functional limitations, but for which there is yet no cure. Evidence-based treatment recommendations state that all patients with hand OA should be offered patient education, hand exercises, and provision of assistive devices and orthoses. Pharmacological therapy is recommended as a symptom relieving supplement. The main indication for CMCJ surgery is pain and poor function, and such surgery should be considered only when other treatment has proven insufficient in relieving pain (1). Previous research has shown that high motivation is a significant predictor for deciding to undergo CMCJ surgery (2), but there is little knowledge regarding which factors that motivates patients for undergoing such surgery.

Objectives: The objective of this study was to explore patient goals and motivation for surgery, and factors characterizing patients highly motivated for surgery.

Methods: This cross-sectional study included 180 patients referred from their general practitioner for CMCJ surgical consultation. Goals for surgery were collected with an open-ended question and analysed by linking the content of each goal to domains in the International Classification of Functioning, Disability and Health coding system. Motivation for surgery was rated with a Numeric Rating Scale (NRS, 0-10, 0=no motivation). Activity limitations was self-reported using the Measure of Activity Performance of the Hand (MAP-Hand, score 1 to 4, 1=no activity problems) and the Disabilities of the Arm, Shoulder and Hand questionnaire (QuickDASH; score 0-100, 0=no disability). Factors that characterized patients highly motivated for surgery (NRS≥8) were explored with multivariate regression analyses.

Results: Mean age of participants was 63 years (SD 7.6) and 142 (79%) were women. The most common goals for surgery were to reduce pain and improve arm and hand use. Fifty-six (31%) of the patients were characterized as highly motivated for surgery. High motivation for surgery was strongly associated with more activity limitations (MAP-Hand; (OR 4.00, $p=0.008$)), living alone (OR 3.18, $p=0.007$) and a young age (OR 0.94, $p=0.002$).

Conclusion: Decisions on CMCJ OA surgery should be based on assessment and discussion of patients' life situation, hand pain, activity limitations and motivation and goals for surgery. According to the EULAR recommendations, previously received conservative and pharmacological treatment should also be evaluated.

References:

- [1] Kloppenburg, M., et al. (2018). "2018 update of the EULAR recommendations for the management of hand osteoarthritis." *Ann Rheum Dis*. 0; 1-9
- [2] Gravas, E. M. H., et al. (2019). "Non-pharmacological treatment gap preceding surgical consultation in thumb carpometacarpal osteoarthritis - a cross-sectional study." *BMC Musculoskelet Disord* 20(1): 180.

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COMPARING THE EFFECTS OF YOGA AND HOME EXERCISE PROGRAMS ON FUNCTIONAL STATUS IN CHILDREN WITH ENTHESITIS RELATED ARTHRITIS

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Background: Enthesitis-Related Arthritis (ERA), also referred as the juvenile ankylosing spondylitis, is a subtype of Juvenile Idiopathic Arthritis (JIA). However, ERA patients were reported as having higher pain levels, lower functional status and lower quality of life level compared to other JIA subtypes. Yoga is used as an exercise method in adult patients with rheumatic diseases and positive effects on physical and psychosocial symptoms were reported. However, no study was conducted related to yoga in pediatric population with rheumatic diseases.

Objectives: The aim of this study was to investigate effects of performing yoga or home exercises on functional status in children with ERA.

Methods: Twenty-one children with ERA were allocated into two groups as yoga group (n=11) and home exercise group (n=10). Yoga group performed yoga exercises supervised by a physiotherapist for twice a week, for eight weeks, while the home exercise group performed video-based home exercises for the same period. Pain in rest and activity (Numeric Rating Pain Scale), functional status (Six-Minute Walk Distance, Stair Climb Test), and quality of life (PedsQL Children and Parent Form) were evaluated at baseline and following eight weeks.

Results: The groups were similar regarding to physical characteristics, pain, functional status, and quality of life at baseline ($p>0.05$, Table 1). While, all the parameters (except PEDSQL Parent Form) in yoga group significantly improved at the end of the study ($p<0.05$, Table 2), only stair climb test results significantly improved in home exercise group ($p<0.05$, Table 2).

Table 1. Comparison of the groups at baseline

	Yoga Group (n:11) Median (IQR 25/75)	Home Exercise Group (n:10) Median (IQR 25/75)	p*
Physical parameters			
Age (year)	15.0 (13.0/15.5)	16.0 (14.0/17.0)	0.099
BMI (kg/m ²)	20.7 (18.3/23.1)	21.2 (19.9/22.0)	0.756
Pain			
Rest pain (score)	0 (0/5.0)	1.0 (0/3.0)	0.705
Activity pain (score)	4.0 (1.0/6.5)	2.0 (0/7.0)	0.387
Functional Status			
Six-minute walk distance (m)	600.0 (552.5/664.5)	626.0 (556.0/650.0)	1.000
Stair climb test (sec)	7.6 (6.8/8.3)	7.4 (7.0/8.0)	1.000
Quality of Life			
PedsQL Children (score)	13.0 (10.0/23.5)	12.5 (6.0/20.0)	0.654
PedsQL Parent (score)	21.0 (8.5/31.5)	26.0 (15.0/39.0)	0.387

*: Mann-Whitney U test; IQR 25/75: Interquartile Range 25/75, PedsQL: Pediatric Quality of Life Inventory, $p<0.05$

Table 2. Changes in the Groups

	Before Median (IQR 25/75)	After Median (IQR 25/75)	p*
Yoga Group			
Pain			
Rest pain (score)	0 (0/5.0)	0 (0/2.5)	0.039
Activity pain (score)	4.0 (1.0/6.5)	0 (0/1.5)	0.012
Functional Status			
Six-minute walk distance (m)	600.0 (552.5/664.5)	692.0 (595.0/705.5)	0.011
Stair climb test (sec)	7.6 (6.8/8.3)	6.2 (6.0/7.0)	0.008
Quality of Life			
PedsQL Children (score)	13.0 (10.0/23.5)	9.0 (4.0/17.0)	0.021
PedsQL Parent (score)	21.0 (8.5/31.5)	18.0 (8.0/22.0)	0.169
Home Exercise Group			
Pain			
Rest pain (score)	1.0 (0/3.0)	0 (0/3.0)	0.715
Activity pain (score)	2.0 (0/7.0)	2.0 (0/7.0)	0.892
Functional Status			
Six-minute walk distance (m)	626.0 (556.0/650.0)	601.5 (585.0/707.0)	0.093
Stair climb test (sec)	7.4 (7.0/8.0)	7.0 (6.5/7.8)	0.028
Quality of Life			
PedsQL Children (score)	12.5 (6.0/20.0)	8.5 (7.0/18.0)	0.475
PedsQL Parent (score)	26.0 (15.0/39.0)	22.5 (14.0/30.0)	0.192

*: Wilcoxon Signed Rank Test, IQR 25/75: Interquartile Range 25/75, PedsQL: Pediatric Quality of Life Inventory, $p<0.05$

Conclusion: Yoga seems promising for improving functional status in children with ERA compared to a home-based exercise program. Therefore, yoga can be implemented as an exercise intervention in rehabilitation programs in children with ERA.

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FRI0637-HPR

INDIVIDUALISED EXERCISE INTERVENTION FOR HIP AND KNEE OSTEOARTHRITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMISED CONTROLLED TRIALS

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Background: Osteoarthritis (OA) is a leading cause of disability worldwide. Currently, exercise is recognised to be one of the core treatments for OA (NICE, 2014). Convincing evidence shows that exercise can have positive effects on pain and function in people with OA (Fransen et al., 2015). However, a standardised exercise regimen may not suit all patients and adherence to exercise is always an issue. Therefore, several international guidelines recommended individualisation of the exercise regimen according to individual patient characteristics (e.g. pain severity, personal goals and co-morbidities), as this may enhance take up and adherence, hence treatment effect of the intervention (Fernandes et al., 2013).

Objectives: The aims of this systematic review were: (1) to evaluate the current evidence for efficacy in randomised controlled trials (RCTs) of individualised exercise (IE) interventions for people with hip or knee OA; and (2) compare this to the efficacy of non-individualised exercise (NIE).

Methods: A systematic search was carried out, up until March 6th 2018, on the following databases: MEDLINE, CINAHL, AMED, PsycINFO and EMBASE. RCTs of IE interventions, or with subgroup analysis based on specific patient characteristics, were searched. Standardised mean difference and 95% confidence interval (CI) were calculated using random effects model. Risk of bias was evaluated using the modified Cochrane tool. Pain was the primary outcome of interest. Results of IE interventions were then compared to the NIE interventions identified from a previous systematic review (Goh et al., 2019).

Results: We reviewed titles of 1,766 records in the systematic search. The screening process (Figure) identified 15 studies (1,826 participants) that met the inclusion criteria, of which 7 were included in a meta-analysis. Most included studies had high risk of bias. Blinding was a consistent problem due to the nature of the intervention. Within the trials exercise was individualised according to factors including severity of symptoms, exercise performance, lower limb muscle strength and presence of co-morbidities (e.g. heart failure, chronic obstructive pulmonary disease (COPD) and diabetes mellitus (DM) type 2).

The analysis showed that IE significantly improved pain, physical function, performance and quality of life outcomes (Table). When compared to NIE interventions, IE showed greater effect size for all outcomes but their 95% CIs were overlapping.

Figure showing Summary of screening process

Table 1. Summary of results

Outcome	Type of exercise program	ES	95% CI	Number of studies (Number of patients)
Pain	IE	1.04	0.32 - 1.77	7 (991)
	NIE	0.57	0.44 - 0.69	65 (4,723)
Function	IE	1.37	0.50 - 2.24	7 (991)
	NIE	0.51	0.38 - 0.64	63 (4,829)
Performance	IE	2.00	0.07 - 3.93	2 (291)
	NIE	0.51	0.38 - 0.63	66 (4,889)
QoL	IE	1.30	-0.52 - 3.12	2 (226)
	NIE	0.32	0.15 - 0.49	34 (2,545)

ES= Effect size. CI= Confidence Interval. IE= Individualised Exercise. NIE= Non-Individualised Exercise. QoL= Quality of Life

Conclusion: The results of this review show that IE may have better outcomes on people with hip or knee OA compared to NIE. However, the small study effect may inflate the estimates of the individualised exercise group, and further head to head comparisons are required.

References:

- [1] FERNANDES L., HAGEN K. B., BIJLSMA J. W., ANDREASSEN O., CHRISTENSEN P., CONAGHAN P. G., DOHERTY M., GEENEN R., HAMMOND A. & KJEKEN I. 2013. EULAR recommendations for the non-pharmacological core management of hip and knee osteoarthritis. *Annals of the rheumatic diseases*, 72, 1125-1135.
- [2] FRANSEN M., MCCONNELL S., HARMER A. R., VAN DER ESCH M., SIMIC M. & BENNELL K. L. 2015. Exercise for osteoarthritis of the knee. *The Cochrane Library*.
- [3] GOH S.-L., PERSSON M. S., STOCKS J., HOU Y., WELTON N. J., LIN J., HALL M. C., DOHERTY M. & ZHANG, W. 2019. Relative efficacy of different exercises for pain, function, performance and quality of life in knee and hip osteoarthritis: Systematic review and network meta-analysis. *Sports Medicine*, 49, 743-761.
- [4] NICE 2014. Osteoarthritis: care and management in adults. <https://www.nice.org.uk/guidance/cg177/chapter/1-Recommendations#non-pharmacological-management-2> [Accessed 02/12 2019]

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HPR Interdisciplinary research

FRI0638-HPR

IMPACT OF PARENTAL MIGRATION IN THE CONTEXT OF THE MULTIFACTORIAL ETIOLOGY OF CHRONIC ARTHRITIS IN CHILDHOOD

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Background: Migration of Romanians to work abroad began after 1990 with the aim to provide a better income and life for their family. Current studies show that the migration of one parent or both, even when it is temporary, produces negative long-term effects on the health and psychosocial evolution of the children affected. Children and adolescents exposed to chronic stress due to migration, misunderstandings between the parents, alcoholism, violence, divorce of the parents etc., present an increased risk of illness. More and more data from the literature suggest that prolonged stress and depression induces inadequate cortisol along with norepinephrine secretion, increased synthesis of proinflammatory cytokines, which are the basis for autoimmune pathologies, such as chronic arthritis.

Objectives: Given the extended phenomenon of migration from Romania and the increase in the cases with autoimmune pathology in children and adolescents, we aimed to evaluate the association between the disorders related to the permanent stress induced by the parental migration abroad and the risk of developing arthritis during childhood.

Methods: The study included 201 children and adolescents aged 13.4 ± 3.7 years, who were in evidence of an outpatient health unit, from 2016-2019. These cases were included in a chronic disease registry with the diagnosis of Juvenile Idiopathic Arthritis (JIA), established by a pediatric rheumatologist. For the initial evaluation, we used a questionnaire that included the socio-demographic data. In comparison, we studied 40 healthy children (control group). The family drawing test was used for patients between 5 and 16 years of age to identify possible conflicts with certain family members, to assess the emotional and psychological maturity of the child or adolescent, and to find out if there are any problems at home.

Results: At the end of the study, only 181 (90%) of the eligible patients completed the questionnaire and the family drawing test. Demographic data showed that patients from rural areas predominated (71.8%), compared to 28.2% from urban areas. In terms of sex, 52.5% were male, compared to 47.5% female. Family history (mother, father, sister, brother, grandfather, aunt, uncle) of autoimmune disease was encountered in 28.1% of patients, as follows: spondylarthritis in 9.4% cases, rheumatoid arthritis in 8.8% cases, JIA in 3.9% cases and other autoimmune diseases (Systemic Lupus Erythematosus, Scleroderma, Diabetes, Asthma) in 6% cases. Patients from low-income families were in 82.3% of cases. 72.5% of the cases had a prolonged state of stress by migrant parents for working abroad [38.7% only one parent (30% mother) and both parents in 17.7% of cases], divorce in the family in 11.6% of cases, unmarried mother in 2.8% of cases, and a close relative recently deceased in 1.7% of patients.