The course of VO2 max overtime was independently associated with pre-rehabilitation BMI, waist circumference, muscle mass of total body, arms and legs, fat mass, body fat, the fat mass index and TST, as well as with change of BMI, waist circumference, fat mass and the fat mass index between pre-rehabilitation and after 3 and 12 months.

Conclusion: We observed benefits of intervention with a team-rehabilitation program for 4 weeks on body composition profile, functioning, physical limitation and cardiorespiratory fitness, which were presented beyond the time of the rehabilitation period for up to 12 months. Different aspects of body composition and physical capacity were associated with levels of disability measured with HAQ and with cardiorespiratory fitness. This study indicates that in patients with inflammatory arthritis, muscle mass and strength were linked to HAQ over time, whereas the measures of body composition could be more linked to cardiorespiratory fitness than to HAQ.

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HPR Interventions (educational, physical, social and psychological)

SAT0613-HPR EFFECT OF CERVICAL STABILIZATION EXERCISES ON CERVICAL POSITION ERROR IN PATIENTS WITH SPONDYLOARTHRITIS: A RANDOMIZED CONTROLLED TRIAL

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Background: Proprioception sense might be deteriorated due to joint related diseases. Different exercise programs were shown beneficial for improving proprioception sense. However, the effect of exercise on cervical position error was not investigated in patients with axial spondyloarthritis (axSpA).

Objectives: To investigate the effect of cervical stabilization exercises on cervical position error in patients with axSpA.

Methods: Thirty-nine patients with axSpA were randomly allocated into two groups as exercise group (n: 20, 11 males) and control group (n: 19, 12 males). All patients were evaluated regarding to physical characteristics (age, body mass index), disease activity (Bath Ankylosing Spondylitis Disease Activity Index), functional status (Bath Ankylosing Spondylitis Functional Index), and spinal mobility (Bath Ankylosing Spondylitis Metrology Index). Cervical position error was evaluated in flexion, extension, rotation and lateral flexion directions and was calculated using a special formula (1). All evaluations were performed at baseline and after 3 and 12 months. Exercise group performed a progressive home-based cervical stabilization exercise program, while the control group did not receive any exercise intervention. Exercise adherence control and exercise progression was delivered by sending messages and video instructions via a freeware and cross-platform messaging service (WhatsApp Messenger) in a weekly basis.

Results: Baseline physical and disease related characteristics were similar between groups (p>0.05, Table 1). Exercise group showed significant improvements in all directions related to cervical proprioception following six weeks (p<0.05, Table 2), however, no improvements were observed in the control group (p>0.05, Table 2).

Table 1. Comparison of the Groups at Baseline

<table>
<thead>
<tr>
<th>Physical Characteristics</th>
<th>Exercise Group (n: 20) Median (IQR 25/75)</th>
<th>Control Group (n: 19) Median (IQR 25/75)</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>40.5 (36.0/52.5)</td>
<td>44.0 (39.0/49.5)</td>
<td>0.496</td>
</tr>
<tr>
<td>Body-Mass Index (kg/m²)</td>
<td>27.5 (24.5/30.2)</td>
<td>26.8 (23.6/29.3)</td>
<td>0.569</td>
</tr>
<tr>
<td>Disease Related</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Characteristics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BASDAI (score)</td>
<td>2.0 (1.0/3.3)</td>
<td>1.8 (1.3/2.5)</td>
<td>0.687</td>
</tr>
<tr>
<td>BASMI Total (score)</td>
<td>2.9 (1.7/4.1)</td>
<td>2.3 (1.8/3.1)</td>
<td>0.127</td>
</tr>
<tr>
<td>BASFI (score)</td>
<td>1.8 (0.6/2.9)</td>
<td>1.2 (1.0/2.2)</td>
<td>0.496</td>
</tr>
</tbody>
</table>

SAT0614-HPR IDENTIFYING AND OPTIMISING MULTIPLE INTERVENTION COMPONENTS AND THEIR DELIVERY WITHIN A SELF-MANAGEMENT SMARTPHONE APP FOR PEOPLE WITH SJÖGREN’S SYNDROME: A QUALITATIVE STUDY

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Background: Sjögren’s syndrome (SS) is an autoimmune rheumatic disease with diverse symptoms including mental and physical fatigue, dryness, pain and sleep disturbances. These symptoms are interconnected and rarely occur in isolation. Improving symptoms and quality of life requires people with SS to navigate multiple interventions and engage in self-management. Smartphone applications (apps) can deliver multiple cognitive and behaviour-based interventions in users’ everyday daily lives and are readily accessible. However, delivering several therapeutic interventions together within a single coherent self-management app requires systematic and evidence-based selection of intervention components, and an understanding of existing self-management approaches and their associated challenges for those living with SS.

Objectives: To identify theory-based intervention components for inclusion in a SS self-management app. To understand the self-management approaches and challenges of those living with SS and use this to identify in-app components.

Methods: First, to identify intervention components within the app, existing interventions that target each symptom of fatigue, dryness, pain, sleep disturbance were identified through a literature search. Their content was coded by the research team using behaviour change techniques and the Theoretical Domains Framework1. The content was grouped to form five intervention components which target multiple symptoms.

Second, to understand SS self-management approaches and challenges, 13 people living with SS took part in a series of qualitative focus groups (n=6) and a second focus group (n=7). Focus group involved participants discussing their own self-management experiences and approaches (e.g. when and how they employed a variety of techniques). In design workshops participants sketched maps to explain these experiences and used craft materials to create “Magic Machines”2 addressing their self-management challenges. Focus groups and design workshops were audio-recorded, transcribed, thematically analysed as a single data set, and findings mapped to the self-determination theory3 dimensions of capability, autonomy, and relatedness.

Results: Intervention components identified were: i) SS psychoeducation, ii) relaxation techniques, iii) activity pacing and goal setting, iv) assertiveness and communication skills, and v) sleep and dryness tips. Participants tackled complex symptom patterns (i.e. symptom interrelatedness and flares) using different self-management approaches; reactively (focusing on the most severe symptom) or systematically (one symptom at a time). Knowing which intervention techniques to choose was felt to be challenging; however the availability of multiple interventions techniques provided a sense of optimism.

Table 2. In-Group Comparison of Cervical Position Sense Error

Before Median (IQR 25/75) After Median (IQR 25/75) p*

Exercise Group (n: 20) Flexion (*) 4.8 (2.0/2.7) 2.8 (1.7/3.8) 0.033
Extension (*) 4.5 (3.3/6.4) 3.1 (1.8/4.8) 0.040
Right Rotation (*) 5.2 (2.9/8.9) 3.7 (1.9/4.7) 0.006
Left Rotation (*) 4.3 (2.5/5.0) 2.8 (2.2/3.3) 0.017
Right Lateral Flexion (*) and lateral rotation (*) 4.9 (3.3/6.8) 2.3 (1.8/3.7) 0.009
Control Group (n: 19) Flexion (*) 6.3 (3.5/7.3) 5.2 (3.8/7.0) 0.856
Extension (*) 5.5 (3.7/7.3) 4.1 (3.3/8.2) 0.809
Right Rotation (*) 6.4 (4.3/9.0) 5.5 (3.0/8.5) 0.472
Left Rotation (*) 5.4 (3.5/7.9) 5.0 (3.5/7.2) 0.778
Right Lateral Flexion (*) 5.9 (3.6/8.4) 4.3 (2.7/7.7) 0.717
Left Lateral Flexion (*) 3.8 (2.4/5.6) 4.9 (2.9/5.7) 0.904

*Wilcoxon Signed Rank Test, IQR 25/75: Interquartile range 25/75, °: degree, p<0.05.
and motivation. Participants were enthusiastic about accessing several inter-
vention techniques via an app, but warned that smartphones and technology can
exacerbate mental fatigue and eye dryness. The invisible nature of symp-
toms, and highly visible nature of management techniques (e.g., applying eye
drops), presented further self-management challenges relating to their inter-
actions with other people.

Conclusion: Promising components to include in an SS app were identified
but should be tested in an optimisation trial. The in-app delivery of component
modules should be designed to support diverse self-management approaches,
choice and autonomy, yet provide module recommendations and guidance when
needed, and be simple to use to reduce mental fatigue and dry eye symptoms. A
self-management app should also be designed to enable users to share informa-
tion about SS with other people.

References:

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Disclosure of Interests: None declared

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SAT0616-HPR

IMPLICATED FACTORS IN THERAPEUTIC ADHERENCE
OF PATIENTS WITH RHEUMATOID ARTHRITIS: THE
PATIENT’S PERSPECTIVE

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Background: Therapeutic adherence has become a topic of growing interest
for medical research. Studies have reported non-adherence rates of 20-50% in
rheumatoid arthritis (RA) patients (1). Poor adherence has a negative impact
on disease outcomes and implies an economic burden for the health system (2).
Identifying the potential risk factors for non-adherence is essential to develop
intervention strategies to solve this problem

Objectives: To establish the contribution of illness and medication beliefs
to therapeutic adherence in RA. To explore the association of treatment adherence
with other patient and disease factors.

Methods: RA patients ≥ 18 years old from a military hospital diagnosed with RA
based on ACR / EULAR 2010 criteria were included in a cross-sectional study.
Compliance Questionnaire Rheumatology (CQR) was used to assess treatment
adherence. Unsatisfactory compliance was defined as taking correct dosing <
80%. Illness and medication beliefs were evaluated using the “Illness Perception
Questionnaire” (IPO-b) and the “Beliefs about medicine questionnaire” (BMQ). Demographic data and clinical characteristics were collected by stand-
ardized clinical interview and revision of medical records.

Results: 144 patients were included in the study, 106 (73.6%) women, with a mean
age of 62 years (SD 12) and median disease duration of 5 years (interquartile
range 25-75: 2-11), 113 (78.4%) patients showed good treatment adherence.
No differences were observed regarding demographics and clinical characteris-
tics. Strong beliefs about drugs potential damage was associated with poor
compliance (13±5 vs. 11±3, p= 0.013), meanwhile increased belief in medica-
tion necessity was associated with good compliance (21±3 vs. 20±3, p= 0.015).
From the illness perception measures, adherent patients had increased feeling of
treatment control (8.8± 1.5 vs 7.7± 2.1,p= 0.008) and greater emotional response
(6.2±3.1 vs 4.8±3.4,p= 0.042). In a multivariate analysis was found that for each
unit of increase in the score of BMQ’s damage domain, adherence was reduced
by 20% (CI 95%: 0.7-0.9, p= 0.001); for each unit of increase in the treatment
control item of the IPO-b, adherence increased 1.2 times (CI 95%: 1.08-1.46, p= 0.006); and for each unit of increase in the emotional response item of the IPO-b
adherence increased 1.2 times (CI 95%: 1.08-1.46,p= 0.002).

Conclusion: Illness and medication beliefs could influence compliance to treat-
ment in patients with RA.

References:
and association with nonadherence in patients with rheumatoid arthritis using
tivity Costs Due to Absenteeism and Permanent Work Disability in Patients
with Early, Active Rheumatoid Arthritis: A Nationwide Register Study of 7831

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SAT0615-HPR

FACTORS ASSOCIATED WITH PATIENT ACTIVATION IN
PEOPLE WITH RHEUMATIC CONDITIONS

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Foundation Trust, Bristol, United Kingdom

Background: Patient activation describes the skills, abilities and confidence
someone uses to actively manage their health. Patient activation abilities in rheu-
matology are unclear, and there is little knowledge about factors that explain var-
iation in patient activation. Therefore, understanding these factors can contribute
to the development of appropriate, rheumatology-specific interventions targeting
activation. The Patient Activation Measure (PAM) captures patient activation and
provides people with both a score and a level to describe how able they are to
actively manage their health.

Objectives: To explore longitudinal changes to patient activation (measured
using the PAM) (Hibbard et al., 2005), and the PAM’s associations with related
constructs (including self-efficacy, health literacy and health beliefs) in a sample
of participants with inflammatory arthritis.

Methods: A postal survey was administered at two time points that were nine
months apart. This survey captured the PAM and a range of clinical, demographic
and psychosocial variables in a sample of rheumatology patients from 6 NHS
sites in England. The measures included in the survey had been selected based
on both theory and prior qualitative research and the survey pack was designed
in collaboration with a patient partner. Following data collection, candidate vari-
ables for a multiple regression analysis were identified using univariable analysis.
These variables were included in a forced entry multiple regression at
each time point, and the variables that were statistically significant contributors at
a 0.1 level were included in the final models. Changes to PAM scores over time
were investigated using a Wilcoxon matched-pair signed rank test.

Results: 251 participants completed the first survey and 154 participants com-
pleted both full surveys. Self-efficacy, illness beliefs, health literacy and health
locus of control were consistently associated with variance in PAM scores. The
first three factors were also predictive of variance in PAM levels. With the 154
participants who fully completed both surveys, there was a statistically significant
difference in participants’ PAM scores between the two surveys.

Conclusion: The findings suggest factors that may be targets for interventions
that aim to increase patient activation. The changes to PAM scores across the
data collection period also suggest that when using the PAM as a clinical tool,
healthcare professionals would benefit from incorporating regular reviews and
preparations for any increases or reductions in patient activation.

References:
mation and testing of a short form of the patient activation measure. Health

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Novartis to deliver training to nurses.

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SAT0617-HPR

QUALITATIVE STUDY EXPLORING THE
BARRIERS AND FACILITATORS TO HOME-BASED
EXERCISE PROGRAMS ADHERENCE WITH
KNEE OSTEOARTHRITIS: THE PERSPECTIVES
PHYSIOTHERAPISTS AND PATIENTS.

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University, Physiotherapy and Rehabilitation, Istanbul, Turkey

Background: Home exercise programs are widely used in the treatment of knee
osteoarthritis (OA). However, adherence to these exercises decreases in the
long term due to different factors. In recent years, new approaches are being
developed to increase exercise adherence (EA) for patients with OA. Although it
is known that EA is low in Turkish patients, there is no study that examines the

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