with information about health benefits and selecting personally relevant motives and social support sources regarding physical activity, 3) an action planning intervention in which participants specified which physical activities they would do, when, where and for how long and 4) a combination of these interventions. Prior to the intervention, participants' leisure time physical activity in the past week was measured with items from the SQUASH. Also behavioural intentions, expected social support and planning behaviour with regard to leisure time physical activity were measured. Directly after the intervention, positive outcome expectations and self-efficacy were measured. After a week, physical activity measures were administered again.

Results: 208 Participants (71% female; mean age 62 years; 40% with a rheumatic disease) completed the study. Figure 1 displays the average change in physical activity for each intervention. Multiple regression analyses showed that both the motivational intervention ($\beta=0.22$) and action planning ($\beta=0.31$) significantly predicted a positive physical activity change and that these effects appeared additive as opposed to catalytic. The effects were not moderated by intention, expected social support or planning behaviour, nor mediated by outcome expectations or self-efficacy. The motivational intervention's effectiveness was weakly correlated with the number of personally relevant exercise motives identified ($r=0.22$) and the action planning's effectiveness was weakly related to the number of plans made ($r=0.19$) and to one's outcome expectations after the intervention ($r=0.21$).

Conclusions: These data suggest that using a motivational or action planning intervention seems beneficial for increasing physical activity in patients with a chronic disease, independent of one's intentions, expected social support and planning behaviour. The data also suggest that action planning is preferable over a motivational intervention and that the added value of a motivational intervention is minimal if action planning is used.

This study was limited by only measuring physical activity after a week and by using self-report. Future studies should investigate longer term effects, other potential moderators and mediators and interaction effects between other promising behavioural change methods.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.2137

THU0750-HPR THE EFFECTIVENESS OF THERAPEUTIC FOOTWEAR IN PATIENTS WITH RHEUMATOID ARTHRITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

M. Tenten-Diepenmaat¹, M. Leeden van der^{1,2}, T. Vliet Vlieland³, L.D. Roorda¹, J. Dekker^{2,4}. ¹Amsterdam Rehabilitation Research Center, Reade; ²Department of Rehabilitation Medicine, VU University Medical Center, Amsterdam; ³Department of Orthopaedics, Rehabilitation and Physical Therapy, Leiden University Medical Center, Leiden; ⁴Department of Epidemiology and Biostatistics, Amsterdam Public Health research institute, VU University Medical Center, Amsterdam, Netherlands

Background: Therapeutic footwear is recommended in guidelines for the treatment of foot problems in patients with rheumatoid arthritis (RA) and commonly prescribed and frequently used, especially in patients with established RA, foot deformities or erosions in foot joints.

Objectives: The objectives of this study were to summarize the effectiveness of therapeutic footwear on foot function, pain, physical functioning, health-related quality of life, adherence, adverse events and patient satisfaction in patients with RA.

Methods: All randomized controlled trials, randomized controlled cross-over trials, (quasi-experimental) clinical trials, and uncontrolled studies investigating the effect of therapeutic footwear in patients with RA related foot problems were included. Therapeutic footwear consists of custom-made or ready-made shoes. A literature search was conducted in The Cochrane Central Registry for Controlled Trials (CENTRAL), PubMed, EMBASE and PEDro up to January 19, 2017. Selection and inclusion of articles, data extraction (using a standardized template)

and assessment of methodological quality (using a checklist for between-group and within-group comparisons) was conducted by two independent reviewers. Quantitative data analyses was conducted, when quantitative data analysis was not possible qualitative data analysis was performed.

Results: Thirteen studies were identified. In five studies, one of which was of high quality, between-group differences were reported. In twelve studies, of which two were of high quality, within-group differences were reported. Qualitative data-syntheses for the within-group differences of custom-made therapeutic footwear resulted in weak evidence for the reduction of foot pain and improvement of physical functioning. Quantitative data-analyses of the within-group differences of ready-made therapeutic footwear resulted in a medium to large effect for the reduction of foot pain (SMD -0.68, 95% CI -1.00 to -0.37; $P=0.0001$; 162 participants), and a small to medium effect for the improvement of physical functioning (SMD -0.32, 95% CI -0.62 to -0.02; $P=0.04$; 128 participants). Qualitative data-analyses of the between-group differences of ready-made therapeutic footwear resulted in inconclusive evidence for foot pain and physical functioning.

Conclusions: In within-group designs, there is weak evidence for the reduction of foot pain and improvement of physical functioning after wearing custom-made therapeutic footwear. Furthermore, in within-group designs there is a medium to large effect of ready-made therapeutic footwear on the reduction of foot pain, and a small to medium effect on the improvement of physical function. Controlled, between-group designs resulted in inconclusive evidence. A definite RCT is necessary to investigate the between-group effectiveness of therapeutic footwear in patients with RA.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.5809

THU0751-HPR EFFECTIVENESS OF FOOT ORTHOSIS IN PATIENTS WITH RHEUMATOID ARTHRITIS RELATED TO QUALITY OF LIFE AND PAIN. A SYSTEMATIC REVIEW AND META-ANALYSIS

G. Gijon-Nogueron, L. Ramos-Petersen, S. Garcia-Mayor, J.M. Morales-Asencio. Nursing and Podiatry, University of Malaga, Malaga, Spain

Background: Foot pain and deformity is almost ubiquitous in RA and results in considerable physical and psychosocial impairment [1]. Epidemiological studies consistently suggest a 90% prevalence of foot pain despite advances in pharmacological therapy [2]. Mechanical and other non-pharmacological interventions such as orthoses and footwear, have an important role in managing foot pathology in patients with their systemic disease controlled [1,3]. The effectiveness of treatment with insoles, especially in early periods, was studied in a randomized controlled trial, which results suggested an immediate clinical improvement, reducing foot pain, disability and limited functionality.[1]

Objectives: The aim of this study is the effectiveness of foot orthosis in patients with rheumatoid arthritis in terms of quality of life and pain.

Methods: A systematic review and meta-analysis was conducted of randomized controlled trials.

Participants: Patients with rheumatoid arthritis were included. The criteria of exclusion were Juvenile Rheumatoid Arthritis, analysis of gait,

Intervention: Studies had to compare foot orthosis

Comparison: Other type of treatments, other type of foot orthosis, sham

Outcomes: Evaluation of Pain or Quality of life with any tool that measure this outcomes

The search was conducted in Cochrane, CINAHL, PubMed, EMBASE, LILACS, and Cuiden. An independent peer review was carried out. The Mesh term and fields used were foot, ankle, joint, rheumatoid arthritis, foot, orthosis, insole, foot orthosis.

Results: After the analysis of 71 studies, 4 were included for the systematic review. The 4 studies enrolled 285 participants. Follow-up periods varied from 6 to 30 months.

Only two studies were included in the meta-analysis [4,5], both of them with pain (measured with Foot Function Index) as the selected outcome.

A meta-analysis of the two trials showed that use of FO resulted in a non-significant improvement in disability compared with control (MD (95% CI): 4.37 (-6.24, 14.98); $N=64$) (Figure 1).

1.2 Foot pain (FFI) - 6 months

Conclusions: Foot orthoses showed improvements in pain and disability/quality of life, but no significant differences between groups were found. Future research needs to increase the number of RCTs in this topic because results are not conclusive.

References:

- [1] Woodburn J, Barker S, Helliwell PS. A randomized controlled trial of foot orthoses in rheumatoid arthritis. *J Rheumatol*. 2002;29:1377-83.
- [2] Otter SJ, Lucas K, Springett K, Moore A, Davies K, Young A, et al. Comparison

- of foot pain and foot care among rheumatoid arthritis patients taking and not taking anti-TNF α therapy: an epidemiological study. *Rheumatol Int.* 2011;31:1515–9.
- [3] Hennessy K, Woodburn J, Steultjens MPM. Custom foot orthoses for rheumatoid arthritis: A systematic review. *Arthritis Care Res (Hoboken)*. 2012;64:311–20.
- [4] Conrad KJ, Budiman-Mak E, Roach KE, Hedeker D, Caraballada R, Burks D, Moore H. Impacts of foot orthoses on pain and disability in rheumatoid arthritis. *J Clin Epidemiol.* 1996 Jan;49(1):1–7.
- [5] Novak P, Burger H, Tomsic M, Marincek C, Vidmar G. Influence of foot orthoses on plantar pressures, foot pain and walking ability of rheumatoid arthritis patients—a randomised controlled study. *Disabil Rehabil.* 2009;31(8):638–45.
- Disclosure of Interest:** None declared
DOI: 10.1136/annrheumdis-2017-eular.2739

THURSDAY, 15 JUNE 2017

HPR measuring health (development and measurement properties of PROs, tests, devices) —

THU0752-HPR DEVELOPMENT OF THE “TREATMENT BELIEFS IN KNEE AND HIP OSTEOARTHRITIS (TOA)” QUESTIONNAIRE

E.M. Seltén¹, J.E. Vriezekolk¹, H.J. Schers², M.W. Nijhof³, W.H. van der Laan⁴, R.G. van der Meulen-Dilling⁵, R. Geenen⁶, C.H. van den Ende¹.

¹Rheumatology, Sint Maartenskliniek; ²Primary and Community Care, Radboud University Nijmegen Medical Centre; ³Orthopaedics, Sint Maartenskliniek, Nijmegen; ⁴Rheumatology, Sint Maartenskliniek, Woerden; ⁵Physical Therapy and Manual Therapy, Partnership Velperweg, Arnhem; ⁶Psychology, Utrecht University, Utrecht, Netherlands

Background: Use of non-surgical treatment modalities in osteoarthritis (OA) is suboptimal¹, which might be influenced by patients' beliefs about treatments. An instrument for measuring treatment beliefs in OA is not available yet.

Objectives: To develop a questionnaire assessing patients' beliefs about treatment modalities of hip and knee OA: the “Treatment beliefs in OA (TOA) questionnaire” and to evaluate its clinimetric properties.

Methods: The item pool, drawn from two previous qualitative studies, comprised beliefs regarding 5 treatment modalities: physical activity, pain medication, physiotherapy, injections and arthroplasty. A draft questionnaire comprising beliefs on these 5 treatment modalities was developed (200 items, Table 1). Two samples of patients with knee or hip OA (N=840, N=700) were recruited from our hospital to test the clinimetric properties of the TOA questionnaire. Descriptive analyses, explorative factor analyses (EFA; sample 1) and confirmatory factor analyses (CFA; sample 2) were conducted for each treatment module separately. Internal consistency was assessed with Cronbach's Alpha (both samples). In order to examine test-retest reliability a subsample of sample 2 (N=67) was asked to fill out the final TOA questionnaire again after two weeks.

Results: 351 patients filled out the draft TOA questionnaire (sample 1), 289 patients filled out the final TOA questionnaire (sample 2), with a subsample (N=50) who filled out the final questionnaire twice. EFA yielded a two factor solution for each treatment modality. The factors were labeled “positive treatment beliefs” and “negative treatment beliefs”. The final TOA questionnaire comprised 60 items; items per treatment modality ranged from 9 to 14. CFA showed adequate fit indices for physical activities and physical therapy, while fit indices for the treatment modalities pain medication, injections and arthroplasty just failed to reach adequate cut-off values. Internal consistency was good to excellent for the subscale positive treatment beliefs (Cronbach's α between 0.84 and 0.90), and mediocre to acceptable for the subscale negative treatment beliefs (Cronbach's α between 0.66 and -0.79). Test-retest reliability was satisfactorily to good with ICCs from 0.66 to 0.88 and SEMs from 0.17 to 0.52.

Table 1: Example items in the TOA questionnaire

Items TOA-questionnaire	Disagree				Agree
I think [doing physical activities] leads to risks	1	2	3	4	5
My quality of life improves through [using pain medication]	1	2	3	4	5
I think [physiotherapy] causes pain	1	2	3	4	5
I can do household chores more easily through [an injection]	1	2	3	4	5
I think [a joint replacement] is pervasive	1	2	3	4	5

Conclusions: The TOA questionnaire is the first questionnaire assessing positive and negative beliefs regarding five treatment modalities for knee and hip OA. The TOA questionnaire showed moderate structural validity and good internal consistency and test-retest reliability. The TOA questionnaire is useful for a better understanding of patients' treatment beliefs. Future research will examine how treatment beliefs, in interaction with other variables, influence treatment choices.

References:

- [1] Churchill 2016. The development and validation of a multivariable model

to predict whether patients referred for total knee replacement are suitable surgical candidates at the time of initial consultation. *Can J Surg.* Vol. 59, No. 6, pp. 407–414.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.4815

THURSDAY, 15 JUNE 2017

HPR epidemiology and public health (including prevention)

THU0753-HPR PREDICTING THE FUTURE DEVELOPMENT OF SPONDYLOARTHRITIS AMONG PATIENTS WITH IDIOPATHIC ACUTE ANTERIOR UVEITIS USING REAL-WORLD DATA

M. Haroon¹, K.A. Betts², F. Mu², M. Skup³, J.K. Anderson³, A.D. Joshi³.

¹Division of Rheumatology, University Hospital Kerry, Tralee, Ireland; ²Analysis Group, Boston; ³AbbVie Inc., North Chicago, United States

Background: Previous studies have suggested an association between idiopathic acute anterior uveitis (AAU) and spondyloarthritis (SpA), including showing that at least 40% of AAU patients have undiagnosed SpA. However, the clinical factors to predict the incident diagnosis or future development of SpA remain poorly recognized.

Objectives: The objectives of this study were: 1) to describe the patient characteristics of AAU patients with and without SpA diagnosis, and 2) to identify the predictive factors of SpA diagnosis among AAU patients using real-world data.

Methods: Adult patients with at least one diagnosis of AAU (ICD-9-CM: 364.01 or 364.02) were selected from a large US insurance claims database (01/01/2008–06/30/2015). The first AAU diagnosis was defined as the index date. Patients were required to have at least 6 months of continuous data availability before the index date. Patients with intraocular surgery, penetrating or blunt eye trauma, or a diagnosis of rheumatoid arthritis or SpA on or prior to the index date were excluded. Potential predictive factors for subsequent diagnosis of SpA included demographic characteristics, type of AAU (primary [first diagnosis] vs. recurrent), SpA-related comorbidities, and healthcare resource utilization prior to the index date. Factors predictive of SpA diagnosis were selected into a multivariable Cox proportional hazards model based on statistical significance and clinical relevance. Hazards ratios (HR) and p-values were estimated for each factor.

Results: A total of 48,822 patients with AAU were included, and among them, 1,032 patients were newly diagnosed with SpA during the follow-up period which was 24 months on average. Patients with SpA were younger (45.7 vs. 50.4 years), more likely to be male (52% vs. 42%), more likely to have recurrent AAU (44% vs. 29%), back pain (21% vs. 13%), SpA-related comorbidities including inflammatory bowel disease (IBD) (4% vs. 1%) and psoriasis (3% vs. 1%), and more likely to use corticosteroids (45% vs 40%). Predictive factors in the final Cox model were: male vs. female (HR=1.55; p-value<0.01), age<45 vs. $\geq$ 45 years old (1.65; <0.01), recurrent vs. primary AAU (1.94; <0.01), back pain under age 45 vs. no back pain (1.90; <0.01), back pain above age 45 vs. no back pain (1.46; <0.01), psoriasis (5.16; <0.01), IBD (2.50; <0.01), chiropractor/physical therapist visits (1.29; 0.01), conjunctivitis (1.23; 0.02), nonsteroidal anti-inflammatory drugs use (1.44; <0.01), use of conventional synthetic disease-modifying anti-rheumatic drugs (1.32; 0.05), joint pain (1.14; 0.19), imaging test use (1.03; 0.74), corticosteroids use (1.07; 0.33), and enthesitis/heel pain (1.13; 0.36). When sacroiliitis was included in the model, results remained largely similar.

Conclusions: There are significant differences among isolated AAU patients and AAU patients that developed SpA later. The most predictive factors of SpA diagnosis were male, age<45 years, recurrent AAU, back pain, and other extra-articular manifestations of SpA such as IBD and psoriasis. Since delayed diagnosis is common among SpA patients, identifying such predictive factors can help inform risk stratification.

Disclosure of Interest: M. Haroon Grant/research support from: AbbVie and Pfizer, K. Betts Consultant for: AbbVie, F. Mu Consultant for: AbbVie, M. Skup Employee of: AbbVie, J. Anderson Employee of: AbbVie, A. Joshi Employee of: AbbVie

DOI: 10.1136/annrheumdis-2017-eular.3028

THU0754-HPR WORK STATUS IN WOMEN WITH FIBROMYALGIA – A 12-YEAR FOLLOW UP STUDY

S. Johannesson¹, L. Nordman^{2,3}, M. Joelsson¹, K. Mannerkorpi², A. Bergenheim^{1,2,3}. ¹Närhälsan rehabilitation centre, Region Västra Götaland; ²Institute of Neuroscience and Physiology/Physiotherapy, Sahlgrenska Academy, University of Gothenburg, Gothenburg; ³Närhälsan Research and Development Primary Health Care, Region Västra Götaland, Sweden

Background: Fibromyalgia (FM) affects approximately 1–3% of the general population in the Western world and about 10% have been found to report Chronic Widespread Pain (CWP). The work ability is often affected in persons with FM and CWP. Previous research has shown a small improvement of symptoms over time in patient with FM and CWP. Sustain in work has been