Title: *The challenge of change and maintain healthy behaviors. Effectiveness of coaching to empower people with knee osteoarthritis and improve their quality of life.*

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**Background:** First line treatment for knee osteoarthritis (KO) should be non-pharmacological (weight loss, physical activity and self-management of pain). Health Coaching facilitates the achievement of health improvement and self-management for chronic conditions.

**Research question:** To analyze the effectiveness of a health coaching intervention on quality of life, pain, overweight and physical activity in patients with KO from 18 primary care centres of Barcelona.

**Methods:** Methodology from the Medical Research Council on developing complex interventions. **Phase 1:** Intervention modelling and operationalization through a qualitative study using theoretical sampling with patients with KO and with primary care professionals. **Phase 2:** A community-based randomized clinical trial with 360 patients with knee osteoarthritis whit an Intervention Group (IG) and Control Group (CG) (180 per group). IG receives usual care plus 20-hour health coaching and follow-up sessions. CG receives usual care. The main outcome is quality of life (WOMAC). Data Analyses: Comparison of proportions between study groups

**Results:** Phase 1: Results indicated the barriers and facilitators of the health behaviors and were transformed into recommendations for the intervention design. Phase 2: Preliminary results on effectiveness after the intervention are present comparing IG vs CG. 415 participants were included: 234 IG and 181 CG. Intervention helps improve quality of life (57% IG reduce 5 points in WOMAC vs 40% in CG), decrease pain (54% IG decrease 4 points vs 39% in CG), reduce weight (54% lost 5% weight), and increase physical activity (24% decrease one category in IPAQ in a clinically relevant way (p <0.05). The adherence in the intervention group was 96% and in the control group 84%.

**Conclusions:** Preliminary results show that the Coaching Health intervention is effective for quality of life, pain, overweight, physical activity for people with KO compared to usual practice in a Primary Health Care context in Barcelona.