After the demographic characteristics and disease related data of the individuals were recorded; for the functional status, the Bath Ankylosing Spondylitis Functional Index (BASFI), Bath Ankylosing Spondylitis Disease Activity Index (BASDAI), Bath Ankylosing Spondylitis Metrology Index (BASMI) were used. Six-minute walk test (6MWT) was used for the assessment of aerobic capacity. Group I was attended 40 min aerobic exercises sessions (5-min warm up, 30-min treadmill, 5-min cool down), plus supervised spinal mobility exercises and Group II was attended only supervised spinal mobility exercises per day, 3 times a week, for 12 weeks. Data were analysed Wilcoxon and Mann Whitney U Test.

Results: After training aerobic exercise group, BASMI ($p=.021$), BASDAI ($p=.002$) and 6MWT ($p=.036$) results were statistically significant, while the difference was not significant in BASFI ($p=.068$). It was observed that there was no significant difference in the after training period in the supervised exercises group. BASDAI, in group aerobic exercise group had improved more significantly when compared to supervised exercises group.

Conclusion: As a result of the study, it was noted that when aerobic exercise training applied together with the supervised exercises in ankylosing spondylitis patients, effectiveness on mainly disease activity, spinal mobility and aerobic capacity was increased. Key words: Ankylosing spondylitis, aerobic exercise training, supervised exercised.

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FRI0704-HPR THE EFFECTS OF CLINICAL PILATES TRAINING IN PATIENTS WITH FIBROMYALGIA: A RANDOMIZED CONTROLLED TRIAL

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Background: Fibromyalgia (FM) is a chronic condition characterized by widespread pain, sleep disorders, fatigue and reduced quality of life. Exercise is commonly recommended in the approach of people with FM. Researches support some forms of exercises reduce fibromyalgia symptoms and improve quality of life. Pilates recently has become popular form of exercise which focused core strengthening, posture and coordination of breathing with movement. Studies showed that clinical pilates can be used to provide improvements in patients with FM. However there is no study which compared clinical pilates-based supervised exercises and group exercises on FM patients in literature.

Objectives: The first aim of the study was to investigate the effects of clinical pilates training, secondly to compare the effects of supervised exercises and group exercises training on disease activity, functional status, anxiety, quality of life and biopsychosocial status in individuals with FM.

Methods: 42 voluntary women diagnosed with FM according to 2010 American College of Rheumatology Criteria in the age range of 35-65, who applied to Pamukkale University Department of Internal Medicine, Department of Rheumatology were included in the study. Individuals were randomly divided into two groups, as there would be supervised exercises (Group I, $n=16$, mean age 55.93 ± 8.03) and group exercises (Group II, $n=26$, mean age 47.80 ± 5.87). All participants attended 60-min exercises sessions (10-min warm up, 40-min clinical pilates exercises, 10-min cool down) per day, 2 times a week, for 6 weeks. The training was applied by same physiotherapist who received clinical pilates certificate by an experienced Pilates instructor and physiotherapist. After the demographic characteristics and disease related data of the individuals were recorded; disease activity were assessed with the Fibromyalgia Impact Questionnaire (FIQ), functional status with Health Assessment Questionnaire (HAQ), anxiety with Beck Anxiety Inventory (BAI), quality of life with Short Form 36 (SF-36) scale and biopsychosocial status with the Cognitive Exercise Therapy Approach Scale (BETY). All outcomes were assessed just before and 6 weeks after training. The data were statistically evaluated by the Wilcoxon test and Mann-Whitney Test.

Results: There were no significant differences in baseline demographics between the Group I and Group II ($p>0.05$). After 6 weeks, showed for both groups a statistically significant improvement in FIQ, SF-36 (physical and mental component) and BETY also Group II showed a statistically

significant improvement in HAQ and BAI ($p<0.05$). When both group were compared, a significant difference was observed in FIQ ($p<0.05$) in Group II, whereas no statistical differences were found in other outcomes ($p>0.05$)

Conclusion: This study showed that clinical pilates training which were applied 6 weeks, resulted in improvement on disease activity, functional status, anxiety, quality of life and biopsychosocial status in individuals with FM. Besides group exercises training provides social interaction so we suggest clinical pilates as an effective and safe method for people with FM.

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FRI0705-HPR THE RELATIONSHIP BETWEEN SELF-REPORTED PAIN EXPERIENCE AND FUNCTIONALITY IN PATIENTS WITH JUVENILE SCLERODERMA

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Background: Juvenile scleroderma (JS) is a rarely seen chronic connective tissue disorder characterized by inflammation and fibrosis of the skin. Pain and functionality is a widely neglected symptom in patients with JS, even though it may be common and have a significant impact on the quality of life. Clinical trials and small treatment studies suggest that pain is significant in scleroderma, but few data speak of the frequency or presence and experience of pain and the relationship between self-reported pain and functionality.

Objectives: This study aimed to determine whether the presence of pain (based on physical conditions and participants' report) and self-reported pain experience in children with JS differ from same gender population controls.

Methods: 30 patients (26 girls, 4 boys) with JS between the ages of 6-18 years and 30 healthy controls (20 girls, 10 boys) with similar age and gender were included in our study. The follow-up form was prepared considering the relevant parameters such as socio-demographic status of JS disease. Self-reported presence and experience of pain were assessed in rest, during a physical activity and after or during an exercise. Children rated their pain severity on a six-item Wong-Baker Pain Scale (WBS:0-10) from none to worst. The location, spread and character of the pain were asked (flamable, sinking, squeezing, restlessness, tingling, throbbing, tingling, electric shock etc.). Children completed their functional ability status with "Childhood Health Assessment Questionnaire (CHAQ)" and "Jebson Taylor Hand Function Test (JTHFT)".

Results: The mean age of the JS group was 14.06 ± 3.24 years (86% female, 14% male; while the %53 localized scleroderma, %47 SSc). Compared with controls, more JS participants, who indicated pain and comprehended self-reporting scales, reported higher pain affect and intensity pain and/or discomfort with activity and with exercise ($p<0.05$, 47% vs $p<0.05$, 57%), but fewer JS participants reported pain at the test ($p<0.05$, 3.3%). 40% of the patients described the character of the pain as sneezing, 7% had throbbing, 7% had tingling, 3% had flammable, and 3% had a smear. The rest of 40% population had no pain. There was a significant correlation between pain at rest and CHAQ-Total scores ($r=0.576$; $p=0.001$). There was no significant relationship between pain during activity or exercise and JTHFT and CHAQ-Total ($p>0.05$).

Conclusion: In our study, only a significant relationship was found between pain at rest and functionality. These findings indicate that pain is common in JS and that pain is significant determinants of physical

functioning and social adjustment, two important components of health-related quality of life. Increased attention to effective management of pain in pediatric scleroderma will likely lead to improved functioning and quality of life.

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FRI0706-HPR COMPARISON OF IMPACT OF VERUM AND PLACEBO THUMB BASE ORTHOSES ON SKIN SURFACE TEMPERATURE AND PRESSURE : A PROOF OF CONCEPT STUDY

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Background: Basal thumb osteoarthritis (OA) can cause significant pain and cause a decline in hand function (Litwic et al 2013). Guidelines for treatment of symptomatic basal thumb OA supports a conservative approach, including splinting to support the carpometacarpal joint (CMCJ) and reduce the painful movements of the thumb joint during functional tasks (Zhang et al 2000). Lack of legitimate placebo thumb splint has been a barrier to research to distinguish the specific mechanism of the perceived therapeutic effect of wearing thumb splints. Despite this, splinting of the basal thumb joint remains a common intervention for pain. This research contributed to a national CRN portfolio adopted study examining the clinical effectiveness and efficacy of basal thumb splints for people with basal thumb OA.

Objectives: In the present study, the efficacy of two novel placebo splint designs are examined in comparison to widely used verum thumb splint and no splint for the effect at skin surface interface whilst performing a functional task

Methods: This proof of concept study used a single blind, cross-over design that assessed the effect of wearing different splint conditions on the skin surface interface during a functional hand task.

17 healthy participants (male n=8; female n=9) who met the inclusion criteria were recruited to take part in the study. Skin surface temperature (°C) and pressure exerted at the skin surface interface was recorded during performance of a standardised hand function task, the nine-hole peg test (9HPT) for four splint conditions i) verum splint (Promedics NC79562), ii) placebo lycra splint (P1); iii) placebo lycra splint "lite" (P2) and iv) no splint. Data were recorded and analysed by one rater using MatLab and SPSS software.

Results: It was observed from the mean rank that the verum splint condition caused the greatest pressures compared to all other splint conditions. Post hoc analysis revealed there was no difference in pressure exerted over the CMCJ between the no splint condition and P1 ($Z = -1.577$, $p=0.115$) and P2 ($Z = -0.365$, $p=0.715$). The verum splint caused a significant increase in pressure over the CMCJ in comparison to all other test conditions ($Z = -3.516$, $p<0.0005$).

ANOVA showed a significant effect of splint design on temp ($F(3,16)=22.96$, $p<0.05$). Post hoc analysis revealed that the verum splint produced a significantly higher skin surface temperature ($32.67^{\circ}\text{C} \pm 1.10^{\circ}\text{C}$) than P1 ($31.75^{\circ}\text{C} \pm 1.10^{\circ}\text{C}$, $p<0.0005$), P2 ($31.85^{\circ}\text{C} \pm 1.11^{\circ}\text{C}$, $p=0.001$) and no splint ($31.06^{\circ}\text{C} \pm 1.24^{\circ}\text{C}$, $p<0.0005$) conditions. No differences in skin temperature was shown between placebo designs ($p=1.00$).

Conclusion: This study is the first to characterise the effect of different thumb splint designs on the skin surface temperature and the mechanical loading force local to the CMCJ.

This study further informs the specific effect of thumb splints at the joint interface. Identifying that new placebo splint designs do not provide additional support to the thumb joint is a novel supplement to research surrounding thumb splinting intervention and can support the use of these devices as placebo splint conditions in future trials.

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FRI0707-HPR IS A TAILORED DELIVERY OF NORDIC WALKING ACCEPTABLE FOR PEOPLE WITH INFLAMMATORY RHEUMATIC DISEASE?

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Background: People with inflammatory rheumatic diseases find it more difficult to stay physically active. Although interventions delivered in a clinical setting lead to short-term benefits, sustaining physical activity is challenging. Nordic Walking is a whole-body physical activity that involves walking with poles. It has been shown to be beneficial in long-term conditions but not specifically for inflammatory rheumatic diseases.

Objectives: To establish the acceptability of a tailored Nordic Walking intervention in this population as preparation for a full efficacy trial.

Methods: The intervention was developed collaboratively with patient research partners and involves a 30-minute training session followed by 10 one hour sessions of Nordic Walking over 10 weeks. Twelve people received the intervention between May and July 2018 and 12 more from September to November 2018. The intervention differed from standard Nordic Walking in several ways; initial training was provided in small groups of 2 to 3 by an instructor and a rheumatology physiotherapist. Flexible routes enabled participants to self-select their pace and distance. Routes radiated from, and circled back to, a central base with seats and drinking water.

Participants completed a Short Form (36) Health Survey (the RAND) at baseline and post-intervention and took part in a focus group or interview.

Results: Eighteen females and six males; mean age 60 years (range 35-82) were recruited from rheumatology clinics in the Southwest of England. All participants had a diagnosis of an inflammatory rheumatic disease including rheumatoid arthritis, psoriatic arthritis, axial spondyloarthritis, connective tissue disease and systemic vasculitis. SF-36 data suggested a trend towards improvements and qualitative data provided insights into why the intervention was acceptable. All 24 participants enjoyed being active outdoors and reported benefits such as 'walking taller', 'better posture', 'better balance' and 'improved well-being'.

Results reveal how important the adaptations with this tailored delivery of Nordic Walking were to participants. They found it reassuring that rheumatology specialists had contributed to the design of the intervention and that delivery was supported by a physiotherapist. Learning Nordic Walking in small groups alongside people with similar conditions was popular and meant that participants could walk at their own pace, engage with peers and felt supported. Participants said they would not join a non-specialised Nordic Walking group. Several participants subsequently purchased their own Nordic Walking poles and have arranged to meet independently to continue, indicating the potential for sustainability.

Conclusion: This tailored delivery of Nordic Walking has the potential to offer acceptable, beneficial and sustainable physical activity for patients with inflammatory rheumatic diseases. Further research is now needed to investigate the long-term impact in a full efficacy trial.

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