and Hand), STEF (Simple Test for Evaluating Hand Function), and Purdue Pegboard.

Methods: We developed the following equipment: Type U to imitate extension limitation of metacarpophalangeal (MCP) joints seen in ulnar deviation; Type B which imitates flexion deformity of the distal interphalangeal (DIP) joints by seen in boutonniere deformity; and Type S which imitates flexion limitation of proximal interphalangeal (PIP) and interphalangeal (IP) joints by reversing the upper and lower ends of the Oval-8 Finger Splint (Fukui Co. Ltd, Japan). Types U and S were fitted on HV (index to pinky). RSE was evaluated using DASH, STEF and Purdue Pegboard in hand-finger function evaluation. Twenty-four RA patients with hand-finger deformation and Forty-one HV were included in this study to evaluate the equipment.

Results: Mean $\pm$ SD ages for RA patients was 67.4 ± 8.0 years (95.8% female) and 38.2 ± 17.7 for HV (63.4% female), respectively. Total hand-finger deformities for RA patients were 23 hands for ulnar deviation, 66 fingers for swan-neck deformity, and 33 fingers for boutonniere deformity. Randomization for RA patients was as follows: 13 DASH, 5 (10 hands) STEF, and 6 Purdue Pegboard. 10 HV were assigned to DASH, 10 to Purdue Pegboard, and 14 (28 hands) to STEF. HV were evaluated with RSE and without RSE. For DASH, STEF, and Purdue Pegboard, RA patients showed significant functional loss compared to HV. Significant function loss in RA patients was also observed with the RSE. However, no differences were seen between the RA group and the HV with RSE group (figure 1).

Abstract THU0734HPR – Figure 1 Purdue pegboard scores of RA, RSE and HV groups

Conclusions: We developed the RSE, which allows for one to experience the decrease in function with RA hand-finger deformity. Our study showed that RSE use can indeed allow this experience. By using RSE, health care workers, patient caretakers and early RA patients can experience joint limitation of RA for educational purposes, personalised rehab programs, and development of self-help tools.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.3416

THU0735-HPR HOW RHEUMATOLOGY SPECIALIST NURSE DETECTS SMOKING HABIT IN RHEUMATOID CHRONIC INFLAMMATORY DISEASE PATIENTS

M. Serra Miralles¹, F. Abella², N. Montaña¹, M. Mateu¹, A. Palau¹, M. Conde¹, L. Roselló¹. ¹Rheumatology; ²Psychology, Hospital Santa Maria, Lleida, Spain

Background: Inflammation plays a significant role in the development of atherosclerosis and cardiovascular disease (CVD). Patients with chronic inflammatory disease (CID) have an increased risk of CVD. Smoking is one of the main risk factors for CVD and a predictor of poor response to treatment and poor prognosis.

Objectives: We aimed to describe the role of a rheumatology specialist nurse in the detection of smoking habit and dependence to nicotine in CID patients before the start of an interventionism plan to avoid it in CID patients.

Methods: All CID patients attended in a nurse rheumatologist unit, during one month, were asked for smoking habit. We determined the characteristics, onset of smoking and number of cigarettes per day. The Fagerström test was used to establish the nicotine dependence (ND) (score >5) and the Richmond test for predicting abstinence following intervention to stop smoking (score >5). Exhaled CO level Coximetry was also recorded. We planned an interventionism consenting in health advice provided by a nurse and the derivation to a smoke unit.

Results: 22 patients were identified. 12 (50.0%) were female and mean age was 46.0 (SD 10.5). 14 (63.6%) suffered Rheumatoid Arthritis, 6 (27.3%) Ankylosing Spondylitis and 2 (9.1%) Psoriatic Arthritis. 5 (22.7%) subjects were under

biological treatment. Mean number of cigarettes smoked per day and smoking years were 16.0 (SD 8.9) cigarettes and 27.2 (SD 11.7) years respectively. Up to 5 out of 22 (22.7%) subjects had high ND. Patients with ND had higher exhaled CO levels than non ND subjects (24.6 [SD 6.0] vs. 17.9 [SD 12.2] p-value 0.160). We observed no differences in age, sex, rheumatoid diagnosis, years smoking or cigarettes per day between both groups. Active treatment with biological drugs was significantly associated with ND (60.0 vs. 14.3%, p-value 0.046). One out of five patients with ND had good abstinence prediction according to Richmond test.

Conclusions: Nearly one out of five smoking CID subjects had severe ND. Treatment with biological drugs was related to ND. Interestingly, most of the ND subjects had good prediction for smoking cessation. Therefore, the development of a nurse program to detect smoking and our interventionism plan to avoid smoking habit are of enormous interest.

REFERENCES:

- [1] Oliver S, Leary A. The value of the nurse specialists' role: Pandora initial findings. *Musculoskeletal Care* 2010;8:175-7.
- [2] Soderlin MK, Petersson IF, Geborek P. The effect of smoking on response and drug survival in rheumatoid arthritis patients treated with their first anti-TNF drug. *Scand J Rheumatol* 2012;41:1-9.
- [3] Chang K, Yang SM, Kim SH, Han KH, Park SJ, Shin JI. Smoking and rheumatoid arthritis. *Int J Mol Sci* 2014;15:22279-95.
- [4] Roelsgaard IK, Thomsen T, Ostergaard M, et al. The effect of an intensive smoking cessation intervention on disease activity in patients with rheumatoid arthritis: study protocol for a randomised controlled trial. *Trials* 2017;18:570.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.4105

THU0736-HPR THE EFFECTIVENESS OF SHORT TRAINING IN PSYCHOLOGICAL SUPPORT FOR NURSES IN RHEUMATIC CARE

M. Fusama¹, H. Nakahara², K. Higashi¹, M. Mori³, M. Mabuchi⁴, Y. Sakai⁵, T. Motonaga⁶, T. Takeuchi⁷. ¹Division of Nursing; ²NTT West Osaka Hospital, Osaka; ³Jikei University School of Medicine; ⁴Tokyo University of Agriculture and Technology; ⁵Atomi University; ⁶Teikyo University; ⁷Department of Internal Medicine, Keio University School of Medicine, Tokyo, Japan

Background: Patients with rheumatoid arthritis (RA) often suffer from psychological concerns.¹ There is a lack of psychology specialists in many hospitals and clinics. According to EULAR, nurses should undertake a significant portion of providing psychological support to patients.² However, in Japan nurses involved in clinical practice often do not have sufficient time and opportunity to receive adequate education on psychological support.

Objectives: The aim of this study is to evaluate nurses' understanding of basic psychological concepts and the efficacy of a short psychology workshop for nurses in RA clinical care.

Methods: A clinical psychotherapist provided a lecture on psychological support once for a period of 30 min, followed by 1 hour of role-play groupwork. The lecture focused on basic psychological support including concepts of "listening", "acceptance", "empathy", "open question", "closed question" and "patient-centred perspective". Group work focused on applying the aforementioned concepts. Nurses were asked before and after workshop regarding their understanding and opinions on the necessity and feasibility of psychological support, as well as their motivation for implementation. Nurses' opinions were evaluated on a 1-7 rating scale (1=not at all, 7=full). Client Satisfaction Questionnaire-8 (CSQ-8J) was utilised to assess satisfaction with the workshop. Data analyses were performed with Wilcoxon signed rank test.

Results: 53 nurses (M/F: 1/52) participated in this study. The average of ages, clinical experience and clinical experience in RA care were 45.5 years old, 21.0 and 7.9 years, respectively. Nurses' opinions regarding the necessity and feasibility of psychological support in general, as well as their motivation for providing psychological support statistically significantly increased post-workshop (necessity: p=0.0052, feasibility: p<0.0001, motivation: p=0.0033).

Nurses' answers regarding their current application of these concepts in clinical practice were as follows: mean $\pm$ SD; listening: 5.15 ± 1.20 , empathy: 5.06 ± 1.18 , acceptance: 4.71 ± 1.18 , open question: 4.80 ± 1.31 , closed question: 4.49 ± 1.47 . The understanding of these concepts was statistically significantly higher after the workshop (p<0.0001 for each concept). Moreover, the feasibility of all the above concepts was rated as statistically significantly higher post-workshop. (p<0.001 for each concept). The necessity of adopting a patient-centred perspective was also judged as statistically significantly higher post-workshop (p<0.001). Based on CSQ-8J, satisfaction with the workshop was overall high.

Conclusions: This is the first report evaluating the effectiveness of brief psychological workshops for nurses in rheumatic care in Japan. This preliminary study

demonstrated that even a brief workshop appears effective for assisting and encouraging nurses in providing psychological support to patients. Further studies of training methods and of nurses' application of the skills acquired in such training are ongoing.

REFERENCES:

- [1] Hyrich K, et al. *Ann Rheum Dis* 2006;65:895–8.
- [2] van Eijk-Hustings Y, et al. *Ann Rheum Dis* 2012;71:13–9.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.4055

THU0737-HPR THE EFFECTIVENESS OF RELAXATION EXERCISES ON PAIN, FUNCTIONAL LEVEL AND MUSCLE STRENGTH IN PATIENTS WITH TOTAL KNEE ARTHROPLASTY: A PRELIMINARY RESULTS

M. Eymir¹, B. Ünver¹, V. Karatosun². ¹*School of Physical Therapy and Rehabilitation;* ²*Department of Orthopaedics and Traumatology, School of Medicine, Dokuz Eylül University, Izmir, Turkey*

Background: Total Knee Arthroplasty (TKA) is a common procedure performed mainly due to advanced osteoarthritis (OA), pain, physical disability and reduced quality of life. However, approximately 20% of the patients respond poorly to the surgery and chronic pain and disability following TKA remains a major health burden for many patients. Among the most well documented predictors of poor outcome following TKA is pain catastrophizing. Inadequate pain relief can cause impaired functional performance, increased skeletal muscles tension which are close to surgery related incision site, longer length of hospital stay, unnecessary psychological distress and decreased patient satisfaction. There is high need of developing treatments aimed at improving self-management for patient with TKA at early postoperative period.

Objectives: The aim of this study is to investigate the effectiveness of progressive muscle relaxations exercises (PMR) on pain coping, physical function and muscle strength among patients with TKA due to OA.

Methods: The study group consisted of 22 patients (33 knees), who underwent primary TKA because of OA were consecutively allocated to an intervention group (n=11, with mean age; 66.18±13.29 years), and were allocated to a control group (n=11, with mean age; 62.45±7.28 years). After surgery, all patients underwent the same rehabilitation program. The intervention group also was instructed pre-operative patient education about PMR exercises, and the intervention group received PMR exercises focusing on reducing overall body tension, anxiety and pain managed by a physiotherapist. Patients were evaluated regarding the pain (Numeric Pain Rating Scale (NPRS)), muscle strength, knee function score (Hospital for Special Surgery (HSS) score), pain-related fear (Tampa Scale for Kinesiophobia (TSK)), anxiety and depressive symptoms (Hospital Anxiety and Depression Scale (HADS)) and quality of life (Short-Form 12 Health Survey (SF-12)). Functional activities were evaluated using the Iowa Level of Assistance Scale and walking speed was evaluated using the Iowa Ambulation Velocity Scale. Also functional outcomes were evaluated with timed up and go (TUG) test and 10-metre walk test (10 MWT). Patients were evaluated preoperatively and at discharge.

Results: At baseline, demographic characteristics were similar in groups and there was no statistically difference between groups ($p>0.05$). It was determined at postoperatively that; the intervention group had better results in terms of reduction of pain severity ($p=0.001$), improvement of HADS anxiety level ($p<0.030$), pain-related TKS level ($p<0.035$) and SF-12 mental component score ($p<0.011$). When the HSS knee scores and quadriceps muscle strength were compared, there was statistically difference between groups and the two outcomes scores were lower in control group after surgery ($p<0.040$, $p<0.012$, respectively). There were no statistical differences between groups for other outcomes after TKA ($p>0.05$).

Conclusions: The current results suggest that the PMR exercises at early stage after TKA might be an effective method for patient rehabilitation outcomes. However, in this comparison to obtain more comprehensive results studies on larger series are needed. In this way, a more uniform and objective data can be achieved.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.5907

THU0738-HPR COMPARISON OF THE FUNCTIONAL PROFILE OF THE FOOT BETWEEN THE PATIENTS WITH PATELLOFEMORAL OSTEOARTRITIS AND TIBIOFEMORAL OSTEOARTHRITIS

N.B. Sari¹, H. Güney Deniz², G. Baltacı¹, on behalf of Hande Güney Deniz, Gul Baltacı. ¹*Physical Therapy and Rehabilitation Department, Guven Hospital;* ²*Physical Therapy and Rehabilitation Department, Hacettepe University, Faculty of Health Science, Ankara, Turkey*

Background: The biomechanics of the patellofemoral (PF) joint are distinct from the tibiofemoral (TF) joint and hence, interventions that have been designed to reduce pain and improve function in those with tibiofemoral disease may be inappropriate for those with Patellofemoral OA (PFOA). Therefore, patients with PFOA have been recently considered a subgroup different from patients with Tibiofemoral OA (TFOA). Loading asymmetries of the foot, discrepancy in foot contact area, and excessive increase in plantar pressure are associated with knee OA patients but there is lack of information that how PFOA or TFOA affect the foot profile.

Objectives: The purpose of this study was to investigate the foot profile differences between PFOA and TFOA patients and also compare these foot profiles with healthy individuals.

Methods: Twenty-nine patients with unilateral knee OA and 14 age-matched controls (median age=42.5 years, median BMI=23.8 kg/m²) were included in the study. The patients were divided into two groups; PFOA group (n=16, median age=52.5 years, median BMI=26.7 kg/m²) if they had a radiographic Kallgren and Lawrence (KL) score grade 2 or 3 in the PF joint, which was greater than KL score for the TF compartments; TFOA group (n=13, median age=54 years, median BMI=26.6 kg/m²) if they had a radiographic KL score grade 2 or 3 in the TF joint, which was greater than KL score for the PF compartments. Plantar pressure distribution was recorded by Digital Biometry Scanning System and Millettix software (DIASU, Italy). The static test was used to determine the maximum foot pressure (N/cm²) of the foot, forefoot weight ratio, rarefoot weight ratio, total load and foot angle axis (FAA). Kruskal Wallis test was used to compare the affected side of TFOA and PFOA groups with the control group. After application of the Bonferroni correction, Mann Whitney-U was used to compare the two-group differences.

Results: The age ($p=0.179$) and BMI ($p=0.150$) were similar between the groups. There were no differences on the affected side maximum foot pressure ($p=0.603$), forefoot weight ratio ($p=0.247$), rarefoot weight ratio ($p=0.240$) and total load ($p=0.599$) between TFOA, PFOA and control groups. FAA was higher in TFOA group [median-IQR: 17.0°(13.3°–35.4°)] when compared to PFOA ($p<0.001$) and control group ($p<0.001$). In addition, foot angle axis was lower in PFOA groups [median-IQR: 9.4°(1.5°–19.5°)] than control group [median-IQR: 13.4°(10.0°–15.8°)] ($p=0.005$). A reference value is appreciable if found to be between 12°–16°.

Conclusions: The angle of the foot plays an important role on optimal weight distribution during walking. Changing the angle of the foot may affect all other joints and create a modifying effect on the moment around the lower extremity. PFOA patients presented lower foot angle axis than normal values while TFOA patients presented higher angles. This may indicate that the intervention should be design for the joint involvement in the knee OA patients.

REFERENCES:

- [1] Hinman RS, Crossley KM. Patellofemoral joint osteoarthritis: an important subgroup of knee osteoarthritis. *Rheumatology (Oxford)* 2007;46(7):1057–62.
- [2] Komaat PR, Bloem JL, Ceulemans RY, Riyazi N, Rosendaal FR, Nelissen RG, Carter WO, Hellio Le Graverand MP, Kloppenburg M. Osteoarthritis of the knee: association between clinical features and MR imaging findings. *Radiology* 2006;239(3):811–7.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.3240

THU0739-HPR EFFECTIVE PREVENTION AND MANAGEMENT OF OSTEOPOROTIC FRACTURES: A SYSTEMATIC LITERATURE REVIEW OF NON-PHYSICIAN HEALTH PROFESSIONALS' INTERVENTIONS FOR A EULAR POINTS-TO-CONSIDER PROJECT

N. Wilson¹, E. Hurkmans², J. Adams¹, T. Stamm³. ¹*Faculty of Health Sciences, University of Southampton, Southampton, UK;* ²*Social Affairs and Health, Ecorys, Rotterdam, Netherlands;* ³*Center for Medical Statistics, Informatics and Intelligent Systems, Medical University of Vienna, Vienna, Austria*

Background: Osteoporotic fractures are a global concern due to associated patient mortality, morbidity and health service expenditure. Optimal care provided