

external validity was confirmed by correlation with the RAID score of 0.16 ($p=0.08$).

Conclusion: This study enabled the development and the validation of the RAKE, a Knowledge questionnaire for patients with RA, with a good acceptability, reproducibility and sensitivity to change. This KQ will be helpful to assess the process of knowledge acquisition in patient education approaches.

REFERENCES:

- [1] Hill and al., Br J Rheumatol. 1991;30 :45-9. Lineker and al., J Rheumatol. 1997, 24(4):647-53. Beauvais C, et al. ARD 2015; 74, suppl 2.

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FRI0721-HPR EFFECTIVENESS OF NON-PHARMACOLOGICAL AND NON-SURGICAL INTERVENTIONS ON THE IMPACT OF RHEUMATOID ARTHRITIS: AN OVERVIEW OF REVIEWS

Eduardo Santos¹, Catia Duarte¹, Andrea Marques¹, Daniela Cardoso², João Apóstolo², P José Antonio. Da Silva¹, Maria Do Céu Barbieri-Figueiredo³.

¹Centro Hospitalar e Universitário de Coimbra, Rheumatology, Coimbra, Portugal;

²Health Sciences Research Unit: Nursing, Coimbra, Portugal; ³Nursing School of Porto, Porto, Portugal

Background: Impact of disease persists in many patients with rheumatoid arthritis (RA) even after inflammatory remission is achieved, requiring the need for adjunctive interventions targeting the uncontrolled domains of disease impact. Several systematic reviews have addressed nonpharmacologic interventions, but there is still uncertainty due to scarce or conflicting results or significant methodological flaws.

Objectives: To determine the effectiveness of non-pharmacological and non-surgical interventions upon the impact of RA.

Methods: A comprehensive search strategy for 13 databases and grey literature was developed. This review included quantitative systematic reviews that examined the effectiveness of non-pharmacological and non-surgical interventions of any form, duration, frequency and intensity, alone or in combination with other interventions designed to reduce the impact of disease in adult patients with RA. The outcomes were pain, functional disability, fatigue, emotional well-being, sleep, coping, physical well-being and global impact of disease. Critical appraisal and data extraction were performed independently by two reviewers and summarized using a narrative synthesis approach.

Results: Eight systematic reviews were included (Figure 1), with a total of 91 RCT's and nine observational studies (6740 participants). Four systematic reviews examined the effects of multicomponent or single exercise/physical activity interventions, two examined the effects of hydrotherapy/balneotherapy, two evaluated the effects of psychosocial interventions and one assessed the effects of custom orthoses for the foot and ankle. Multicomponent or single exercise/physical activity interventions, psychosocial interventions and custom orthoses appeared to be effective in improving pain and functional disability. Fatigue also improved with the implementation of multicomponent or single exercise/physical activity interventions and psychosocial interventions. Only exercise/physical activity interventions appeared to be the effective in improving the global impact of disease. None of the included systematic reviews reported on emotional well-being, sleep, coping or physical well-being as an outcome

measure. Other types of interventions were not sufficiently studied and their effectiveness is not yet established.

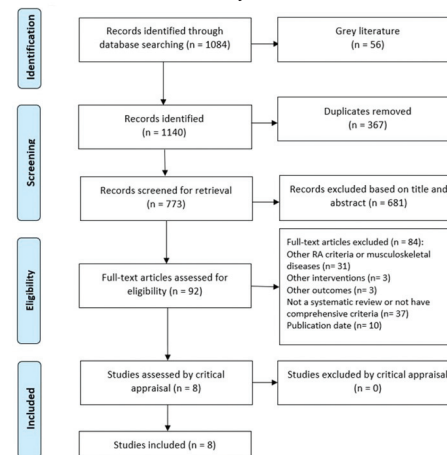


Figure 1: Flowchart of the study selection and inclusion process

Conclusion: Only multicomponent or single exercise/physical activity interventions, psychosocial interventions and custom orthoses seems to be capable of reducing the impact of rheumatoid arthritis. Future evidence should be created and synthesized in the fields identified as knowledge gaps, namely emotional well-being, sleep, coping and physical well-being. Further investigation should be encouraged on the effects of interventions that have not been assessed at all or sufficiently to established their effectiveness, so that robust decisions and recommendations can be made.

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FRI0722-HPR THE INVESTIGATION OF THE RELATIONSHIP BETWEEN PSYCHOSOCIAL AND FUNCTIONAL STATUS OF CHILDREN WITH JIA

Aybüke Seven¹, Aykut Özçadırcı¹, Fatma Birgül Kumbaroğlu¹, Gamze Ann¹, Nur Banu Karaca¹, Yasemin Özel Aslıyüce¹, Selcan Demir², Yelda Bilginer², Edibe Ünal¹, Seza Özen². ¹Hacettepe University Faculty of Physical Therapy and Rehabilitation, Ankara, Turkey; ²Hacettepe University Faculty of Medicine, Department of Pediatric Rheumatology, Ankara, Turkey

Background: JIA is the most common rheumatic disease in children and may result in significant morbidity with joint deformity, growth disorder, and persistence of active arthritis to adulthood (1). According to the model of biopsychosocial pain, emotions affect the degree of functional impairment (2).

Objectives: The aim of this study is to investigate the relationship between the psychosocial and functional status of children with juvenile idiopathic arthritis (JIA).

Methods: 382 children with JIA were included in the study. Individuals were assessed with the Juvenile Arthritis Biopsychosocial Questionnaire (JAB-Q) (3) and Children Health Assessment Questionnaire (CHAQ) was applied for functional status (4).

Results: The mean age of the subjects included in the study ($n = 386$) was 12.48 ± 3.81 years. The median value of the JAB-Q functional status was 2 (min: 0 max: 34), psychosocial status was 10 (min: 0 max: 38). And the median value of the CHAQ was 0,25 (min: 0 max: 3). Correlation coefficients and statistical significance were calculated by using Pearson's test. There was a low positive correlation between BETY-BQ functional status and BETY-BQ psychosocial status ($r = 0.347$, $p < 0.001$), a low positive correlation between CHAQ and BETY-BQ psychosocial status ($r = 0.395$, $p < 0.001$). There was a good positive correlation between BETY-BQ functional status and CHAQ ($r = 0.678$, $p < 0.001$) (Table 1).

FRI0722HPR Table 1. Comparison of JAB-Q Psychosocial, JAB-Q Function and CHAQ scores of children with JIA

		BETY-BQ Psychosocial	BETY-BQ Function	CHAQ
BETY-BQ Psychosocial	r	1	0,347**	0,395**
p		0,000	0,000	
BETY-BQ Function	r	0,346**	1	0,678**
p		0,000	0,000	
CHAQ	r	0,395**	0,678**	1
p		0,000	0,000	

Conclusion: The psychosocial status of children is not affected by functional status. Psychosocial status may be affected by different variables. It was concluded that children should be encouraged to participate in social activities independently their functional problems. Further studies are needed to examine the other variables' effects on psychosocial status in children with JIA.

REFERENCES:

- [1] Kahn, P. Juvenile idiopathic arthritis: current and future therapies. *Bulletin of the NYU hospital for joint diseases*, 2009, 67(3), 291-291.
- [2] Gatchel R, Peng Y, Peters M, Fuchs P, Turk D. The biopsychosocial approach to chronic pain: Scientific advances and future directions, *Psychological Bulletin*, 2007, vol.1334 (pg.581-624)
- [3] Unal, Edibe, et al. "A new biopsychosocial and clinical questionnaire to assess juvenile idiopathic arthritis: JAB-Q." *Rheumatology international* 2018: 1-8.
- [4] Singh G, Athreya BH, Fries JF, Goldsmith DP. Measurement of health status in children with juvenile rheumatoid arthritis. *Arthritis Rheum* 1994;37:1761-9.

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FRI0723-HPR A MIXED METHOD STUDY TO EXPLORE THE FEASIBILITY AND PATIENT SATISFACTION OF TWO DIFFERENT EXERCISE PROGRAMS IN SYSTEMIC SCLEROSIS ASSOCIATED MICROSTOMIA

Ellinor Sydow, Sabien Severi, Kristien Van der Elst, Patrick Verschueren, Jan Lenaerts, Rene Westhovens, Ellen De Langhe. *University Hospitals Leuven, Rheumatology, Leuven, Belgium*

Background: Systemic sclerosis (SSc) is a severe autoimmune disease and fibrotic cutaneous involvement of hands and face is a typical characteristic. Oral involvement with reduced oral aperture is frequent and associated with impaired food intake, oral hygiene and secondary dental problems. Several studies have shown that stretching (placing the thumbs in opposite corners of the mouth hand, pulling outward) and oral augmentation (tongue depressors between the back molars) exercises can increase oral aperture but is often hampered by low adherence rates.

Objectives: The aim of this descriptive explorative mixed method study was to explore feasibility, patient satisfaction and effectiveness of two exercise programs, Therabite and orofacial exercises, in systemic sclerosis associated microstomia.

Methods: We included adult patients suffering from systemic sclerosis (fulfilling the ACR/EULAR 2013 criteria) and microstomia (maximal oral aperture <40mm). We discerned two groups: Group A exercised with a passive jaw motion device (Therabite®), and Group B performed mouth-stretching exercises. Patients were expected to exercise for 10 minutes, 3 times/day for 3 months. Patients were contacted 4 times by telephone to address encountered problems and completed an exercise diary to document the adherence rate. Patients were evaluated at baseline, 3 months (period without intervention), 6 months (after 3 months of intervention) and at 9 months (post-intervention visit). At time point 6 months, semi-structured one to one interviews were conducted. Interviews were recorded, transcribed verbatim and systematically analyzed using Qualitative Analysis Guide of Leuven.

Results: We included 6 women and 3 men, with a median age of 60 years (range 40-75) and a median disease duration of 8 years (range 3-22). At time point 6 months, all patients in group A (n=4) and 4 patients in group B (n=5) improved with a median of 9mm (range 2-10) and 7mm (range 4-11), respectively. One patient had a decrease of 2mm. The compliance, measured as the ratio of executed exercises relative to the planned number of exercises ranged between 63.7% and 98.9% in

group A and between 48.5% and 97.4% in group B. Details are shown in Table 1. In the follow-up period, we documented maintenance of the observed increase in oral aperture in those patients that continued exercising daily. In all others, maximal oral aperture declined again. All 9 patients attended the interview. Three main themes emerged from the data: drivers, challenges and perceived improvement. Patients highlighted several drivers to perform the exercises at home, such as the motivation to improve current disability cause by microstomia. Furthermore, they equally highlighted several challenges regarding feasibility, such as the struggle to exercise multiple times a day. Most of the patients were hoping that they could keep their improvement. They were willing to continue practicing if necessary, but with a lower frequency.

Conclusion: This study suggests that both types of intervention can improve maximal oral aperture. The adherence to therapy was higher than expected but none of the patients considered it feasible to continue practicing 3 times/day in the long-term resulting in a decline of improvement post intervention. This is the first study to report the feasibility of the exercises for the patients and can be very useful for health professionals giving guidance. Future studies are needed in order to define exercise programs that are feasible and can be sustained in the long term.

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Table 1: Evolution in maximal oral aperture for both intervention groups

Intervention group	Participant number	Evolution between M3 and M6	Evolution between M6 and M9	Adherence rate between M3 and M6
A	1	+9 mm	-3 mm	95.2%
	2	+2 mm	-2 mm	85.7%
	3	+9 mm	-3 mm	98.5%
	4	+10 mm	+4 mm	63.7%
B	1	+11 mm	-2 mm	97.4%
	2	+10 mm	+2 mm	88.9%
	3	+4 mm	-2 mm	68.3%
	4	+7 mm	+1 mm	93.8%
	5	-2 mm	+2 mm	68.5%

M: month; M3: start intervention; M6: end of intervention; M9: post-intervention.

FRI0724-HPR THE EFFECTIVENESS OF TAI CHI CHUAN IN OSTEOARTHRITIS OF THE KNEE: A SYSTEMATIC REVIEW

Kevin Tai, Ingrid Merlin Batista de Souza, Amelia Pasqual Marques. *University of São Paulo, Physical Therapy, Speech Therapy and Occupational Therapy, São Paulo, Brazil*

Background: Osteoarthritis (OA) is the most prevalent joint disease in the elderly. The signs and symptoms are degeneration of joint surface, pain, stiffness, swelling and decrease in physical function. Knee OA is the most common joint disease and more prevalent among older adults. Tai Chi Chuan is a safe exercise modality of Chinese origin, which may be a potentially in reducing symptoms.

Objectives: The aim of systematic review was to identify the effects of Tai Chi Chuan in the elderly with knee osteoarthritis.

Methods: This systematic review was registered in Prospero (CRD42018098699). MEDLINE, EMBASE, PEDro, Cochrane, Scopus, Scielo, Lilacs and Web of Science, were screened between May 2008 to May 2018 in English, Spanish, Portuguese and Mandarin language. Randomized controlled trials (RCTs) comparing Tai Chi to control conditions were included. Two authors independently assessed risk of bias using the risk of bias tool recommended by Jadad index. Outcome measures included were pain, stiffness, muscular strength, functionality and quality of life.

Results: In the search we founded 161 studies, MEDLINE (29), Pedro (58), Web of Science (17), Embase (29), Cochrane (6), Scopus (18), Manual search (4). Eight articles were included and seven showed the effectiveness of Tai Chi Chuan, being higher to the interventions of the control groups, consisting of self-care educational activities, or strengthening and endurance exercises of knee flexors and extensors. Only one study, that patients received a lower limb resistance training program, presented better results in pain, stiffness and physical function scores. Tai Chi Chuan was not associated with adverse events.

Conclusion: Tai Chi Chuan was effective in improving pain, stiffness and physical function of sleep quality, in addition to increased speed and step length during gait, and strength gain of knee extensor muscles in elderly patients with knee OA. This systematic review found moderate