Our data suggest that women and patients with higher disease activity are likely to have high levels of educational needs and these groups should be targeted in educational interventions for people with USpA.

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FRI0734-HPR EFFECTS OF VIRTUAL REHABILITATION ON SHOULDER PERIARTHRITIS

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Background: The virtual rehabilitation (Nintendo Wii) program works with a 3-dimensional, computer-assisted, virtual reality creation system. The system creates a mirror effect and provides the smoothness of the movement of the adult. It keeps visual and sensory feedback during exercise. The avatar that appears on the screen detects motion and displays the result thanks to the control commander. The use of virtual reality practice in the exercise program is a new way of improving participation and motivation of participants.

Objectives: The aim of our study is to investigate the effect of virtual rehabilitation on kinesophobia and clinical fragility in patients with shoulder periarthritis.

Methods: Fifteen cases diagnosed with shoulder periarthritis were included in the study. In our study, we used Tampa Kinesophobia Scale for kinesophobia, VAS for pain severity, manual muscle test for muscle strength and goniometer for ROM. In addition to Clinical fragility Scale for fragility and 4-item Quality of Life Questionnaire were used to assess quality of life. Finally, Shoulder Pain and Disability Index (SPADI) was used for shoulder disability. Eight of 15 patients were included in the control group (CG) and 7 in the virtual rehabilitation group (VRG). Both groups were treated with Therapeutic US, TENS and Cold Pack. In addition to these, the control group consisted of 15 sessions of active stretching and strengthening exercises for 20 minutes each session; the VRG was given a total of 15 sessions of the virtual rehabilitation program for 45 minutes each session, with 3 sessions per week. Intra-group pretreatment and post-treatment differences were analyzed by Wilcoxon test, and inter-group comparisons were analyzed by Mann-Whitney U test.

Results: Statistically significant reductions in Frailite, Kinesophobia, SPADI and VAS values were observed in the VRG analyzes; A statistically significant increase in the 4-item quality of life questionnaire, range of motion and muscle strength values was assessed ($p < 0.05$). In the CG, there was a statistically significant decrease in kinesophobia, VAS and SPADI values; There was a statistically significant increase in joint range of motion and muscle strength evaluations ($p < 0.05$). There was no statistically significant difference in the fragility evaluation of the CG ($p > 0.05$).

Fragility and kinesophobia decreased in both groups after treatment compared to before treatment, but this decrease was found to be higher in VRG ($p < 0.05$).

Conclusions: As a result of our study, virtual rehabilitation in the treatment of kinesophobia and fragility in shoulder periarthritis patients was game-focused and it was found to be an effective method for increasing participation and biofeedback. Virtual rehabilitation was considered as an alternative to conventional physiotherapy and rehabilitation programs.

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FRI0735-HPR ANALYSIS OF LEFT VENTRICULAR FUNCTION WITH ECHOCARDIOGRAM IN PATIENTS WITH PSORIATIC ARTHRITIS AND NOT DIAGNOSED CARDIOVASCULAR DISEASE

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Background: It is known that some rheumatologic disorders may affect the cardiovascular system. In the last years, psoriatic arthritis (PsA) has been pointed out as one of those.

Objectives: The aim of this study was to analyze if there was any subclinical dysfunction sign in patients with PsA of whom no cardiovascular disease had been diagnosed.

Methods: Forty three patients with PsA were studied. A comprehensive echocar-

diogram was performed. Variables recorded for each patient were: left ventricular (LV) dimensions, LV and right ventricular (RV) systolic function, valve morphology and function, LV diastolic function assessment, and longitudinal strain (LS) assessment with speckle tracking imaging. Information on age, sex, cardiovascular risk factors (hypertension, diabetes, dyslipemia, renal disease and smoking), and evolution time of PsA was also recorded. An electrocardiogram was also carried out for each patient.

Results: There were 23 men and 20 women. The mean age was 52 ± 12 years old. The PsA mean evolution time was 6.8 ± 5.3 years. Most of patients had at least one cardiovascular risk factor. All patients were in sinus rhythm. The LV end-diastolic diameter and ejection fraction, left atrium, and RV function were within normal limits. Men had overall a thicker interventricular septum (12 ± 1.7 mm) when compared to women (9.7 ± 1.6 mm). 86% patients had a normal mitral valve function, as so 91% with aortic valve. None of them had findings suggesting pulmonary hypertension, or pericardial effusion. The diastolic function assessment in the general population revealed normal average of septal and lateral A' and S waves peak velocities, and E/E' ratio. Men had lower septal E' and S waves values and higher septal A' wave velocity. Nearly 50% of patients had a low septal E' or lateral E' wave peak velocity. 13 patients (30%) had impaired both septal E' and lateral E' waves, who were older and mainly men. The strain analysis showed an average of global LS - $17.9 \pm 3\%$, two-chambers general LS - $17.2 \pm 5\%$, three-chambers general LS - $19\% \pm 5.2\%$, and four-chambers general LS - $17.3 \pm 3.5\%$; without any significant difference between sex. 26 patients (60.5%) had global LS above normal limits; these were younger and with less PsA evolution time. Longitudinal strain values tended to be less negative at the basal level.

Conclusions: Half of the patients with PsA were found to have some feature of diastolic dysfunction and more than the half of them had a slightly impaired global longitudinal strain value. Further studies could be of value to determine whether these findings would have a specific impact on the follow-up in this kind of patients.

Disclosure of Interest: None declared

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FRI0736-HPR VALIDITY AND RELIABILITY OF PERFORMANCE TESTS ASSESSING BALANCE AND FALL RISK IN PATIENTS WITH TOTAL KNEE ARTHROPLASTY

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Background: Total knee arthroplasty (TKA) is a common surgical intervention that is performed with an aim to treat severe osteoarthritis (OA) of knee. Even though there is a rapid improvement in knee pain, functional improvement is limited in the following year after the surgery. Increased fall risk due to impairments in balance is one of the most common limitations after TKA. Therefore, balance and fall risk evaluation is an essential part of the assessment.

Objectives: The aim of this study was to determine the validity and reliability of various performance tests that are used for evaluating balance and fall risk in patients with TKA.

Methods: This study included 32 OA patients (27 F, 5 M) who undergone TKA surgery 6 months prior to the study. Mean age and BMI of the patients were 64 ± 10.58 and 30.49 ± 5.87 , respectively. Participants performed the Timed Up and Go Test (TUG), 10 Meter Walk Test (10MWT), Single Leg Stance Test (SLST), Functional Reach Test (FRT), 2 Minute Walk Test (2MWT), Five Times Sit to Stand Test (5x SST) as performance tests. Each of the tests was performed twice, with a

Table 1. Test-Retest Reliability analysis of the performance tests

	Day 1 Mean (SD)	Day 2 Mean (SD)	ICC (95% CI)	SEM	MDC ₉₅
TUG (sec)	10.67±4.53	10.61±5.05	0.95 (0.90–0.97)	1.01	2.79
10 MWT (sec)	9.89±3.37	9.72±3.03	0.97 (0.94–0.98)	0.58	1.6
SLST (sec)	14.96±14.90	18.97±19.15	0.74 (0.48–0.87)	7.59	21.02
FRT (cm)	26.19±7.33	26.60±6.63	0.94 (0.88–0.97)	1.79	4.95
2 MWT (m)	145.25±37.63	145.32±38.06	0.98 (0.96–0.99)	5.32	14.73
5x SST (sec)	13.54±6.26	13.04±5.03	0.96 (0.91–0.98)	1.25	3.46

Unit: Mean ± SD, ICC: Intraclass Correlation Coefficient CI: Confidence Interval, SEM: Standard Error of Measurement, MDC: Minimal Detectable Change at 95% Confidence Interval, sec: seconds, cm: Centimeters, m: meters, TUG: Timed Up and Go Test, 10 MWT: 10 Meter Walk Test, SLST: Single Leg Stance Test, FRT: Functional Reach Test, 2 MWT: 2 Minute Walk Test, 5x SST: Five Times Sit to Stand Test.

Table 2. Concurrent Validity of Performance Tests

	r value	p*
TUG (sec)	-0.713	$p < 0.01$
10 MWT (sec)	-0.736	$p < 0.01$
SLST (sec)	0.754	$p < 0.01$
FRT (cm)	0.695	$p < 0.01$
2 MWT (m)	0.792	$p < 0.01$
5x SST (sec)	-0.766	$p < 0.01$

*Spearman Correlation Test; sec: seconds, cm: Centimeters, m: meters, TUG: Timed Up and Go Test, 10 MWT: 10 Meter Walk Test, SLST: Single Leg Stance Test, FRT: Functional Reach Test, 2 MWT: 2 Minute Walk Test, 5x SST: Five Times Sit to Stand Test.

1-day interval. ICC models were used to determine the test-retest reliability. Berg Balance Scale (BBS) was used as the reference standard to establish concurrent validity.

Results: All tests showed good to excellent reliability (ICC >0.94) except SLST which showed moderate to good reliability (ICC=0.74). Three of the tests (SLST, 10 MWT, 5x SST) found to have good to excellent validity ($r>0.75$) and three (2 MWT, TUG, FRT) found to have moderate to good reliability ($r>0.69$). Results are presented in details at Table 1 and Table 2.

Conclusions: TUG, 10MWT, SLST, FRT, 5x SST and 2 MWT are reliable and valid outcome measures, and could be used to assess balance and fall risk in patients with TKA. MDC scores presented in this study can be used to evaluate change in performance over time or effectiveness of interventions. 2 MWT and 5x SST were determined as the most reliable and valid methods among the investigated tests.

Disclosure of Interest: None declared

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FRI0737-HPR THE SOURCES OF PAIN IN ABDOMEN IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Systemic diseases of connective tissue associated with the early development of atherosclerosis [1,2]. It is well-known that the main cause of decrease the quality of life patients with rheumatoid arthritis (RA) is a chronic pain syndrome. The cause of pain can be joint inflammatory process, systemic manifestations of RA (vasculitis, pericarditis, pleurisy, polyneuropathy), complications of drug therapy, comorbid conditions. Pain in the stomach area may be associated with NSAID-gastropathy, problems with spinal discs, and perhaps with atherosclerotic lesions of the abdominal aorta.

Objectives: To estimate atherosclerotic changes of arteries in patients with RA and determine possible sources of pain in the abdomen by ultrasound-control palpation.

Methods: We included 75 patients with RA (age 38.7 ± 7.4 , males 93.3%) and 29 healthy subjects, matched for age and gender, without a history of cardiovascular diseases. An ultrasound investigation of the arterial vessel with measurement of the intima-media thickness (IMT) of carotids was performed. To determine the source of pain in the abdominal cavity ultrasound-control palpation of duodenal bulb, gallbladder, lumbar discs, and abdominal aorta was done. Severity of pain was assessed using the VAS.

Results: It has been determined, that in RA group IMT was 0.8 mm (0.7–0.9), compared with 0.6 mm (0.6–0.7) in control group. IMT positively correlate with the age, duration of disease, Ritchie index, C-reactive protein level. In 22 (29.3%) patients with RA we found atherosclerotic plaques lesion in carotids, aorta, and vessels of the lower extremities. Present of atherosclerotic plaques associated with disease durations (12 years (10–15) in group with plaques and 5 years (3–8) in group without plaques). The presence of atherosclerotic plaques is associated with rheumatoid factor ($c^2=1.02$, $p>0.05$), and systemic manifestations of RA ($c^2=15.89$, $p<0.001$).

In RA group 36 (48%) patients had indicated the presence of pain in the abdomen while performing ultrasound control palpation. In 15 (20%) cases was detected pain during palpation of the lumbar spine, VAS 48 (36–59). In 21 (28%) cases, patients indicated pain during palpation of the abdominal aorta, VAS 42 (31–65). In this group of patients we found signs of the atherosclerotic lesions of aorta: change in the contour of the vessel, the heterogeneous structure of the vascular wall. Atherosclerotic plaques in the abdominal aorta are founded in 21 (28%) cases.

Conclusions: Patients with RA had an increase thickness of IMT and atherosclerotic plaques, which appear in various vascular regions. During performing

ultrasound-control palpation in 36 (48%) patients was detected pain, associated with vertebral changes 15 (20%), and with atherosclerotic changes of abdominal aorta – 21 (28%).

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FRI0738-HPR QUALITY IN REHABILITATION FOR RHEUMATIC AND MUSCULOSKELETAL DISEASES (RMDs): DEVELOPMENT AND TESTING OF A RMD REHABILITATION QUALITY INDICATOR SET

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Background: Rehabilitation in Norway is characterized by a lack of coordination across levels of care, and by large variations in content and quality. A means to monitor the quality of care is to use quality indicators (QI), which are related to structure (the settings in which care is given), process (what is actually being done) or outcome of health care.

Objectives: To develop and test a set of quality indicators for rehabilitation of people with RMDs.

Methods: The QI set was developed following the Rand/UCLA Method and pilot-tested for validity and feasibility in 29 specialist and primary care rehabilitation units. Pass rates were recorded in telephone interviews with managers of the rehabilitation units (structure QIs (yes/no)), or patients (process and outcome QIs (yes/no)). Time use and participants rating of face validity on a numeric rating scale (0–10, 10=high validity) were recorded. Separate QI pass rates and summary QI pass rates were calculated.

Results: A total of 164 patients (mean (SD) age 58.5 (16.5) years and 76% women) participated. Mean (range) validity score for managers/patients was 8.3 (8)/7.9 (9), and mean answering time was 6.0/5.5 minutes.

A 100% summary pass rate was reached by only two of the rehabilitation units and 4% of the patients.

Conclusions: To our knowledge this is the first QI set developed to measure QI pass rates for rehabilitation of RMDs. The results indicate that the QI set is acceptable to respondents, and it's validity and feasible format make it suitable for monitoring quality of rehabilitation. The large variety in pass rates suggests a high potential for quality improvement in rehabilitation.

Disclosure of Interest: None declared

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FRI0739-HPR A RHEUMATOLOGY PATIENTPANEL: THE PATIENT IS THE EXPERT, WE ARE THE SPECIALIST

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Background: Patient participation is known in the field of rheumatology research and is becoming more customary. The patient perspective can improve the care and line specific needs of the patient to the delivered care. Recently, our Rheumatology department within the Maasstad Hospital introduced the Value Based Health Care principle in order to optimize the current healthcare system.

Abstract FRI0738-HPR – Table 1. Structure, process and outcome Quality indicators (QI) with Pass rates (PR) in %

STRUCTURE QI (answered by unit managers)	PR	PROCESS QI (answered by patients)	PR
Has a defined patient target group	96		
Procedures for		Had an initial bio-psycho-social assessment	85
Developing an individual rehabilitation plan	76	Received a written rehabilitation plan	77
Regular team meetings with patients	72	Participated in minimum 2 team meetings	69
Meetings with possibility to participate for next of kin and external HPs*	65	It was possible for next of kin and external HPs to participate in the team meetings	19
Individual plans for follow-up after discharge	52	Received an individual plan for follow-up	65
		External HPs* were involved in follow-up	22
Procedures for involving patients in		Participated in	
Setting goals	93	Setting goals	91
Planning the intervention	93	Planning the intervention	71
Evaluating the intervention	89	Planning follow-up	74
Use of validated assessment instruments	69	OUTCOME QI (answered by patients)	PR
Assessment of		Satisfied or very satisfied with rehabilitation	88
Goal attainment at discharge	41	Reached important goals	89
Goal attainment 3–6 months after discharge	21		
Function at admission and discharge	79	Had important improvement in physical, psychological or social function	86
Function 3–6 months after discharge	24		
HRQoL at admission and discharge	29	Had improvement in quality of life	77
HRQoL 3–6 months after discharge	17		
Registration of adverse events	96	Experienced negative events	12

*External HPs are health professionals from other health care settings, such as primary care.