physical therapists reported that they would use other interventions in addition to advice and exercise (manual therapy 27%, acupuncture 5%, electrotherapy 2%) and there was an increased focus on aerobic training (37%). More physical therapists reported that they would supervise exercise (95%) and provide written advice about home exercise (75%) during follow-up appointments, and more would use an exercise diary to monitor exercise adherence (43%). Changes appeared most pronounced in those physical therapists attending the training days supporting 'targeted exercise adherence' and 'individually tailored exercise' interventions. Some of the reported changes were maintained at the post-intervention evaluation, including lower reported rates of other treatments, greater supervision of exercise during follow-up (89%) and use of exercise diaries (49%). However, use of specific aerobic training had reverted to pre-training levels (15%), as had use of written exercise advice during follow-up appointments (69%).

Conclusion: Overall, participating in a dedicated training programme as part of a randomised trial changed some aspects of how physical therapists manage patients with knee OA. This suggests that attending training programmes, particularly those that are highly focused, are useful in terms of changing clinical practice, but multi-faceted approaches are likely to be needed to successfully maintain changes in clinical behaviour over time.

351
GETTING A GRIP ON ARTHRITIS: WEB-BASED CONTINUING HEALTH EDUCATION IMPROVES RURAL/REMOTE PRIMARY HEALTH CARE PROVIDERS' SATISFACTION AND CONFIDENCE WITH MANAGING OSTEOARTHRITIS

E. Badley †‡, L. Fleet §, M. Bell †, S. Lineker ‖·¶, V. Curran §, M. Del Pino #, F. Kirby §, A. Lyddiatt ††, L. Moore ‖, K. Simmons §, R. Sweezie ‖, P. Tugwell ‡‡, E. Ziesmann ‖. † *Univ. of Toronto, Toronto, ON, Canada;* ‡ *Arthritis Community Res. and Evaluation Unit, Toronto, ON, Canada;* § *Mem. Univ., St. John's, NL, Canada;* ‖ *The Arthritis Society, Toronto, ON, Canada;* ¶ *McMaster Univ., Hamilton, ON, Canada;* # *Hlth.Canada, Winnipeg, MB, Canada;* †† *Patient Partners in Arthritis, Toronto, ON, Canada;* ‡‡ *Univ. of Ottawa, Ottawa, ON, Canada*

Purpose: Osteoarthritis (OA) is highly prevalent in Canada's rural/remote communities. Primary health care providers serving these communities are often challenged with delivering optimal OA care and accessing relevant up-to-date information. *Getting a Grip on Arthritis,* a web-based continuing health education module with case-based content developed around best practice guidelines, was recently developed to address these issues. An evaluation of the program's effectiveness in improving primary health care providers' confidence and satisfaction with their ability to manage OA was performed.

Methods: An online learning module was developed for OA based on a needs assessment with primary health care providers, and input from an interdisciplinary expert panel. The module was piloted in two predominantly rural/remote areas of Canada with documented arthritis prevalence and health human resource shortages. These areas encompassed the North West Local Health Integration Network in Ontario and the Central Health Region in Newfoundland. A mixed methods evaluation was performed. This included 1) paired samples analyses of pre/post measurements of confidence and satisfaction with ability to manage arthritis and 2) an evaluation of module content and design. Confidence and satisfaction were measured on 10 point numerical rating scales (0 = not satisfied/not at all confident; 10 = extremely satisfied/confident).

Results: Thirty-four providers participated in the pilot, which exceeded our target of 30. Participants represented various primary health care professions, including physiotherapists, occupational therapists, nurses, and family physicians. After taking the module, satisfaction with ability to manage OA improved significantly ($p = 0.02$). Significant increases in confidence with different aspects of OA care were also observed. Participants' confidence also improved for the comprehensive musculoskeletal examination ($p = 0.02$), prescribing/recommending corticosteroids ($p = 0.02$), ordering/recommending serological tests ($p \leq 0.01$), and managing common musculoskeletal conditions ($p = 0.03$). The majority of respondents agreed that the module was consistent with stated objectives (97.5%), addressed their learning needs (87.2%) and was relevant to practice (80.0%). The planned use of relevant resources in practice and with patients highlighted the participants' commitment to change. Participant feedback highlighted the need for additional information relevant to professions other than physicians to better capture the importance of inter-professional care.

Conclusions: With knowledge gained from the online module, participants reported an increase in both satisfaction and confidence with managing OA. The module was also relevant to practice and the content addressed the participants' learning needs. The case-based format simulated interaction with 'real' patients and enabled participants to practice their diagnostic and management skills. Feedback is being incorporated into the final version of the module with plans for a national launch in 2014.

Epidemiology and Health Services Research

352
THE RELATIVE CONTRIBUTION OF MECHANICAL STRESS AND SYSTEMIC PROCESSES IN DIFFERENT TYPES OF OSTEOARTHRITIS: THE NEO STUDY

A.W. Visser, R. de Mutsert, S. le Cessie, M. den Heijer, F.R. Rosendaal, M. Kloppenburg, NEO Study Group. *Leiden Univ. Med. Ctr., Leiden, Netherlands*

Purpose: Obesity is a risk factor for osteoarthritis (OA) in both weight-bearing and non-weight-bearing joints. In the association between obesity and OA, both increased mechanical stress and systemic processes seem to be of importance, although it is unclear which mechanisms play a role in certain joints. To gain more insight into the relative contribution of mechanical stress and systemic processes to OA of weight-bearing and non-weight-bearing joints, we examined the association of surrogates for both mechanisms with OA of the knees, hands or both.

Methods: The Netherlands Epidemiology of Obesity (NEO) study is a population-based cohort including 6673 lean, overweight and obese participants aged 45–65 years. Weight (kg) and fat mass (kg) were measured, fat free mass (FFM) (kg) was calculated. The metabolic syndrome (MetS) was defined following the ATPIII criteria; based on measured waist circumference (cm), blood pressure (mmHg), triglycerides (mmol/L), HDL cholesterol (mmol/L), fasting glucose (mmol/L), and recorded medication use. Knee and hand OA were defined according to the ACR clinical criteria; pain and stiffness were measured using a standardized questionnaire, physical examination of the knees and hands was performed by trained research nurses. Odds ratios (OR) with 95% confidence intervals (CI) were calculated to associate surrogates for mechanical stress (weight, FFM) and systemic processes (MetS) with OA in knees alone, both knees and hands or hands alone, using individuals without knee or hand OA as reference group. Analyses were adjusted for age, sex, height, smoking, education and ethnicity, and either metabolic factors or weight. Finally, adjusted ORs were calculated for each OA type in three weight categories (<75 kg, 75–90 kg, >90 kg), stratified by MetS. Participants in the lowest weight category without MetS served as reference.

Results: After exclusion of participants with missing data (n = 45), data from 6628 participants were analyzed (median (IQR) age 56 years (50–61), BMI 26 kg/m^2 (23–28), 56% women). The estimated population prevalence of knee, both knee and hand, and hand OA were 10%, 4% and 8%, respectively. After adjustment for metabolic factors, knee OA was associated with both weight (OR 1.49 (95%CI 1.32,1.68)) and FFM (OR 2.05 (1.60,2.62)). Similar results were observed for OA in both knees and hands (OR 1.51 (95%CI 1.29,1.78) and 2.17 (1.52,3.10) respectively). Neither knee OA nor OA in both knees and hands were associated with MetS after adjustment for weight (OR 1.08 (95%CI 0.85,1.39) and (1.03 (0.72,1.46) respectively). In hand OA the opposite was observed; whereas no associations with weight and FFM were observed after adjustment for metabolic factors (OR 1.12 (95%CI 0.96,1.32) and 1.17 (0.83,1.63) respectively), hand OA remained associated with MetS, after adjustment for weight (OR 1.46 (95% CI 1.06,2.02)). The figure illustrates the relative contribution of weight as surrogate for mechanical stress and MetS as surrogate for systemic processes to OA of the knees (a) and hands (b). The adjusted ORs for knee OA were higher in higher categories of weight as compared with the lowest weight category. The adjusted OR of the highest weight category in individuals without MetS was 2.62 (95%CI 1.77,3.88) (Figure). The adjusted OR of highest versus lowest weight category in individuals with MetS was 2.30 (1.29,4.12). The presence of MetS, adjusted for the weight categories, did not result in a higher OR for knee OA (1.16 (95%CI 0.91,1.47)) (Figure). The same