, 1969; Caldwell *et al.*, 1969; Finnerty *et al.*, 1973).

Aim

This study looks at acceptance of screening. It is part of a hypertension study done at the Theobald Centre, Borehamwood, the principal aim of which is to find the most efficient way in which the general practitioner can identify those patients with hypertension and then keep the blood pressure under control. We attempt here to examine why some patients who were invited for screening did not attend, and look for ways in which response to such a programme may be increased in the future. We also look at attitudes to the disease and its treatment.

Methods

Beginning in 1972, patients between the ages of 45 and 54 from one group practice were invited for a 'check-up', consisting of a series of tests including measurement of blood pressure. Altogether, 3,138 patients were invited. Of these, 60 per cent attended for screening. However, the reasons for non-response for some people suggested that they should have been eliminated altogether, and if they are excluded the response rate was 69 per cent.

All those who were put on treatment for hypertension and those under review for hypertension were included in this study and have been analysed as one group. Hypertensive patients are defined as those who had a diastolic blood pressure (phase 4) of at least 105 mm Hg on preliminary screening which was sustained on two subsequent occasions. The review group had an initial pressure of 105 mm Hg which was not sustained on two subsequent occasions. As well as these, 200 patients who attended screening but who were not hypertensive were selected, and also 200 patients who, although invited, did not attend the screening programme. The two last groups were composed of equal numbers of men and women.

The patients were sent a postal questionnaire with a covering letter explaining about the study and confidentiality. Two reminders were sent, and after nine

weeks an interviewer called on those who had still not replied (patients were given an opportunity to say they did not want the interviewer to call). In addition, information from the patients' medical records was available. The response rates were 93 per cent for the hypertensive and review group, 91 per cent for the screened, and 66 per cent for the unscreened group.

Patients not seen by the practice for two years or more and whose names did not appear on the electoral register had been replaced at the sampling stage, so the low response among the unscreened group is unlikely to have been because they had moved. Possibly there is a group who are characteristic 'non-responders'; if so, there is little that any study can do to discover more about them.

Results

Characteristics of the sample

Previous studies of response to a cervical screening programme have shown that initial recruitment was biased in favour of social classes 1, 2, and 3 (Wakefield and Baric, 1965; Wakefield and Sansom, 1966). However, in this study we found no differences between the groups in terms of social class. Age, marital status, and education were also similar for the groups.

We were also able to look at the age, sex, marital status, education, and surgery contacts of those who refused to take part in both the screening and the survey, and were unable to find any differences between them and the unscreened group who took part in the survey. It seems that these repeated non-responders are not a clearly definable group in terms of the information it is possible to obtain about them.

Screening

When asked whether check-ups for patients over 45 years of age were a good idea the majority of patients were in favour, but the unscreened were rather less enthusiastic; 82 per cent of them thought it was a good idea compared with 93 per cent of screened and 96 per cent of the hypertensive group. Patients were also asked the reasons why they felt as they did, and results are shown in Table 1. Hypertensives were more likely than the others to mention peace of mind as a reason, 24 per cent did so compared with 14 per cent of the rest, and the unscreened group mentioned health deterioration among the over 45s less often than the rest, six per cent doing so compared with 21 per cent of the others. Otherwise there were no differences between the groups in their responses to this question.

In some cases answers to these questions suggested that while people felt the idea was good in principle, they had reservations about it being a good idea for themselves. A set of three questions was asked to discover their personal feelings about check-ups. These related to the degrees of unpleasantness, worry, and reassurance that respondents associated with check-ups.

Table 1. Responses in percentages to an open question about why people did or did not think check-ups were a good idea.

Reasons for or against check-ups	Hypertensives	Screened	Unscreened	All respondents
Reasons for				
Can discover illness in early stages	*38*	*46*	*41*	*42*
Gives peace of mind	*24*	*15*	*14*	*17*
Health deteriorates as people get older	*21*	*21*	*6*	*17*
People would not go to doctor otherwise	*12*	*10*	*9*	*10*
Prevention better than cure	*3*	*8*	*6*	*6*
Other reasons	*9*	*7*	*7*	*7*
Reasons against				
Waste of doctor's time	*0*	*1*	*5*	*2*
Better not to know if something is wrong	*5*	*4*	*6*	*5*
Only necessary if person feels ill	*0*	*1*	*6*	*2*
Should be left up to the individual	*0*	*1*	*5*	*2*
Other reasons	*0*	*1*	*4*	*2*
Total* (=100 per cent)	86	137	81	304

*In this and later tables, inadequate replies have been omitted from the totals.

Table 2 shows the responses of the three groups to these questions. While the unscreened were more likely than the rest to feel a check-up was unpleasant to some degree, and to be worried by it, they were also more likely to think they would be reassured by it. As the negative side of the check-up presumably weighs more heavily with this group than its positive aspects, anxiety and unpleasantness seem to count for more than possible reassurance with them.

Perhaps the best indicators of all as to why the unscreened did not come to be screened are their own explanations. The most frequent reason mentioned (23 per cent) was that they were already 'under' the doctor or hospital, or had had a check-up recently for work or insurance purposes. Eighteen per cent felt it was unnecessary or a waste of their or the doctor's time, and 16

Table 2. Feelings about check-ups (given as percentages).

	Screened hypertensives	Screened non-hypertensives	Unscreened
Thought check-up not at all unpleasant	*94*	*94*	*80*
Check-up would worry them not at all	*67*	*73*	*59*
Check-up would reassure them a lot	*50*	*53*	*64*
Total (=100 per cent)	115	181	131

per cent were too busy or found it inconvenient. Other reasons were that they were away at the time (eight per cent), that they were afraid or nervous (seven per cent), that they had family problems (three per cent), or that they had no faith in, or did not like, doctors. Seven per cent claimed not to have received an invitation, and five per cent said they had had a check-up.

The unscreened were also asked if they would accept this time if another invitation was sent. Sixty-eight per cent said they would, and two per cent were uncertain. Those who said they would accept another invitation differed in one respect from those who would not. Seventy-seven per cent said that a check-up would reassure them considerably compared with 36 per cent of the rest.

While there were slight differences in attitudes between the unscreened and the rest towards screening, it seems that for a number of patients, time and convenience were largely responsible for their not accepting the screening invitation, and as a majority said they would accept another invitation, and there was also evidence that 82 per cent thought screening was a good idea, there may be steps that could be taken to increase response to a screening programme.

Attitudes to illness

We considered whether attitudes to illness might relate to attendance or non-attendance for screening, but in general found no differences between the groups on the indicators we used. However, one important finding did emerge. A question about whether there was any illness they thought they might get or were worried about showed that the hypertensives were less worried about this (27 per cent were worried about getting something) than the screened (40 per cent), although neither of these two groups differed significantly from the unscreened (33 per cent). This is an important finding, in that some patients thought that discovery or labelling of illness might lead to anxiety about health—but in fact it appears from this result that it has the opposite effect, making people less anxious.

Attitudes to and knowledge of high blood pressure

The original hypothesis was that the hypertensive group would be better informed about the disease than either of the other two groups, and possibly, if the check-up itself played an educating role, that the unscreened would be the least well informed. In fact, the results showed few differences between the groups in their responses to the questions about knowledge of and attitudes to blood pressure. Consequently, the discussion relates to the group as a whole, and where there are differences these are pointed out.

When we asked what taking a person's blood pressure told the doctor, the most common answer was that it told him about the heart, circulation, or blood vessels; however, fewer of the hypertensives (29 per cent) said this than of the non-hypertensives (46 per cent). Nineteen per cent of the patients thought it told the doctor about the state of a person's health in general, and 10 per cent that it told him if the patient was anxious, worried, or overworked. Other things men-

Table 3. Response of patients to possible causes of high or low blood pressure.

	Per cent perceiving as cause			
Possible causes**	Hyper-tensives	Screened	Un-screened	All res-pondents
Overweight*	*92*	*98*	*95*	*95*
Having heart trouble*	*73*	*82*	*75*	*78*
Worrying a lot	*83*	*70*	*71*	*74*
Taking too little exercise	*50*	*47*	*48*	*48*
Smoking	*50*	*48*	*44*	*47*
Working too hard	*38*	*36*	*37*	*37*
Having kidney trouble*	*43*	*37*	*30*	*37*
Eating a lot of salt	*39*	*33*	*28*	*33*
Taking birth control pill*	*31*	*32*	*27*	*30*
Having relatives who have it*	*37*	*22*	*15*	*24*
Insufficient vitamins	*17*	*20*	*26*	*21*
Taking a lot of exercise	*14*	*14*	*25*	*17*
Anything else mentioned	*19*	*18*	*18*	*19*
Total (=100 per cent)	113	174	122	409

**The above list was printed on the questionnaire and patients were asked to tick those they thought were related to high or low blood pressure.

*Possible causes marked thus are assessed as being related to high or low blood pressure (C.H.).

tioned were that it told him about the state or content of the blood (two per cent), that it could detect future illness (two per cent), or that it told him about the state of the kidneys (three per cent). Seven per cent gave a tautological answer.

We also asked them whether they thought, if a patient's blood pressure was not normal, it was better for it to be above or below average. Fifty-two per cent said it was better to be below, and 31 per cent that it was better to be above average. Three per cent said "Neither" (they were given these two alternatives only), and 13 per cent said they did not know.

Table 3 shows the perceptions patients had of the causes of high or low blood pressure. On this and subsequent questions we have indicated the answers considered to be correct, and have compared the answers of the patients with these answers.

It can be seen from the table that the two causes mentioned most often by the patients were also said by one of us (C.H.) to be related. Three other causes identified by us were less frequently mentioned by patients, and "having relatives who had it" was particularly low in the patients' 'league table'. This last cause, however, was mentioned more frequently by the hypertensive group, but "worrying a lot" was also mentioned more frequently by them.

Table 4. Response of patients to possible symptoms of hypertension.

	Per cent perceiving as symptom			
Possible symptoms**	Hypertensives	Screened	Unscreened	All respondents
Dizziness*	*83*	*93*	*88*	*89*
Headaches	*78*	*70*	*71*	*72*
Faintness and/or blackouts*	*62*	*73*	*71*	*69*
Worry/tension nerves	*65*	*55*	*49*	*56*
Palpitations	*53*	*55*	*57*	*55*
Breathlessness	*53*	*52*	*60*	*55*
Tiredness	*57*	*53*	*54*	*54*
Sweating	*43*	*34*	*32*	*36*
Trouble with eyesight*	*32*	*31*	*27*	*30*
Nervousness	*33*	*28*	*28*	*29*
Swelling joints	*25*	*21*	*23*	*23*
Sleeplessness	*20*	*18*	*17*	*18*
Anything else mentioned	*8*	*9*	*6*	*8*
Total (=100 per cent)	113	176	121	410

**The above list was printed on the questionnaire and patients were asked to tick those they thought might be caused by high or low blood pressure.
*Symptoms marked thus assessed as being associated with severe hypertension (C.H.).

We also attempted to discover which symptoms people most often associated with hypertension. The majority of patients were aware of some likelihood of the disease being symptomless, 32 per cent said it was very likely that a person could have it and not be aware of any symptoms, and 39 per cent said that it was fairly likely. Table 4 shows the symptoms patients thought were caused by hypertension. The only difference between the hypertensive group and the rest was that the hypertensives mentioned worry, tension, or nerves more often; 65 per cent of them thought of this as a symptom, compared with 53 per cent of the rest.

Table 5. Response of patients to possible illnesses caused by hypertension.

	Per cent perceiving as possible illness			
Possible illnesses**	Hypertensives	Screened	Unscreened	All respondents
A heart attack*	*85*	*89*	*80*	*85*
A stroke*	*79*	*73*	*71*	*74*
Hardening of the arteries*	*76*	*60*	*63*	*65*
Kidney disease*	*29*	*26*	*19*	*25*
Tuberculosis	*2*	*4*	*3*	*3*
Cancer	*4*	*2*	*4*	*3*
Anything else mentioned	*6*	*2*	*4*	*4*
Nothing	*2*	*3*	*3*	*3*
Total (=100 per cent)	107	171	119	397

**The above list was printed on the questionnaire and patients were asked to tick those they thought people with high or low blood pressure were more likely to get or have.
*Illnesses marked thus assessed as being associated with hypertension (C.H.).

There was rather more agreement between the patients and us in terms of illnesses that might be caused by high blood pressure (Table 5). The difference between the proportion of hypertensives mentioning hardening of the arteries and the proportion of other patients mentioning it is significant.

Most patients were aware of a need for regular checking of blood pressure once it was found to be high. Two thirds agreed that hypertension should be treated whether it was troubling the patient or not, seven per cent felt it should not, and a quarter were uncertain.

Patients were asked for how long they thought it was necessary to continue taking tablets for high blood pressure. Two thirds (67 per cent) thought until the blood pressure was normal, and 14 per cent thought it was necessary to take them for the rest of one's life. Those who felt unable to answer here were asked if they thought it was likely to be for less than a year, or a year or more, and 55 per cent thought it was likely to be for

more than a year. When asked how soon a patient whose blood pressure had gone back to normal could stop taking the tablets, the majority (82 per cent) thought tablets could be stopped after it had been normal for some time, nine per cent thought straight away, and eight per cent thought they could not be stopped at all.

Lastly in this section we asked about the effects that tablets for high blood pressure might have (Table 6). All the symptoms in our list might be caused by tablets for hypertension, but the patients were less likely to be aware of the possibility of these effects. Thirty-eight per cent thought none of the symptoms in our list was likely to be caused by tablets. There was also a large number of people who did not answer this question at all (27 per cent of those who returned a questionnaire); probably because they had no idea of the answer. The hypertensives were more likely to say the tablets might cause impotence (19 per cent compared with 10 per cent of the rest) and less likely to say that the tablets might cause headaches (17 per cent compared with 27 per cent), but otherwise there was no difference between them and the non-hypertensives.

Table 6. Response of patients to possible effects of tablets for hypertension.

	Per cent perceiving as possible effect			
Possible effects of tablets*	Hypertensives	Screened	Unscreened	All respondents
Tiredness	45	42	34	41
Headaches	17	25	30	24
Faintness	13	19	17	17
Nerves	11	17	16	15
Sleeplessness	17	15	17	16
Impotence	19	10	10	12
Breathlessness	9	6	16	10
Anything else mentioned	15	6	10	4
Total (=100 per cent)	95	125	93	313

*The above list was printed on the questionnaire and patients were asked to tick those they thought might be caused by tablets for hypertension.

Discussion

Another paper arising from the hypertension study (Hodes *et al.*, 1976) showed that screening uncovered more cases of hypertension than would have been discovered in the course of normal good general practice care. If it had been possible to attract the 31 per cent who did not attend for screening, then probably more cases of hypertension could have been discovered and treated.

Consequently, one emphasis of this paper has been to explore the reasons why some patients did not take part in screening. We found that almost a quarter of this group were already under medical surveillance, and attempts to attract them might prove unnecessary and time wasting. A similar proportion gave reasons of being too busy at work, or away at the time. Efforts were made to accommodate those with difficulties in attending, and possibly these explanations were rationalizations for non-attendance, particularly since their doctor was associated with this inquiry. It may be possible to encourage those who did not attend because they felt it was unnecessary and a waste of time by giving a fuller explanation of the tests and their purposes, and in particular of why it is important to detect asymptomatic hypertension. Those worried about particular tests being done might attend if they were assured that they could refuse any particular test if they so wished. Nevertheless, the total numbers who consistently declined screening and who were not already under medical supervision are relatively small, and it would appear that, given sufficient reassurance, information, and flexibility of arrangements, a substantial majority of people would respond to a screening programme of this nature.

A survey of public knowledge and attitudes to hypertension in the USA (National Heart and Lung Institute, 1973) revealed a very poor knowledge of the disease. Our sample, however, showed themselves to be comparatively knowledgeable. Attitudes and knowledge of hypertension were remarkably similar between hypertensives and non-hypertensives. The group as a whole seemed aware that it might not cause symptoms but should nevertheless be treated, and that it was related to other, more severe, illnesses. They were aware that treatment for the disease was long term, but not that it was likely to go on for life. Acceptance of treatment regimens has been a problem among hypertensive patients, and we wondered if this might be related to the effects of tablet taking, but the hypertensives did not think tablets caused more effects than the non-hypertensives, and mentioned considerably fewer than the general practitioner.

The question this raises is why the hypertensive group were not more knowledgeable than the non-hypertensives. It is possible that all the patients at this practice had a high level of knowledge, perhaps induced by the screening programme, but if this were so one would expect the unscreened group to be less knowledgeable, which was not so. It may reflect the fact that knowledge about the disease in the medical profession is low and sometimes contradictory. A survey among general practitioners showed substantial differences among them on different aspects of high blood pressure (Hodes *et al.*, 1975). Given the state of knowledge in the profession and the contradictory evidence available, it would seem that the patients had a reasonable level of lay knowledge of the disease.

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Addendum

A copy of the questionnaire is available on request from the authors.