The community prevalence of chronic pelvic pain in women and associated illness behaviour

Krina T Zondervan, Patricia L Yudkin, Martin P Vessey, Crispin P Jenkinson, Martin G Dawes, David H Barlow and Stephen H Kennedy

SUMMARY
Background: *Chronic pelvic pain has often been described as a major women's health issue, but no information exists on the extent of the problem in the United Kingdom.*
Aim: *To investigate the community prevalence of chronic pelvic pain and its effect on the lives of consulting and non-consulting women.*
Design of study: *Postal questionnaire survey.*
Setting: *Women aged 18 to 49 (*n *= 3916) randomly selected from the Oxfordshire Health Authority Register.*
Method: *The questionnaire response rate (adjusted for non-deliveries) was 74% (2304/3106). Chronic pelvic pain was defined as recurrent or constant pelvic pain of at least six months' duration, unrelated to periods, intercourse, or pregnancy. Case subgroups comprised recent consulters, past consulters, and non-consulters. Women who reported dysmenorrhoea alone formed a comparison group.*
Results: *The three-month prevalence of chronic pelvic pain was 24.0% (95% CI = 22.1% to 25.8%). One-third of women reported pain that started more than five years ago. Recent consulters (32% of cases) were most affected by their symptoms in terms of pain severity, use of health care, physical and mental health scores, sleep quality, and pain-related absence from work. Non-consulters (41% of cases) did not differ from women with dysmenorrhoea in terms of symptom-related impairment. Irrespective of consulting behaviour, a high rate of symptom-related anxiety was found in women with chronic pelvic pain (31%) compared with women with dysmenorrhoea (7%).*
Conclusions: *This study showed a high community prevalence of chronic pelvic pain in women of reproductive age. Cases varied substantially in the degree to which they were affected by their symptoms. The high symptom-related anxiety in these women emphasises the need for more information about chronic pelvic pain and its possible causes.*
Keywords: *chronic pelvic pain; prevalence, illness behaviour.*

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Introduction

CHRONIC pain is increasingly being recognised as a common complaint in the general population.[1] However, there is a lack of good quality epidemiological information on different pain conditions. An important type of chronic pain that has been virtually ignored is chronic pelvic pain in women.

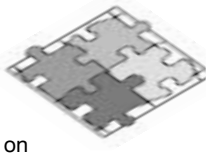
Chronic pelvic pain is defined as lower abdominal pain unrelated to pregnancy, that has lasted for at least six months. Pain occurring exclusively around menstruation (dysmenorrhoea) or with intercourse (dyspareunia) is excluded from the definition. We recently provided the first evidence of a high chronic pelvic pain burden in primary care in the United Kingdom (UK): the annual prevalence in women aged 15 to 73 was found to be 38/1000, a rate comparable to that of asthma (37/1000) and back pain (41/1000).[2]

There is a wide range of possible causes for chronic pelvic pain, most of which are difficult to diagnose and treat.[3] The main gynaecological diagnoses — which can only be made at laparoscopy — include endometriosis, chronic pelvic inflammatory disease, and adhesions. The observation of endometriosis and pelvic adhesions in 15–20% of asymptomatic women undergoing laparoscopic sterilisation, however, implies that the pain may not always be causally related to these pathologies.[4,5] The most common gastrointestinal cause of chronic pelvic pain is irritable bowel syndrome (IBS);[6] possible genitourinary causes include interstitial cystitis and the urethral syndrome.[7] These conditions all have overlapping symptomatology[8] that contributes to the difficulty in establishing a diagnosis.

In many women with chronic pelvic pain, no 'obvious' pathological explanation is found. Traditionally, pain in these women has often been attributed to psychological factors, an approach that is increasingly being recognised as unhelpful.[9] High levels of depression and anxiety are observed in chronic pelvic pain patients, but these are common to chronic pain states in general rather than specific to pelvic pain.[10]

Despite being described as a major women's health issue,[3,11] there are no data on the community prevalence of chronic pelvic pain in the UK or its effect upon women's lives.[12] The present paper describes results from the Oxfordshire Women's Health Study, a cross-sectional survey that investigated its prevalence, use of health care, and associated functioning and wellbeing in a randomly selected community sample of women of reproductive age.

HOW THIS FITS IN



What do we know?
No information exists about the community prevalence of chronic pelvic pain in the United Kingdom and its effect on the lives of women.

What does this paper add?
The community prevalence of chronic pelvic pain was shown to be very high at 24%. Many of these women (41%) never consulted for their symptoms. Although they varied in the extent to which they were affected, many consulters as well as non-consulters expressed anxiety about the cause of their symptoms. There is a need for increased awareness of the high prevalence of chronic pelvic pain and further research into possible causation mechanisms.

Method

Study design and participants

The Oxfordshire Women's Health Study was a postal questionnaire survey among 4000 women randomly selected from 141 400 women aged 18 to 49 years on the Oxfordshire Health Authority (OHA) register. Assuming a prevalence rate of between 10–20% and a response rate of between 50–75%, the sample size was sufficient to estimate the prevalence rate with 95% confidence to within 1.8%. The Central Oxford Research Ethics Committee gave approval for the study.

Questionnaire

We developed a semi-quantitative questionnaire, collecting information on a wide range of issues related to women's health (http://www.medicine.ox.ac.uk/ndog/cppr/frame.html). Pelvic pain was described as 'any type of pain in the lower part of your belly (the area from your navel down)'. Dysmenorrhoea was described as 'pelvic pain with periods, including irregular bleeding while on the pill or on hormone replacement therapy'; dyspareunia as 'pelvic pain during or in the 24 hours after intercourse'; and other pelvic pain as 'pelvic pain not occurring with periods or intercourse, either on and off or constantly'. Pelvic pain-specific functioning and wellbeing was assessed in two open-ended questions: 'Does your pelvic pain affect what you can or cannot do?', and 'What troubles you most about the pelvic pain?'. The questionnaire was piloted and validated in groups of chronic pelvic pain patients, healthy volunteers, and a random sample of 200 women identified from the OHA register.

Definitions and grouping

Chronic pelvic pain was defined as recurrent or constant pelvic pain of at least six months' duration, unrelated to periods, intercourse, or pregnancy. Women who had been pregnant in the previous 12 months were excluded from the analyses. A chronic pelvic pain case was defined as a woman with chronic pelvic pain in the previous three months. Dysmenorrhoea was defined as pelvic pain during or shortly before/after periods, and dyspareunia as pelvic pain during or in the 24 hours after sexual intercourse.

To aid interpretation, pain severity, health care use, and functioning and wellbeing were compared between women with chronic pelvic pain (n = 483) and women who had dysmenorrhoea but no other pelvic pain in the previous three months (n = 660). Women with chronic pelvic pain were grouped into the following categories:

1. *recent consulters*: those who had sought medical advice from a GP or hospital doctor for any pelvic pain in the previous 12 months (n = 195);
2. *past consulters*: those who did not consult in the previous 12 months but who had earlier undergone an investigation or received a diagnosis for pelvic pain (n = 127); and
3. *non-consulters*: those who did not consult in the previous 12 months, and who had never undergone an investigation or received a diagnosis (n = 153). Eight cases could not be grouped owing to missing values.

Measures of pain severity and functioning and wellbeing

Cumulative duration of pelvic pain (expressed in hours) experienced in the previous 12 months was calculated for each chronic pelvic pain case by multiplying the reported average duration of a pain episode by the number of episodes. Typical pain severity was assessed using a categorical scale (none/mild/moderate/severe),[13] a 10 cm visual analogue scale (VAS) going from 'least possible pain' to 'worst possible pain',[14] and the multi-dimensional SF-McGill pain questionnaire.[15] The SF-McGill comprises 15 descriptive words indicating a pain quality, each of which is rated from 'none' to 'severe' (scored from 0 to 3). The Total Pain Rating Index (PRI) was calculated by summing the intensity scores.

General health status in the previous four weeks was assessed using the Short Form-36 Health Survey (SF-36). The SF-36 was used here to gain two summary scores of health: the Physical Component Summary (PCS) score and the Mental Component Summary (MCS) score. Scores were standardised to a general UK population sample with the normative mean set at 50 and the standard deviation at 10 (details described elsewhere[16]). In addition, sleep problems in the past four weeks were assessed in terms of difficulty falling asleep, frequent awakenings (more than once a night), and non-regenerative sleep (waking up tired/not rested).

Information given in the open-ended questions regarding pelvic pain-specific functioning was categorised into common themes, following recommended methods for qualitative data analysis.[17]

Statistical methods

Comparisons between proportions were made using the χ^2 test and between means using the t-test or analysis of variance. A logistic regression model was used to assess risk of chronic pelvic pain (as an odds ratio [OR]) in relation to ethnicity, adjusted for potential confounding factors. Analyses were performed using SPSS-PC version 8.0 and Epi-Info version 6.04b.

Results

Study group

The 4000 women were registered with 85 general practices. One practice objected to their patients participating: they were excluded from the sample (n = 73). Other exclusions were for mental illness (n = 6), and participation in the pilot study (n = 5). Of the 3916 questionnaires sent, 318 were returned undelivered and a further 492 did not live at the OHA address according to the updated electoral roll or directory enquiries. A completed questionnaire was returned by 2304 women (74% out of 3106 questionnaire receivers).

Compared with mid-1997 estimates for the general Oxfordshire population (Office for National Statistics, personal communication 1999), women under 25 were slightly under-represented among survey responders (24% versus 18%, respectively). This was owing to a higher frequency of inaccurate OHA addresses among young women (students) in the sample and not to selective non-response. The social class and ethnic distributions of responders were similar to that of the 1991 Census for Oxfordshire.[18]

After exclusion of 259 women who had been pregnant in the past 12 months (see Method) and 29 because of missing pelvic pain data, the study group consisted of 2016 women.

Prevalence of CPP, dysmenorrhoea, and dyspareunia

Chronic pelvic pain in the last three months was reported by 483/2016 women, a prevalence rate of 24.0% (95% CI = 22.1% to 25.8%). The majority also had another type of pelvic pain: of those who had periods (n = 451), 81% had dysmenorrhoea (95% CI = 77% to 84%), and of those who were sexually active (n = 432), 41% had dyspareunia (95% CI = 37% to 46%). The overlap between chronic pelvic pain, dysmenorrhoea and dyspareunia is further illustrated by Figure 1, showing the prevalence rates of all three types of pelvic pain among the subgroup of 1671 women who had periods and were sexually active.

Prevalence of chronic pelvic pain varied slightly with age ($\chi^2_{df = 5}$ = 13.3; P = 0.02); the lowest rate (20%) was found in the age groups 18 to 25 years and 31 to 35 years, and the highest (28%) in 36 to 40-year-olds. Prevalence did not vary with social class, marital status, or employment status. Non-Caucasian women had a much lower prevalence (8/80 [10%]) than Caucasian women (475/1935 [25%]; $\chi^2_{df = 1}$ = 8.9; P = 0.003); a risk ratio (RR) of 0.4 (95% CI = 0.2 to 0.8). Adjustment for age and social class did not affect this result (OR = 0.3; 95% CI = 0.2 to 0.7).

Chronic pelvic pain characteristics, severity, and related health care use

Of the 475 chronic pelvic pain cases giving information about medical advice sought, 153 (32%) were recent consulters for any type of pelvic pain (115 for chronic pelvic pain specifically), 127 (27%) were past consulters, and 195 (41%) were non-consulters. Past consulters were significantly older (mean age = 37.7 years) than recent consulters (mean age = 34.3 years) and non-consulters (mean age = 34.7 years) ($F_{df = 2}$ = 6.8; P = 0.001).

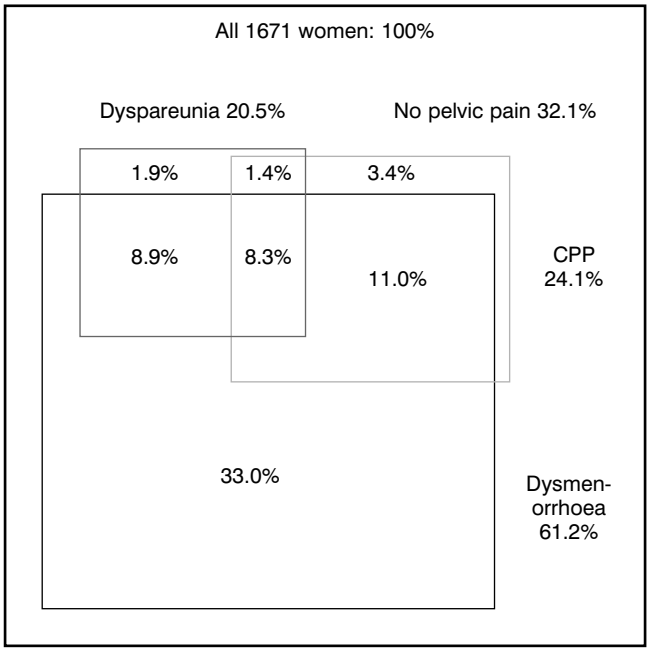


Figure 1. Prevalence (%) of dysmenorrhoea, dyspareunia, and chronic pelvic pain (CPP) in the past three months among 1671 women who had periods and who were sexually active. The total prevalence of women with dysmenorrhoea is given in blue; dyspareunia in red; and CPP in green. The overlap between the different types of pelvic pain is represented by the overlap between the squares, with corresponding percentages in black.

Most women with chronic pelvic pain had had pain in the previous month, and one-third reported that their pain had first started more than five years ago (Table 1). One-third reported pain occurring at mid-cycle alone, but another third was unable to specify whether their pain was ovulation-related. The median cumulative pain duration in the past year ranged from 16 hours in non-consulters to 126 hours in recent consulters.

Of all cases, 51% reported that their typical pain severity was moderate or severe (Table 2). This percentage rose from 36% in non-consulters to 69% in recent consulters ($\chi^2_{df = 2}$ = 38.8; P<0.001); mean VAS scores and SF-McGill PRIs increased accordingly across the groups. Table 2 also shows that, while one-third of women with chronic pelvic pain had seen a general practitioner for pelvic pain in the past 12 months, only 12% of women with dysmenorrhoea had done so. However, in both groups approximately three-quarters used medication for symptom relief.

Functioning and wellbeing in women with chronic pelvic pain

Table 3 shows that the general health of chronic pelvic pain cases — in terms of mean SF-36 physical and mental component summary scores and frequency of sleep problems — was significantly worse than that of women with dysmenorrhoea. Scores for SF-36 in the latter group were comparable with mean values for women aged 18 to 49 years in the normative UK population (C Jenkinson, personal communication 1999). Among chronic pelvic pain cases, recent consulters had the lowest SF-36 scores and the highest frequency of sleep problems, whereas results for non-consul-

Table 1. Chronic pelvic pain (CPP) characteristics in recent consulters, past consulters, and non-consulters in the past 12 months.[a]

Characteristic	All CPP cases (n = 483)	Non-consulters (n = 195)	Past consulters (n = 127)	Recent consulters (n = 153)
Most recent pain % (n)				
In previous month	65.6 (317)	56.9 (111)	69.3 (88)	73.2 (112)
1–3 months ago	34.4 (166)	43.1 (84)	30.7 (39)	26.8 (41)
First onset of pain % (n)				
6 months to 1 year earlier	19.0 (92)	22.6 (44)	11.0 (14)	20.9 (32)
Between 1 to 5 years earlier	31.3 (151)	30.2 (59)	29.1 (37)	34.6 (53)
More than 5 years earlier	32.9 (159)	28.7 (56)	43.3 (55)	30.1 (46)
Unable to recall year of onset	16.8 (81)	18.5 (36)	16.5 (21)	14.4 (22)
Relation to cycle % (n)				
No	38.9 (188)	31.8 (61)	35.0 (42)	42.4 (61)
Yes, at mid-cycle	29.4 (142)	31.8 (61)	36.7 (44)	24.3 (35)
Don't know	31.7 (153)	36.5 (70)	28.3 (34)	33.3 (48)
Duration of a typical pain episode in the past 12 months % (n)				
≤1 hour	34.9 (168)	50.5 (98)	29.9 (38)	19.8 (30)
A few hours to 1 day	41.6 (200)	41.2 (80)	42.5 (54)	41.4 (63)
2 to 5 days	15.2 (73)	6.7 (13)	18.1 (23)	23.7 (36)
>5 days	4.2 (20)	– (0)	4.0 (5)	9.2 (14)
Constant pain	4.1 (20)	1.5 (3)	5.5 (7)	5.9 (9)
Number of episodes in the past 12 months % (n)				
1 to 2	7.1 (34)	8.7 (17)	7.9 (10)	4.6 (7)
3 to 5	32.2 (155)	40.5 (79)	23.6 (30)	28.9 (44)
6 to 10	36.7 (177)	37.9 (74)	38.6 (49)	33.6 (51)
>10	19.9 (96)	11.3 (22)	24.4 (31)	27.0 (41)
Constant pain	4.1 (20)	1.5 (3)	5.5 (7)	5.9 (9)
Median cumulative pain duration in past 12 months in hours[b] (interquartile range)	52 (4–336)	16 (2–104)	104 (15–403)	126 (52–672)

[a]Numbers do not always add up to the totals owing to missing values. [b]Calculated as the average duration of a CPP episode in the past 12 months multiplied by the number of episodes in that time period.

Table 2. Reported typical pain severity and use of health care in the past 12 months in women with chronic pelvic pain (CPP) compared with women with dysmenorrhoea only[a]*.*

	Dysmenorrhoea only (n = 660)	All CPP cases (n = 483)	Non-consulters (n = 195)	Past consulters (n = 127)	Recent consulters (n = 153)	Test for heterogeneity
Typical CPP severity						
Reporting moderate/severe pain % (n)	–	50.9 (246)	35.9 (70)	54.3 (69)	69.3 (106)	P<0.001
Mean VAS score (SD)	–	4.2 (2.6)	3.3 (2.3)	4.2 (2.5)	5.2 (2.6)	P<0.001
Mean total PRI in SF-McGill (SD)	–	10.4 (7.4)	7.6 (5.2)	10.7 (7.6)	13.8 (8.4)	P<0.001
Use of health care for any pelvic pain in the last 12 months % (n)						
Seen a GP	12.2 (80)	30.9 (148)[e]	–	–	96.7 (148)	–
Seen a hospital doctor	3.8 (25)	11.7 (56)[e]	–	–	36.6 (56)	–
Seen an alternative therapist[b]	1.8 (12)	7.9 (38)[e]	3.1 (6)	11.8 (15)	9.9 (15)	P = 0.008
Used any medication[c]	73.3 (483)	75.5 (364)[e]	64.1 (125)	78.0 (99)	87.6 (134)	P<0.001
Used other treatments[d]	10.0 (66)	16.7 (80)[e]	14.9 (29)	20.6 (26)	16.0 (24)	P = 0.4

[a]Percentages were calculated after exclusion of missing values from the denominator groups. [b]The most frequently reported alternative therapist was a homeopath. [c]Reported medication consisted almost exclusively of over-the-counter analgesics. [d]The most frequently reported other treatments were heat (e.g. a hot water bottle, a bath); exercise; reflexology/massage; aloe vera/primrose oils and aromatherapy. [e]Comparison of CPP cases with women with dysmenorrhoea only: P<0.001

ters closely resembled those for women with dysmenorrhoea.

We assessed comorbidity rates to investigate whether the reduced general health status in women with chronic pelvic pain was owing to the coexistence of other illnesses (Table 3). The comorbidity rate was higher in cases than in women with dysmenorrhoea only (20% versus 13%, $\chi^2_{df = 1}$ = 14.6; P<0.001); after exclusion of psychological conditions that could be related to chronic pelvic pain itself (e.g. depression), these rates were reduced to 8% versus 4% ($\chi^2_{df = 1}$ = 6.9; P = 0.009). No differences in comorbidity rates were observed between non-consulters, past consulters, and recent consulters.

Table 4 shows the results for pelvic pain-specific functioning and wellbeing. At least one day of pelvic pain-related absence from work in the past 12 months was reported by 18% of employed chronic pelvic pain cases compared with 10% of the comparison group ($\chi^2_{df = 3}$ = 12.1; P = 0.007).

Table 3. General functioning and well-being in women with chronic pelvic pain (CPP) compared with women with dysmenorrhoea alone[a].

	Dysmenorrhoea only (*n* = 660)	All CPP cases (*n* = 483)	Non-consulters (*n* = 195)	Past consulters (*n* = 127)	Recent consulters (*n* = 153)	Test for heterogeneity
SF-36[b]	*n* = 589	*n* = 434	*n* = 175	*n* = 112	*n* = 139	
PCS						
Mean score (SD)	51.3 (8.5)	48.2 (11.0)[d]	50.8 (9.4)	49.2 (0.9)	44.1 (2.1)	*P*<.001
Percentage scoring <50	32.9	43.5	31.4	37.5	64.0	
MCS						
Mean score (SD)	47.7 (10.1)	44.4 (11.5)[d]	46.1 (11.3)	44.1 (1.9)	42.5 (1.3)	*P* = 0.02
Percentage scoring <50	47.1	56.7	49.1	58.0	66.2	
Sleep problems % (*n*) Usually/always[c]						
Difficulty falling asleep	5.9 (39)	10.2 (49)[d]	6.7 (13)	12.7 (16)	11.2 (17)	*P* = 0.03
Frequent awakenings	20.8 (137)	30.3 (145)[d]	29.4 (57)	31.7 (40)	30.5 (46)	*P* = 0.7
Non-regenerative sleep	21.3 (140)	34.6 (166)[d]	29.4 (57)	35.7 (45)	39.5 (60)	*P* = 0.04
Comorbidity % (*n*)						
Any	12.7 (83)	21.2 (102)[d]	19.0 (37)	22.0 (28)	24.2 (37)	*P* = 0.5
Excluding psychological	3.9 (26)	7.5 (36)[e]	6.2 (12)	8.8 (11)	8.5 (13)	*P* = 0.6

[a]Percentages were calculated after exclusion of missing values from the denominator groups. [b]SF-36 summary scores were only calculated for women with complete data for all 36 items (approximately 90% in all subgroups): numbers are given for each group. [c]Differences in proportions were tested for statistical significance using three categories of sleep problem frequency: never/occasionally, often, and usually/always. [d]Comparison of CPP cases with women with dysmenorrhoea only: *P*<0.001. [e]Comparison of CPP cases with women with dysmenorrhoea only: *P*<0.01.

Among cases, 35% of recent consulters had taken at least one day off, compared with 14% of past consulters and 7% of non-consulters ($\chi^2_{df = 6}$ = 50.5; *P*<0.001).

A restriction in activities owing to pelvic pain was reported by 42% of chronic pelvic pain cases compared with 32% of women with dysmenorrhoea (Table 4). The most common restrictions reported in both groups were lethargy/fatigue and inability to carry out activities without taking analgesics or rest (Table 5). Anxiety about the pain was reported as the most troubling aspect by 31% of women with chronic pelvic pain compared with only 7% of women with dysmenorrhoea ($\chi^2_{df = 1}$ = 118.2; *P*<0.001). This anxiety was reported by 22% of non-consulters, 32% of past consulters, and 41% of recent consulters ($\chi^2_{df = 1}$ = 14.8; *P* = 0.001). The majority of women with chronic pelvic pain (132/149 [89%]) reported that they were anxious about the possible cause of the pain.

Discussion

Our study found a three-month prevalence rate of chronic pelvic pain of 24.0%, showing for the first time that the condition is very common in women aged 18 to 50 in the general UK population. Women had often experienced symptoms for a long time: one-third reported that their pain had started more than five years ago.

Our prevalence estimate was higher than the only other reported figure of 14.7% from Mathias *et al*[19] in the United States of America. However, this study excluded women with ovulation-related pain, which our study did not, since many women were unable to say whether their pelvic pain occurred at mid-cycle. Exclusion of those reporting ovulation-related pain would have reduced our estimate to a similar figure of 16.9% (95% CI = 15.3% to 18.6%).

The prevalence of chronic pelvic pain appeared much lower in non-Caucasian women than Caucasian women (RR = 0.4). This difference could not be accounted for by the influence of potential confounders, such as age or social class. Mathias *et al*[19] also reported a reduced risk in women of Afro-American origin compared with Caucasian women (OR = 0.7; 95% CI = 0.5 to 0.95). In contrast, however, Jamieson *et al*[20] reported a higher prevalence in the former group (53%) compared with the latter (35%). Possible reasons for ethnic differences in risk of chronic pelvic pain remain unknown.

We are confident of the generalisability of our results to the general Oxfordshire population. Bias owing to selective response was unlikely: the study was focused on women's health in general rather than pelvic pain and age, social class, and ethnic distributions of responders were similar to Oxfordshire figures. The extent of the generalisability to the total UK population remains unknown, but there is no obvious reason why this would be compromised.

Only one-quarter of women with chronic pelvic pain had sought medical advice in the previous year, which would imply an annual prevalence in primary care of 5.7% (95% CI = 4.7% to 6.7%). This figure is slightly higher than the 3.7% (95% CI = 3.6% to 3.8%) we recently reported from an analysis of a general practice database.[2] However, the definition of chronic pelvic pain used in the latter analysis was more restricted, since the use of routinely collected data required a woman with chronic pelvic pain to have had at least two contacts with general practice in a year.

Our finding that the prevalence of chronic pelvic pain in general practice substantially underestimated the prevalence in the general population has been similarly reported for other conditions. For example, back pain has also been described as a condition that many people cope with themselves without seeking health care: the annual prevalence of low back pain in the adult population was found to be approximately 37% in population surveys, while according to medical records only 6–7% had consulted a GP for their pain.[21] These findings raise the question why non-consulters refrain from seeking health care, and to what extent they are affected by their symptoms in comparison with consulters.

Our survey showed that women who had consulted for

Table 4. Pelvic pain-specific functioning and wellbeing in women with chronic pelvic pain (CPP) compared with women with dysmenorrhoea alone[a].

	Dysmenorrhoea only (n = 660)	All CPP cases (n = 483)	Non-consulters (n = 195)	Past consulters (n = 127)	Recent consulters (n = 153)	Test for heterogeneity
Taken time off work owing to pelvic pain in past 12 months[b] % (n)	(n = 557)	(n = 419)	(n = 171)	(n = 110)	(n = 132)	
None/<1 day	89.9 (488)	82.3 (331)[c]	93.3 (154)	85.8 (91)	65.1 (82)	
1 to 2 days	5.0 (27)	9.5 (38)	5.5 (9)	8.5 (9)	15.1 (19)	
3 to 5 days	3.1 (17)	4.2 (17)	1.2 (2)	4.7 (5)	7.9 (10)	
>5 days	2.0 (11)	4.0 (16)	– (0)	0.9 (1)	11.9 (15)	P<0.001
Reporting any restrictions owing to pelvic pain % (n)	31.7 (209)	42.2 (204)[d]	29.2 (57)	43.3 (55)	58.2 (89)	P<0.001

[a]Percentages were calculated after exclusion of missing values from the denominator groups. [b]In women who were employed in the Past 12 months: numbers are given for each subgroup. [c]Comparison of CPP cases with dysmenorrhoea controls: P<0.01; [d]Comparison of CPP cases with dysmenorrhoea controls: P<0.001.

Table 5. Types of restrictions owing to pelvic pain and most troubling aspects of pelvic pain: women with chronic pelvic pain (CPP) compared with women with dysmenorrhoea alone.

	Dysmenorrhoea alone (n = 660)	CPP cases (n = 483)
Type of restrictions % (n)		
General lethargy/fatigue	8.6 (57)	8.1 (39)
Requires rest/painkillers for any activity	8.5 (56)	8.7 (42)
Limited in (house)work activities	6.2 (41)	6.6 (32)
Limited in doing exercise	4.5 (30)	4.8 (23)
Posture problems: standing/sitting	3.3 (22)	6.8 (33)
Concentration problems	2.6 (17)	1.9 (9)
Limited in mobility: moving/walking	2.4 (16)	6.4 (31)
Affected sleep quality	2.0 (13)	1.7 (8)
Limited in social activities	1.5 (10)	1.9 (9)
Limited in sexual intercourse	0.2 (1)	6.2 (30)
Other	2.6 (17)	4.3 (21)
Most troubling aspect % (n)		
The pain itself (severity/nature)	19.2 (127)	19.5 (94)
Limitations caused by the pain	12.7 (84)	13.0 (63)
Lack of control over the pain	10.0 (66)	14.1 (68)
Anxiety about the pain (mainly its cause)	6.5 (43)	30.8 (149)
Associated GI/GU symptoms [a]	6.5 (43)	6.2 (30)
Effect on mood	3.5 (23)	4.3 (21)
Interaction with environment (e.g. family)	0.9 (6)	3.3 (16)
Other	2.0 (13)	1.7 (8)

[a]GI = gastrointestinal; GU = genitourinary.

pelvic pain in the previous year were most affected by their symptoms. Nearly 70% reported moderate or severe pain, 58% reported that the pain restricted their activities, and one-third had taken at least one day off work in the preceding 12 months owing to the pain. Compared to other women with chronic pelvic pain, their general health status was appreciably reduced in terms of SF-36 summary scores, although they were no more likely to have coexisting illnesses. Sleep quality was also significantly reduced, an observation that has previously been reported in women with chronic pelvic pain.[22]

Women with chronic pelvic pain who had never consulted for pelvic pain (41% of cases) were similar in terms of general health, pain severity, use of health care, and measures of pain-related functioning to women with dysmenorrhoea alone. The latter group was used for comparison since dysmenorrhoea is a very common type of pelvic pain[12] (as was shown also in our survey) and the general health status of women with dysmenorrhoea was very similar to that of women without any pelvic pain. Nevertheless, the reported effect of dysmenorrhoea on women's lives at the times they had the pain was far from negligible: three-quarters used medication for symptom relief and one-third reported that when they had pain it restricted their activities. Thus, non-consulting women with chronic pelvic pain appear to perceive their symptoms as no greater a burden than having painful periods.

Women who had consulted for their symptoms more than 12 months previously appeared slightly less affected by their symptoms than recent consulters. However, a substantial number (43%) reported that the pain restricted their activities. Why these women discontinued seeking medical advice despite ongoing symptoms is unclear, and would need further investigation. Some women may have been controlling their pain to the best of their ability after having been given medical advice or treatment. Another explana-

tion, however, could be that they were dissatisfied with the way in which their pain was being managed. In a New Zealand survey of 144 women who sought health care for chronic pelvic pain,[23] around 45% felt their GP had not adequately explained the diagnosis, said there had been occasions when they felt their pain was not taken seriously, or reported the experience of 'feeling less and less in control' after numerous trips to a doctor. Indeed, optimal communication and understanding between patient and doctor is increasingly recognised as an important aspect of the consultation that may well influence outcome for various conditions,[24,25] including chronic pelvic pain.[26]

An important finding in our study was that one-third of women with chronic pelvic pain reported that they were anxious about their pain, particularly its cause. This observation supports results from a small qualitative study of women with chronic pelvic pain interviewed 12 to 18 months after a negative laparoscopy.[27] Most women stated that their pain negatively affected many aspects of their lives, that they were worried about the pain (mainly about its cause and possible long-term effects), and that this anxiety affected their mood, sleep, and weight. Strikingly, our study found that symptom-related anxiety was common in non-consulters as well as consulters. Further research is required to investigate the nature of this anxiety in more detail, and to explore ways of addressing the issue.

This study showed a very high prevalence of chronic pelvic pain in women of reproductive age in the community, many of whom were not seen in general practice for their symptoms. This finding could partly be explained by variation in the severity of the condition and its impact on daily life as perceived by the women. However, the large number of women — including non-consulters — reporting being anxious about the cause of their symptoms strongly emphasises the need for further research into potential causes. Furthermore, the high proportion of past consulters among women with chronic pelvic pain warrants research into possible reasons why women discontinue seeking medical advice despite ongoing symptoms. Lastly, more widespread awareness that the condition is highly prevalent is likely to benefit all women with chronic pelvic pain, including those who have so far refrained from seeking medical advice.

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