

Prevalence of female urinary incontinence and its impact on quality of life in a cluster population in the United Kingdom (UK): a community survey

Jason Cooper¹, Manjula Annappa¹, Angela Quigley¹, Davina Dracocardos¹, Anu Bondili² and Christian Mallen³

¹Department of Obstetrics & Gynaecology, University Hospital of North Staffordshire, UK

²Department of Obstetrics & Gynaecology, Calderdale and Huddersfield NHS Foundation Trust, Halifax, UK

³Professor of General Practice Research, Keele University, Keele, Staffordshire, UK

Aim: To ascertain the prevalence of urinary incontinence and lower urinary tract symptoms, impact on quality of life and help-seeking behaviour. **Background:** Urinary incontinence is common and will affect more individuals as the population ages. Estimates of the prevalence of urinary incontinence vary hugely. Additional information is required to inform resource allocation. **Methods:** Population-based cross-sectional postal evaluation of all female patients over 21 years registered at a single medical practice in the United Kingdom. **Findings:** A total of 40% of respondents suffered urinary incontinence, which caused significant problems in 8.5%. Stress urinary incontinence was the most common type of incontinence while 10% had symptoms of voiding dysfunction. A total of 17% of women had sought professional help. Patients perceived that urinary incontinence was part of the natural ageing process and that there was a low expectation of successful treatment.

Key words: community; female; survey; urinary incontinence

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Introduction

Urinary incontinence (UI) is common and is defined as ‘the complaint of any involuntary leakage of urine’ (Botlero *et al.*, 2008) or by ‘the observation of the involuntary loss of urine leakage on examination’ (Haylen *et al.*, 2010). UI affects both sexes; however, it is more common among women (Brocklehurst, 1993; Roe *et al.*, 2011). UI can be detrimental to the social, psychological and physical well-being of the sufferer (Largo-Janssen *et al.*, 1992; Scottish Intercollegiate Guideline Network, 2004). The cost of UI in Sweden and the United

States of America accounts for 2% of the healthcare budget (Milsom *et al.*, 2002). With the UK healthcare budget for 2011–2012 of £102.7 billion (HM Treasury, 2011), this would equate to spending in the UK of £2.1 billion/year. In addition, many patients find themselves having to buy extra incontinence pads as 81% of primary care providers and 76% of care home services limit the maximum number of pads available per day (Wagg *et al.*, 2005). UI will affect more individuals as the mean age of the population increases (Santiago *et al.*, 2008). However, estimates of the prevalence of UI vary hugely (Roe *et al.*, 2011); this could be owing to differences in the definition and the assumption that people will openly declare their continence problems (Scottish Intercollegiate Guideline Network, 2004). We have carried out a questionnaire survey

Correspondence to: Mr Jason Cooper, Consultant Gynaecologist, University Hospital of North Staffordshire, Stoke on Trent ST4 6QG, UK. Email: Jason.cooper@uhns.nhs.uk

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to establish the prevalence of UI in a sample of the female population in the United Kingdom.

Methods

Participants and setting

This was a population-based cross-sectional postal evaluation of all (2414) female patients over the age of 21 registered at a single community medical practice in Newcastle-under-Lyme, Staffordshire (UK). This practice has a higher proportion of white British people than the UK average, in addition, North Staffordshire has higher levels of socio-economic deprivation than the UK average. Participants, who were allocated a unique number so remained anonymous to the research team, were sent a brief self-completion postal questionnaire. In the absence of a response to the original questionnaire within 4 weeks, the questionnaire was resent. Returned questionnaires were scanned at the clinical audit department of the local hospital. A random sample of 247 returned questionnaires was checked manually to ensure accurate scanning and accuracy of the entered data.

Questionnaire content

The questionnaire was designed to identify the most likely classification of UI, bladder obstruction, nocturia, treatments offered and the impact of UI on quality of life. Questions included allowed us to classify participants as having either urinary urge incontinence (UUI) or stress urinary incontinence (SUI). There were also questions relating to quality of life, seeking help and treatment success (a scale of four, from very good to no help). The questionnaire was not piloted but users were involved in its development. A copy of the questionnaire is available from the authors on request.

Analysis

Descriptive data are presented as numbers (raw data) and percentages of responders. This study was one of the several conducted as a collaboration between local primary and secondary care providers to evaluate local service provision. Advice from the local Research & Development Department determined that formal ethical review was not required as this was deemed a service evaluation.

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Results

A total of 2414 questionnaires were sent of which 1415 responded (58.6%). The median age-range of responders was 55–64 years (Table 1). The prevalence of UI was 39.9%. Urinary symptoms were common with 7% reporting overactive bladder/UUI, 20% mixed urinary incontinence (MUI) and 24% SUI. A total of 49% were symptom free. Figure 1 presents the age related data for leakage. The peak age of women suffering from SUI was 35–44 years, MUI was 55–64 years and OAB was 65–74 years, there were two peaks for UUI, one at 24 years or less, and one over 75 years of age. MUI increases with age until 55–64 years when it levels off, with OAB symptoms showing a similar pattern. Of those women who leaked urine, 84% leaked when ‘coughing, sneezing, exercising or laughing’. For individual symptoms of SUI, 32% had it with cough, 33% with sneeze, 14% with exercise, 17% with laughing and 3% with sex.

Table 1 Demographics of the female population in the study group

Age	n = 1465	National
<25	3.5% (n = 50)	3%
25–34	8.5% (n = 121)	12%
35–44	16% (n = 16)	20%
45–54	18% (n = 261)	20%
55–64	20% (n = 290)	17%
65–74	17% (n = 246)	13%
>75	17% (n = 246)	15%

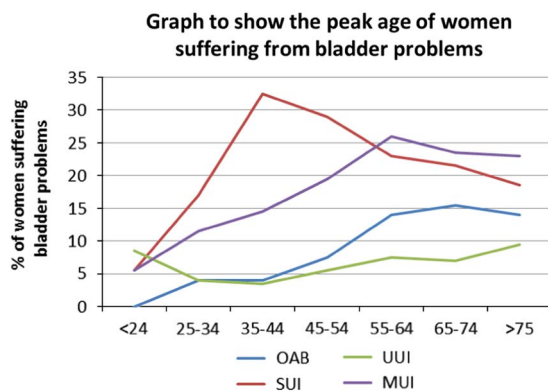


Figure 1 Graph to show the peak age of women suffering from bladder problems

Table 2 Treatment sought by women with urinary incontinence symptoms and perceived success

	% of participants seeking treatment
Advice sought	17
General practitioner	80
Nurse	13
Continence advisor	16
Secondary care	42
Success with treatment	
Very much	16
Good	26
Little help	31
No help	18

Prevalence of lower urinary tract symptoms (LUTS)

Daytime frequency of LUTS were experienced by 31%. A total of 28% of women had to pass urine more than once at night; 29% had urge incontinence and 36% had urgency. A total of 10% of the participants had symptoms of bladder obstruction while 50% of responders felt their incontinence started after childbirth. Of those leaking urine, 38.5% leaked a drip, 53% a little, 8% a lot and 0.5% a flood.

Treatment

A total of 17% of participants sought professional help for their symptoms, the most common source being their family doctor; however, multiple sources of advice were often accessed (including nurse, continence advisor or hospital specialist) (Table 2). A total of 18% of women with UI thought there was no help available. Of those who sought help, the commonest treatments were advice/exercise followed by medication, surgery and then bladder retraining. Multiple treatment modalities may have been used by individual patients. Subjective success of treatments can be found in Table 2.

Quality of life and UI

The majority of patients suffered with their problems for more than a year with 46% suffering symptoms for one to five years and 42% for more than five years. A total of 53% found their bladder problems affected their life 'hardly at all'.

However, 34% were affected 'a bit', 9% 'a lot' and 4% very much. The majority of people with bladder symptoms (68%) 'accept it'; 16% are embarrassed; 12% are unhappy and 4% are very unhappy.

Help-seeking behaviour was commonest in women with OAB (42%) followed by 34% of women with MUI and 12.9% in those with SUI. Only 7.4% of women with SUI and 20% of women with MUI reported receiving supervised pelvic floor muscle retraining of at least three months duration. Bladder retraining was offered in only 5.2% of patients who reported UII and 9.4% of patients who reported MUI.

Discussion

This study provides new insight into the prevalence of UI, which was 39.9% in this sample of UK primary care patients. The relatively high prevalence in this population may be owing to the survey being a postal questionnaire: people may have been less embarrassed and therefore more willing to discuss their problems as compared with telephone interviews or face-to-face contact, with the mode of administration of a questionnaire affecting data measurement and completeness (Bowling, 2005). Community-based populations and postal questionnaires of randomly selected participants have led to higher reported prevalence rates of UI 42% (Hunnskaar *et al.*, 2004), 34% (McGrother *et al.*, 2004) and 20% (Perry *et al.*, 2000) than, for example, phone interviews (13%) (Irwin *et al.*, 2006). It is, however, difficult to directly compare these prevalence estimates as different studies have used different definitions of leakage, including 'ever leaked', one episode in the last year or one episode in the last 30 days. We used the measure 'do you suffer leakage at any time?' These differences demonstrate the need for a standardised definition and a core set of questions to determine prevalence and other LUTS. The peak age for SUI in our study was in the 35–44 year age group, which is in keeping with other studies (Correia *et al.*, 2009). Reduction in symptoms after this age may be related to successful treatment, spontaneous resolution of symptoms or alteration in lifestyle, with a reduction in precipitating activities. In addition, pure SUI could change into MUI. The peak for OAB and UII

symptoms was similar, increasing with age, and perhaps should be categorised together (Figure 1). Clearly, the prevalence of OAB/UI symptoms increases with age, a finding noted in other studies (Correia *et al.*, 2009; Schimpf *et al.*, 2009). Rising rates in the elderly may be owing to the factors including a rise in the natural occurrence of idiopathic detrusor activity, changes in risk factors such as increasing body mass index, diabetes (Izci *et al.*, 2009; Roe *et al.*, 2011), drug therapies and poor mobility. In our population-based survey, our findings are limited to those participants who had the ability to return their questionnaire; it is likely that it may therefore underestimate the true prevalence of OAB/UI as women unable to complete the questions may have been at the greatest risk of these symptoms, for example, dementia sufferers (Roe *et al.*, 2011). One way to address this in future studies would be to involve the carers of those unable to fill in or return their questionnaires.

The NICE guidelines in the United Kingdom (National Institute for Health and Care Excellence, 2013) recommended that women with SUI and MUI are offered supervised pelvic floor muscle training of at least three months duration; only 7.4% of women with SUI and 20% of women who reported MUI reported receiving this treatment. NICE also recommends that for women with UUI or MUI that bladder retraining should be offered; only 5.2% of patients who reported UUI and 9.4% of patients who reported MUI recall receiving this therapy. This would therefore indicate that further education is required of healthcare professionals in conservative management of these condition.

Only 17% of women responding to this questionnaire had sought professional help. Of those participants who reported the amount of urine they leaked, the positive response level rises to 31%. This is similar to two other studies with 28% of women seeking advice (Legace *et al.*, 1993; Rogers *et al.*, 1999). This is in keeping with research on illness behaviour where not seeking advice is regarded as the 'norm', rather than the exception (Rogers *et al.*, 1999). Research indicates that of people who experience symptoms on a regular basis, only a small percentage of these will seek help, this being the 'illness or clinical iceberg' (Rogers *et al.*, 1999). Owing to the low percentage of women in our study seeking help (17%), further

analysis was conducted to determine who was most likely to seek help. As the amount of urine women leak increased, more women sought help. Women with OAB were the most likely to seek help and women with SUI least likely, a finding also noted by Seim *et al.* (1995). This may be because SUI leaks are usually smaller and more predictable. In addition, OAB and UUI symptoms led to greater psychological stress, possibly owing to the unpredictable nature of the symptoms and the larger volume leaked (Barber *et al.*, 2002), triggering help-seeking behaviour earlier. Triggers may include interference with personal relations; sanctioning that help is required from friends or family and interference with work or physical activity (Zola, 1973). Of importance in recognising the unmet need of UI sufferers in the community is the fact that major depression is three times more common in those with UI (Melville *et al.*, 2002). Therefore, if we proactively recognise and treat UI, this burden in the community may be reduced as well as sexual and employment problems, and avoidance of healthy activities such as sport (Sinclair and Ramsey, 2011).

This study has several strengths. It achieved a good response rate, from a large number of women and asked about a range of symptoms relevant to UI. It sampled from a single general practice, which may limit the generalisability of these findings although the source population is broadly similar to the nationally expected demographics.

Education is required for both patients and doctors, especially in the community where most treatments can occur (Shaw *et al.*, 2001; National Institute for Health and Clinical Excellence, 2006). Healthcare knowledge, experience, time and organisational constraints all play their part in forming a barrier to provision of first-line treatments in primary care (Roe *et al.*, 2011). This results in more referrals into the secondary care setting (Shaw *et al.*, 2001) and less pro-active questioning that would allow the elicitation of symptoms that the patient may be too embarrassed to mention spontaneously. The National Audit on Continence Care in the United Kingdom (Wagg *et al.*, 2010) summarised that the great majority of continence services are poorly integrated across acute, medical, surgical, primary, care home and community settings, resulting in disjointed care for patients and carers. Wagg *et al.* (2010) specifically

mentions routine questioning of incontinence symptoms whenever healthcare givers encounter elderly people and others at high risk of incontinence.

Surprisingly, women seem to put up with bladder problems for a long time: 88% had bladder problems for more than one year and 42% problems for more than five years before seeking help. This is consistent with other studies with a duration of incontinence greater than five years in 49% women (Seim *et al.*, 1996) and may be owing to factors already mentioned, such as embarrassment, acceptance, the feeling that is it the norm, lack of education and knowledge of services available.

Conclusion

This primary care study confirms that UI and LUTS in women are a major problem in society. The unmet need in these women may be a major use of healthcare resource and planning around improving services should be considered with the information this study provides. It appears that the level of patient knowledge and health-seeking behaviour surrounding the nature of the problem and possible alternative treatments is very low. A significant effort from healthcare providers has to be made to improve patient information about the nature of UI and its effects on life both in the short and the long term, as well as about available treatments.

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