

# Consultation patterns in a community survey of men with benign prostatic hyperplasia

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## Introduction

IN 1909 Sir Henry Thompson reported that 'one man in every five over the age of 50 suffers from benign prostatic hyperplasia'.<sup>1</sup>

The Stirling benign prostatic hyperplasia natural history group have previously reported a community study showing a prevalence of the condition of 255 per 1000 in men aged between 40 and 79 years.<sup>2</sup>

The study group has also reported on the impact of benign prostatic hyperplasia on the daily activities of men aged between 40 and 64 years.<sup>3</sup> Of men with the condition 17% reported interference most or all of the time for at least one activity of daily living compared with 3% of men without the condition. Only a small proportion of these men reported having consulted their doctor during the previous year about bothersome symptoms.<sup>3</sup> It was decided to explore in greater detail the pattern of their consultations with general practitioners.

## Method

The general and statistical methodology has previously been reported in detail.<sup>2,3</sup> The records of men aged 40–79 years in three practices in Stirling, central Scotland (total population 15 000) were scrutinized. Eligible men were then invited to complete a urinary symptom questionnaire (for which a scoring system had been adapted from that of Fowler and colleagues<sup>4</sup>) which was similar to the American Urological Association's symptom questionnaire,<sup>5</sup> and a validated 135 item benign prostatic hyperplasia lifestyle questionnaire.<sup>6</sup> Peak urinary flow rate was measured using a Urolynx 1000<sup>®</sup> uroflowmeter (Dantec).<sup>7</sup> The lifestyle questionnaire asked about bothersomeness of symptoms and symptom variation with time, interference with activities of daily living, and consultations with the general practitioner in the previous year. Questions were asked about consultations specifically related to urinary symptoms and those related to general symptoms. Participants were also asked about previous prostate or genitourinary problems. These last three questions allowed some cross checking for validity of response.

Men who reported urinary symptom scores of more than 10, who had a peak urinary flow rate of less than 15 ml s<sup>-1</sup>, or both, were referred to a special prostate clinic for transurethral ultrasound in order to estimate prostate size.<sup>8</sup> Men who could not void at least 150 ml urine on three occasions were also referred.

## Results

From the 2716 men aged between 40 and 79 years registered with the practices on 1 January 1990, 219 were excluded, 108 because of previous or imminent prostatectomy. Of the remaining 2497, 1627 (65.2%) participated. A total of 1385 participating men (85.1%) completed all or part of the lifestyle questionnaire. Their demographic characteristics have previously been reported.<sup>3</sup> Because of missing data there are minor inconsistencies between numbers presented.

## SUMMARY

**Background.** The Stirling benign prostatic hyperplasia natural history group have previously reported a prevalence of this condition of 255 per 1000 in a community study of 1610 men aged 40–79 years.

**Aim.** It was decided to examine the consultation patterns of men with benign prostatic hyperplasia in greater detail.

**Method.** All participating men were invited to complete a previously validated lifestyle questionnaire including questions on consultations with their general practitioner during the previous year and previous history of prostatic problems. The men who had a urinary symptom score greater than 11, or who had a urinary flow rate of less than 15 ml per second were examined by transurethral ultrasonography for prostate size.

**Results.** Of 364 men with benign prostatic hyperplasia, 89% had not consulted their doctor about urinary symptoms in the year prior to the study. Men with moderate to severe urinary symptoms were six times more likely to have consulted their doctor than those with mild symptoms. Moderate to severe symptoms and greater interference with daily living activities were both associated with a greater likelihood of consultation, independent of age. Of all the men in the study referred to the specialist clinic for assessment of prostate size by transurethral ultrasonography, two thirds were referred because of low urinary flow rate and one third because of high urinary symptom scores. The reported consultation data showed a reverse ratio of one third of those consulting having a low urinary flow rate and approximately two thirds having urinary symptoms.

**Conclusion.** While mass screening is unjustified, there is a need for patient education about benign prostatic hyperplasia in general and the recognition of declining strength of urinary flow as a symptom of benign prostatic hyperplasia and not of ageing alone. Furthermore, evaluation of primary care use of urinary flowmeters and the development of local protocols are suggested as elements of a case finding strategy for benign prostatic hyperplasia based on patient led consultation.

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Information on the consultation rates of a subset of all 781 men aged between 45 and 65 years was extracted for comparison with mean consultation rates reported in the third national morbidity survey.<sup>9</sup> Compared with the national survey, the study group had a lower proportion of men who had not consulted a doctor at all, a higher proportion who had consulted once or twice or between three and six times, and a similar proportion who had consulted more than six times during the previous year (Wilcoxon rank sum test  $P < 0.001$ ). The 1322 men who answered the question about consulting a doctor during the past year had a mean consultation rate of 3.3 (standard deviation 4.3), with 1034 men (78.2%) consulting a doctor at least once.

### Consultations for urinary symptoms

Only 77 of the 1385 men (5.6%) who completed the lifestyle questionnaire reported having consulted a doctor during the past year for urinary symptoms. Consultation rates for urinary symptoms increased independently with age and increasing symptoms. After controlling for age, the 234 men with moderate to severe symptoms were about six times more likely to have consulted a doctor for urinary symptoms than were the 1151 men with mild symptoms (odds ratio: 6.1, 95% confidence interval (CI) 3.9 to 9.4). A logistic regression analysis was performed to assess the effect of symptoms and interference with daily living activities, independent of age, upon consultation rates for urinary symptoms. A moderate to severe symptom score (odds ratio: 1.1, 95% CI 1.1 to 1.2) and a score indicating greater interference with daily activities (odds ratio: 1.1, 95% CI 1.0 to 1.2) were independently associated with increased likelihood of consultation for urinary symptoms.

### Reasons for referral and consultation

As has been reported from this study previously,<sup>3</sup> 410 men out of all 1627 participating men were found to have benign prostatic hyperplasia. Of these 410 men, 255 had been referred to the prostate clinic with low urinary flow rates while 101 were referred because of a urinary symptom score of 11 or more, and 42 men had both (12 were referred because they were unable to void adequately). Excluding these 12 men, 297 men (255 + 42) were referred because of a low urinary flow rate (62.2%) and 143 (101 + 42) were referred because of a high symptom score (34.9%). Examination of the 58 men found to have benign prostatic hyperplasia and who had consulted their doctor showed that 17 (29.3%) had consulted with a low urinary flow rate and 40 (70.7%) had consulted with a high urinary symptom score. Of those who had transurethral ultrasonography, 364 met the study criteria for benign prostatic hyperplasia. There were no social class differences between those with and without benign prostatic hyperplasia.

### Prostate problems reported by doctor

Of those with benign prostatic hyperplasia, 29 (8.0%) reported having been told by their doctor that they had an enlarged prostate. Nine of these men (31.0%) compared with 32 of the 335 men (9.6%) found to have benign prostatic hyperplasia but who did not report having been told that they had a prostate problem by their doctor had consulted about one or more urinary symptom in the past year (2-tail Fishers exact test,  $P < 0.01$ ). The men whose doctor had told them about an enlarged prostate also reported a statistically greater degree of bothersomeness than the other men with benign prostatic hyperplasia for 10 of the 12 urinary symptoms (Table 1). Furthermore, they reported statistically greater interference with five out of seven activities of daily living (Table 1).

**Table 1.** Bothersomeness of urinary symptoms during past month and impact of symptoms on activities of daily living (ADL) reported by men with benign prostatic hyperplasia who had and who had not been told by their doctor they had an enlarged prostate.

	Mean score (SD) of bothersomeness/ADL interference by men with enlarged prostate who	
	Had been told (n = 29)	Had not been told (n = 335)
<i>Urinary symptom<sup>a</sup></i>		
Daytime urination 2 hourly +	1.4 (1.6)	0.6 (1.1) ***
Nocturia twice or more	1.3 (1.7)	0.8 (1.3)
Weak stream force	1.3 (1.0)	0.6 (1.1) ***
Pain/burning when urinating	0.4 (0.6)	0.2 (0.7) **
Straining	0.9 (1.1)	0.5 (1.1) **
Urinate, then again 10 min later	0.9 (1.3)	0.5 (1.0) **
Intermittency	1.7 (1.4)	0.7 (1.2) ***
Dribbling	1.6 (1.8)	0.9 (1.4) *
Hesitancy	1.2 (1.4)	0.5 (1.1) **
Urgency	1.9 (2.1)	1.0 (1.5) **
Incomplete bladder emptying	1.4 (1.8)	0.6 (1.1) **
Stained clothes from dribbling	1.7 (2.2)	0.9 (1.4)
<i>ADL</i>		
Limits fluids before travel	2.2 (1.5)	1.5 (1.0) **
Limits fluids before bedtime	2.5 (1.4)	1.6 (1.0) ***
Cannot drive for two hours	2.1 (1.5)	1.3 (0.8) **
Not getting enough sleep at night	1.9 (1.3)	1.5 (1.0)
Limits going to places without toilets	2.2 (1.5)	1.6 (1.0) *
Limits playing outdoor sports	1.7 (1.4)	1.2 (0.6)
Limits going to cinema, theatre, church, etc	1.8 (1.4)	1.2 (0.7) **

n = number of men in group. SD = standard deviation. <sup>a</sup>Rated each urinary symptom on a scale of 0 = not bothersome through to 6 = extremely bothersome. <sup>b</sup>Rated each ADL on a scale of 1 = none of the time through to 5 = all of the time. Wilcoxon rank-sum tests comparing those who had and had not been told by their doctor they had an enlarged prostate: \* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$ .

### Consultation patterns and outcome

As regards patterns of consultation 1330 men could be divided into three: 77 men had consulted about urinary symptoms in the past year, 967 had consulted other than about urinary symptoms, and 286 had not consulted their doctor at all. The diagnosis of benign prostatic hyperplasia and whether or not a transurethral resection of the prostate operation was performed, for each consultation group, was investigated (Table 2). Those who had consulted for urinary symptoms in the past year were significantly more likely to have had benign prostatic hyperplasia or to have had an operation than those who had consulted other than about urinary symptoms, who in turn were more likely to have had these outcomes than non-consulters.

The 41 men with benign prostatic hyperplasia who reported having had a consultation with their doctor about urinary symptoms in the past year reported a significantly greater impact of urinary symptoms upon six of the seven daily living activities compared with the 323 men with benign prostatic hyperplasia who had not consulted their doctor about urinary symptoms (Table 3).

In reporting changes in urinary symptoms over the previous year, most men found them unchanged; approximately one sixth

**Table 2.** Presence of benign prostatic hyperplasia (BPH) and performance of transurethral resection of the prostate (TURP), by consultation patterns in previous year.

Outcome	% of men consulting with		
	Urinary symptoms (n = 77)	Symptoms other than urinary symptoms (n = 967)	% of non-consulters (n = 286)
Having BPH <sup>a</sup> ***	55.4 <sup>b</sup>	25.5 <sup>d</sup>	22.0
Having TURP ***	21.1 <sup>c</sup>	4.6 <sup>e</sup>	1.4

n = number of men with consultation pattern. <sup>a</sup>Prostate estimated to be >20 g. <sup>b</sup>n = 74, <sup>c</sup>n = 76, <sup>d</sup>n = 956 <sup>e</sup>n = 959. Chi square test for trend for those having and not having BPH:  $\chi^2 = 18.3$ , 1 df, \*\*\*P<0.001. Chi square test for trend for those having and not having TURP:  $\chi^2 = 32.4$ , 1 df, \*\*\*P<0.001.

reported improvement and approximately one sixth reported worsening of symptoms (Table 4).

## Discussion

While this study has a number of limitations, the data on consultation patterns are sufficiently robust to provide a productive basis for benign prostatic hyperplasia case finding in primary care.

A central problem surrounding this condition is the current use of a histopathological definition (hyperplasia found in glands of more than 20 g<sup>10</sup>) which is clinically unhelpful. Furthermore, the clinical thresholds used in this study as a basis for referral for the measurement of benign prostatic hyperplasia may have resulted in an underestimate of its prevalence since there is no clear relationship between urinary symptoms, urinary flow and prostate size.<sup>1</sup>

The lifestyle questionnaire, though detailed, provided only retrospective data. The discrepancy with earlier national consultation data<sup>9</sup> may be because of differences in the period of time of the study. The questionnaire had been validated only in the United States of America.

The data showed that the overwhelming majority of men with benign prostatic hyperplasia do not consult their doctor about this problem. The reasons for this are unclear. They may include acceptance of symptoms, including reduced urinary flow rate, as a normal part of ageing. Whereas two thirds of the men were referred to the clinic because of low urinary flow rates alone, and one third because of high symptom scores, the consultation patterns here showed the exact opposite: two thirds of those consult-

**Table 3.** Impact of urinary symptoms on activities of daily living reported by men with benign prostatic hyperplasia who had and who had not consulted their doctor in the previous year about urinary symptoms.

ADL	Mean score (SD) of ADL interference <sup>a</sup> by men who	
	Had consulted GP (n = 41)	Had not consulted GP (n = 323)
Limits fluids before travel	2.5 (1.4)	1.5 (0.9) ***
Limits fluids before bedtime	2.5 (1.4)	1.6 (1.0) ***
Cannot drive for two hours	2.3 (1.5)	1.3 (0.8) ***
Not getting enough sleep at night	2.4 (1.6)	1.4 (0.9) ***
Limits going to places without toilets	2.4 (1.5)	1.5 (1.0) ***
Limits playing outdoor sports	1.5 (1.1)	1.2 (0.7)
Limits going to cinema, theatre, church, etc	1.9 (1.2)	1.2 (0.7) ***

n = number of men in group. SD = standard deviation. ADL = activity of daily living. <sup>a</sup>Rated each ADL on a scale of 1 = none of the time through to 5 = all of the time. Wilcoxon rank-sum tests comparing those who did and did not consult GP about urinary symptoms: \*\*\*P<0.001.

ing had symptoms and only one third had low urinary flow rates. There is a need to educate men that reduced urinary stream may possibly presage substantial pathology rather than natural ageing. The future role of flowmeters in primary care or as a direct access diagnostic tool is currently being evaluated in a number of centres.

The natural history of benign prostatic hyperplasia remains uncertain. Only the doubling of prevalence with each decade from 40 to 70 years is known.<sup>2</sup> No association with social class was found, unlike the social class 1 and 2 bias suggested by Richardson in his hospital based study.<sup>11</sup>

The fluctuation of symptoms, which has also been reported in small prospective studies,<sup>12,13</sup> may encourage men to believe that the symptoms are temporary. Patients' and doctors' awareness of morbidity associated with transurethral resection of the prostate, particularly in mild to moderate cases, may be a factor in both non-presentation and inadequate diagnosis.<sup>13</sup> There may also be a fear of prostate cancer, despite its low profile.<sup>14</sup>

The consultation patterns in Stirling, if replicated nationally, could provide the basis for efficient case finding. Case finding

**Table 4.** Reported changes in urinary symptoms over the past year.

Symptom	% of men with symptom reporting it			No. of men with no symptom
	Better	Same	Worse	
Daytime urination 2 hourly + (n = 318)	16.0	68.9	15.1	1005
Nocturia twice or more (n = 281)	22.1	66.5	11.4	1040
Weak stream force (n = 326)	14.7	69.0	16.3	993
Pain/burning when urinating (n = 127)	42.5	39.4	18.1	1201
Straining (n = 161)	15.5	70.2	14.3	1187
Urinate, then again 10 min later (n = 178)	19.1	65.2	15.7	1172
Intermittency (n = 247)	15.8	70.4	13.8	1099
Dribbling (n = 421)	17.3	65.3	17.3	926
Hesitancy (n = 173)	19.7	65.9	14.4	1172
Urgency (n = 320)	17.8	64.7	17.5	1027
Incomplete bladder emptying (n = 202)	17.3	63.9	18.8	1143
Stained clothes from dribbling (n = 399)	19.5	64.9	15.5	949

n = number of men with symptom.

can be justified in part by the number of transurethral ultrasonographies carried out following this study<sup>15</sup> as well as the impact of symptoms on quality of life.<sup>3</sup>

There are two overlapping groups who merit initial attention: first, those who have been informed that they have a prostate problem; secondly, those where urinary symptoms or a slow urinary stream are not explained by other pathology. However, it must be emphasized that without adequate public education, men with slow urinary stream, who constitute the majority, remain less likely to consult. The present study suggests that more weight should be given to the impact of symptoms on men's lives than to the presumed effects of ageing when general practitioners assess patients.

Men with benign prostatic hyperplasia could form the core of any 'watchful waiting' group, after referral for a prostatectomy of those with impending complications.<sup>16</sup> To this core group can be added those diagnosed following a urinary check, undertaken as one of a number of opportunistic health promotion strategies. However, any mass screening programme is presently wholly unjustified.

The sizeable group of men with benign prostatic hyperplasia may be managed mainly by watchful waiting in the primary care setting. Many locally developed protocols are now emerging. These men may in future benefit either from improved medical treatments or from pre-emptive referral for prostatectomy once the natural history and prognosis of benign prostatic hyperplasia is clarified.

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