

Personalised Physical Activity Promotion in Patients With Osteoarthritis Using a Smartphone-Based Solution: The PIANISSIMO Study

Mathilde Mura, Berta Portugal, Laurent Malisoux

Luxembourg Institute of Health, Strassen, Luxembourg

Purpose: Osteoarthritis is one of the most prevalent musculoskeletal disorders. Physical activity is recommended by international organisations (e.g. European Alliance of Association for Rheumatology [EULAR]) as an effective tool to improve quality of life and reduce disease-related pain in osteoarthritis patients. Yet, these patients often do not meet the levels of physical activity recommended by the World Health Organization (i.e. 7,500 steps/day for patients with chronic diseases). The PIANISSIMO study aims to test adherence and retention of patients with osteoarthritis to a 6-month intervention for the promotion of physical activity using a dedicated mobile application. Furthermore, the study aims to explore the interrelationship between physical activity and pain.

Methods: PIANISSIMO is an innovative intervention based on the ‘Capability, Opportunity, Motivation Behaviour change’ (COM-B) theory. As such, the intervention includes several behaviour change techniques such as weekly steps/day personal goal setting, feedback on performance (daily steps), as well as daily population-tailored notifications about practice opportunities, and physical activity benefits on osteoarthritis and general health. The intervention is delivered through an eponym mobile application, which also collects data, including demographic data, connection logs, daily steps, and weekly pain questionnaires (pain intensity and location). Osteoarthritis patients are recruited through social media and flyers distribution. Linear mixed model will be used to investigate the influence of daily step counts on pain over the subsequent days.

Results: Forty patients living or working in Luxembourg have been included in the study so far. Descriptive statistics will present demographic data of the population, adherence to the intervention using the number of logins per week, and retention (illustrated as the number of drop-outs over time on a Kaplan–Meier graph). Preliminary data on the association between daily step counts and pain will also be presented.

Conclusion: In order to maximise adherence and retention of the patients to the application, clinicians (i.e. orthopaedic physician, physiotherapists), policy makers (Physical activity representative of the Luxembourg’s Ministry of Health), and patient associations were involved in the creation of the intervention. The PIANISSIMO application is an innovative tool to help osteoarthritis patients reach physical activity recommendations, supporting physicians in patient follow up.

