

Health risk appraisal in older people 3: prevalence, impact, and context of pain and their implications for GPs

Claudia Carmaciu, Steve Iliffe, Kalpa Kharicha, Danielle Harari, Cameron Swift, Gerhard Gillmann and Andreas E Stuck

ABSTRACT

Background

Pain is a common experience in later life. There is conflicting evidence of the prevalence, impact, and context of pain in older people. GPs are criticised for underestimating and under-treating pain.

Aim

To assess the extent to which older people experience pain, and to explore relationships between self-reported pain and functional ability and depression.

Design of study

Secondary analysis of baseline data from a randomised controlled trial of health risk appraisal.

Setting

A total of 1090 community-dwelling non-disabled people aged 65 years and over were included in the study from three group practices in suburban London.

Method

Main outcome measures were pain in the last 4 weeks and the impact of pain, measured using the 24-item Geriatric Pain Measure; depression symptoms captured using the 5-item Mental Health Inventory; social relationships measured using the 6-item Lubben Social Network Scale; Basic and Instrumental Activities of Daily Living and self-reported symptoms.

Results

Forty-five per cent of women and 34% of men reported pain in the previous 4 weeks. Pain experience appeared to be less in the 'oldest old': 27.5% of those aged 85 years and over reported pain compared with 38–53% of the 'younger old'. Those with arthritis were four times more likely to report pain. Pain had a profound impact on activities of daily living, but most of those reporting pain described their health as good or excellent. Although there was a significant association between the experience of pain and depressed mood, the majority of those reporting pain did not have depressed mood.

Conclusion

A multidimensional approach to assessing pain is appropriate. Primary care practitioners should also assess the impact of pain on activities of daily living.

Keywords

depression; functional ability; older people; pain.

INTRODUCTION

Pain is a universal, enigmatic, and highly subjective phenomenon¹ with complex organic, psychological, and social dimensions.²

Chronic pain appears to be a common experience among people aged 65 years and older,³ but it is unclear how common this is. Prevalence estimates range from 20–50%⁴ to 58–70% of community-dwelling older adults.⁵ A similar variation in chronic pain experience is encountered with advancing age. In some studies the prevalence of pain increases with age,^{6–8} while other studies report a decrease in the prevalence of pain as people age.^{9,10} The reasons for these conflicting findings are unclear.¹¹

A number of factors appear to influence the experience of chronic pain. Depression is associated with more pain complaints, greater pain intensity, longer duration of pain, and greater likelihood of non-recovery.¹² Although women are more likely to report chronic pain, depression associated with pain may be more common in men.¹³ Social relationships also seem to matter. A study into health behaviours, social networks, and healthy aging in a large cohort of American women

C Carmaciu, BSc, medical student; S Iliffe, FRCGP, professor of primary care; K Kharicha, MSc, senior research fellow, Department of Primary Care and Population Sciences, University College London; D Harari, FRCP, consultant geriatrician and senior lecturer (Hon), Department of Ageing and Health, St. Thomas' Hospital; C Swift, PhD, FRCP, FRCPI, professor of Health Care of the Elderly, Kings College London, Clinical Age Research Unit, Kings College Hospital, London, UK. G Gillman, MSc, statistician, Department of Social and Preventative Medicine, University of Bern; AE Stuck, MD, professor of geriatrics, University Department of Geriatrics, Spital Bern-Siegler and Inselspital, Bern, Switzerland.

Address for correspondence

Dr Steve Iliffe, Department of Primary Care and Population Sciences, University College London, Hampstead Campus, Rowland Hill Street, London, NW3 2PF.
E-mail: s.iliffe@pcps.ucl.ac.uk

Submitted: 16 September 2006; Editor's response: 24 October 2006; final acceptance: 12 December 2006.

©British Journal of General Practice 2007; 57: 630–635.

aged 55–72 years showed that the absence of a confidant and having few close friends and relatives was associated with higher levels of persistent or recurrent bodily pain.¹⁴

Chronic pain has a wide-ranging impact on daily life and activities,¹⁵ and significantly reduces physical and mental aspects of quality of life,¹⁶ including functional limitations, fatigue, sleeping problems, and depressed mood.⁸ Musculoskeletal pain, particularly widespread pain, is a substantial risk factor for falls in older women with disabilities.¹⁷ Chronic pain is a common reason for seeking medical care, with one study reporting 40% of attendances in primary care being due to pain.¹⁸

Given the potential impact of pain, clinicians need to be able to assess accurately and understand the nature of pain in everyday life.¹ Daily pain is perceived as prevalent among older patients living in the community and is thought to be often untreated.¹⁹

Dowrick *et al*, in discussing the relationship between pain and depression,²⁰ showed that family doctors are faced with the dilemma of treating a symptom or seeking its cause, and allude to both diagnostic confusion and clinical neglect in primary care. Gloth, reviewing the 1998 American Geriatrics Society's guidelines on The Management of Chronic Pain in Older Persons, argues that 'educating clinicians about available assessment tools, techniques and interventions, may be the biggest challenge to comforting the older adult in pain'.²¹

It is not clear how GPs should respond when attributed responsibility for under-treatment of older people experiencing chronic pain. This paper explores these questions by describing the experiences of pain reported by a large cohort of older people recruited through general practice, and measuring the associations between pain and psychological health, functional ability, and social relationships in those reporting pain in the previous 4 weeks. The specific questions asked were:

- How prevalent is chronic pain in non-disabled, community-dwelling older people?
- What impact does pain have on everyday life?
- What psychological and social factors are associated with the experience of pain?

METHOD

Three large group practices in suburban London were recruited to participate in a multicentre, multinational, randomised controlled trial investigating the effect of the Health Risk Appraisal in Older People on health behaviours and status.²² Practices were selected for their interest in primary care for older people, location in London, and routine use of electronic medical

How this fits in

Pain is a common experience in later life and has an impact on quality of life, physical disability, and mood. Its exact prevalence and relationship to comorbidity and advancing age are unclear. GPs are encouraged to enhance their skills in the recognition of and response to pain in older patients, particularly by using pain rating scales. This study shows that pain is widespread in non-disabled and community-dwelling older people. Despite having a profound impact on daily life, the majority of older people experiencing pain describe their health as good or excellent. There is a significant association between reported pain and depression, but most of those reporting pain do not have depressed mood. A multidimensional approach to assessing pain appears justified in non-disabled community-dwelling older people. Changes in function and behaviour due to pain may be a good guide to the impact of this approach.

recording systems in clinical encounters. A full account of the methodology of the study is available elsewhere,²³ as are specific descriptions of how the data have been used for epidemiological analyses.^{24,25}

To identify eligible patients aged 65 years and over, practice lists were examined by GPs. Eligibility criteria were: those living at home, without evidence of need for human assistance in basic activities of daily living; high dependency due to major physical or psychiatric illness, or cognitive impairment; or a terminal illness. Patients also had to have a sufficient understanding of English to complete the questionnaires. This patient population was further evaluated using the Probability of Recurrent Admissions questionnaire,²⁶ and asked to complete a consent form by post. The Probability of Recurrent Admissions questionnaire measures risk of hospital

Box 1. Checklist of diagnosed medical problems.

- ▶ High blood pressure
- ▶ Coronary heart disease or heart attack
- ▶ Heart failure
- ▶ Irregular heart beat
- ▶ Stroke
- ▶ Chronic bronchitis or emphysema
- ▶ Asthma
- ▶ Arthritis or rheumatism
- ▶ Osteoporosis
- ▶ Diabetes
- ▶ Depression
- ▶ Emotional or mental illness other than depression
- ▶ Glaucoma
- ▶ Irreversible/untreatable retinal disease
- ▶ Cataracts

Table 1. Demographics and health status of patients at time of interviews.

Variable	Pain (%) Total (n =1017)	Odds ratio (95% CI)
Female	249/552 (45.1)	1.61 (1.25 to 2.08)
Male	157/465 (33.8)	
Age, years		
65–74	218/575 (37.9)	1
75–79	101/244 (41.1)	1.16 (0.85 to 1.57)
80–84	68/129 (52.7)	1.83 (1.24 to 2.68)
≥85	19/69 (27.5)	0.62 (0.36 to 1.08)
General health		
Excellent	25/153 (16.4)	1
Good	251/646 (38.9)	3.25 (2.06 to 5.14)
Fair	115/195 (59.0)	7.36 (4.40 to 12.32)
Poor	10/15 (66.7)	10.24 (3.22 to 32.53)
Depressed mood	76/131 (58.0)	2.33 (1.60 to 3.38)
No depressed mood	329/883 (37.3)	
At risk of social isolation	59/139 (42.4)	1.12 (0.78 to 1.62)
Not at risk	344/868 (39.6)	
Medical history		
Coronary heart disease		
Yes	63/126 (50.0)	1.60 (1.10 to 2.33)
No	339/882 (38.4)	
Irregular heart beat		
Yes	88/170 (51.8)	1.79 (1.28 to 2.49)
No	312/832 (37.5)	
Chronic bronchitis or emphysema		
Yes	22/40 (55.0)	1.89 (1.00 to 3.58)
No	379/966 (39.2)	
Asthma		
Yes	66/139 (47.5)	1.43 (1.00 to 2.05)
No	334/862 (38.7)	
Arthritis or rheumatism		
Yes	249/407 (61.2)	1.96 (1.71 to 2.84)
No	150/591(25.4)	
Osteoporosis		
Yes	52/80 (65.0)	3.08 (1.91 to 4.97)
No	347/923 (37.6)	
Depression		
Yes	61/113 (54.0)	1.90 (1.29 to 2.82)
No	340/892 (38.1)	
Other emotional problems		
Yes	18/31 (58.1)	2.13 (1.03 to 4.39)
No	383/971(39.4)	

Variable denominators reflect incomplete answers to questions.

admission, and stratifies the population by level of risk for future in-patient care. This questionnaire was used in the main study as the basis for risk-stratified outcome analyses.

Eligible and consenting patients were posted the health risk appraisal questionnaire. The findings reported in this paper are from the baseline completion of the questionnaire. The Health Risk Appraisal in Older People tool is a multidimensional, self-completion questionnaire that collects information on health, functional status, health behaviours, preventive care, and psychosocial factors in older people. The development of the

health risk appraisal²² questionnaire and the feasibility of its use in UK primary care have been reported elsewhere.²⁷ Those who gave positive answers to a screening question about the experience of pain in the previous 4 weeks completed the Geriatric Pain Measure, a 24-item multidimensional pain questionnaire that captures information on pain experience (measured on 10-point modified Likert scale) and impact of pain on everyday living.²⁸ To identify depressed mood the 5-item Mental Health Inventory²⁹ was used, which is a tool validated for use in older community-dwelling populations. Psychological distress other than depression was assessed by asking the question: 'Has a doctor ever told you that you have an emotional or mental illness other than depression?'. Social networks were measured using the 6-item version³⁰ of the Lubben Social Network Scale,³¹ developed specifically for use among older adult populations and used widely in both research and clinical settings.^{32–35} On the Lubben scale, a range of 0–30 captures the extent of social contact with family and friends; being at risk of social isolation is defined as having a score >12. Functional ability was assessed using a modified version of the Lawton and Brody activities of daily living scale.³⁶ Responders were asked to report other diagnosed medical problems from the checklist shown in Box 1.

Data were analysed using SPSS (version 12) to carry out χ^2 and stepwise-backward multiple logistic regression as appropriate. The following analyses were carried out:

- associations between the presence of pain in the last 4 weeks and age, sex, physical illnesses, depression symptoms, social network, and self-perceived health status in all those in the study population who answered a screening question on pain experience in the previous 4 weeks;
- logistic regression analysis using all those characteristics with significant associations with reported pain (with significance set at the $P < 0.05$ level) as independent variables, and the presence of pain in the last 4 weeks as a dependent variable;
- description of the self-reported impact of pain on performance of activities of daily living and social activities in those reporting pain in the previous 4 weeks.

RESULTS

A total of 4466 patients aged 65 years and over were identified across the three practices, of which 391 were excluded based on a *priori* criteria. A total of 4075 older people were sent an invitation letter, a consent form, and the Probability of Recurrent

Admissions questionnaire.²⁶ Overall, 2620 patients completed the questionnaire and consent forms (64%) were returned. Based on the questionnaire, 117 patients were excluded because of self-reported need for human assistance in basic activities of daily living, leaving a study sample of 2503.

After randomisation, 1240 older people were posted the Health Risk Appraisal questionnaire at baseline, of which 1090 completed and returned the questionnaire (response rate 88%). Findings from this group are reported here. Responders were less likely to have fair or poor health (rather than excellent, very good, or good health) than non-responders (23.1 versus 34.7%; $P = 0.002$).

The screening question on pain experience in the previous 4 weeks was completed by 1017 (82%) responders. Four hundred and six responders (39.9%) had experienced pain in the past 4 weeks compared with 611 (60.1%) who had not. The experience of pain in the previous 4 weeks was significantly associated with female sex and advancing age up to 84 years. The 85 years and older group reported far less pain than all other age groups.

Other factors significantly associated with pain being present over the past 4 weeks were self-reported fair or poor health, depressed mood (as measured by the Mental Health Inventory as well as from a checklist of diagnoses), other emotional problems, and a number of medical conditions including arthritis/rheumatism, osteoporosis, cardiac disorders, and respiratory diseases (Table 1). Two-thirds of those reporting pain in the previous 4 weeks described their general health as good or excellent. Only seventy-six participants (19.7%) also reported feeling sad or depressed, and 18.8% of those reporting pain over the past 4 weeks had a mental mood score suggesting depression. There was no significant association between reports of pain in the last 4 weeks and the frequency or type of social contact or support received by responders.

Stepwise-backward binary logistic regression using the significant associations shown in Table 1 as independent variables, demonstrated that the experience of pain in the previous 4 weeks is not associated in a linear way with advancing age, but is associated with self-reported health. Pain is also directly associated with depressed mood, arthritis or rheumatism, and osteoporosis (Table 2).

Of those who reported pain over the previous 4 weeks, 201 (53.2%) experienced pain every day, 240 (73.6%) experienced pain several times a week, 146 (40.4%) had pain that 'never goes away', and 165 (44%) took medication for pain at least three times a week.

Table 2. Stepwise-backward multiple logistic regression of factors associated with the experience of pain in the last 4 weeks ($n = 406$).

	Odds ratio	95% CI	P-value
Age, years			
65–74	1		
75–79	0.99	0.69 to 1.39	
80–84	1.28	0.82 to 2.01	
≥85	0.40	0.21 to 0.78	0.024
General health			
Excellent	1		
Good	2.60	1.59 to 4.25	
Fair	4.74	2.77 to 8.41	
Poor	8.50	1.98 to 36.54	<0.001
Depressed on mental mood score	1.88	1.20 to 2.96	0.006
Arthritis/rheumatism	4.03	3.01 to 5.39	<0.001
Osteoporosis	1.97	1.11 to 3.48	0.02

Step 1: All variables from Table 1 were entered into the equation, and were then removed in the following sequence. Step 2: asthma ($P = 0.968$). Step 3: history of depression ($P = 0.750$). Step 4: coronary heart disease ($P = 0.397$). Step 5: other emotional illness ($P = 0.340$). Step 6: bronchitis and emphysema ($P = 0.286$). Step 7: sex ($P = 0.193$).

The experience of pain in the previous 4 weeks was associated with considerable changes in self-reported behaviour and function (Table 3).

DISCUSSION

Summary of main findings

This study shows that the experience of pain is widespread in this population of non-disabled

Table 3. Self-reported consequences of pain.

	Pain over the past 4 weeks $n = 406$ (%)
Answering 'yes' to the following questions:	
Pain with vigorous activities?	281/390 (72.1)
Accomplished less than you want because of pain?	253/405 (62.5)
Limited activities because of pain?	242/404 (59.9)
Extra effort needed for activities because of pain?	231/402 (57.5)
Fatigued or tired because of pain?	215/401 (53.6)
Pain with climbing more than one flight of stairs?	192/392 (49.0)
Cut down activities because of pain?	187/401 (46.6)
Pain with moderately strenuous activities?	177/393 (45.0)
Pain with walking 200 yards or more?	161/390 (41.3)
Pain with lifting or carrying groceries?	159/396 (40.2)
Trouble sleeping because of pain?	124/402 (30.8)
Rely on others for help because of pain?	114/397 (28.7)
Pain with walking 200 yards or less?	107/390 (27.4)
Pain with climbing only a few steps?	81/393 (20.6)
Prevented from enjoying other social/recreational activities?	78/401 (19.5)
Pain with bathing or dressing?	59/397 (14.9)
Prevented from travelling/using public transport by pain?	52/404 (12.9)
Prevented from attending religious activities?	30/399 (7.5)

Variable denominators reflect incomplete answers to questions.

community-dwelling older people. Chronic pain is reported by a smaller proportion of the 'oldest old' (85 years and over), compared with the 'younger old', (65–74 years). This finding is consistent with other studies,³ and attributable to a survivor cohort effect (the oldest old being robust), or to reduced nociception with advancing age.³ Forty per cent of the sample described pain in the previous 4 weeks, and half of this group experienced pain every day. Pain is associated with joint disease more than with any other pathology, and has a major impact on everyday life. These findings support the suggestion that primary care practitioners could usefully enquire about chronic pain experience in the population of non-disabled, community-dwelling older people who are seen in clinics on a regular basis to monitor their hypertension, diabetes, and heart disease, or to detect symptoms other than pain itself.

Despite that pain has a large impact on older people's daily activities, their psychosocial health appears to be affected less than might be expected. Most of those reporting pain describe their health as good or excellent, which may be evidence that individuals in pain are able to adapt to it and maintain a sense of good health. There is a striking gradient in pain experience with worsening perceived health, with nearly 40% of those in 'good' health experiencing pain, compared with nearly 60% of those in only 'fair' health, and close to 70% of those with 'poor' health. Although there is a significant association between pain and depression symptoms, the majority of those reporting pain do not have depressed mood. In the study the experience of pain did not appear to be associated with limited social relationships or support.

Limitations of the study

Due to the cross-sectional nature of the data, it is not possible to determine causality in the relationships between pain, depression, and self-perceived health. There are also a number of methodological limitations, which should be taken into account when interpreting the results. The sample was drawn from three general practices in suburban London, and subject to eligibility criteria and disability screening implemented for recruitment into a trial of health promotion, which may limit the generalisability of the results.

The prevalence of pain identified within this sample may be lower than that in the general population of older primary care patients, partly because older people with disabilities were deliberately excluded and partly because the participants were a self-selecting sub-group who returned lengthy questionnaires. It is conceivable

that only those who were in pain answered the whole questionnaire, thus biasing the findings towards an overestimate of pain prevalence, but this is unlikely. The relationships between pain and other factors may be underestimated.

Comparison with existing literature

Although the epidemiological findings of the study are broadly consistent with the literature to date, the more detailed findings within the cohort reporting pain raises a key question of major relevance to GPs. Why do the majority of older people experiencing pain not become depressed, and continue to describe their health as good or even excellent? There is some evidence that personal comparison standards are lowered and some aspects of function are downgraded in later life.³⁷

Qualitative research³⁸ reveals negative coping strategies, in which older people view pain as part of normal aging, learn to 'put up' with it, and fail to report it when asked.³⁹ There is also evidence that individuals experiencing frequent pain adopt complex positive coping strategies, the most common ones being medication use, rest, mobility, distracting activities, and talking about pain.⁴⁰ Those with negative coping strategies who describe their health as good or excellent may be denying the impact of pain on their lives, while those with positive strategies could be accommodating pain, and assimilating pain experiences into their sense of wellbeing. There is scope for further exploration of these possibilities, and general practice is an ideal place to do this with the non-disabled, community-dwelling older population.

Implications for future practice and research

The findings of this study support the conclusion that simply asking older people how they rate their health may result in a large number who are experiencing pain, sometimes severely, being overlooked. The prevalence of pain is such that routine enquiry about pain appears to be justified with all older people seen in general practice. The findings of this study also support the recommendation that primary care practitioners discussing pain with older patients should not only enquire about its presence, frequency, and intensity, but also about the impact of pain on activities of daily life.⁴¹ A tool such as the Geriatric Pain Measure²⁸ may be useful for this. However, before embarking on such screening, much more needs to be known about the coping strategies and compensatory mechanisms that non-disabled, community-dwelling older people use in the self-management of pain, to refine interventions designed to reduce its impact.

Funding body

European Commission project QLK6-CT-1999-02205 and the Federal Education Science Ministry, Berne, Switzerland (BBW 990311.1)

Ethics committee

Approval was obtained from Brent Medical Ethics Committee (BEC 745) and King's College Hospital Research Ethics Committee (01-010)

Competing interests

The authors have stated that there are none

Acknowledgements

We thank the practices and patients involved in the study.

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