

Getting a Grip on Arthritis®: An Educational Intervention for the Diagnosis and Treatment of Arthritis in Primary Care

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ABSTRACT. *Objective.* To evaluate a community-based educational intervention designed to improve the diagnosis and treatment of arthritis in primary care.

Methods. The educational intervention, entitled “Getting a Grip on Arthritis”[®], consisted of a 2-day workshop and followup reinforcement activities for healthcare providers (providers) and was supported by a toolkit of written materials for providers and clients. The content of the intervention was designed around 10 arthritis best practices derived from published arthritis guidelines. Five community health centers (CHC) participated as intervention sites and 2 as control sites. Intervention impact was determined through a mailed survey to clients with arthritis. Primary outcome analysis compared responses to questions about arthritis best practices between intervention and control sites at baseline and followup.

Results. The workshop was attended by 21 multidisciplinary providers from intervention CHC. At baseline, 423 of 624 eligible and consenting clients completed the survey and 376 of 593 completed the followup survey. At followup clients in the intervention group reported significantly higher referrals to The Arthritis Society therapy program, and were more often provided information on type of arthritis, medications and their side effects, disease management strategies, and arthritis community resources.

Conclusion. This demonstration project is one of the first to show changes in the management of arthritis in a primary care setting. This project has recently received funding from Health Canada’s Primary Health Care Transition Fund for implementation across Canada and is expected to provide a template for use in other chronic diseases. (*J Rheumatol* 2005;32:137–42)

Key Indexing Terms:

ARTHRITIS

TREATMENT GUIDELINES

PRIMARY CARE

Primary care providers are the cornerstone of arthritis care¹. Their role is particularly crucial in Canada, where access to specialists and other programs is dependent on referral by a primary care provider, most often a family physician or general practitioner. With the predicted increases in the prevalence of arthritis in the population^{1,2}, primary care providers (providers) must be well trained to distinguish self-limiting

problems from those leading to chronicity. They must also be trained to minimize the potential harm that accompanies many rheumatologic medications and to identify people who need to be referred to specialists. Several studies have demonstrated that providers may be poorly prepared for these tasks³⁻⁹. These attitudes and practices likely reflect inadequate training in musculoskeletal (MSK) problems received by many providers¹⁰. Enhanced MSK training through innovative rheumatology educational interventions needs to be implemented to improve the skills of providers.

A number of initiatives have been developed to aid the primary care management of arthritis, including clinical practice guidelines and algorithms¹¹⁻¹³. With more than 1000 new guidelines produced annually, it has become impossible for providers to determine which ones should be adopted in their clinical practice¹⁴. Passive distribution of guidelines also appears to have a very limited impact on practice^{15,16}.

Following the publication of a major report on the impact of arthritis in Ontario¹⁷, a provincially-appointed working group concluded that improvement in primary care management of arthritis was an important priority. This group commissioned a research team to work with rheumatologists,

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primary care providers and other health professionals, and people with arthritis to develop an intervention program to improve the primary care management of arthritis. The development of this program coincided with the publication of Ontario guidelines for the diagnosis and treatment of osteoarthritis (OA) and rheumatoid arthritis (RA)¹⁸, which were consistent with the guidelines of international rheumatology associations¹¹⁻¹³. The objective of this study was to evaluate an educational intervention for the diagnosis and treatment of arthritis in primary care.

MATERIALS AND METHODS

Design team. The educational intervention, entitled "Getting a Grip on Arthritis"[®], was designed by a taskforce consisting of provincial government representatives, health services researchers, health professionals, adults with arthritis, and staff from community health centers (CHC)¹⁹. CHC are nonprofit organizations funded by the provincial government that offer integrated primary healthcare to people who have difficulty accessing primary healthcare services. CHC employ salaried multidisciplinary healthcare teams.

Participants. Five CHC participated as intervention sites (4 urban, one rural); 2 CHC served as comparison (control) sites (one urban, one rural). All 7 sites employed at least 2 family physicians and 2 nurse practitioners in addition to health promoters and other regulated health professionals. As this was a demonstration project, CHC participation was voluntary and targeted to CHC with a population size and age distribution appropriate for an arthritis education intervention. Ministry officials polled their CHC to determine willingness to participate as intervention sites. Once intervention sites were identified, 2 additional sites were asked to participate as control sites matched on characteristics of the intervention sites (e.g., urban/rural, inner city, multicultural). Staff from the 5 intervention sites also participated in the design of this intervention (2 family physicians, one nurse and nurse practitioner, 3 health promoters, one executive director, and one occupational therapist).

Intervention. The structure of the intervention was developed using the findings from a systematic review of the implementation of clinical practice guidelines in primary care¹⁵. A needs assessment was conducted through the use of CHC provider and client focus groups and provider surveys to determine any additional issues that should be addressed during the intervention. The client and provider surveys also facilitated evaluation of the intervention and are described below.

The Getting a Grip on Arthritis intervention consisted of a 2-day workshop and followup reinforcement for CHC health professionals and encompassed features of social cognitive theory. These included skill development, the use of credible role models, opportunities for decision-making, and rewards and incentives using multiple approaches to behavior change²⁰. Davis and Taylor-Vaisey have reported improved adoption of clinical practice guidelines with implementation strategies that were multifaceted, practice-based, and community-based¹⁵. Therefore, the workshop was designed to consist mostly of small-group, hands-on activities, with ample opportunity for providers to interact with their local arthritis specialists. The acceptability of a multiple-modality intervention was confirmed through focus groups with CHC staff and clients. The workshop was also designed using a "train the trainer" principle whereby participants were expected to be a resource to their colleagues who were unable to attend. Through consultation with CHC staff, the design taskforce determined which vehicle would best support educational messages for healthcare providers and clients: a "toolkit" comprising written materials in various formats.

The content of the educational intervention focused on 10 best practices for arthritis care (best practices), which were derived from the Ontario guidelines¹⁸ (Table 1). Workshop sessions included: guideline review and

local adaptation of guidelines; nonpharmacologic interventions focusing on occupational therapy, physical therapy, exercise, social work, and the Arthritis Self Management Program (ASMP); appropriate referrals and communication with specialists; pharmacologic interventions; and MSK examination review with trained patient educators²¹. The program was accredited for 13.5 MAINPRO-C credits from the College of Family Physicians of Canada. Arthritis health professionals (e.g., Arthritis Society therapists and rheumatologists) were available in all CHC communities and were invited to participate in the workshop and meet CHC staff from their area. Providers returned to their CHC with plans for implementing the program. Written materials for CHC clients were developed in collaboration with communication consultants, vetted by CHC staff, and printed for mass distribution at the sites²². These tools, which included brochures and posters, were assessed at a grade 6 to grade 11 reading level, as deemed appropriate by CHC staff. Key messages developed for client materials were appropriate for many chronic diseases: know your diagnosis, maintain a healthy weight, work with your provider to identify an appropriate exercise program, understand your medications, and learn about the role of other health professions to help clients enjoy a healthy lifestyle in their community.

Methods for provider reinforcement included written materials for all CHC staff (laminated pocket card, newsletter) and site visits for specific learning needs such as exercise program evaluation (one site) and joint injection and aspiration techniques (one site). At 6 months post-intervention, all workshop participants were asked to complete a self-administered chart audit, followed by team meetings to discuss audit findings and reinforce best practices.

Reinforcement activities for clients were multifaceted and included community events and forums. Intervention CHC documented their local activities (e.g., media coverage, newsletters, and displays), new relationships (e.g., with local Arthritis Society staff, other allied health professionals and specialists), activities (e.g., arthritis information night), and new programs. Recommended books and videos were donated to local and CHC libraries in all intervention communities. The ASMP was also made available in all intervention communities. Individuals from several communities where the ASMP course was not available were trained to become ASMP course leaders.

Provider outcomes. Provider learning needs and identification of local barriers to care were determined through focus groups and a paper survey containing arthritis case scenarios and ratings of perceived barriers to provision of care and provider confidence in the management of MSK conditions^{1,2}. Impact on providers was measured through changes on the paper survey and key informant interviews one year after the workshop. The key informant interviews were conducted by an independent researcher. Providers also evaluated the chart audit process through written feedback. CHC staff from the control sites participated in the survey portion of the evaluation and were offered the intervention after the evaluation period.

Client outcomes. The primary outcome measurement for the impact of the intervention was the effect on CHC clients. Impact on clients was determined through a mailed survey administered to all eligible clients seen at the CHC for arthritis in the one year prior to the provider workshop (baseline survey), and a followup survey of CHC clients seen for arthritis in the 10 months after the provider workshop held February 5 and 6, 2000. The survey contained a cover letter with the instructions addressed to the individual client, in addition to a cover sheet in the 16 languages used at participating CHC, advising: "This is an important message. Please take it to someone who can translate."

The client survey questions consisted of demographics, client satisfaction with care, and recommendations for care that clients received for their arthritis. The Health Assessment Questionnaire was used to measure functional disability²³, and the Medical Outcome Study Short Form-36 general health perception question was used to determine client perception of health status²⁴. Questions were added to the followup survey to determine if clients recalled seeing the materials and educational events provided by

Table 1. Best practices for arthritis care: osteoarthritis (OA) and rheumatoid arthritis (RA). Derived from Holbrook AM (Chair) for the Ontario Musculoskeletal Therapy Review Panel. Treatment guidelines for osteoarthritis, rheumatoid arthritis, and acute musculoskeletal injury. Toronto: Queen's Printer of Ontario; 2000.

Best Practice	OA	RA
Clients receive education about self-management strategies and a contact for further information (e.g., CHC programs, Arthritis Society Help Line)	√	√
Clients receive a recommendation for exercise or referral to an exercise program or to a physiotherapist	√	√
Obese clients receive a recommendation for weight loss or referral to a weight loss group or professional	√	
Social support and coping is discussed with clients and counselling and referrals made as needed	√	√
Clients requiring pharmacologic treatment for pain receive acetaminophen up to 1000 mg 4 times per day as initial therapy	√	
Clients not responding to or not tolerating acetaminophen may progress to nonsteroidal antiinflammatory drugs (NSAID), advancing to higher doses as necessary	√	√
Clients with 2 or more of the following risk factors should avoid NSAID use: age > 75, history of peptic ulcer disease, history of gastrointestinal bleeding, cardiovascular disease. If NSAID cannot be avoided, clients should receive misoprostol, a proton pump inhibitor, or a selective cyclooxygenase-2 agent	√	√
Intraarticular corticosteroids or hyaluronans are considered for an OA painful knee	√	
Surgical referral is discussed with clients who continue to experience significant pain and functional disability despite optimal medical therapy	√	√
Providers initiate a rheumatology consultation for treatment for clients with suspected inflammatory arthritis		√

their CHC between February and December 2000. The Arthritis Society client database was also reviewed for differences in referral from participating CHC before and after the intervention. Ten questions from the client questionnaire that addressed 6 of the best practices were compared between intervention and control sites at baseline and followup. Chi-square tests were performed to compare proportions at baseline and post-intervention; 95% confidence intervals were also generated for outcome variables. Alpha of < 0.05 was considered statistically significant.

RESULTS

Data collected through the needs assessment indicated that both clients and providers required information about the importance of early referral and treatment of RA, risks and benefits of arthritis medications, principles of self-management, benefit of nonpharmacologic management (education, social support, and exercise), and an inventory of community and CHC arthritis resources (library books and videos, programs, and financial information). These data informed the development of the provider workshop and written tools as described in Materials and Methods.

Provider outcomes. The workshop was attended by 21 of 30 clinical staff (8 family physicians, 11 nurses/nurse practitioners, one occupational therapist, and one physiotherapist from the 5 intervention CHC). In addition, 5 health promoters and an executive director also attended the workshop. At followup, 11 (57.9%) intervention site providers reported increased confidence in performing a comprehensive MSK examination compared to one (12.5%) control site provider. Eight (40%) intervention site providers reported a change in their perception of barriers to rheumatology care from some

barriers to no barriers; there were no changes in the perceptions of control site providers. Provider feedback to the chart audits included comments that the exercise was efficient, simple, comfortable, and a good reminder tool and provided immediate feedback on personal gaps in arthritis related clinical practice behaviors. The weakness identified was the tight time frame in which the exercise had to be performed and the lack of independent validation of the data. Results of the key informant interviews indicated all providers agreed the project was valuable. Factors that contributed to the overall success of the project included a committed project coordinator at each site. In addition, links in both clinical and community programs within the CHC, a breadth of team members at the CHC, and the endorsement of "high status" members of the healthcare team contributed to the overall success. The impact of the project was perceived to be an improvement in arthritis knowledge as reflected in better assessment skills, more consistent pharmacologic management, and timely referral to specialist and allied health professionals. Team building and improved team functioning as a result of improved communication and collaboration within the established teams was also identified. Providers reported improved knowledge of and communication with community services and, for most CHC, new links with other community services and programs.

Patient outcomes. At baseline, 423 of 624 (67.8%) eligible and consenting clients with arthritis completed the survey and 376 of 593 (63.4%) completed the followup survey. Ninety-nine clients in the intervention group and 35 in the

control group completed both baseline and followup surveys. There were no measurable differences in demographics or health status at baseline or at followup between the intervention and control groups (Table 2). About one-quarter of the questionnaires were completed by proxy or translation. Survey participants were primarily older women, and the most frequently identified type of joint problem was osteoarthritis.

At baseline, both intervention and control groups responded similarly to questions specifically addressing the best practices (Table 3). The number of clients who reported receiving information on their type of arthritis had almost doubled from about 23% at baseline for both groups to 42.1% at followup for the intervention group. In addition, there was an increase in the number of clients who reported they were given adequate information about their arthritis medications and side effects. The intervention group reported significantly higher receipt of information regarding The Arthritis Society (Client Services) and other services available in their community. The Arthritis Society referrals were confirmed by The Arthritis Society client database, which demonstrated that referrals by intervention sites jumped from none in 1998 to 60 in the year 2000²⁵. In the control sites, referrals increased from none to 2.

At followup, about one-third of clients in the intervention group reported they were aware of arthritis educational training programs, received educational materials about arthritis, and read about arthritis events (compared to 8% to

18% of clients in the control group). In addition, 57.7% of clients in the intervention group saw posters about arthritis compared to 27.2% of clients in the control group. While only 11% to 13.4% of clients in the intervention group attended an arthritis educational training program, attended an arthritis event, or borrowed a video or book, this number was still significantly higher than those in the control group (0 to 4.8%).

DISCUSSION

Our demonstration project is one of the first to show changes in management of arthritis in a primary care setting. Of particular importance was the change in client knowledge regarding their type of arthritis, understanding their medications, and knowledge of community services; these are all essential features of chronic disease management²⁶. Despite the development of a plethora of new guidelines over the past decade, the adoption of guidelines in primary care has been of limited success¹⁵. Our intervention was grounded in clinical practice guidelines and targeted to the interface between care providers and clients. The model of partnership between care providers, researchers, and representatives from the provincial ministry of health in designing, implementing, and evaluating the intervention could be used as a template for other chronic conditions. This project also demonstrates a practical and effective approach to the implementation and dissemination of clinical practice guidelines at a grassroots level.

Table 2. Client demographics and characteristics. Values are given as n (%) unless otherwise indicated.

	Baseline		Followup	
	Intervention, n = 318	Control, n = 105	Intervention, n = 291	Control, n = 85
Age, yrs, mean (SD)	64.2 (15.0)	61.1 (14.8)	63.3 (14.4)	60.5 (15.8)
Health Assessment Questionnaire Disability Index*, mean (SD)	1.1 (0.7)	0.9 (0.7)	1.1 (0.8)	1.0 (0.8)
Female	222 (70.5)	73 (70.2)	204 (71.3)	60 (71.4)
Married	118 (37.3)	49 (47.1)	123 (43.3)	37 (44.6)
Completed post-secondary education	99 (31.4)	24 (24.0)	101 (35.1)	24 (29.6)
Employed	64 (20.2)	20 (19.4)	63 (22.0)	13 (15.7)
Born in Canada	233 (73.5)	78 (75.7)	213 (73.7)	58 (69.0)
Completed questionnaire for self	257 (86.2)	74 (73.3)	213 (77.2)	62 (75.6)
Questionnaire translated	21 (7.2)	13 (13.3)	17 (6.7)	12 (15.2)
Type of joint problem (multiple allowed) [†]				
Osteoarthritis	197 (61.9)	48 (45.7)	197 (68.9)	43 (51.8)
Rheumatoid arthritis	73 (23.0)	19 (18.1)	86 (30.1)	14 (16.9)
Other	95 (29.9)	25 (23.8)	114 (39.2)	40 (47.1)
Not sure	92 (28.9)	37 (35.2)	60 (21.0)	19 (22.9)
Health status				
Very good/excellent	75 (23.8)	27 (25.8)	56 (19.5)	17 (20.3)
Good	103 (32.7)	37 (35.2)	114 (39.7)	28 (33.3)
Fair/poor	137 (43.5)	41 (39.1)	117 (40.8)	39 (46.4)

* Low score: good health status, minimum 0, maximum 3. † Time since diagnosis was reported as unknown by many clients. Of those who reported at baseline, 82/211 (38.9%) in the intervention group reported duration of ≤ 5 years [vs 29/69 (42.0%) in the control group]; at followup 100/189 (52.9%) in the intervention group reported duration of ≤ 5 years [vs 27/49 (55.1%) in the control group].

Table 3. Proportion of clients to demonstrate change from baseline in best practices for arthritis care and recall materials and events.

	Baseline		p	Followup		p
	Intervention, n = 318 n (%) [95% CI]	Control, n = 105 n (%) [95% CI]		Intervention, n = 291 n (%) [95% CI]	Control, n = 85 n (%) [95% CI]	
Client given information on their type of arthritis (e.g., pamphlets, books, brochures, videos)	67 (22.4) [17.7–27.2]	22 (22.7) [14.3–31.1]	0.995	120 (42.1) [36.3–47.9]	18 (22.0) [13.0–31.0]	0.001
Client given adequate information about their arthritis medications and their side effects	174 (64.0) [58.2–69.7]	53 (55.8) [45.8–65.8]	0.158	180 (70.3) [64.7–75.9]	41 (52.6) [41.4–63.7]	0.004
Client given toll-free (1-800) or local phone number for The Arthritis Society	34 (11.0) [07.5–14.6]	4 (4.0) [00.1–07.8]	0.033	68 (24.2) [19.2–29.2]	7 (8.8) [02.5–15.0]	0.003
Client given adequate information about arthritis services available in their community	111 (39.4) [33.6–45.1]	38 (40.4) [30.5–50.4]	0.885	140 (51.1) [45.2–57.0]	26 (33.8) [23.2–44.4]	0.007
Client given adequate information about how to deal with their arthritis pain	150 (53.8) [47.9–59.6]	51 (53.7) [43.6–63.8]	0.989	170 (63.7) [57.9–69.5]	38 (48.7) [37.6–59.9]	0.018
Client received adequate education about their arthritis and how to manage it	154 (54.4) [48.6–60.2]	46 (48.9) [38.8–59.1]	0.356	173 (62.5) [56.7–68.2]	38 (49.4) [38.1–60.6]	0.038
Client's need for support and ability to cope with their arthritis adequately addressed	143 (51.4) [45.5–57.3]	45 (47.4) [37.3–57.5]	0.493	163 (61.3) [55.4–67.2]	39 (50.0) [38.8–61.2]	0.075
Provider discussed how client is coping with arthritis or how to get additional support for their arthritis	134 (43.6) [38.1–49.2]	49 (48.5) [38.7–58.3]	0.394	159 (57.0) [51.2–62.8]	37 (46.8) [35.8–57.9]	0.109
Provider discussed nutrition and healthy body weight in relation with client's arthritis	142 (46.0) [40.4–51.5]	49 (48.0) [38.3–57.8]	0.714	157 (55.7) [49.8–61.5]	40 (50.6) [39.6–61.7]	0.426
Provider recommended that client participate in an exercise program or do exercises for treatment of arthritis	145 (46.9) [41.3–52.5]	47 (46.1) [36.4–55.8]	0.882	155 (54.8) [48.9–60.6]	44 (55.7) [45.0–66.7]	0.884
At followup, clients were asked if they had...						
Heard about any arthritis educational training programs				97 (34.3) [28.7–39.8]	10 (12.2) [05.1–19.3]	0.001
Attended arthritis educational training program				38 (13.4) [9.4–17.4]	0 (0.0) —	0.001
Saw posters about arthritis				164 (57.7) [52.0–63.5]	22 (27.2) [17.4–36.9]	0.001
Saw or were given educational materials				92 (32.7) [27.2–38.3]	7 (8.5) [2.5–14.6]	0.001
Read about arthritis events				104 (37.1) [31.5–42.8]	15 (18.3) [9.9–26.7]	0.001
Attended arthritis events				32 (11.3) [7.6–15.0]	1 (1.2) [0–03.6]	0.002
Borrowed a video or book				32 (11.2) [7.6–14.9]	4 (4.8) [0.1–09.5]	0.058

A major limitation of this project is lack of potential generalizability resulting from the unique characteristics of CHC clients and providers compared to the fee-for-service environment. A further limitation, which had implications for the evaluation, is that the design of the project was concurrent with the intervention. While this may have enhanced overall endorsement of the project by participating CHC, it likely resulted in an underestimate of the changes from baseline in the intervention sites. The toolkit and provider learning reinforcement activities were not fully implemented in the CHC until the fall of 2000. This allowed limited time to demonstrate the full extent of the potential effectiveness of the intervention. In addition, the method of evaluation was limited to a cross-sectional survey at 2 time-points instead of a randomized controlled trial.

In light of the promising results of this pilot project, our

program has recently received funding for national implementation through Health Canada's Primary Health Care Transition Fund.

Our multifaceted integrated client-centered training program for the management of arthritis in primary care was successful in enhancing the provision of care for people with arthritis. Our next step will be to implement and conduct a rigorous evaluation of a national program.

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