Community survey of factors associated with consultation for low back pain

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Abstract

Objective To investigate the psychosocial factors associated with consultation for low back pain.
Design Two phase cross sectional postal survey.
Setting Bradford Metropolitan Health District.
Subjects 1813 adults responding to the phase 1 questionnaire. 540 of the 782 with an episode of low back pain in the past 12 months completed the second questionnaire.
Main outcome measures Six psychosocial constructs.
Results 406 (52%) of the respondents reporting back pain in the past 12 months had not consulted a health professional. Logistic regression showed that consultation was associated with externalised beliefs regarding pain management (odds ratio 3.6; 95% confidence interval 2.1 to 6.0). Duration of pain affected the factors associated with consultation. Consultation for episodes lasting less than two weeks (n = 290) was associated with greater than median pain (3.0; 1.7 to 5.5), consultation for episodes over two weeks (n = 243) was associated with increased disability (3.7; 1.5 to 9.0), and consultation for episodes over three months (n = 143) with increased depression (3.9; 1.3 to 11.8).
Conclusions The results support a role for psychosocial factors in consultation for low back pain and suggest that the reasons for consultation vary with duration of pain. Duration of the episode may be a useful guide to management of non-specific low back pain.

Introduction

A community survey of low back pain and consultation behaviour in Bradford Metropolitan Health District in 1994 found that half of those who reported an episode of low back pain in the past year had not consulted a health professional for the problem.[1] Severe pain was reported by respondents who did and did not consult, which suggested psychosocial factors might have a role. This hypothesis is supported by a Swedish study that found few clinical or radiographic differences between patients who did and did not consult for back pain.[2] Most studies that have investigated care seeking for low back pain have examined only physical and social factors.[3–7] Wright et al, however, found that consultation was associated with general health questionnaire scores above the threshold for psychiatric morbidity.[8]

We conducted a further survey of the Bradford population to examine the non-physical aspects of consulting behaviour including cognitive strategies, health beliefs, and psychological wellbeing. Knowledge of the precise reasons for consultation with low back pain should help inform primary care management and indicate the mix of services required to cope with the increasing numbers of patients disabled by low back pain.

Subjects and methods

With the approval of the local ethics committee we recontacted the 3184 valid respondents to the 1994 Bradford study.[1] The original study was based on an age stratified random sample of Bradford residents aged 25-64 derived from the family health services authority population register. Full details of the methods have been published.[1] According to 1997 Yorkshire Regional Health Authority records, about 18% of the sample had changed address, resulting in a valid sample frame of 2598.

We used a two phase postal questionnaire. Phase 1 directed recipients towards a picture of the back with a shaded area between the lowest rib and the gluteal folds and asked the following questions: have you ever had back pain in the shaded area which lasted for more than a day? and, if yes, have you had this back pain in the past 12 months?

Respondents who answered yes to these questions were then asked to tick all health professionals they had visited for their back pain in the past 12 months from a list. We classified respondents as consulting if they reported visiting their general practitioner, hospital doctor, workplace doctor or nurse, pain clinic, or accident and emergency department. Access to physiotherapy in the NHS is usually by referral from primary or secondary care medicine. Respondents who ticked only a physiotherapist, osteopath, or chiropractor were considered to have self referred and classified as non-consulting within the NHS.

Respondents who reported having had an episode of low back pain in the past year were sent a phase 2 questionnaire which obtained information on characteristics of low back pain, tests and treatments, work and benefits, health and social support, plus measures of six psychosocial constructs and one measure of

disability. The information gathered from this questionnaire formed the basis of this study.

We assessed the prevalence of back pain in three ways based on responses to the phase 1 questionnaire: lifetime prevalence (number of respondents who had ever experienced back pain lasting more than a day per 100 population aged 25-64 in 1994), annual prevalence (number who had had back pain in past 12 months), and point prevalence (number who had back pain on the day they completed the second questionnaire).

Psychosocial measurements

We selected instruments that had been validated in populations with low back pain and that identified characteristics of coping and health beliefs that might distinguish those who did and did not consult. We used the Roland and Morris disability questionnaire, the fear avoidance beliefs questionnaire, the coping strategies questionnaire (cognitive coping and helplessness dimensions only), the pain locus of control questionnaire, the modified somatic perceptions questionnaire, the modified Zung depression index, and the back beliefs questionnaire.[9–15]

Statistics

We used logistic regression to model the association between prognostic variables and consulting. All variables were entered into the model in a single step, allowing a maximum of 10 cases per variable category.[16 17] All variables were grouped into predisposing, perceived need, and psychosocial factors based loosely on Andersen's behavioural model of health services use (box).[18] Predisposing and perceived need factors were modelled separately, and those variables that contained at least one category with a significance of $P<0.1$ were combined and analysed with the psychosocial factors. Prognostic index variables were derived for predisposing and perceived need factors and used to model subgroups based on duration of pain, and the index variables were then combined with psychosocial variables.[16] The final model contains only variables with a significance <0.05. Age group and sex were retained throughout regardless of significance.

Variables grouped by prognostic factor

Predisposing factors	Age group, sex, school leaving age, work status, number of children, smoking status and history, amount of regular exercise, 3 questions concerning social support from family and friends
Perceived need factors	Likert pain score for today, Likert pain score for pain at its worst, when back pain started, duration of back pain episodes, description of periodicity, diagnosis, Roland and Morris disability index, disability status
Psychosocial factors	Back beliefs, locus of control (pain control and responsibility for pain management), coping strategies (cognitive coping and helplessness), fear avoidance (fear of physical exercise and work), Zung depression, somatic perceptions

Results

We had a 70% (n = 1813) response rate to the phase 1 screening questionnaire. This showed a 62% (95% confidence interval 59% to 64%) lifetime prevalence, 43% (41% to 45%) annual prevalence, and 21% (19% to 23%) point prevalence of low back pain among the adult population of Bradford (table 1). Of the 782 respondents to the phase 1 questionnaire who reported having had low back pain in the past 12 months, 406 (52% (49% to 56%)) reported that they had not consulted an NHS professional. One hundred and eleven (29%) of those who had consulted had also visited a physiotherapist, osteopath, or chiropractor. Only 37 (<5%) people reported consulting only a physiotherapist, osteopath, or chiropractor.

We received 540 valid responses (69%) to the phase 2 questionnaire. We found no significant difference between respondents and non-respondents in terms of consulting for low back pain, but women and those aged over 35 were significantly more likely to respond, resulting in proportionally more women and fewer people under the age of 35 compared with the 1997 adult population of Bradford.

Among the 540 respondents, the odds of consulting were significantly increased by having ever had the cause of low back pain diagnosed, being unemployed or retired, having first ever episode of low back pain in the previous year, having greater than median worst pain, and having externalised locus of control for pain management (table 2).

Table 3 shows the results of univariate analyses by duration of low back pain. Because these groups displayed different prognostic indicators for consultation behaviour we decided to analyse acute (duration ≤two weeks), non-acute (>two weeks), and chronic cases (>three months) separately. Non-acute cases comprise subacute plus chronic cases.

Consultation for episodes of less than two weeks was associated with having ever been given a diagnosis for low back pain, being unemployed or retired, first

Table 1 Population prevalences (95% confidence intervals) for back pain in Bradford (rate per 100 people aged 25-64 in 1994)

	Lifetime (n=1107)	Annual (n=780)	Point (n=380)
Men	63 (60 to 66)	42 (39 to 46)	23 (20 to 25)
Women	60 (57 to 63)	44 (40 to 47)	20 (17 to 23)
Age (years):			
<35	54 (48 to 59)	49 (34 to 44)	16 (12 to 19)
35-44	63 (59 to 67)	44 (40 to 48)	20 (16 to 23)
45-54	63 (59 to 68)	45 (41 to 50)	22 (18 to 26)
≥55	65 (60 to 69)	43 (39 to 48)	26 (22 to 30)

Table 2 Odds ratios for consultation for low back pain for 540 respondents*

Factor	Odds ratio (95% CI)	P value
Predisposing factors		
Not employed	2.3 (1.4 to 3.9)	0.002
Need factors		
Diagnosed low back pain	3.1 (2.0 to 4.9)	<0.001
Pain started <1 year ago	2.8 (1.4 to 5.6)	0.005
Chronicity:		
Acute (≤2 weeks)	1.0	
Subacute (>2 weeks)	3.7 (2.1 to 6.5)	<0.001
Chronic (>3 months)	4.0 (2.3 to 6.7)	<0.001
Worst pain score >median	2.0 (1.3 to 3.1)	0.003
Psychosocial factors		
External locus of control for pain management	3.6 (2.1 to 6.0)	<0.001

*Age group and sex not significant.

Table 3 Effect of severity and periodicity of pain on consultation for low back pain according to duration of episode

Category	Pain ≤2 weeks		Pain >3 months	
	No (%) consulting	No (%) not consulting	No (%) consulting	No (%) not consulting
Worst pain:				
< Median	40 (20)	158 (80)	36 (65)	19 (35)
> Median	43 (48)	46 (52)	70 (79)	19 (21)
Total	83 (29)	204 (71)	106 (73)	38 (27)
Periodicity:				
Constant or intermittent	40 (39)	63 (61)	101 (74)	36 (26)
Occasional or rare	43 (23)	140 (77)	3 (50)	3 (50)
Total	83 (29)	203 (71)	104 (73)	39 (27)

ever low back pain episode in the previous year, and greater than median worst pain (table 4). Psychosocial factors were not significant. Consultation for episodes lasting more than two weeks was associated with having ever been given a diagnosis for low back pain, externalised locus of control for pain management, and a greater than median Roland and Morris disability score. Predisposing factors were not significant. Consultation for episodes of more than three months was associated with external locus of control for pain management, and a greater than median Zung depression score. Predisposing and perceived need factors were not significant.

Discussion

Half of those who had experienced low back pain in the past year in Bradford consulted a health service professional. Horal in Sweden, and Wright et al and Dodd in the United Kingdom found similar rates of consultation for low back pain.[2 8 19] However, many more people with acute low back pain (71% in this survey) do not consult. The factors associated with not consulting in this group are intuitively sensible—less severe pain, employment, and previous experience of back pain which may have resolved spontaneously.

Consultation for chronic low back pain, however, may be governed by depressive symptoms rather than pain characteristics, which is important for management. Furthermore, studies have shown that depression is more strongly associated with impaired function and the failure to resume normal activity than intensity of pain.[20 21] Our results support this hypothesis.

The Clinical Standards Advisory Group's guidelines for back pain emphasise a biopsychosocial approach to management.[22] Primary care is identified as having a pivotal role in control of pain and prevention of disability, and our results would support this for episodes lasting less than three months. However, the guidelines also state that if patients have not returned to work within three months primary care management has failed and chronic pain and disability are likely. Our results suggest that assessment of patients should include duration of low back pain. Patients who present with low back pain lasting more than three months may require referral to psychological support services. Half of all serious cases of depression go unrecognised in primary care, especially those where patients present with physical symptoms.[23 24] In addition, patients often focus on physical symptoms rather than the psychosocial consequences of their illness.[25 26]

Significant associations found in epidemiological research may not be causal, partly because the time sequence of events cannot be established. This is especially true in observational studies where the results of modelling of complex relations between aetiology and outcome may be due to the effects of chance associations or unidentified confounding factors. Logistic regression allows us to control for a number of factors simultaneously, but the logistic regression model also has a weakness in that complex matters are presented as a simple equation. We controlled for several possible prognostic factors in our modelling but restricted our analysis to six psychosocial constructs in addition to several clinical and demographic variables.

Although not fully representative of consultation patterns for low back pain, our model of consulting behaviour gives a useful insight into an unexplored dimension of low back pain. Future research might explore the efficacy of treating the factors we found to be associated with consultation for acute, non-acute, and chronic low back pain.

Contributors: PH conceived the study and together with AT and G Rajaratnam received the grant that funded it. RW was responsible for planning and coordination, data collection, data analysis, and writing the paper with the supervision of PH and AT. A Vail gave statistical and methodological advice and M Tennant helped with statistical analysis. PH, AT, and M A Chamberlain advised on the finished paper. The patients and staff of the Ling House Surgery, Keighley, provided a pilot setting. Members of the Bradford Branch of the National Back Pain Association gave us their views on the questionnaire and the results.

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Competing financial interest: None declared.

Table 4 Significant odds ratios for consulting with low back pain according to duration of episode*

Factor	≤2 weeks (n=290)		>2 weeks (n=243)		>3 months (n=143)	
	Odds ratio (95% CI)	P value	Odds ratio (95% CI)	P value	Odds ratio (95% CI)	P value
Predisposing factor						
Not employed	2.4 (1.1 to 5.0)	0.018	—	—	—	—
Need factors						
Diagnosed low back pain	3.4 (1.8 to 6.1)	<0.001	3.1 (1.6 to 5.9)	<0.001	—	—
Pain started within 1 year	2.5 (1.1 to 5.9)	0.033	—	—	—	—
Pain > median score	3.0 (1.7 to 5.5)	<0.001	—	—	—	
> median Roland and Morris score	—	—	3.7 (1.5 to 9.0)	0.005	—	—
Psychosocial factors						
External locus of control for pain management	—	—	5.0 (2.3 to 10.8)	<0.001	3.7 (1.3 to 11.1)	0.018
Zung depression index > median score	—	—	—	—	3.9 (1.3 to 11.8)	0.018

*Age group and sex not significant.

Key messages

- Only half of those who experience low back pain consult a health service professional
- Most of those who consult have had low back pain for more than two weeks
- The severity of pain may influence consulting behaviour at the acute stage, but after the acute period those who consult are more likely to have increased disability, externalised beliefs about pain management, and depressive symptoms.
- Management of low back pain may need to vary according to the duration of pain

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A memorable patient

Never fully examined

In 1989, when I was head of the department of medicine in Kerala, a 40 year old unmarried woman, a ward attender in the same hospital, was admitted with mid back pain of three months' duration. A chest *x* ray examination was normal, but an *x* ray examination of the spine showed collapse of the T10 vertebra with narrowing of intervertebral space. A Mantoux test was positive. In view of the absence of any detectable primary lesion, the possibility of tuberculosis of the spine was suspected. The patient was subsequently referred to the orthopaedic surgeon who also agreed with the diagnosis and advised antituberculous treatment.

Being a hospital employee, she was moved to a special room and given extra care and attention. Not a day passed without an examination of her chest or heart by me or my assistants. In addition to antituberculous treatment, a spinal jacket was advised to avoid injury to the spinal cord. When we explained the position to the patient, she just smiled and accepted our recommendations.

It was two weeks before a decision about treatment was taken. On the day the spinal jacket was to be put on, the patient was given a whole body bath by the nurse. When she was undressed, the nurse noticed a non discharging ulcerated growth on the left breast. On being questioned about this, the patient told her that the lesion had been there for the past two months and since it hadn't given her any pain, she kept silent about it even to her family. In spite of being examined every day by the unit boss or his assistants no one had undressed her and examined her chest or breast. The orthopaedic consultant also agreed that he saw only the *x* ray results and had not examined the patient. We had palpated the breasts over her blouse as examining the naked breasts of an unmarried woman in front of a group of people was probably a little embarrassing. The patient had metastatic bone disease from scirrhous carcinoma of the breast and she died from the disease within six months.

In an orthodox Indian society bound by customs and taboos, male doctors, especially physicians, are hesitant to undress and examine a woman patient in detail. But the case illustrates how fatal a failure to conduct a thorough physical examination can be. A group of competent doctors did not detect the lesion, even when the patient was under their care continuously for two weeks. I continue to tell my students this story whenever I teach about physical examination.

K P Paulose, *retired professor of medicine, Kerala, India*

We welcome articles up to 600 words on topics such as *A memorable patient, A paper that changed my practice, My most unfortunate mistake,* or any other piece conveying instruction, pathos, or humour. If possible the article should be supplied on a disk. Permission is needed from the patient or a relative if an identifiable patient is referred to. We also welcome contributions for "Endpieces," consisting of quotations of up to 80 words (but most are considerably shorter) from any source, ancient or modern, which have appealed to the reader.