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**Title:** Current osteoarthritis treatment, prescribing influences and barriers to implementation in primary care

**Running title:** GP management of OA

**Key words:** Osteoarthritis, primary health care, professional practice

## **Abstract**

**Aim:** To explore general practitioners' (GPs) management of osteoarthritis (OA).

**Background:** OA represents a large burden on primary care. Little is known about GPs current management of OA, especially influences on their prescribing and the barriers they face in providing good care.

**Methods:** One thousand and six GPs were randomly selected and invited to participate in an online survey on assessment and treatment of OA, influences on their management, burden on their practice, and needs for improving care.

**Findings:** There were 232 respondents (23%). National Institute for Health and Clinical Excellence (NICE) guidance (65%) and professional experience (64%) were the biggest influences on OA management. When assessing patients, pain and mobility were most frequently assessed, with quality of life, independent living, sleep and depression addressed by over half. 52% did not use educational materials; only a third of users rated their current educational material as good or very good. Treatments employed were largely in line with NICE recommendations. Prescription review was reported by a high proportion (74%). Achieving adequate pain control and lack of time were the most frequently cited challenges, whilst more time with patients, collaboration with specialist colleagues and improved communication tools were the commonest needs identified to improve OA management. In summary, national guidelines are an important influence for GP treatment of OA. This survey has highlighted issues about the adequacy of information available for OA, about GPs need for more time with OA patients as well as their interaction with specialist colleagues.

Osteoarthritis (OA) is the most common chronic musculoskeletal condition worldwide and a leading cause of chronic disability (Arthritis Research Campaign; OA Nations Survey, 2003, Murray and Lopez, 1997b), currently accounting for more than a third of chronic moderate to severe pain in the UK (Breivik et al., 2006). 10-15% of the UK adult population are estimated to have OA, with the prevalence rising considerably in the older population. At least half of those over the age of 60 have knee, hip and/or hand OA whilst 3 of every 4 people over the age of 75 have OA in at least one joint (Arden and Nevitt, 2006). Over the past 20 years the incidence of OA has increased 2-4 fold and, with the continual ageing of the UK population and the growing problem of obesity, it is expected to continue to rise in years to come (Murray and Lopez, 1997a).

Aside from the considerable suffering to individuals, in terms of poorly controlled pain, loss of function and markedly reduced quality of life, OA places an enormous burden on healthcare services (Arthritis Care; OA Nations Survey, 2003). OA is a chronic condition that may require periodic review over many years, with primary care acting as the major provider of both initial and continuing care for OA. It is estimated that at least 20% of adults consult their general practitioner (GP) with a musculoskeletal problem over the course of a year, with the majority of these consultations attributed to OA (Jordan et al., 2007). On average 1 in every 7 GP consultations is related to a musculoskeletal problem (Jordan et al., 2007).

Efficient primary care management of OA is crucial to reduce or delay the use of limited and costly specialized care resources, particularly in light of the growing prevalence of OA and the potential increasing burden on the healthcare service. In order to appropriately manage OA in both primary and secondary care, several evidence-based guidelines have been produced nationally (Conaghan et al., 2008) and internationally (Jordan et al., 2003, Zhang et al., 2005, Zhang et al., 2007, Zhang et al., 2010), with some related to specific anatomical sites of OA. However, relatively little is known about current management of OA, use of the available guidelines and the barriers to optimal management of OA at the primary care level.

The aims of this study were therefore to survey randomly selected primary care practitioners to obtain data on current management strategies for OA and perceived barriers to providing optimal care.

## **Methods**

### Questionnaire development

A twenty-one question online survey was constructed to obtain relevant information from general practitioners on the following questions: how they assess and treat OA; the influences on their management; the burden on their practice; and their needs for improving care. Questions offered a variety of relevant set responses which were developed through a consultation process and the option to provide additional/other information where appropriate (see Appendix 1).

### Sample

GPs across the UK were randomly selected and invited to take part in the online questionnaire. Only participants who selected either GP or GP with a special interest in musculoskeletal conditions (GPwSI) as their specialty were able to complete the survey. All respondents remained anonymous unless they chose to include contact details to receive a summary of results.

### Ethical review

According to the National Research Ethics Service (NRES) definitions of research this project is classified as a service evaluation and is therefore exempt from the need for ethical review.

### Data analysis

Descriptive statistics were used to present the data according to the questionnaire categories. In some categories, respondents had the opportunity to include more than one response; therefore data could exceed 100%.

## **Results**

### Profile of respondents

One thousand and six GPs were invited to participate and 232 people completed the survey (23%). Slightly more GPs were male than female; the majority were aged between 35 and

54; and a small number were GPs with a musculoskeletal special interest (GPwSI) (Table 1). Geographically, respondents were evenly spread across the Strategic Health Authorities with the majority working in urban locations and in medium sized group practices (Table 1).

#### Patient assessment

OA represented the fourth most demanding condition in terms of practice time (ranked first by 23 respondents [10%]), with depression (n= 81, 35%), diabetes (n=72, 31%) and hypertension (n=39, 17%) the most demanding conditions. Over 60% (n=139) of GPs reported that they were very confident at differentiating OA from rheumatoid arthritis when assessing a patient presenting with joint pain. In terms of OA management, the majority of respondents rated National Institute for Health and Clinical Excellence (NICE) and professional experience as their biggest influences, followed by Primary Care Trust guidelines, Arthritis Research UK and own practice guidelines (Table 2).

When seeing patients, pain and mobility were reported to be the most frequently assessed constructs with quality of life, independent living and sleep quality addressed by over half (Table 3). Depression, the effect of OA on relationships with friends and family and the effects on sexual relationships were the least likely constructs to be assessed by GPs. The majority (n=191, 82%) of GPs reported that they did not use any tools to evaluate pain in OA patients; the few that did use tools (n=41, 18%) most commonly using a numerical rating scale (n=24, 58%) or general questioning about pain (n=17, 42%). Approximately half of GPs (n=111, 48%) used educational materials with OA patients; however only a third rated their current educational material as good or very good. The most commonly cited reasons for not providing adequate information or using educational material with patients were lack of time (n=128, 55%), availability of material (n=126, 54%) and quality of material (n=67, 28%).

#### OA management

In accordance with NICE guidelines, recommendation of exercise and/or prescription of paracetamol and topical NSAIDs were the most common reported management strategies (Table 4), with diet, prescription of oral NSAIDs or COX-2s, referral to a physiotherapist and opioid prescription also commonly used. Referral to a specialist or for joint replacement surgery, and recommendation of walking aids or braces were less common (Table 4). GI risk

(n=70, 30%), pain control (n=51, 22%), severity of condition (n=46, 20%) and CV risk (n=46, 20%) were the main reported influences for NSAID prescribing. Pain and side effects were also the main focus for NSAID (n=218, 94% and n=223, 96% respectively) and opioid (both n=223, 96%) prescription review, reported to be carried out by 74% (n=172) of GPs every 2-6 months. On average, GPs reported to prescribe gastroprotection, most commonly omeprazole, to 57% of patients treated with an NSAID.

### Barriers to OA management

Achieving adequate pain control was the most frequently cited challenge to OA management, followed by lack of time and getting patients to make lifestyle changes (Table 5). When asked what would enable GPs to manage OA patients more effectively, more time to see patients, collaboration with a specialist team, a need for improved tools to aid patient communications around risk, accredited training courses for GPs and more staff and resources were commonly suggested solutions (Table 6). Only a small proportion of GPs felt that they were currently managing their OA patients effectively (Table 6).

### Discussion

Management of OA places a considerable burden on primary care practitioners, with only depression, diabetes and hypertension found to be more demanding in terms of practice time. This is the first study to examine the influences on GP treatment of OA and their perceived barriers to optimal patient management. National guidelines were reportedly an important influence for GP treatment of OA and our data suggest that most GPs employ at least some of the recommendations in their practice. This survey has highlighted a perception about the adequacy of the educational material available for OA and a need to improve both access to and quality of material for use with patients by GPs. In particular, OA management within primary care would benefit from increased time for GPs to spend with OA patients as well as improved interaction with specialist colleagues.

That the majority of responding GPs reported to be influenced by the NICE recommendations in their practice is an important finding of this study and underlines the value of this guidance in patient management. This view is also reflected in the data on the therapies utilised, with most GPs reporting to use paracetamol, topical NSAIDs and exercise for their OA patients, recommended early treatments in the NICE OA guidance (Conaghan

et al., 2008). Use of gastroprotection was modest (57%), although it appears increased compared with recent reports (van Soest et al., 2011) and may reflect impact of NICE guidance. Importantly there was a high rate of medication review with 74% of GPs reporting medication reviews every 2-6 months, in line with NICE recommendations for periodic review.

Educational material was used by less than half the GPs who responded. NICE has recommended provision of information as part of the core treatment of OA. It is possible that some of these GPs provided verbal information but there is a concern about access to written information and its quality. Of note, and an area requiring further investigation, is the opinion of many GPs currently using educational material that it is not adequate. Nearly half of GPs felt that improved tools to aid patient communication around risk would help with OA patient management. It is encouraging that there are a number of ongoing studies to develop new educational material for GPs to use with people with OA, with a recent feasibility study of a hip and knee OA management booklet showing small improvements in illness, exercise and fear-avoidance beliefs and increased levels of physical activity in patients provided with the booklet compared to a control group not provided with the booklet (Williams et al., 2011). However, the findings in our study suggest that mechanisms to encourage GPs to utilise such material and further studies to develop, improve and validate educational material should be explored.

The NICE guidelines recommend a holistic approach to OA assessment and management, considering the global needs of an individual and taking into account social and psychological factors that have an effect on their quality of life and the ability to carry out activities of daily living, employment-related activities, family commitments, relationships and hobbies (Conaghan et al., 2008). In line with these recommendations nearly all GPs reported the assessment of pain and function for patients presenting with OA and the majority also reported to assess quality of life and effect on independent living. However, less than half assessed depression and only 22% of GPs reported to assess the effect on relationships with family and friends. Anxiety and depression are very common in OA patients, and are associated with increased pain and disability (Axford et al., 2010, Kim et al., 2011) and increased risk of functional decline (Dunlop et al., 2005, Mallen et al., 2007). People with depression are also three times more likely to be non-compliant with medical treatment recommendations (DiMatteo et al., 2000). The strong interrelationship between mental health, pain and disability underlines the importance of a multidisciplinary approach to the



treatment of OA and suggests assessment of anxiety and depression should form a core part of primary care management of OA.

Compared to data reported in 2004 from a GP survey on the use of conventional and complementary treatments for OA (Jordan et al., 2004), the incidence of physiotherapy referral and paracetamol prescription in our survey are increased whilst the incidence of NSAID prescription is reduced, as might be expected with changes in prescription following growing awareness of NSAID complications in the mid 2000s (Sun et al., 2007). In contrast, a 2007 survey of adults aged 50 years or over suffering from knee pain, found similar rates of patient-reported paracetamol prescription, recommendation for dieting and referral to a physiotherapist (Porcheret et al., 2007). However in our survey recommendation for exercise was much higher, probably reflecting government initiatives to encourage increased physical activity (Health Scotland, 2008, Foster et al., 2009, Department of Health, 2009), whilst NSAID and opioid prescription and recommendation of walking aids were reduced.

It is of particular note that GPs indicated lack of available time to spend with patients to be one of the main challenges to OA management and the factor that, if addressed, would make the biggest difference in terms of their ability to optimally care for people with OA. The issue of time also reportedly hampered the provision of information to patients. Lack of time is an issue that has frequently been highlighted by GPs in other UK and European-based studies as a reason for not practising evidence-based medicine (McColl et al., 1998, Al-Ansary and Khoja, 2002) or health promotion (McKinlay et al., 2005), as well as for not researching or implementing research findings (Lionis et al., 2004, Robinson and Gould, 2000). The Royal College of General Practitioners 'Manifesto for Patient Care 2010' has also highlighted this point, calling for an increase in the length of GP consultations to cope with the rising demand of the ageing population with their long-term and increasingly complex conditions (Manifesto for Patient Care, 2010). In addition, better collaboration with a specialist team was highlighted as a key need to improve primary care OA management.

#### Strengths and limitations of the study

There were limitations to the study. Only 23% of those invited completed the online survey and this may have introduced bias. GP response to survey requests is acknowledged to vary widely and often to be low, and is known to be influenced by questionnaire length, insufficient background information, volume of requests and financial information (McAvoy and Kaner, 1996). However, the GP population in this study is broadly reflective of the UK

GP population as a whole, with similar gender and age distribution and geographic spread (Health Policy and Economic Research Unit. 2009 UK Medical Workforce, 2010), and only a small proportion reporting a special interest in musculoskeletal conditions. Although the option of recording additional answers not covered by the set text was offered for most questions in the survey, the set answers offered may have influenced GP responses and thus the results of this survey. For example, the use of topical NSAIDs and capsaicin, which are recommended as therapeutic options in the NICE guidelines, were not offered as answers to the question regarding treatment options offered to patients and therefore relative use of these treatment modalities cannot be assessed.

This study used clinician self-report as a proxy for clinician behaviour. Although direct measurement of clinical practice may be considered the 'gold-standard' measure of performance, these measures are often intrusive, time-consuming and costly, and may introduce bias through positive promotion of desired behaviour in observed individuals. The use of proxy measures is therefore considered a useful means of determining behaviour in an effective and less costly manner. Studies of clinical behaviour have utilised a number of proxy measures including clinician self-report (Salmon et al., 2007), patient self-report (Steel et al., 2008) and medical record review (Broadbent et al., 2008), however the evidence base for these measures is still limited (Hrisos et al., 2009). Further work to refine the findings of this study may therefore examine the potential for using a combination of proxy measures to obtain an all round picture of clinical behaviour.

#### Implications for future research or clinical practice

With the continual ageing of the UK population, the existing massive social and economic burden of OA is set to grow considerably over the coming decades. Developing and delivering strategies to optimise management of OA at the primary care level is therefore essential. Whilst the use of national guidelines to guide OA management by the majority of responding GPs in this survey is promising, it is evident that further provision is needed to enable GPs to satisfactorily manage their OA patients, and to aid patients in managing their own condition. Recent trials of self-help material are encouraging and further studies to develop and validate such material will benefit both GPs and patients. Adequate management of pain is still a concern for GPs. This may well reflect issues with existing analgesic therapies; most clinical trials report group-level or mean pain responses, whereas the response in individuals is quite variable (Moore et al., 2010). The results of this survey also emphasize a need to revisit the duration of GP consultations, or to develop novel

methods of front line clinicians' involvement in OA management, perhaps in line with management of other chronic conditions, such as diabetes and cardiovascular disease, where nurse-led management has proved effective (Woodward et al., 2010, Clark et al., 2011, Wallymahmed et al., 2011, Berra et al., 2011). It may be that such changes to practice might centre on patient self-management with intermittent multidisciplinary intervention, with a focus on the global needs and psychological well-being of individuals. Improved links between primary care and specialist colleagues is still a much needed focus for future health services research (Ham et al., 2011).

### **Additional information**

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