Methods: Five electronic databases were searched until September 2018. Randomised controlled trials (RCTs) investigating the effect of exercise on measures of psychological well-being were included. Three teams of two authors independently screened articles and the time-point immediately following treatment for each study was extracted. Disagreement was resolved either by consensus or consultation with a third author. Risk of bias was assessed using the Cochrane Risk of Bias tool for each study. Standardised mean differences (SMD) of outcomes were pooled as appropriate using a random effects approach. Quality of the body of evidence was assessed using GRADE.

Results: Of the 7,159 articles identified, 41 met the inclusion criteria and 31 citations from 30 RCTs were available for meta-analyses. The mean sample age was 65±8 years, and participants were mostly female (75%). The mean exercise program duration was 21 weeks (range 3 weeks to 18 months). Frequency of exercise sessions (reported in 83% of RCTs) ranged from 1 to 7 days per week, and the most common frequency was 3 times per week [number of trials (k)=13]. Fifteen (50%) exercise interventions were fully supervised by various healthcare professionals while 13 (26%) included a combination of supervised and unsupervised sessions. Adherence was reported in 15 (50%) of the 30 RCTs and the mean adherence rate to the prescribed number of sessions was 76±13%. The overall effect (SMD) and quality of the evidence for exercise on depression, anxiety, self-efficacy related to symptoms, self-efficacy related to exercise and general mental health, is presented in Table 1. No trials were considered low risk of bias in all domains of the Cochrane Risk of Bias tool. Unblinding of participants and personnel were the most frequent risks to bias in trials. The types of exercise investigated included aerobic [k=2], strengthening [k=14], and Tai-Chi/Yoga [k=6] and a combination of types [k=14]. When subgroup analyses by exercise type were conducted, 95% confidence intervals for the SMD overlapped for each outcome by exercise type, suggesting no differential effect of exercise type on measures of psychological well-being.

Conclusions: Key findings suggest that in people with knee OA: 1) moderate quality evidence supports a small beneficial effect of exercise on depression and anxiety; 2) low quality evidence supports a small beneficial effect of exercise on overall mental health; and 3) low quality evidence supports no effect of exercise on self-efficacy related to symptoms, while moderate quality evidence supports a moderate beneficial effect of exercise on self-efficacy related to exercise. Physiological adaptations to different types of exercise are distinctly different, yet evidence did not support differential effects of exercise type on measures of psychological well-being. Limitations of this study include poor reporting of exercise interventions, thus mediating effects of dosage could not be determined. Our synthesis did not account for baseline psychological well-being and therefore some studies may have included participants with good psychological well-being at baseline, and limited potential to improve. Overall, this synthesis of the evidence pertaining to people with knee OA highlights small-to-moderate beneficial effects of exercise on psychological well-being, and highlights scope to improve exercise interventions particularly with respect to self-efficacy related to symptoms. Exercise could be complemented with psychological interventions such as pain coping skills training and/or specific education to target self-efficacy related to symptoms.

Table 1
Effect of exercise on measures of psychological wellbeing

Outcome	k	n	SMD (95%CI)	Quality of Evidence
Depression	8	1,103	0.19 (0.06, 0.32)	Moderate
Anxiety	6	1,033	0.17 (0.05, 0.30)	Moderate
Symptom self-efficacy	5	551	0.11 (-0.25, 0.47)	Low
Exercise self-efficacy	5	750	0.40 (0.26, 0.54)	Moderate
SF-36 Mental component score	12	1,140	0.26 (0.03, 0.50)	Low
SF-36 Mental health	8	795	0.19 (-0.05, 0.43)	Low
SF-36 Vitality	8	795	0.17 (-0.05, 0.38)	Moderate
SF-36 Emotional role	8	795	0.18 (-0.01, 0.37)	Moderate
SF-36 Social function	8	795	0.23 (0.02, 0.45)	Moderate

k: number of trials; SMD: Standardised mean difference; Quality of Evidence range: high, moderate, low, very low. (Body of evidence from RCTs starts at high quality)

644

IS FUNCTIONAL LEVEL RELATED WITH BODY COMPOSITION IN PATIENTS WITH KNEE OSTEOARTHRITIS

M.P. Kurtça, U.B. Aslan, H. Şenol. *PAMUKKALE Univ., DENİZLİ, Turkey*

Purpose: Knee osteoarthritis (OA) is a common cause of chronic pain and disability. High body mass index (BMI) is a main risk factor for both onset and progression of OA. The biomechanical effect seen with the increase in the load on the joints in obese patients seems to be a logical explanation for the increased risk of lower-limb OA. However, OA development is also increasingly being associated with fat deposition and metabolic factors associated with adipose tissue as inflammatory effect. A few previous studies showed that obesity determined by BMI has negative consequences pain and functional ability. Because of body mass includes both fat and lean mass, the relative contribution of adipose tissue and muscle mass, can not be disaggregated when using BMI as a measure of obesity. Our study was planned to determine whether body composition is associated with functional ability in patients with knee osteoarthritis or not.

Methods: This study included 44 knee OA patients (40 female, 4 male) diagnosed according to ACR criteria for OA. Kellegren-Lawrence grade was used for level of OA. Body composition (fat mass and lean mass) was measured by using bioelectric impedance analysis (BIA). Pain and function were measured by using the Western Ontario and McMaster Universities Arthritis Index (WOMAC). Pearson and Spearman correlation tests, simple *linear* regression analysis were used to examine the factors associated with obesity affecting functional level.

Results: The patients ranged in age between 39 and 65 years with a mean age of 53.32 ± 6.03 years. All patients have II or III grade of OA. The mean BMI was 33.79 ± 4.24 kg/m^2 (min-max: 24.86 - 42.26) and the mean total WOMAC score was 39.52 ± 18.39 (min-max: 4 - 72) in knee OA patients. High BMI (B= 0.427, p = 0.004), high right leg fat mass (B = 0.454, p = 0.002), high left leg fat mass (B = 0.470, p = 0.001), high body fat mass (B = 0.429, p = 0.004), high body fat percentages (B = 0.418, p = 0.005), high left leg fat percentages (B = 0.418, p = 0.005), high right leg fat percentages (B = 0.398, p = 0.007) related with higher WOMAC score. However, right leg muscle mass (B = 0.042, p = 0.789), left leg muscle mass (B = 0.058, p = 0.709) and total muscle mass (B = 0.027, p = 0.862) did not significantly associated with WOMAC score.

Conclusions: In conclusion, increase in fat mass and BMI is inversely related to functional level in knee osteoarthritis. Therefore, these factors must be considered in order to improve the functional level in knee osteoarthritis.

645

A QUALITATIVE EVALUATION OF PHYSIOTHERAPISTS ACCEPTABILITY OF A CLINICAL SENSOR BASED APPROACH TO MOVEMENT FEEDBACK REHABILITATION

K.A. Nicholas [1,2], M. Al-Amri [1,2], J.L. Davies [1,2], V. Sparkes [1,2], K. Button [1,2]. [1] *Sch. of Hlth.care Sci., Cardiff Univ., Cardiff, United Kingdom;* [2] *Arthritis Res. UK Biomechanics and Bioengineering Ctr., Cardiff Univ., Cardiff, United Kingdom*

Purpose: The identification, targeting and assessment of modifiable risk factors such as movement compensation strategies by Physiotherapists following knee injury is subjective, relying on observational skills to detect potential risk factors. It is a challenge to identify lower limb movement patterns across three joints, each with six planes of movement whilst performing dynamic tasks. Technology now exists to improve objective identification of movement disorders through using wearable inertial measurement units (sensors). Objective data can be used to provide the treating physiotherapist and patient with a personalised movement feedback report that is based on the assessment of a range of functional tasks using the sensors in the clinic. The aim of this study was to evaluate physiotherapist experience and acceptance of the sensor based movement feedback approach.

Methods: A qualitative semi-structured interview study design used nineteen patients following anterior cruciate ligament reconstruction (6 to 52 weeks following surgery) who underwent sensor-based movement analysis in the clinic. Patients performed up to five functional tasks (typical of their usual care, stage of recovery and physical capabilities) whilst wearing seven MTw2 sensors (Xsens technologies BV, Enschede, The Netherlands). Tasks included; gait, double leg squat, single leg squat, stairs and vertical jump. Biomechanical data were extracted using Xsens MVN Biomech and MATLAB (Mathworks)