OP0275-HPR THE EFFECTS OF EXERCISE ON DEPRESSIVE AND ANXIETY SYMPTOMS IN RHEUMATOID ARTHRITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Exercise reduces depressive and anxiety symptoms among the general population, and those with a chronic illness. Elevated depressive and anxiety symptoms are prevalent co-morbidities in Rheumatoid Arthritis (RA) therefore, addressing same through exercise may have an important impact on their health related quality of life (HqOL). Evidence does support the effect of exercise on these outcomes however, quantitative synthesis of evidence from randomised controlled trials (RCTs) of exercise effects, on these critically important symptoms in RA, has yet to be conducted.

Objectives: To quantify the overall population effect of exercise on depressive and anxiety symptoms, fatigue, and pain, derived from available RCT's, and to explore the extent to which participant and trial characteristics moderated the mean effect.

Methods: Articles published before September 2017 were located by two independent reviewers using Google Scholar, PsycINFO, PubMed, and Web of Science. Trials included both randomization to exercise and non-exercise control using validated measures of depression and anxiety, assessed at baseline and post-intervention. Hedges' *d* effect sizes (95% CI) were computed and random effects models were used for all analyses. Sources of bias were also assessed independently by two reviewers using the Cochrane bias assessment tool for RCTs and Newcastle–Ottawa Quality Assessment Scale for non-RCTs.

Results: Seventeen studies were included, with 1214 participants, of which 12 RCT's contributed to the meta-regression analysis. Participants were aged 49±9 years and 83%±14% female. Exercise training consisted on average of 3 ±1 weekly sessions, 60±17 min per session, and 11±5 weeks in duration. Interventions were diverse with a mix of aerobic and/or resistance training including, 4 different types of Yoga, 2 dance based and 1 Tai-chi. Mean reported adherence was 87%±11%. For depression, 18 of 20 effects (90%) were >0. The mean effect size Δ was 0.20 (0.10–0.31; $p<0.001$). For anxiety, seven of seven effects (100%) were >0. The mean effect size Δ was 0.50 (0.27–0.74; $p<0.001$). Seven of 16 effects reduced pain by a mean effect delta of 0.04 (95% CI: –0.14 to 0.21; $z=0.41$; $p>0.69$). Six of 11 effects (54.5%) did not reduce fatigue with the mean effect delta being –0.01 (95% CI: –0.20 to 0.19; $z=-0.09$; $p>0.93$). Depressive or anxiety symptoms were not the primary outcome in any of the included trials.

Conclusions: Pharmacologic interventions have improved the management of RA however, research indicates that exercise remains an important part of the overall treatment. This quantitative synthesis of evidence from RCTs of the effects of exercise shows significant small-to-moderate reductions in depressive and anxiety symptoms. It has been reported that the degree of depression and anxiety in people with RA is a preceding sign of physical disability that may appear later in life therefore, aiming to target both through exercise may help to improve HqOL. Future trials should focus on depression and/or anxiety as the primary outcome. Exercise prescription is a core skill for physiotherapists therefore, they should be confident in prescribing exercise to people with RA, who have depression and anxiety, as it significantly reduces their symptoms.

Disclosure of Interest: None declared

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OP0276-HPR OCCUPATIONAL BALANCE AND ITS RELATION TO PERFORMANCE OF VALUED LIFE ACTIVITIES IN PERSONS WITH RHEUMATOID ARTHRITIS IN WORKING AGE

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Background: Experience of balance in everyday activities where work is an essential part is important to health and well-being,¹ as has also been observed in previous studies in people with rheumatoid arthritis (RA).² The Valued life activity scale (VLA-swe) is a questionnaire in which patient's first report if the separate activities are valued or not to perform and secondly difficulties to perform these activities.³ Occupational Balance Questionnaire (OBQ) focuses on satisfaction with the amount and variation of occupations.⁴

Objectives: The objectives were to 1) describe the relationship between performance of valued activities and experienced occupational balance, and to 2) identify aspects associated with low occupational balance in persons with RA.

Methods: 368 persons (age 18–65 years, 77% women) with RA responded to a questionnaire measuring occupational balance (OBQ)⁴ and performance of

valued life activities (VLA-swe).³ Other aspects of interest were activity limitations measured by Health Assessment Questionnaire (HAQ), pain (measured by VAS), continuous stress (stressed continuously for more than a month during the last 12 months), children at home, education, and living situation. The relation between OBQ and performance in VLA across genders and Workers/Non-workers were analysed using non-parametric correlation analyses. To identify the impact of different aspects on the likelihood that participants would report lower occupational balance, OBQ was analysed using workers/nonworkers, stress, gender, age, pain and difficulties performing valued activities as independent variables in logistic regressions models. The study was approved by the Regional Ethics Committee (Dnr2011/452–31).

Results: The OBQ was significantly related to difficulties to perform valued activities reported by VLA ($r=-0.41$, $p<0.001$). Having more difficulties performing valued activities was the strongest predictor of lower occupation balance and increased the risk of reporting lower occupation balance with nearly five times (OR=4.54, $p=0.001$). Continuous stress increased the risk of having lower occupation balance more than three times (OR=3.27, $p<0.0001$) than those who not reported being stressed. The other variables show no significant impact on the likelihood that the participants would report lower occupational balance.

Conclusions: The results showed support for the relationship between occupation balance and performance of valued life activities and highlights to identify what's important for the individual and to assume that in the rehabilitation. The results also show the importance of ability to manage stress, in order to enable for retaining ability to work and achieve high occupational balance.

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OP0277-HPR EVALUATION OF THE EFFECTIVENESS OF A PROGRESSIVE RESISTANCE TRAINING PROGRAM FOR PATIENTS WITH FIBROMYALGIA: A RANDOMISED CONTROLLED TRIAL

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Background: Fibromyalgia (FM) is a chronic pain syndrome, not inflammatory, characterised by the presence of diffuse pain and painful points. Commonly, it is linked to other symptoms such as fatigue, sleep disorders, morning stiffness; and psychological disorders such as anxiety and depression. The medical treatment of FM brings benefits in the short term. For long-term benefits it is usually associated with non-medicated treatment, such as patient education, physical conditioning, rehabilitation and psychological therapy. In this study, we used the progressive resistance training, which is muscle strengthening performed through the gradual increase of load during the training period.

Objectives: To evaluate the impact of a global progressive resistance training program on pain, quality of life, functional capacity and muscular strength in patients with fibromyalgia

Methods: Sixty patients were randomised into 2 groups: experimental group and control group. Patients in the experimental group underwent a progressive resistance training program, performed twice a week for 12 weeks. The charge intensity was progressively increased from 40% to 80% of 1RM. The following muscle groups were worked: trunk flexors and extensors, elbow flexors and extensors, knee flexors and extensors, hip abductors and adductors and shoulder abductors. In addition to strength training, the experimental group also received a structured education program in one hour class once a week for five weeks. Patients in the control group received the same education program.

Results: After the intervention, significant improvements were observed in the experimental group in comparison with control group over time for the following parameters: pain ($p=0.004$), FIQ ($p=0.021$), quality of life (with statistically significant improvement for all the SF-36 domains), functional capacity, assessed by the 6 min walk test ($p=0.045$), and muscle strength (with statistically significant improvement for all muscle groups trained). The intergroup and intragroup comparisons were showed in table 1.

Abstract OP0277-HPR – Table 1 Intergroup and intragroup comparisons

	Experimental group n=30				Control group n=30				p	p	p
	T0	T6	T12	Intergr.	T0	T6	T12	Intergr.			
Numerical pain scale (cm)	6.90 ± 1.50	6.00 ± 1.80	5.20 ± 2.00	<0.001	6.80 ± 1.40	7.00 ± 1.80	6.80 ± 2.00	0.794	0.002		
VAS score	5.60 ± 1.20	6.00 ± 1.70	4.70 ± 1.40	<0.001	5.80 ± 1.20	5.90 ± 1.00	5.80 ± 1.20	0.728	0.021		
Fib-3 Subgen score	5.91 ± 2.87	5.43 ± 2.72	5.13 ± 2.53	<0.001	7.81 ± 1.74	7.53 ± 2.04	6.73 ± 2.18	0.587	0.001		
SP-36 score											
Physical functioning	48.30 ± 21.30	58.00 ± 19.70	61.30 ± 19.40	0.001	37.00 ± 22.80	36.90 ± 23.40	35.70 ± 23.00	0.794	0.002		
Physical role functioning	15.00 ± 24.20	37.50 ± 38.10	39.20 ± 38.10	0.001	24.20 ± 38.80	15.00 ± 29.10	13.30 ± 29.05	0.068	<0.001		
Bodily pain	37.10 ± 16.40	46.10 ± 16.00	46.80 ± 14.60	0.002	33.20 ± 17.10	37.70 ± 17.40	32.00 ± 16.30	0.085	0.002		
General health perceptions	43.60 ± 22.70	45.80 ± 25.90	51.80 ± 25.50	0.044	38.70 ± 22.90	41.60 ± 24.30	37.80 ± 21.50	0.3	0.004		
Vitality	38.80 ± 19.80	50.30 ± 21.00	52.20 ± 22.40	<0.001	37.50 ± 17.80	35.30 ± 18.70	34.30 ± 19.90	0.561	0.002		
Social role functioning	50.40 ± 23.60	64.20 ± 24.90	62.90 ± 27.20	0.012	48.30 ± 32.80	40.40 ± 25.80	41.70 ± 24.20	0.332	0.013		
Emotional role functioning	12.20 ± 25.50	45.00 ± 45.00	48.70 ± 42.50	<0.001	28.70 ± 45.00	28.90 ± 42.60	23.30 ± 41.20	0.745	0.005		
Mental health	49.10 ± 23.00	55.70 ± 24.80	62.00 ± 22.60	<0.001	45.30 ± 18.60	43.70 ± 17.60	42.10 ± 19.00	0.301	<0.001		
S-4 minute walk test (meters)	447.30 ± 89.00	465.50 ± 83.30	482.50 ± 72.60	0.002	420.80 ± 112.00	427.70 ± 101.40	429.40 ± 112.50	0.585	0.045		

Data presented as mean ± SD

Conclusions: The progressive resistance training program was effective in improving pain, quality of life, functional capacity and muscular strength of patients with fibromyalgia.

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OP0278-HPR PATIENT REPORTED OUTCOMES AND SAFETY IN PATIENTS UNDERGOING SYNOVIAL BIOPSY: COMPARISON OF ARTHROSCOPIC, ULTRASOUND-GUIDED PORTAL FORCEPS AND ULTRASOUND-GUIDED NEEDLE BIOPSY TECHNIQUES, IN FIVE CENTRES ACROSS EUROPE

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Background: Synovial tissue analysis could provide a step towards personalised medicine in daily clinical practice for patients with inflammatory arthritis. However systematic reports comparing the patient's perspective when undergoing synovial biopsy according to different synovial sampling techniques is currently missing from the literature. We here present a multicenter study across Europe, comparing patient reported outcomes (PRO) and safety data from patients undergoing synovial biopsy procedures using either ultrasound guided needle biopsy (US-NB), ultrasound guided portal and forceps (US-PF) or conventional arthroscopy.

Objectives: 1. Describe PRO data on joint indices of pain, stiffness and swelling, procedural discomfort and willingness to undergo a second biopsy for each biopsy technique.

2. Describe and compare safety data.

3. Evaluate the impact of intramuscular (IM) or intra-articular (IA) corticosteroid as part of the biopsy procedure, on PRO data and safety.

4. Evaluate how sequential biopsy procedures impacted on PRO and safety data.

Methods: Information on PROs, safety, diagnosis, disease activity and treatment were collected from five European biopsy centres. Joint pain, swelling and stiffness indices were recorded as 0–100 mm VAS; qualitative variables on balanced 5-point Likert scales. PRO data delta values between post and pre-values were calculated. Between group comparisons with unadjusted and adjusted robust linear regression, adjusting for disease activity, corticosteroid use during biopsy procedure and when relevant pre-biopsy value.

Results: 524 synovial biopsy procedures were included; 329 (78%) had Rheumatoid Arthritis and biopsies were primarily from wrist (n=296, 57%). PRO and safety data are presented in table 1. None of the biopsy techniques caused increase in pain, swelling or stiffness, and there were no differences in post biopsy and delta PROs between biopsy procedures. There was 9 adverse events (1.7%) with no difference between biopsy methods (p=0.85). 71.7% reported none or mild

discomfort during biopsy and 86.5% were positive or neutral to rebiopsy. Corticosteroid use, IM (n=62) or IA (n=38), did not result in more adverse events (p=0.81). However, it was associated with a reduction in post-swelling (p=0.005), but not pain or stiffness. Sequential biopsy procedures (n=103 patients), did not result in more adverse events (p=0.61) or worsening in PRO data between baseline and second biopsy procedure.

Abstract OP0278-HPR – Table 1 Patient reported outcomes and safety

	Needle	Portal & Forceps	Arthroscopic	Total	p-value	Adjusted p-value*
Biopsy procedures, n (%)	402 (76.7)	65 (12.4)	57 (10.9)	524 (100.0)		
Pain, swelling and stiffness before and after biopsy						
Pre pain, mean (SD)	52.21 (29.14)	45.60 (32.90)	62.44 (23.98)	52.51 (29.36)	<0.01	<0.01
Post pain, mean (SD)	39.47 (29.94)	32.46 (27.42)	43.16 (22.62)	38.91 (29.03)	0.06	0.19
Pre swelling, mean (SD)	50.29 (30.70)	41.02 (33.11)	53.09 (29.26)	49.40 (30.99)	0.07	<0.01
Post swelling, mean (SD)	35.95 (30.47)	31.18 (26.66)	36.46 (26.00)	35.35 (29.52)	0.92	0.17
Pre stiffness, mean (SD)	51.48 (30.32)	47.28 (33.89)	48.79 (30.13)	50.62 (30.77)	0.56	0.03
Post stiffness, mean (SD)	37.72 (30.45)	33.75 (28.01)	36.14 (24.91)	37.01 (29.57)	0.56	0.18
Delta pain, mean (SD)	-12.90 (27.74)	-13.14 (30.36)	-20.94 (28.91)	-13.76 (28.27)	0.17	0.19
Delta swelling, mean (SD)	-14.67 (29.57)	-9.83 (27.74)	-18.68 (35.03)	-14.43 (29.96)	0.28	0.17
Delta stiffness, mean (SD)	-13.70 (28.92)	-13.52 (32.25)	-14.18 (37.49)	-13.72 (30.32)	0.99	0.18
Safety						
Syncope or presyncope, n (%)	2 (0.8)	0 (0.0)	0 (0.0)	2 (0.4)		
Tenosynovitis	1 (0.3)	0 (0.0)	0 (0.0)	1 (0.2)		
Neurological affection, n (%)	4 (1.0)	1 (1.5)	0 (0.0)	5 (1.0)		
Tendon damage, n (%)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)		
Haemarthrosis, n (%)	1 (0.3)	0 (0.0)	0 (0.0)	1 (0.2)		
Deep vein thrombosis	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)		
Joint infection	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0.85*	

* adjusted for biopsy method, disease activity, intra-articular or intramuscular corticosteroid injection during biopsy and in Post and delta values also pre-value.

#) Test for difference in total number of adverse events between groups, by Fishers exact test.

Conclusions: Overall, our results do not suggest a significant difference in tolerability or safety between US-NB, US-PF or arthroscopic synovial sampling. Further, data suggests that use of IM or IA corticosteroid, as part of the biopsy procedure, is safe and improves tolerability. Finally, sequential synovial biopsies were well tolerated and safe when performed using all biopsy techniques.

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OP0279-HPR A NATIONAL SURVEY OF THE UTILISATION AND EXPERIENCE OF HYDROTHERAPY IN THE MANAGEMENT OF AXIAL SPONDYLOARTHRITIS: THE PATIENTS' PERSPECTIVE

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Background: Hydrotherapy is recommended in the United Kingdom (UK) by the National Institute for Health and Care Excellence (NICE) as an adjunctive therapy in the management of Axial Spondyloarthritis (AS). Despite these guidelines, NHS hospital hydrotherapy services are in decline. The impact on utilisation and patient experience are poorly understood.

Objectives: To identify the utilisation of hospital hydrotherapy services for AS in the UK and capture the patients' experience to inform future services and research.

Methods: An online survey was distributed to the National Ankylosing Spondylitis Society (NASS) patient membership between September and November 2017, with social media updates. The survey design included open and closed questions. Thematic analysis of the qualitative responses was conducted.

Results: 250 members completed the survey (40.4% male; average age 50.4 years; average delay to diagnosis 11.4 years). **Utilisation:** 157 (65.7%) accessed a hospital hydrotherapy service. 102 (63.0%) were referred by rheumatology, 26 (16.0%) via a specialist AS Physiotherapist and 3 (1.9%) self-referring via a telephone helpline. The most frequent service offered was six weekly sessions. 85 (62.5%) reported no access to hospital hydrotherapy when in flare. Barriers to access in a flare included long waiting times, a limit on the sessions offered and pool closures. 'Pay as you Go' hospital hydrotherapy sessions were accessed by 35 (16.1%) with 119 (77.3%) interested in doing so. 59 (26.9%) received written hydrotherapy resources for continuation in a non-hospital pool following discharge. 77 (50.7%) were advised to continue with hydrotherapy for self-management. Barriers to utilising a non-hospital pool were high cost, lower pool temperature, pool crowding and a lack of knowledge of exercises. 28 (18.5%) reported a current threat of closure of their hospital hydrotherapy pool. **Experience:** Five themes emerged from the qualitative data. 1) *Emotional well-being:* Patients described greater control over their condition when exercising in water. 2) *Exercise Behaviour:* Patients performed a wider variety of exercise, often challenging themselves, and not attempted on land. 3) *Group Effect:* Patients described a sense of motivational support when exercising with others. 4) *Professional Support:* Patients cited the benefit of hydrotherapy sessions led by a physiotherapist who shared their expertise and discussed problems. 5) *Pool Environment:* Patients described gains from non-impact exercise and