

Urinary incontinence in women: its prevalence and its management in a health promotion clinic

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SUMMARY

Background. It has been suggested that regular clinics might improve the management of urinary incontinence in general practice.

Aim. A study was undertaken to determine the prevalence of urinary incontinence among women in one general practice and the feasibility of using a health promotion clinic in its management.

Method. Questionnaires were sent to a 10% sample of women aged 20 years and over on the practice register. Pregnant women were excluded.

Results. Of 384 questionnaires sent to eligible women, 314 were completed correctly (82%). The overall reported prevalence of urinary incontinence was 53%; 8% of these women had urge incontinence, 46% had stress incontinence and 43% had mixed incontinence. Incontinence was positively correlated with parity and with gynaecological operation other than hysterectomy and repair of prolapse but not with perineal suturing after childbirth, delivery of a baby weighing 9 lb (4.1 kg) or more or mode of delivery. Twenty seven out of 78 incontinent women (35%) who completed a second questionnaire admitted to worrying about their incontinence but only 10 (13%) had consulted their doctor about the problem. The main reason given for not consulting was that incontinence was a minor inconvenience only. The 167 incontinent women were offered an appointment at a women's clinic but only 13 attended. Of these, 10 were entered into a 12 week treatment trial. Various treatments were offered, such as the women being taught bladder training and pelvic floor exercises. One woman was lost to follow up, and for eight out of nine women their continence had improved, both subjectively and objectively.

Conclusion. Urinary incontinence in women is a common problem. It can be successfully diagnosed and treated in general practice but low attendance makes the health promotion clinic setting an inefficient means of achieving this.

Keywords: urinary incontinence; women's health; GP clinics; management of disease.

Introduction

THE health promotion clinic has been shown to be an effective means of managing many chronic problems, for example hypertension¹ and diabetes.² It has been suggested that regular clinics might improve the management of urinary incontinence in general practice.³

With the increasing popularity of health promotion clinics and the awareness that the prevalence of urinary incontinence in

women is more widespread than previously thought,^{3,4} a study was undertaken to determine the prevalence of urinary incontinence in women in one general practice, women's perceptions of their incontinence⁵ and whether the health promotion clinic is a suitable setting for the management of urinary incontinence.

Method

The study practice is situated in a suburban area of Bristol and has a list size of 11 873 patients who are mainly in social classes 3–5. The subjects for the study were a randomly selected 10% sample of all women in the practice aged 20 years and over on 1 June 1990. Pregnant women were excluded.

Questionnaires

The questionnaires were designed to be as simple as possible and to take up only one sheet of paper, in order to maximize the response rate. For this reason, two questionnaires were used to obtain all the study data. The first questionnaire was sent to all subjects, together with an explanatory letter and a stamped addressed envelope for reply. Those not wishing to take part in the study were asked to return their questionnaire blank. A reminder letter and additional questionnaire were sent out six weeks later to those who had not replied. The first questionnaire comprised 10 questions. The first three asked about the presence of urine leakage and the frequency of leakage episodes, and whether the women leaked urine when they coughed, laughed or exercised (to determine presence of stress or urge incontinence). The other seven questions covered background information on parity, mode of delivery of baby, perineal sutures after childbirth, delivery of a baby weighing 9 lb (4.1 kg) or more, gynaecological operations and the presence of menstrual periods. Women were classified as incontinent if they gave positive answers to either of the questions on frequency of leakage episodes and leakage when coughing, laughing or exercising. All incontinent women were sent a second questionnaire, an invitation to a women's clinic to discuss their urine leakage problem and an information leaflet entitled regaining bladder control, produced by Coloplast Limited.

The second questionnaire comprised eight questions. The first three asked whether the urine leakage caused worry or affected the women's social life and activities. The next three questions asked for further information on the type and severity of urine leakage and whether the women ever wore pads. The last two questions determined how many women had discussed their incontinence with their general practitioner and, if not, the reason for not seeking medical advice.

Data from both questionnaires were entered on a computer and analysed using the statistical package for the social sciences, SPSSX.

Health promotion clinic

The invitation to the women's clinic asked whether further advice on treatment was required, and offered an appointment. Clinics were held on a weekday afternoon. Women were seen individually in a 30-minute appointment. Any woman unable to attend on the date of the clinic was given an alternative clinic date, a surgery appointment or offered a home visit. Clinic staff

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were all women and comprised receptionists, a general practitioner trainee (G H), district continence adviser and physiotherapist.

Women were initially assessed in the clinic by G H or the continence adviser. A standard interview was used to determine the type and frequency of episodes of incontinence. Abdominal and vaginal examination were carried out to exclude prolapse and palpable bladder after micturition, to look for atrophic vaginitis, and to assess the strength of the pelvic floor muscles. Any patients with prolapse, palpable bladder after micturition or disorders of the central nervous system, for example multiple sclerosis, were referred appropriately and excluded from the study. Urine was examined by dipstick for presence of protein and sugar, and a mid-stream specimen sent for microscopy, culture and sensitivity. Any urinary tract infection was treated with appropriate antibiotics and the woman reassessed after treatment in the surgery by G H.

Women were placed in one of three diagnostic/management groups:⁶ stress incontinence — loss of urine on exertion, without active bladder contraction; urge incontinence — involuntary loss of urine associated with a strong desire to void; and mixed incontinence — a combination of stress and urge incontinence.

All patients were encouraged to increase fluid intake to 12 cups per day, to decrease caffeine intake and were given dietary advice if they were overweight. Atrophic vaginitis was treated with dienoestrol vaginal cream 0.01%, one applicator-ful daily for two weeks then once a week. Information on incontinence pads and pants was also provided.

Patients with stress incontinence were taught pelvic floor exercises by the physiotherapist. These were reinforced by G H at follow up.

Patients with urge incontinence were asked to keep a diary of the number of times urine was voided and number of episodes of incontinence over one week. A programme of bladder training was commenced where patients were encouraged to void at regular intervals, increasing from hourly, to one and a half hourly, two hourly, up to three or four hourly. If there was no improvement in two weeks and voiding was hourly by day or two hourly by night patients were started on an antimuscarinic drug, terodiline 12.5 mg, twice a day increasing until a response was obtained or side effects experienced, up to a maximum of 25.0 mg three times a day for three months.

Patients with mixed incontinence were treated as for both stress and urge incontinence.

Women were followed up in surgery at two, four, eight and 12-week intervals after the initial assessment. After 12 weeks they were asked whether there was any improvement in their symptoms. One week diaries of the number of episodes of incontinence before and after 12 weeks' treatment were compared. For patients with urge or mixed incontinence the mean number of times the bladder was emptied during the day (06.00 hours–23.59 hours) and during the night (00.00 hours–5.59 hours) was calculated over one week and compared before and after 12 weeks' treatment and a paired *t* test used to test for any significant difference.

Results

Questionnaires

The initial sample comprised 431 women. Of these one had died, five had moved away and 41 refused to take part. Of the remaining 384, 317 returned the first questionnaire (82.6%); three of these were incorrectly filled in, leaving 314 usable questionnaires. The age distribution of those refusing to take part and those not returning their questionnaire did not differ from those women who replied.

Of the 314 women, 167 reported urine leakage, a prevalence of 53.2%. Of the 110 incontinent women who answered the question, 64 (58.2%) were incontinent less than once a week; 28 (25.5%) were incontinent one to three times per week; and 18 (16.4%) were incontinent almost every day.

From their responses on the questionnaire, 14 women were classified as having urge incontinence (8.4%), 77 had stress incontinence (46.1%) and 71 had mixed incontinence (42.5%). Five women did not answer these questions so could not be classified.

The prevalence of urinary incontinence tended to increase with age until the fifth decade but then declined (Table 1). There was no significant difference in the mean age of continent women (48 years \pm 2 years) and incontinent women (52 years \pm 1 year). The mean age of women in the three diagnostic sub-groups for incontinence also did not differ significantly: mean age of women with urge incontinence 57 years \pm 5 years, stress incontinence 51 years \pm 3 years and mixed incontinence 51 years \pm 2 years.

There was a positive correlation between childbirth and incontinence: 146 of the 248 parous women were incontinent compared with 21 of the 66 nulliparous women ($\chi^2 = 15.3$, 1 df, $P < 0.001$). However there was no evidence of association between incontinence and mode of delivery, perineal sutures after delivery or delivery of a baby weighing 4.1 kg or more.

Neither hysterectomy nor prolapse repair operation were associated with incontinence but there was a significant positive correlation with other gynaecological operations: 38 of the 57 women having a gynaecological operation other than repair or hysterectomy were incontinent compared with 103 of the 217 women who had not undergone a gynaecological operation ($\chi^2 = 6.7$, 1 df, $P < 0.01$).

Ninety two of the 153 post-menopausal women were incontinent compared with 75 of the 161 pre-menopausal group ($\chi^2 = 5.8$, 1 df, $P < 0.05$). However, when hierarchical log linear analysis was used to determine the interaction between age, childbirth and menopause, the effect of menopause itself was not significant.

Of the 167 women reporting incontinence only 78 completed and returned the second questionnaire (46.7%). Of those replying 27 admitted to worrying about their incontinence (34.6%). The mean age of these women was 53 years \pm 0.8 years. Sixteen women reported that incontinence interfered with shopping/walking, 23 when travelling long distances, 17 when doing keep fit exercises and 11 reported that it interfered with their social life.

Only 10 of the 78 women (12.8%) had spoken to their doctor about their incontinence. Only seven of the 27 women who admitted to worrying about incontinence had spoken to their doctor. From the list of reasons given for not consulting the doctor, 36 of the 78 women gave as their main reason they thought the condition was a minor inconvenience only, seven women thought that nothing could be done (all these women had admit-

Table 1. Prevalence of urinary incontinence, by age.

Age (years)	No. of women	% of women with incontinence in age group
20–29	49	34.7
30–39	53	35.8
40–49	62	66.1
50–59	46	76.1
60–69	42	59.5
70–79	44	56.8
80+	18	27.8
All age groups	314	53.2

ted to being worried), seven thought it was a usual women's complaint (all were worried women) and two were too embarrassed (nine women gave other reasons and 17, including nine worried women, did not answer the question).

Ten women reported using protective pads for their urinary incontinence. Of these, seven were worried about their incontinence but only four had spoken to their general practitioner.

Health promotion clinic

Of the 167 women reporting incontinence, only 19 requested further advice on treatment, and 13 subsequently attended the clinic. Three of the 13 women were excluded: one woman had multiple sclerosis, one had urinary retention with overflow incontinence, and one had recurrent urinary tract infections. Of the remaining 10, two had stress incontinence, two had urge incontinence and six had mixed incontinence. Their profiles, treatment and outcome are shown in Table 2.

Following three months' treatment, eight out of the nine patients who were still in the study felt that their incontinence had improved. The number of episodes of incontinence each week fell from a mean of 3.9 (95% confidence interval (CI) 1.3 to 6.5) before treatment to 1.7 (95% CI -0.5 to 3.8) after treatment ($P<0.05$, paired t -test). In women with urge or mixed incontinence the mean number of times the bladder was emptied each day over one week fell from 17.8 (95% CI 13.7 to 21.8) before treatment to 6.3 (95% CI 5.6 to 6.9) after treatment ($P<0.05$, paired t -test). The night-time voiding pattern for this group did not change significantly: 1.6 before treatment (95% CI 0.6 to 2.7) to 0.9 after treatment (95% CI 0.6 to 1.1).

Discussion

The high prevalence of urinary incontinence among women in general practice has become well known over recent years^{3,4} and

is confirmed by this study where 53% of women aged 20 years and over had some degree of urinary incontinence. The study practice is similar to other areas of Bristol in terms of population age structure, standardized mortality ratio and admission rates to hospital (K Morgan, personal communication), and therefore it is likely that the practice is representative of other suburban practices. The proportion of urge, stress and mixed incontinence based on reported symptoms was similar to that found in other studies.^{3,4} As previously reported, there was a positive correlation between parity and incontinence,⁴ but no evidence of association with mode of delivery.^{4,7,8} Unlike Jolleys' study,⁴ there was no evidence of association with perineal suturing after childbirth, and this may reflect variation in obstetric care in different regions of the United Kingdom as damage to the innervation of the pelvic floor muscle during suturing may predispose women to incontinence.⁹

To our knowledge this is the first study in which a protocol-based health promotion clinic has been used in the management of urinary incontinence in women. The social stigma associated with incontinence is well known and for this reason every effort was made to make the clinic as user friendly as possible: all the staff were women, alternative clinic timings, dates and home visits were offered, and the clinic was named women's clinic as opposed to continence clinic in an attempt to make it more acceptable. Despite this, only 13 of the 167 women found on questionnaire to be incontinent attended the clinic. It is possible that the non-attenders spontaneously improved or that the information leaflet provided sufficient advice to make a clinic visit unnecessary, and in retrospect it would have been useful to have measured these factors. However, perhaps a more likely explanation is that there is a large psychological step between admitting that incontinence is a problem and actually seeking help.

Lagro-Janssen and colleagues found that only 15% of women worried about their incontinence and most were 'able to cope'.⁵

Table 2. Profile of the 10 women attending the health promotion clinic, treatment received, and outcome.

	Patient identity									
	A	B	C	D	E	F	G	H	I	J
Profile										
Age (years)	41	51	56	58	59	62	70	70	74	84
Type of incontinence	Mixed	Mixed	Mixed	Stress	Mixed	Stress	Mixed	Mixed	Urge	Urge
No. of episodes of incontinence per week	<1	<1	1-3	<1	1-3	<1	1-3	1-3	<1	1-3
Treatment										
Treated for urinary tract infection	✓	-	-	-	-	-	-	✓	-	-
Taught pelvic floor exercises	✓	✓	✓	✓	✓	✓	✓	✓	-	-
Taught bladder training	✓	✓	✓	-	✓	-	✓	✓	✓	✓
Prescribed terodiline	-	-	-	-	-	-	-	✓	-	✓
Prescribed dienoestrol cream	-	-	-	-	✓	-	✓	-	-	✓
Outcome										
No. of episodes of incontinence per week										
Before treatment	1	0	3	0	3	- ^a	8	12	2	6
After treatment	0	0	0	0	1	-	10	3	0	1
Mean no. of times bladder emptied during the day ^b										
Before treatment	9	12	17	-	16	-	19	27	19	24
After treatment	5	6	7	-	6	-	7	7	5	7
Mean no. of times bladder emptied during the night ^b										
Before treatment	0	1	1	-	1	-	1	4	1	4
After treatment	0	1	1	-	1	-	1	1	1	1
Subjective improvement in continence	Yes	Yes	Yes	Yes	Yes	-	No	Yes	Yes	Yes

^aPatient left area. ^bFor women with urge or mixed incontinence.

In contrast, 35% of incontinent women who returned the second questionnaire in this study admitted to worrying about the problem. As only 47% of incontinent women returned the second questionnaire, it may be that this group were more anxious than those not returning it. Alternatively, the difference between the two studies may reflect the older population sampled in the earlier study (50–65 years)⁵ as older women may be more likely to accept incontinence as part of normal ageing¹⁰ and thus be less likely to worry. In this study there was an apparent decline in the prevalence of urinary incontinence after 60 years of age, as seen in previous studies.^{4,10} We can find no explanation for this, although Brocklehurst and colleagues suggested that elderly women may just be less aware of the problem.¹⁰ Interestingly, a recent study by Brocklehurst found an increased prevalence with age.¹¹

Of the 167 women reporting incontinence, only 78 completed the second questionnaire. The reasons for this low uptake are unclear. It may be that for women in whom urine leakage is not perceived as a problem the questions appeared irrelevant; or on the other hand the invitation to the clinic may have seemed threatening. Of those returning the questionnaire, only 13% had spoken to their doctor about their incontinence, confirming previous reports that few women seek medical help for this complaint.^{3,4} To some extent this is explained by the tip of the iceberg phenomenon where only one quarter of all clinical complaints ever present to the general practitioner.¹² The main reason given for not seeking help was that the incontinence was only a minor inconvenience. This is consistent with Jolleys' study where incontinence was not seen as a serious problem,⁴ and Holst and Wilson's study³ where it was not considered abnormal. However, the fact that 35% of incontinent women admitted to worrying about the problem yet only 26% of these had spoken to their general practitioner is disturbing. Many of the worried women did not give a reason for not seeking help; seven thought nothing could be done and a further seven thought it was a usual women's complaint. This confirms previous reports that low expectations of treatment are a barrier to seeking help.³

A strict protocol was followed for the women attending the clinic and although the numbers were small it is encouraging that eight of the nine women reported improvement in continence after 12 weeks' treatment. This confirms Jolleys' study that diagnosis and management of urinary incontinence in women in general practice is both feasible and highly successful.⁶

In conclusion, urinary incontinence in women is a common problem in general practice. It can be successfully managed by a methodical approach following a protocol for diagnosis and treatment. Low attendance makes a health promotion clinic an inefficient means of management, but this was an exploratory study into one particular clinic type and does rule out the possibility of using a more general women's clinic, for example for cervical smears, to opportunistically screen for and advise about urinary incontinence. Testing pelvic floor muscle strength during vaginal examination at routine cervical smears would be an easy means of screening a large number of women.

References

1. Coope JR. Management of hypertension in general practice. In: *ABC of hypertension*. London: British Medical Journal, 1987.
2. Williams DRR, Monroe C, Hospedeles CJ, Greenwood RH. A three year evaluation of the quality of diabetes care in Norwich community care scheme. *Diabetic Med* 1990; **7**: 74-79.
3. Holst K, Wilson PD. The prevalence of female urinary incontinence and reasons for not seeking treatment. *N Z Med J* 1988; **101**: 756-758.
4. Jolleys JV. Reported prevalence of urinary incontinence in women in a general practice. *BMJ* 1988; **296**: 1300-1302.

5. Lagro-Janssen TLM, Smits AJA, van Weel C. Women with urinary incontinence: self-perceived worries and general practitioners' knowledge of problem. *Br J Gen Pract* 1990; **40**: 331-334.
6. Jolleys JV. Diagnosis and management of female urinary incontinence in general practice. *J R Coll Gen Pract* 1989; **39**: 277-279.
7. Francis WJA. Disturbances of bladder function in relation to pregnancy. *J Obstet Gynaecol Br Emp* 1960; **67**: 353-366.
8. Stanton SL, Kerr-Wilson R, Grant-Harris V. The incidence of urological symptoms in normal pregnancy. *Br J Obstet Gynaecol* 1980; **87**: 897-900.
9. Snooks SJ, Setchell M, Swash M, Henry MM. Injury to innervation of pelvic floor sphincter musculature in childbirth. *Lancet* 1984; **2**: 546-550.
10. Brocklehurst JC, Fry J, Griffiths LL, Kalton G. Urinary infection and symptoms of dysuria in women aged 45–64 years: their relevance to similar findings in the elderly. *Age Ageing* 1972; **1**: 41-47.
11. Brocklehurst JC. Urinary incontinence in the community — analysis of a MORI poll. *BMJ* 1993; **306**: 832-834.
12. Fry J. *A new approach to medicine*. Lancaster: MTP Press, 1978.

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