by non-physician health professionals, such as dieticians, nurses, occupational therapists, pharmacists and physiotherapists, to adults at high risk of primary or secondary osteoporotic fracture, is integral in the prevention and management of minimal trauma fracture, but may not be sufficiently realised in all European countries. To address this, a commissioned task force has developed the first collaborative EULAR points to consider/recommendations for non-physician health professionals in the prevention and management of osteoporotic fractures, underpinned by a systematic literature review (SLR).

Objectives: To identify and review the scientific literature to inform the development of evidence-based EULAR points to consider/recommendations for non-physician health professionals in the prevention and management of osteoporotic fracture.

Methods: A SLR for each of eight clinical questions that were previously formulated and consensually agreed by the task force members was undertaken by a research fellow (NW), with guidance from the task force convenors and the methodologist. Four electronic databases (Medline, Embase, Cinahl and PubMed) were searched over the period 13th - 31 st October 2017. The search strategies combined MeSH terms and keywords to identify studies related to two key concepts: (i) adults ≥ 50 years of age at high risk of primary or secondary osteoporotic fracture and (ii) interventions delivered by non-physician health professionals to prevent, treat and manage osteoporotic fractures. Exclusion criteria included articles not in English and without online access. Evidence was categorised using the Oxford Centre for Evidence-based Medicine Levels of Evidence. For critical appraisal of systematic reviews, AMSTAR 2 was used. Risk of bias was assessed by the Cochrane Collaboration's tool.

Results: The eight primary searches returned a total of 15 917 citations; duplicates were removed and the remaining 11 195 citations screened for relevance by title, abstract, design and year of publication (recently published reviews and/or RCTs were prioritised). Thirty-two studies were finally selected. Overall confidence in the findings of included systematic reviews ($n=13$) ranged from low to high. Risk of bias also varied across other included studies. Strongest evidence of benefit was found for exercise in the management of osteoporotic fracture [level 1a].

Conclusions: There is a lack of high quality evidence for the role of health professionals in the prevention and management of adults at high risk of primary or secondary osteoporotic fracture. We recommend the instigation of an education and research agenda for non-physician health professionals.

REFERENCES:

- [1] Shea B, Reeves B, Wells G, et al. AMSTAR 2: a critical appraisal tool for systematic reviews that include randomised or non-randomised studies of healthcare interventions, or both. *BMJ* 2017;358:j4008.
- [2] Higgins J, Altman D, Gøtzsche P, et al. The Cochrane Collaboration's tool for assessing risk of bias in randomised trials. *BMJ* 2011;343:d5928.

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THU0740-HPR DETERMINATION OF EXERCISE BEHAVIOUR IN PATIENTS WITH JUVENILE IDIOPATHIC ARTHRITIS

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Background: Juvenile idiopathic arthritis (JIA) is one of the most common rheumatic diseases in childhood, affecting at least 1 in 1000 children. Children with JIA experience joint inflammation and swelling, pain and tenderness, morning stiffness, limited mobility. Children with JIA complain pain and have lower functional ability and decreased quality of life compared with their peers. Many studies have reported that patients with JIA have low physical activity levels and also exercise therapy is considered an important component of the treatment of JIA. Nowadays, studies for evaluating exercise behaviours in order to cope with physical inactivity for many chronic diseases are becoming increasingly important.

Objectives: The objective of this study was to determine exercise behaviour in patients with JIA.

Methods: 34 patients with JIA (23 female and 11 male), age range 5–18 years, home exercise program being recommended, participated in this study. The survey that was created with Google Forms was sent via WhatsApp to patients after 1 week-10 days than setting home based exercise program for each patient. In the survey, disease duration, involvement joint(s), Childhood Health Assessment Questionnaire (CHAQ) for functional ability, 11-point Numeric Analogue Scale

(NRS) for satisfaction of exercising, Exercise Stages of Change Scale-Short Form (ESCS), Exercise Self-Efficacy Scale (ESES), and Decisional Balance Scale (DBS) for exercise behaviour were inquired for the patients with JIA.

Results: The mean age and disease duration were 11.38 ± 4.68 and 5.36 ± 4.16 years, respectively. The mean of the number of affected joints was 5 ± 4.41 . According to the five behavioural processes by ESCS, the patients were enrolled 38.2% of them in the stage of maintenance, 26.5% of them in the stage of action, 14.7% of them in the stage of preparation, 14.7% of them in stage of contemplation, 5.9% of them in stage of pre-contemplation. 67.5% of them was satisfaction for exercising (≥ 5 for NRS). When comparison of the patients' CHAQ scores due to satisfaction level with NRS, the mean of CHAQ scores was significantly lower in patients with high satisfaction than patients with low satisfaction ($p=0.014$). The mean of scores ESES and DBS were 17.06 ± 6.13 and 12 ± 4.61 , respectively. All of the patients represented "positive perception of exercise" due to DBS. Only a significant correlation with age of patient and DBS was found ($r=0.375$, $p=0.029$).

Conclusions: This study demonstrated that patients with JIA were in high stages participated in exercising and have high self-efficacy of exercise, decreasing of functional ability may affect the satisfaction level of exercising and as age increases, decisional balance for exercising also increases. Therefore, future researchers should investigate potential facilitators of and barriers to exercise for larger population in patients with JIA by following up long term.

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THU0741-HPR MAPPING THE BEHAVIOUR CHANGE TECHNIQUES USED IN A PRACTICE-BASED FIBROMYALGIA SELF-MANAGEMENT PROGRAMME: A QUALITATIVE STUDY

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Background: Fibromyalgia (FM) is a complex long-term condition affecting up to 5.4% of the UK population. It is associated with chronic widespread pain, fatigue, sleep and cognitive difficulties. FM can cause high levels of functional and work disability; with individuals making frequent use of healthcare resources. There is limited robust evidence for effective pharmacological treatments for FM, and current guidelines all recommend non-pharmacological interventions.

Allied health professionals at the Royal National Hospital for Rheumatic Diseases (RNHRD), Bath developed the Fibromyalgia Self-Management Programme (FSMP); a non-pharmacological, multidisciplinary exercise and education group.

Objectives: Main aims of the FSMP are to provide condition-specific, patient centred, education and exercise advice, to support development of core, self-management skills. The FSMP comprises of 16 hours of group treatment, spread over four or six weekly sessions. Core components include education about FM, sleep, diet and lifestyle advice, hydrotherapy and stretches.

The FSMP was developed clinically, with little opportunity for the clinical team to explore the mechanisms by which it is effective. To inform successful implementation beyond the RNHRD, this evaluation aimed to map the FSMP to the NICE recommended Michie Behaviour Change Taxonomy (BCT) to determine key behaviour change components.

Methods: Non-participatory observations were conducted of the four and six week FSMP. Detailed notes on course content, therapist delivery, and additional content not included in the manual were recorded. Semi-structured interviews were conducted with therapists ($n=4$) and patients ($n=9$). Observations and review of the therapist manual data were deductively coded in NVIVO to the Michie Behaviour Change Taxonomy using Framework Analysis. Interview data were analysed using Theoretical Thematic Analysis.

Results: Review of the course manual and course observations show the FSMP coded onto 12 of the 16 main areas of the Michie Behaviour Change Taxonomy, encompassing 22 behaviour change techniques. Patients' interviews indicated significant behaviour changes as a result of attending the course; including increased activity levels, pacing, better quality sleep, and improved communication with family members. Patients reported positive changes to symptoms as a result of attending the course.

Therapists highlighted four key challenges in delivering the course; fidelity between therapists, patient readiness and acceptance of FM, group management and patient fatigue while attending the programme.

Conclusions: The FSMP utilises a range of behaviour change techniques. Patients who attend the course make changes to their behaviour which enables them to manage their symptoms of FM more effectively.

REFERENCE:

- [1] Michie S, Richardson M, Johnston M, Abraham C, Francis J, Hardeman W, Eccles MP, Cane J, Wood CE. The behaviour change technique taxonomy (v1) of 93 hierarchically cluster techniques: building an international consensus for the reporting of behaviour change intervention. *Annals of Behavioural Medicine* 2013;46(1): 81–95.

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THU0742-HPR HOW TO OPTIMISE EXERCISE BEHAVIOUR IN AXIAL SPONDYLOARTHRITIS: RESULTS OF AN INTERVENTION MAPPING STUDY

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Background: Regular exercise has many health benefits for people with axial spondyloarthritis (axSpA).¹ However, most patients do not engage in frequent exercise.² In order to improve exercise behaviour of axSpA patients, a well-founded intervention is needed.

Objectives: To identify effective intervention methods to optimise exercise behaviour in axSpA.

Methods: The first three steps of the Intervention Mapping (IM) protocol, which is a six-step framework for intervention development, were used to determine effective intervention components. This study comprised 1) a needs assessment, to examine the discrepancy between current and desired exercise behaviour of axSpA patients, 2) a determinant analysis, to identify barriers and facilitators (determinants) to overcome this discrepancy, and 3) an intervention method analysis, to select effective methods that target these determinants. All three steps included literature reviews: PubMed and Web of Science were systematically searched for articles up to August 2017 using a well-defined search strategy. Additionally, semi-structured interviews with axSpA patients (n=2) and physiotherapists specialised in axSpA (n=2) explored the literature search findings of IM steps 1 to 3 qualitatively and ranked the determinants and methods identified in steps 2 and 3 in order of relevance.

Results: The literature searches resulted in 28 (64), 23 (257) and 15 (209) included articles (hits) for IM steps 1, 2 and 3, respectively. IM step 1 revealed that only one third of axSpA patients engage in (frequent) mobility, strengthening and/or cardiorespiratory exercises, while especially these components appear beneficial in axSpA. IM step 2 showed that the determinants self-efficacy, attitude, skills, therapists' skills, knowledge, intentions, planning and exercise group support positively influence exercise behaviour in axSpA (ordered by relevance). IM step 3 identified effective methods to stimulate exercise behaviour in axSpA by targeting aforementioned determinants: guided practice, action planning, goal setting, education (on disease, coping, exercise and available resources), feedback, tailoring, motivational interviewing, monitoring, therapists' education and encouragement of exercising in a group (ordered by relevance).

Conclusions: This study showed that in order to optimise exercise behaviour in axSpA, patients should be offered an intervention including education, motivational interviewing, goal setting and action planning and they should be stimulated to exercise in a group. In addition, therapists should be educated how to tailor, practice and monitor exercise and how to base this on thorough assessment.

REFERENCES:

- [1] Regel A, Sepriano A, Baraliakos X, et al. Efficacy and safety of non-pharmacological and non-biological pharmacological treatment: a systematic literature review informing the 2016 update of the ASAS/EULAR recommendations for the management of axial spondyloarthritis. *RMD Open* 2017;3:e000397.
- [2] Passalent LA, Soever LJ, O'Shea FD, Inman RD. Exercise in Ankylosing Spondylitis: Discrepancies Between Recommendations and Reality. *J Rheumatol* 2010;37(4):835–41.

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THU0743-HPR SUPPORTED SELF-MANAGEMENT INTERVENTIONS FOR FAMILIES AND CHILDREN AGED 4 TO 11 YEARS OLD LIVING WITH ARTHRITIS, ASTHMA AND TYPE ONE DIABETES: AN INTEGRATIVE REVIEW

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Background: The Shared Management Model implies that as children with chronic conditions like rheumatic and musculoskeletal diseases (RMDs) mature, they should increasingly take on responsibility for self-managing their health, in partnership with those involved in their care and education.¹ An initial search of the literature suggested that there was a reduced emphasis on the supported self-management of chronic conditions like RMDs in children aged 4 to 11 years, inspiring a more rigorous and systematic search of the empirical literature.

Objectives: The aim of this integrative review was to understand the evidence base regarding supported self-management of chronic conditions by children and their families, including interventions that promote supported self-management skills development.

Methods: Studies published since 2012 were identified through a search of eight bibliographic databases. Given the extensive nature of chronic conditions in children, the review focused on three groups of chronic conditions sharing similar self-management characteristics: asthma, RMDs, and type one diabetes mellitus (T1DM). The methodological quality of quantitative studies was assessed using the Cochrane Risk of Bias scale. Non-randomised studies were assessed using the Methodological Index for Non-randomised Studies (MINORS) instrument. Review articles and qualitative studies were assessed using Critical Appraisal Skills Programme (CASP) Systematic Review Checklist and CASP Qualitative Checklist, respectively.

Results: The review identified 29 relevant articles, reporting on 22 primary research studies and three review articles. Study participants were children with asthma (n=17) and T1DM (n=4). No studies were identified for children with RMDs. Seventeen studies reported an underlying theoretical basis, the most common of which was social cognitive theory. Interventions promoting supported self-management skills appeared to be effective in improving a range of self-reported and clinical outcomes, including health status, health knowledge, and self-efficacy. However, there was limited evidence of the effect of interventions on the psychosocial wellbeing of children. It also became clear that education-based interventions alone are insufficient in improving self- and shared-management skills. In addition, most studies failed to contextualise chronic conditions in children and their families, who shift between interacting with interventions and living their everyday lives over time.

Conclusions: Given the complexity of childhood chronic conditions and intervention components and contents, further investigation is required to specify the mechanisms by which supported self-management interventions operate. Most studies were also aimed at parents and carers, and appeared to neglect the importance of including and engaging children in decisions involving their healthcare. Finally, the review clearly highlighted the need for research on the supported self-management of RMDs in children, since no evidence-based interventions were identified for these individuals.

REFERENCE:

- [1] Lindsay S, et al. 2014. A systematic review of self-management interventions for children and youth with physical disabilities. *Disability and Rehabilitation* 36(4):276–288.

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THU0744-HPR EFFECTIVENESS OF PROFIBRO MOBILE APP ON QUALITY OF LIFE, SYMPTOMS AND SELF-CARE AGENCY IN PATIENTS WITH FIBROMYALGIA: A RANDOMISED, SINGLE-BLIND TRIAL

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Background: ProFibro is the first free mobile Android application in Brazilian Portuguese for fibromyalgia (FM). It was developed as a complementary Mobile Health resource in FM management for the promotion of self-care. Its main functions are educational animation, self-monitoring, sleep strategies, scheduling, exercise, hints through notifications, practice of gratitude with a diary and family adjustments.

Objectives: to assess the effectiveness of ProFibro in the improvement of health-related quality of life, symptoms and self-care agency of patients with FM.

Methods: Forty subjects with FM, aged 19–59 years, were randomised into ProFibro and a control group. ProFibro group received a smartphone with the mobile app and subjects were instructed to use it for 6 weeks, while control group