circulating auto-reactive B cells in patients with PR3-AAV, and suggests that PR3-specific B cells are associated with disease activity and may represent a promising biomarker to predict relapse risk in patients in clinical remission. The progressive enrichment in PR3-specific B cells during the B-cell maturation steps in patients suggest that auto-reactive B cells are actively selected and escape peripheral tolerance checkpoints.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.6505

THURSDAY, 15 JUNE 2017

HPR mind over matter - patients perspectives

OP0138-HPR DO PATIENTS' TREATMENT BELIEFS AFFECT TREATMENT CHOICES IN KNEE AND HIP OSTEOARTHRITIS?

E.M. Selden¹, R. Geenen², H.J. Schers³, F.H. van den Hoogen¹, R.G. van der Meulen-Dilling⁴, W.H. van der Laan⁵, M.W. Nijhof⁶, C.H. van den Ende¹, J.E. Vriezekolk¹. ¹Rheumatology, Sint Maartenskliniek, Nijmegen; ²Psychology, Utrecht University, Utrecht; ³Primary and Community Care, Radboud University Nijmegen Medical Centre, Nijmegen; ⁴Physical Therapy and Manual Therapy, Partnership Velperweg, Arnhem; ⁵Rheumatology, Sint Maartenskliniek, Woerden; ⁶Orthopaedics, Sint Maartenskliniek, Nijmegen, Netherlands

Background: Patients' beliefs about treatment modalities for knee/hip osteoarthritis (OA) might influence their treatment choices. The Theory of Planned Behavior predicts that patients' beliefs, the norms and values of one's social environment (subjective norm) and one's perceived self-efficacy influence behaviour¹. Moreover, symptom severity may influence treatment choices². However, these relationships have not been studied yet in the context of treatment decision-making.

Objectives: To test whether treatment beliefs, subjective norm, perceived self-efficacy and symptom severity were associated with intended treatment choices in OA.

Methods: Patients with knee/hip OA who visited the Sint Maartenskliniek in 2015 and 2016 (N=700) were invited to fill out a booklet. The Treatment beliefs in OsteoArthritis questionnaire was used to assess positive and negative treatment beliefs regarding five treatment modalities: physical activities, pain medication, physiotherapy, injections and arthroplasty. Other measures were demographic and clinical variables, self-efficacy (ASES), and symptom severity (WOMAC). Associations between variables were assessed in three models (Figure 1): 1) whether treatment beliefs are associated with intended treatment choice (model 1); 2) whether treatment beliefs, subjective norm and perceived self-efficacy are associated with intended treatment choice (model 2); 3) whether treatment beliefs, subjective norm, perceived self-efficacy and symptom severity are associated with intended treatment choice (model 3). Path analyses were conducted to examine the hypothesized associations.

Results: 289 patients filled out the booklet. Model 2 had the highest explained variance for each of the treatment modalities (range 32–45%). Positive treatment beliefs and subjective norm were consistently associated with intended treatment choice across all treatment modalities. Negative treatment beliefs were associated with intended treatment choices for pain medication and arthroplasty. Perceived

Figure 1a: Model 1

Figure 1b: Model 2

Figure 1c: Model 3

symptom severity was not related to intended treatment choices. No other associations were found.

Conclusions: This is the first study that found empirical support for the relationship between treatment beliefs and treatment choices. The findings suggest that positive beliefs about treatment modalities and the norms and values of one's social environment are related to a specific treatment choice for knee/hip OA and should be addressed in the clinician's consulting room.

References:

- [1] Ajzen, I. (1991). The Theory of Planned Behavior. *Organ Behav Hum Dec* 50. 179–211.
- [2] Rosemann (2007). Health service utilization patterns of primary care patients with osteoarthritis. *BMC Health Serv Res* 7: 167.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.4834

OP0139-HPR REDUCING ARTHRITIS FATIGUE - CLINICAL TEAMS (RAFT) USING COGNITIVE-BEHAVIOURAL APPROACHES: AN RCT

S. Hewlett¹, N. Ambler², C. Almeida¹, P. Blair³, E. Choy⁴, E. Dures¹, W. Hollingworth⁵, B. Kadir³, J. Kirwan³, Z. Plummer¹, C. Rooke⁵, J. Thorn³, J. Pollock¹ on behalf of RAFT Study Group. ¹University of the West of England, Bristol; ²Southmead Hospital; ³University of Bristol, Bristol; ⁴University of Cardiff, Cardiff; ⁵Royal Royal Infirmary, Bristol, United Kingdom

Background: RA fatigue is common. Group Cognitive Behavioural Therapy by CBT therapists is effective¹ but few rheumatology teams have psychologists, thus we trained rheumatology teams to deliver RAFT, a cognitive behavioural approach (CBA).

Objectives: To test if usual care plus a group CBA course for RA fatigue delivered by rheumatology teams reduces fatigue impact more than usual care alone, in a randomised controlled trial.

Methods: A pair of rheumatology nurses/OTs in each of 7 UK hospitals were trained in RAFT. RAFT is 6, weekly 2hr group sessions and a consolidation session (wk 14). Links between thoughts, feelings and behaviours (pacing, communication, sleep, stress) are addressed, with daily diaries of energy expenditure and weekly goal-setting. Usual care was a 5min discussion of the Arthritis Research UK fatigue booklet. Entry criteria were RA, Bristol RA Fatigue (BRAFF-NRS) severity $\geq 6/10$ and no recent major medication change. Primary outcome was fatigue impact (BRAFF-NRS impact, 0–10) at 26 wks; plus wider aspects of fatigue (BRAFF-Multi-Dimensional Questionnaire), pain, disability, sleep, quality of life, mood, self-efficacy, patient global opinion, valued life activities & disease activity. Intention-to-treat regression analysis involved adjustment for baseline scores and centre.

Results: 308/333 randomized patients completed 26 wks. The 25 who withdrew had similar (10yr) disease duration but were older (69 vs 62.4 yrs). Baseline fatigue impact was similar for RAFT (n=156, BRAFF-NRS 7.10, SD 1.7) and controls (n=152, 7.23, SD 1.6), as were all clinical variables. At 26 wks the RAFT arm had significantly less fatigue impact than controls (BRAFF-NRS 5.74, SD 2.4 vs 6.36, SD 2.4). Mean BRAFF-NRS impact was reduced by -1.36 ($p<0.001$) in RAFT vs -0.88 in controls ($p<0.004$). Regression analysis showed the difference between changes in fatigue impact NRS was -0.59 in favour of RAFT (CI -1.11, -0.06). Regression analysis also showed significant differences in secondary outcomes in favour of RAFT: BRAFF-MDQ total fatigue -3.42 (CI -6.44, -0.39); Living with Fatigue -1.19 (CI -2.17, -0.21); Emotional Fatigue -0.91 (CI -1.58, -0.23); and RA self-efficacy (RASE, +3.05, CI 0.43, 5.66). There were no differences between arms for changes in fatigue severity or other clinical variables.

99% of RAFT patients would definitely recommend the course to others compared to 50% controls ($p<0.001$). 90% of RAFT patients rated satisfaction $\geq 8/10$ (including 62% rating 10/10); in comparison 50% controls rated satisfaction $\geq 8/10$ (including 26% rating 10/10, ($p<0.0001$)). Over 26 weeks 20 control patients sought extra appointments for fatigue help compared to 8 RAFT patients (14.2% vs 5.3%, $p<0.01$).

Conclusions: Rheumatology teams delivering a manualized CBA group intervention addressing fatigue impact, not only improve RA fatigue impact, but also emotional & overall fatigue, living with fatigue and self-efficacy, with very high patient satisfaction. Providing rheumatology teams with CBA skills is a potential new therapeutic approach to change practice and improve patient outcome.

References:

- [1] Hewlett et al, *ARD* 2011;70:1060–7.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.1877

OP0140-HPR ACCEPTANCE AND COMMITMENT THERAPY: A RETROSPECTIVE STUDY OF OUTCOMES FROM A HOSPITAL-BASED, GROUP, PAIN REHABILITATION PROGRAMME IN RHEUMATOLOGY SERVICES IN THE SOUTH EAST OF IRELAND

N. Nealon Lennox^{1,2}, S. O'Neill², A. Hannigan¹. ¹GEMS, University Limerick, Limerick; ²Psychology, Ulster University, Derry, Ireland

Background: Acceptance and Commitment Therapy (ACT) is a form of cognitive

behavioural therapy (CBT), which focuses on psychological flexibility and behavior change. ACT has been advocated for the treatment of Persistent Pain. A systematic review concluded that ACT is efficacious for enhancing physical functioning and decreasing distress amongst adults with chronic pain attending Pain Rehabilitation Programmes (Hann & McCracken 2014). A call was made for further studies to examine outcomes from more homogenous groups.

Objectives: To assess the effects of an eight-week group ACT, Rheumatology based programme, for people with persistent pain, on pain acceptance, activity engagement, psychological distress and self-efficacy.

Methods: Patients were referred to the programme by three Consultant Rheumatologists over a five-year period. Over one hundred patients' outcome measures were available for this retrospective study from a convenience sample. Consent had been sought routinely from patients who attended the ACT programme and ethical approval was granted from the Hospital Research Ethics Committee (REC) and Ulster University REC. Baseline measures were taken at assessment, on the final day of the programme and at the follow up six-month review. Data was analysed with One Way Repeated Measures ANOVA using SPSSv20. Effect sizes were calculated using Partial Eta Squared and interpreted using the guidelines proposed by Cohen (1998).

Results: For those with scores at all three time points, mean depression scores, anxiety scores and self-efficacy scores were statistically significantly different over time. In addition, for those with activity engagement and pain willingness scores at all three time points, scores were statistically significantly different over time.

Table 1. Change from assessment to the 6-month review

Measure (n)	Mean (SD) at assessment	Mean (SD) at 6-month review	Mean change ² (95% CI)	P-value	Cohen's d
Depression (n=91)	8.6 (3.62)	5.9 (3.62)	-2.7 (-3.47, -1.99)	<0.001	0.76
Anxiety (n=91)	11.0 (3.81)	8.1 (3.95)	-2.9 (-3.66, -2.14)	<0.001	0.79
Self-efficacy (n=89)	37.0 (12.72)	49.6 (13.20)	12.6 (9.48, 15.80)	<0.001	0.84
Activity engagement (n=78)	32.5 (12.27)	43.8 (10.26)	11.3 (8.59, 14.03)	<0.001	0.94
Pain willingness (n=78)	16.8 (7.46)	23.6 (8.52)	6.8 (4.84, 8.73)	<0.001	0.79

Conclusions: The ACT Pain Rehabilitation Programme at University Hospital Waterford in Ireland has provided significant outcomes for reducing depression and anxiety amongst its participants as measured by the Hospital Anxiety and Depression Scale (HADS). Increases in self-efficacy were also found to be statistically significant. Increases in activity engagement & pain acceptance, as measured by the Chronic Pain Acceptance Questionnaire (CPAQ) also showed statistically significant increases. A number of limitations should be noted i.e. this was a retrospective study and depended on self report measures only. However, positive outcomes suggest ACT is a helpful intervention for people with persistent pain.

References:

- [1] Hann, K.E.J., McCracken, L.M. (2014). A systematic review of randomized controlled trials of Acceptance and Commitment Therapy for adults with chronic pain: Outcome domains, design quality, and efficacy. *Journal of Contextual Behavioural Science* 3, 217–222.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.7008

OP0141-HPR AN INNOVATE MEASUREMENT INSTRUMENT TO ASSESS ACTIVITY LIMITATIONS IN HIP AND KNEE OSTEOARTHRITIS: THE COMPUTERIZED ANIMATED ACTIVITY QUESTIONNAIRE (AAQ) AND ITS PSYCHOMETRIC PROPERTIES

W. Peter^{1,2}, R. de Vet², M. Boers², J. Harlaar², L. Roorda¹, R. Poolman³, V. Scholtes³, M. Steultjens⁴, E. Roos⁵, F. Guillemin⁶, M.G. Benedetti⁷, A. Escobar Martinez⁸, H. Dagfinrud⁹, H. Buitelaar¹⁰, J. Boogaard¹⁰, C. Terwee². ¹READE; ²VU University Medical Center; ³OLVG, Amsterdam, Netherlands; ⁴Glasgow Caledonian University, Glasgow, United Kingdom; ⁵University of Southern Denmark, Odense, Denmark; ⁶University of Lorraine, Nancy, France; ⁷Istituto Ortopedico Rizzoli, Bologna, Italy; ⁸Basurto University Hospital, Bizkaia, Spain; ⁹Diakonhjemmet Hospital, Oslo, Norway; ¹⁰Patient Research Partner, Amsterdam, Netherlands

Background: The Animated Activity Questionnaire (AAQ) measures activity limitations in hip and knee osteoarthritis (HKO), and was developed in close collaboration with patients¹. Previously we showed an adequate construct- and cross-cultural validity of the AAQ²

Objectives: To determine the reliability, responsiveness and interpretability of the AAQ.

Methods: In 6 European countries the AAQ was completed twice on a computer with a 7 days interval by 238 patients (DK (36), FR (37), IT (51), NL (39), SP (36), UK (39)). Reliability was assessed by calculating internal consistency (Cronbach's alpha), the intra-class correlation coefficient (ICC), the Standard Error of Measurement (SEM) and the Smallest Detectable Change (SDC). In the Netherlands, an additional group of 92 patients were followed for 6 months in order to assess responsiveness. Data from the AAQ, a PROM (the Hip disability or Knee injury Osteoarthritis Outcome Score, ADL subscore), and performance-based tests (the Timed Up and Go test, Stair Climbing Test and 30 seconds Chair Stands Test) were collected. To estimate the Minimal Important Change (MIC) of the

AAQ an anchor-based MIC distribution method was used with a Global Rating of Change (GRC) as anchor. The Receiver Operating Characteristic (ROC) method was used to find the AAQ change score that best discriminates between patients who improved in activity limitations and who are not. The MIC was compared to the SDC in order to facilitate the interpretation of change scores.

Results: Cronbach's alpha was 0.94. ICC for test-retest reliability was 0.93 (95% CI: 0.91–0.95). SEM and SDC were 4.9% and 13.5%, respectively. With regard to responsiveness the change scores of the AAQ after 6 months correlated 0.58 with the PROM, 0.42–0.55 with the performance based tests, and 0.46 with GRC. The ROC curve showed an area under the curve of 0.72 with a sensitivity of 63% and a specificity of 81% for the optimal MIC of 9.1 for discrimination. The MIC was smaller than the SDC meaning that the change is important but cannot be distinguished from measurement error in individual patients.

Conclusions: The AAQ, measuring a new construct in the domain physical functioning in addition to a PROM and performance-based tests, showed good construct validity, cross-cultural validity, internal consistency and test-retest reliability. A change in AAQ score over 13.5% indicates a real improvement in activity limitations in HKOA patients. The AAQ seems to have great potential for international use in research but the application in clinical practice needs caution.

References:

- [1] Peter WF et al. *Arthritis Care Res (Hoboken)*. 2015 Jan;67(1):32–9.
- [2] Peter WF et al. *Arthritis Care Res (Hoboken)*. 2016 Oct 16.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.4050

OP0142-HPR THE POTENTIAL BUFFERING ROLE OF SELF-EFFICACY AND PAIN ACCEPTANCE AGAINST INVALIDATION IN RHEUMATIC DISEASES

R. Geenen¹, N. Cameron¹, M.B. Kool¹, F. Estévez-López², I. López-Chicheri³.

¹Psychology, Utrecht University, Utrecht, Netherlands; ²Department of Physical Education and Sport, Faculty of Sport Sciences, University of Granada, Granada; ³Health Sciences, UCAM Catholic University of Murcia, Murcia, Spain

Background: A substantial number of people with a rheumatic disease perceive invalidation consisting of "lack of understanding" and "discounting" (negative social responses) [1]. Our study was guided by the notion that high self-efficacy will make people feel competent to deal with situations in which control of invalidation is possible and likely to be successful. In other situations, high acceptance will help people to actively and in full awareness experience even adverse situations such as invalidation without unnecessary attempts to change their frequency or form, which is considered a core aspect of acceptance.

Objectives: To get insight into the potential buffering role of self-efficacy and pain acceptance against invalidation, we examined the association of self-efficacy and pain acceptance with invalidation in people with diverse rheumatic diseases.

Methods: The design was cross-sectional. Spanish speaking people (N=1153, 91% female, mean age 45±11 years) with one or multiple rheumatic diseases completed online versions of the Illness Invalidation Inventory [2], the Chronic Pain Acceptance Questionnaire, and the Chronic Disease Self-Efficacy Scale.

Results: Before and after adjustment for age, gender, education, and fibromyalgia diagnosis, higher self-efficacy and higher pain acceptance were independently associated with discounting and lower lack of understanding ($P<0.001$, see Figure). The combined occurrence of high self-efficacy and high acceptance was associated most clearly with lower lack of understanding (interaction: $P=0.03$) and with discounting (interaction: $P=0.07$, not reaching statistical significance): see Figure.

Conclusions: The present study convincingly shows that self-efficacy and pain acceptance are associated with less invalidation. This suggests the usefulness of examining in prospective studies whether interventions aimed at increasing self-efficacy and pain acceptance can help people with rheumatic diseases for whom invalidation is a considerable burden. A cognitive-behavioral model including self-efficacy and acceptance to deal with invalidation is proposed.

References:

- [1] Kool MB, van Middendorp H, Boeije HR, Geenen R. Understanding the lack of understanding: invalidation from the perspective of the patient with fibromyalgia. *Arthritis Rheum-Arthritis Care Res* 2009;61:1650–6.
- [2] Kool MB, van Middendorp H, Lumley MA, Schenk Y, Jacobs JW, Bijlsma JW,