

## Managing osteoarthritis

### *Medication use among seniors in the community*

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#### ABSTRACT

**OBJECTIVE** To determine what types of medication seniors in the community were using to manage osteoarthritis (OA).

**DESIGN** Mailed self-administered survey.

**SETTING** Three family medicine community practice sites in cities in Nova Scotia.

**PARTICIPANTS** All seniors (aged 65 and older) on the electronic record of each practice site with a physician-confirmed diagnosis of OA (N = 244).

**MAIN OUTCOME MEASURES** Proportion of seniors using prescribed medications or self-care products (nonprescribed medications and herbal and natural health products) for OA.

**RESULTS** Response rate was 78%. About 15% were using no medication, 74% were using at least one type of self-care product (60% were using nonprescribed medications, and 45% were using herbal and natural health products), and 52% were using prescribed medications alone or in combination with self-care products.

**CONCLUSION** Seniors' use of prescribed and self-care products for OA is very high. Physicians must be aware that patients seeking prescriptions likely are also using self-care products. The potential for drug interactions is high; patients should be made aware of the risks associated with taking multiple products.

#### RÉSUMÉ

**OBJECTIF** Déterminer le type de médication que les personnes âgées vivant dans la communauté utilisent contre l'arthrose.

**TYPE D'ÉTUDE** Enquête postale auto-administrée.

**CONTEXTE** Trois cliniques urbaines de médecine familiale communautaire de la Nouvelle-Écosse.

**PARTICIPANTS** Tous les patients de 65 ans et plus inscrits au registre électronique de ces cliniques et possédant un diagnostic d'arthrose confirmé par un médecin (N = 244)

**PRINCIPAUX PARAMÈTRES ÉTUDIÉS** Proportion des sujets utilisant une médication anti-arthrosique prescrite ou choisie par eux-mêmes (remède en vente libre, produit de santé naturel ou à base de plantes).

**RÉSULTATS** Le taux de réponse était de 78%. Environ 15% des sujets ne prenaient aucun remède, 74% utilisaient au moins un type de produit de leur choix (60% des médicaments en vente libre et 45% des produits naturels ou à base de plantes) et 52% prenaient une médication prescrite seule ou associée à un produit de leur choix.

**CONCLUSION** Les patients âgés font grand usage de remèdes anti-arthrosique prescrits ou en vente libre. Le médecin doit savoir qu'un patient qui veut s'en faire prescrire fait probablement aussi usage de remèdes de son choix. Il existe un fort risque d'interaction médicamenteuse et le patient doit être averti des risques associés à la poly-médication.

This article has been peer reviewed.

Cet article a fait l'objet d'une évaluation externe.

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**T**he high prevalence of osteoarthritis (OA) among people older than 65 years<sup>1-3</sup> and Canada's aging population suggest that OA is, and will be, an important cause of morbidity. Early symptoms of discomfort and pain can be managed with both nonprescribed and prescribed medication.

A MEDLINE search found no reports of medication use specifically for OA in Canada, but in the United States, acetaminophen use increased and nonsteroidal anti-inflammatory drug (NSAID) use decreased through the 1990s.<sup>4</sup> Use of alternative medicines in the United States rose in the 1990s<sup>5</sup>; 14% were taking herbal products or supplements for which the second most common indication was "arthritis."<sup>6</sup> The first cyclooxygenase-2 selective NSAID (coxib) was marketed in Canada in 1999. One year later, coxibs had increased the total Canadian antiarthritic prescription market by about 25%,<sup>7</sup> accounting for 48% of the total in Ontario<sup>8</sup> and about 50% nationally.<sup>7</sup>

Our objective was to determine what types of medication seniors in the community were currently using to manage OA, whether this use differed by sex or age, and what factors influenced the decision to use prescribed medication for OA. We also sought to determine what proportion of seniors taking prescribed medications for OA were taking coxibs.

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## METHODS

### Design and setting

Data were obtained from responses to a self-administered survey mailed to subjects selected from three large, urban, primary care practices or groups in Nova Scotia. The practices included a hospital-based academic teaching unit, a community-based teaching practice, and a community group practice. Patients in these practices represented a range of demographic and socioeconomic situations.

### Subjects

Clinical staff at each participating practice identified potential subjects from electronic billing records. Initial eligibility criteria included being 65 years old or older on December 31, 2001, and having on record at least one mention over a 3-year period (1999 to 2001) of at least one of the following International Classification of Diseases (ICD) diagnostic codes: OA (ICD-9: 715, 721), joint pain or stiffness (ICD-9: 719.4, 719.5) or diagnosis of other types of arthritis and diffuse connective tissue disorders (ICD-9: 710-713, 719.2, 719.3, 725). Attending family physicians then reviewed this list of potential participants, confirmed diagnosis of OA, and excluded seniors with traumatic or inflammatory forms of arthritis and those who, in the physicians' opinion, were too disabled (mentally, physically, or emotionally) to participate. Whether chart review was necessary to confirm OA or the presence of exclusion criteria was left to physicians' discretion. In total, 244 eligible seniors were asked to participate in the study.

### Procedure

We used a modified Dillman method.<sup>9</sup> An advance notice was mailed to seniors selected from each site to inform them of the upcoming study and tell them to expect the survey. About 1 week later (week 1), the survey questionnaire was mailed. Included with the survey were personalized letters from participants' physicians inviting them to take part in the study, detailed study information,

and a stamped return envelope. Follow-up communication included a postcard reminder at week 2 and a second mailing of the complete survey package at week 4.

### Survey

Participants were asked to complete the “Living with Arthritis” survey developed for this project by the investigators with guidance from others with expertise in pharmacy and survey design. Before administration, the survey was pilot-tested on a volunteer group of nine seniors and assessed for face and content validity by experienced physicians and pharmacists.

The survey had 13 questions, four of which sought demographic information (sex, year of birth, education, drug insurance coverage). The remaining questions asked about use of prescribed medications and self-care products, such as over-the-counter medications (eg, acetaminophen, ibuprofen) and herbal and natural health products (eg, glucosamine, chondroitin, vitamin supplements, shark cartilage) within the past 7 days for OA; whether self-care products were used before prescribed medications and whether use of self-care products changed when prescribed medications were introduced; factors influencing their decision to seek prescribed medications; and use of coxibs. A copy of the survey is available from the authors upon request.

### Analysis

Descriptive statistics were used to summarize responses to each survey item. Differences in medication use between men and women and by age group (65 to 74, 75 to 84, ≥85) were examined using  $\chi^2$  techniques. Significant differences were evaluated at the  $P = .05$  level.  $X^2$  statistics were also used to evaluate whether respondents from each site differed with respect to demographics (sex, age, education, drug insurance coverage) before pooling all responses.

The research ethics board of the Capital District Health Authority in Halifax approved the study.

## RESULTS

A total of 191 seniors returned the survey; response rate was 78%. Because one returned survey contained no data, analysis was based on 190 responses. About 67% of respondents were women, mean age was 76.5 years (standard deviation  $\geq 7.1$  years), mean level of education was grade 9 to 11, and 94% had drug insurance coverage. Demographic characteristics are shown in Table 1. No differences were evident across practice sites.

**Table 1. Demographic characteristics of respondents**

CHARACTERISTIC	N* (%) <sup>†</sup>
<b>Sex</b>	
• Male	62 (33.3)
• Female	124 (66.7)
<b>Age (y)</b>	
• 65-74	87 (46.8)
• 75-84	68 (36.6)
• $\geq 85$	31 (16.7)
<b>Highest level of education obtained</b>	
• $\geq$ Grade 8	18 (9.8)
• Grade 9-11	65 (35.5)
• Graduated from high school	26 (14.2)
• Some technical or trade school	33 (18.0)
• Some college or university	41 (22.4)
<b>Drug insurance coverage</b>	
• No	11 (6.0)
• Yes	173 (94.0)

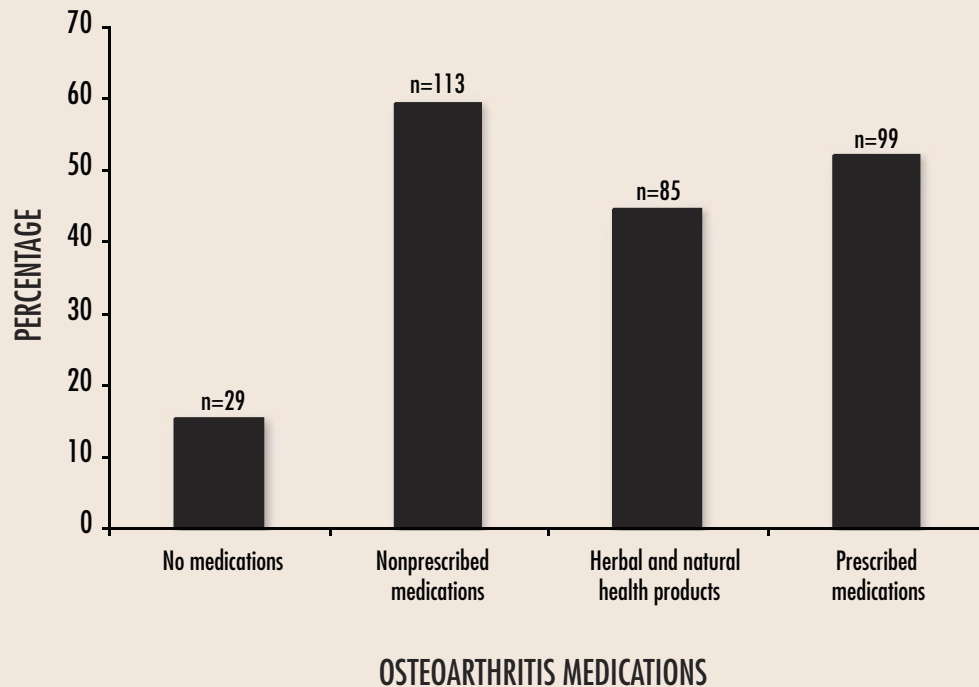
\*Total sample size by characteristic varies owing to missing values.

<sup>†</sup>Proportions might total more than 100 due to rounding.

Figure 1 illustrates medication strategies seniors used to manage OA during the 7 days before the survey. Overall, 15% of seniors used no medications, 74% used at least one type of self-care product (60% used nonprescribed medications, 45% used herbal and natural health products), and 52% used prescribed medications alone or in combination with self-care products. Table 2 details use of self-care products.

Table 3 shows medication use. Only 11% of seniors (21) reported exclusive use of prescribed medications; 33% of seniors (62) reported use of self-care products

**Figure 1.** Medications used\* by seniors for osteoarthritis during the 7 days before the survey: *N*=190.



\* Alone or in combination

**Table 2.** Products used by patients: *N* = 190.

PRODUCT	N* (%)
<b>Nonprescribed medications</b>	
• Acetaminophen	94 (49.5)
• Acetylsalicylic acid	27 (14.2)
• Ibuprofen	12 (6.3)
<b>Herbal and natural health products</b>	
• Glucosamine	30 (15.8)
• Chondroitin	5 (2.6)
• Vitamin supplements	76 (40.0)
• Shark cartilage	3 (1.6)
• Other (eg, apple cider, garlic)	26 (13.7)

\*Patients might have used more than one product.

only. Of the 99 seniors who currently used prescribed medications, 79% (78) also used self-care products. In this subgroup, 62% (61) reported use of combined nonprescribed and prescribed drugs, while 53% (52) combined prescribed medications with herbal and natural health products.

**Table 3.** Seniors' single and combination medication use for osteoarthritis during the 7 days before the survey: *N* = 190.

MEDICATIONS USED	N* (%)
No medication	29 (15.3)
Self-care products <sup>†</sup> only	62 (32.7)
• Nonprescribed medications only	29 (15.3)
• Herbal and natural health products only	10 (5.3)
• Nonprescribed medications and herbal and natural health products	23 (12.1)
Prescribed medications only	21 (11.1)
Prescribed medications and self-care products	78 (41.1)
• Prescribed and nonprescribed medications	26 (13.7)
• Prescribed medications and herbal and natural health products	17 (9.0)
• Prescribed and nonprescribed medications and herbal and natural health products	35 (18.4)

\*Proportions might total more than 100 due to rounding.

<sup>†</sup>Self-care products include nonprescribed medications (eg, acetaminophen, acetylsalicylic acid, ibuprofen) and herbal and natural health products (eg, glucosamine, chondroitin, vitamin supplements, shark cartilage).

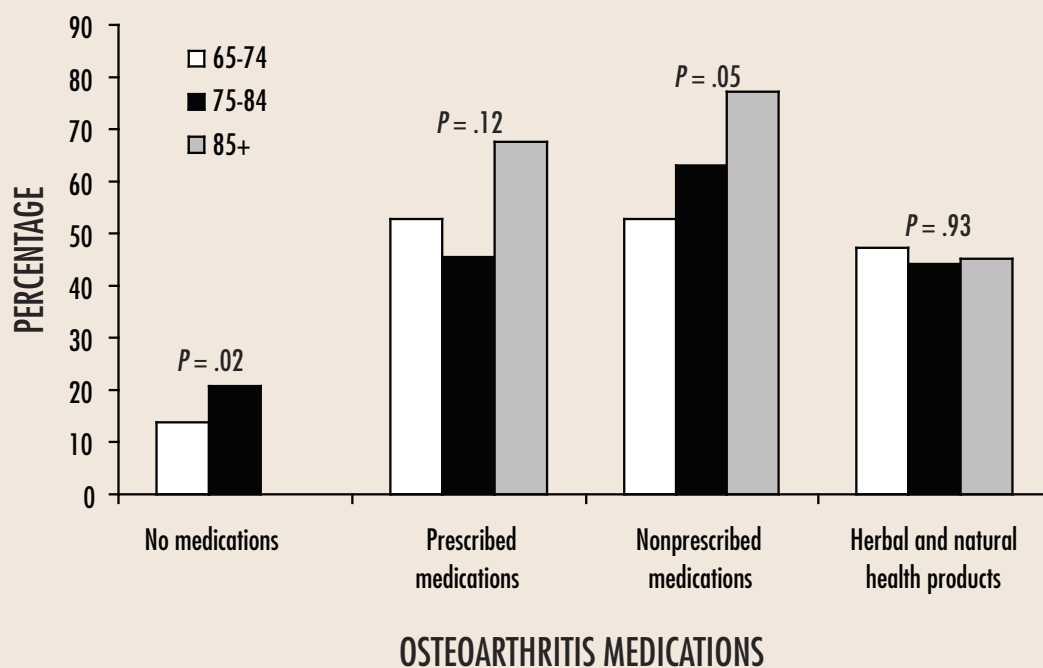
No significant differences were found between men and women with respect to not using medications, using prescribed medications, or using combined prescribed and self-care medications for managing OA. Women, however, reported greater overall use of self-care medications: 65% of women reported using nonprescribed medications compared with 50% of men ( $P = .04$ ); 52% of women and 34% of men used herbal and natural health products ( $P = .02$ ). Men were found to use prescribed medications exclusively more often than women did (22% vs 8.3%;  $P = .02$ ).

Significant differences were evident between age groups (Figure 2). All elderly seniors ( $\geq 85$  years) reported use of at least one medication to manage OA compared with 79% of those aged 75 to 84 and 86% of those aged 65 to 74 years ( $P = .02$ ). The most elderly group were also found to be greater users of nonprescribed medications: 77% of seniors  $\geq 85$  years reported using nonprescribed medications compared with 63% of those aged 75 to 84 and 53% of those aged 65 to 74 ( $P = .05$ ).

Almost half (44%) indicated they had used self-care products before using any prescribed medication. Factors that motivated seniors to seek prescriptions included a need for stronger pain relief (42%), a need to reduce stomach upset (33%), and lower cost (10%). Among those indicating a need for stronger pain relief, 62% had been managing OA with self-care products before seeking prescribed medications. Of those who reported factors motivating their use of prescribed medications, more than 90% indicated they were influenced wholly or in part by doctors' recommendations (73% exclusively). Influence from media sources (television, radio, magazines) was limited (12%), as was information from other people (21%).

One third (34) of seniors currently using prescribed medications reported use of coxibs. An additional 22 seniors indicated they had used coxibs in the past. Of those taking prescription medication, 56 (56%) had tried coxibs, and 22 of those (39%) had discontinued them.

**Figure 2.** Medication used by seniors for osteoarthritis during the 7 days before the survey, reported by age group:  $N = 190$ .



## DISCUSSION

This study documents the high proportion of seniors (85%) who are taking something for OA; 74% of them are using self-care products. Only 9.7% of Canadian adults reported taking natural health products in 2000-2001.<sup>10</sup> Because 79% of those who seek prescriptions from their physicians are also using self-care products, it is very important that all physicians and pharmacists ask each patient about self-treatment and record this information in health records. Given that many older patients have comorbidity and take other medications, the potential for drug interactions is substantial<sup>11</sup> and warrants careful attention. Physicians should also have specific discussions with their patients regarding the benefits and risks of using self-care products, particularly with respect to herbal and natural health products about which less is known regarding potential interactions.<sup>12</sup>

This is particularly true for two groups. Women patients are significantly more likely than men to be taking nonprescribed medications as well as herbal and natural health products.<sup>13</sup> The oldest seniors had the highest proportion taking something for OA and were the most likely to be taking nonprescribed medications. Physicians must be particularly aware of the need to ask about other therapies when treating these patients.

The large number of patients seeking more pain relief and less stomach upset could explain the high market share for coxibs. The media had only a small influence on our survey respondents, as it did in the Canadian arm of a recent study of direct-to-consumer advertising.<sup>14</sup> While physicians know anecdotally that family and friends affect patients' medication choices, this effect pales in comparison with physicians' influence (21% vs 90%).

### Limitations


Because our survey respondents were all drawn from urban practices, results might not be generalizable to rural areas. We found no evidence to suggest that those living outside urban areas would manage OA significantly differently,

however. Perhaps more troubling is the relatively small pool of eligible seniors identified (244); prevalence data suggest there should be many more with diagnosed OA in those practices. Our sampling method of using diagnostic codes on billing records would likely have yielded patients with enough symptoms to present with OA as the main reason for the visit. Patients surveyed might be heavier users of medication than patients whose OA is less painful.

We have no data from seniors who did not consult their physicians for OA. Overall, the demographics of our respondents are representative of seniors with OA. Given that women comprise a greater proportion of the senior population in Nova Scotia than men do<sup>15,16</sup> and that women are known to have a higher incidence of OA than men,<sup>1-3,17</sup> our sample comprising 67% female respondents appears in balance.

### Conclusion

Use of medications and herbal or natural health products for OA among seniors is very high, and physicians must be aware of the probability that patients seeking prescriptions are also using self-care products. This is particularly true for women and very elderly patients.

The need for stronger pain relief and less stomach upset were the main reasons seniors with OA in Nova Scotia sought prescription medications. Use of coxibs remains high, although our patients sampled in 2002 report lower use than that cited in national data for 2000. Overall, the potential for drug interactions is high, and patients should be made aware of the risks of using multiple products that are inadequately tested. The increasing use of self-care products, in particular herbal and natural health products, necessitates more research addressing the potential for interactions with prescribed medications. 

### Acknowledgment

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### Contributors

**Ms Lawson** contributed to development of the initial research questions and study design, took a major role in creating the survey and oversaw its administration, analyzed the data, and wrote the methods and results sections of the paper. **Dr Putnam** contributed to development of the research questions, study design, and survey, and wrote the discussion section and most of the introduction. **Ms Nicol** was involved in project design and contributed to the paper's background and discussion. **Ms Frail** contributed to project design, to data analysis, and to the intellectual content of the paper's discussion section. **Drs Archibald, MacKillop, and Conter** all contributed to project design and data collection, and reviewed each draft for intellectual content. All the authors approved the final manuscript.

### Competing interests

None declared

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### EDITOR'S KEY POINTS

- Among seniors suffering from osteoarthritis (OA), only 15% were using no medication, 74% were using self-care products, and 52% were using prescribed medications alone or in combination with self-care products.
- Among nonprescribed medications, acetaminophen, vitamins, and glucosamine were most commonly used. About 40% of seniors were using a combination of prescribed and other medications, opening the door to potential drug interactions.
- Family doctors need to check with their senior patients about use of nonprescribed medications for OA to avoid potential drug interactions.

### POINTS DE REPÈRE DU RÉDACTEUR

- Seulement 15% des patients âgés souffrant d'arthrose ne prenaient aucune médication; 74% prenaient des remèdes de leur choix et 52% des médicaments prescrits seuls ou associés à des produits de leur choix.
- Les remèdes non prescrits les plus fréquemment utilisés incluaient l'acétaminophène, les vitamines et la glucosamine. Environ 40% des participants utilisaient une combinaison de remèdes prescrits ou autres, augmentant ainsi le risque d'interaction médicamenteuse.
- Le médecin de famille doit vérifier auprès des patients âgés s'ils utilisent des produits non prescrits contre l'arthrose afin d'éviter la possibilité d'interaction médicamenteuse.

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