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Healthy Ageing: Physical Activity in an Ageing Society

I am sharing my findings from my research as Assistant Professor in Sport and Exercise Medicine and Senior Research Fellow in the Versus Arthritis Pain Centre and the Centre for Sport, Exercise and Osteoarthritis Research Versus Arthritis at the University of Nottingham.

2. What are the opportunities for health services to promote physical activity to reduce the impacts of ill health and reduce the development of multimorbidity and/or frailty in older people who already have a long-term health condition? How can this be delivered?

2.1 Chronic knee pain is a major cause of physical disability in older adults. It is estimated that 5.4 million people in the UK are affected by knee osteoarthritis (1).

2.2 Osteoarthritis is a burden on the NHS as a common reason for consultations with healthcare practitioners. It is a leading cause of limitation of physical function, restriction in participation, impaired quality of life, and disability. It is also strongly associated with frailty (2).

2.3 Patients report that they are looking for simple lifestyle interventions they can adopt to manage their pain and to reduce their dependency on pharmacological medications, given the poor efficacy and high side effect rates of analgesic drugs, and their wide applicability. The NICE guidelines (3) recommend exercise as a core treatment for individuals with knee pain due to osteoarthritis.

2.4 We undertook a systematic review and network meta-analysis of over 100 exercise trials to investigate the relative efficacy of different exercises (aerobic, mind–body, strengthening, flexibility/skill, or mixed) for improving pain, function, performance and quality of life for knee and hip osteoarthritis (4).

2.5 Contrary to many lay beliefs, we found that easily applied non-pharmacological behavioural interventions are effective in reducing pain and improving physical functions.

2.6 We found that all types of exercise significantly improved each of the measured outcomes compared to usual care, with different forms of exercise having different benefits to treating the symptoms of knee and hip osteoarthritis, with the effect of the exercise varying according to the type of exercise and target outcome.

2.7 The largest improvements were seen in pain and function when either aerobic (e.g. swimming, jogging) or mind-body (e.g. tai chi, yoga) exercise was undertaken. The fact that mind-body exercise is as effective at relieving pain highlights the potential benefit of exercise that might be able to influence dysfunctions with the central nervous 2.8 system. This is because other forms of exercise, such as strengthening and flexibility, tend to address issues only at the joint level.

2.9 Eight weeks of exercise were found to have moderate but significant benefits for pain and function. However, these benefits then gradually decrease, to be no better than usual care at 9-18 months (5).

2.10 A further systematic review by our team, of over 150 studies, found that exercise has similar effects on pain and function to that of oral non-steroidal anti-inflammatory drugs (NSAIDs) and paracetamol (6).

3. What are the key barriers to older people increasing their physical activity and how can they be encouraged and supported to do more?

3.1 Public health campaigns should promote the benefits of exercise, not just as an activity to lose weight and keep healthy, but also as a form of medicine itself.

3.2 Fear of exacerbating their symptoms is a barrier to people participating in exercise, which in most cases is unwarranted. Starting at a low level and gradually increasing the exercise effort can be a beneficial treatment for knee and hip osteoarthritis.

3.3 Due to the findings on the effectiveness of exercise in treating pain and reduced physical function symptoms in people with knee osteoarthritis, exercise should be given more prominence in recommended care, particularly in older people with co-morbidities or those at a higher risk of adverse events related to pharmacological therapies.

4. How can health services work with social care, the third sector, businesses and local government to support older people to be more physically active and address existing health inequalities?

4.1 We investigated a representative UK cohort of over 2000 chronic knee pain patients (age range 40-85), and found that over 1 in 4 participants reported using exercise as their perceived most effective treatment for their knee pain.

4.2 The perceived effectiveness of exercise as a treatment for their knee pain was also associated with lower knee pain severity, depression, anxiety, catastrophising, comorbidities, fatigue and sleep disturbance.

4.3 Of all the factors we examined, consulting healthcare professionals and exercise prescription were the leading factors for using exercise as a core treatment.

4.4 Healthcare professional consultations and physiotherapy have the potential to influence the perceived effectiveness of exercise treatment for knee pain and may help to shape positive exercise experiences, whilst motivating them to participate and adhere to exercise.

4.5 Our research findings from this study emphasise the importance of patient information and practitioner interaction for successful outcomes from exercise as a form of treatment for knee osteoarthritis.

REFERENCES

1. Versus Arthritis (2024) The state of musculoskeletal health 2024. Arthritis and other musculoskeletal conditions in numbers. Versus Arthritis.

2. Ana M. Valdes and Joanne Stocks. *Osteoarthritis and Ageing.* European Medical Journal. 2018;3[1]:116-123. DOI/10.33590/emj/10313855. https://doi.org/10.33590/emj/10313855.

3. NICE (2022) Osteoarthritis in over 16s: diagnosis and management. National Institute for Health and Care Excellence. https://www.nice.org.uk/guidance/ng226

4. Goh S, Persson M, Stocks J, Hou Y, Welton N, Lin J, Hall M, Doherty M, Zhang W. *Relative Efficacy of Different Exercises for Pain, Function, Performance and Quality of Life in Knee and Hip Osteoarthritis: Systematic Review and Network Meta-Analysis.* Sports Med. May 2019, Volume 49, Issue 5, pp 743–761

5. Siew-Li Goh, Monica S.M. Persson, Joanne Stocks, Yunfei Hou, Jianhao Lin, Michelle C. Hall, Michael Doherty, Weiya Zhang, *Efficacy and potential determinants of exercise therapy in knee and hip osteoarthritis: A systematic review and meta-analysis.* Annals of Physical and Rehabilitation Medicine, Volume 62, Issue 5, 2019, pp 356-365

6. Weng Q, Goh SL, Wu J, Persson MSM, Wei J, Sarmanova A, Li X, Hall M, Doherty M, Jiang T, Zeng C, Lei G, Zhang W. Comparative efficacy of exercise therapy and oral non-steroidal anti-inflammatory drugs and paracetamol for knee or hip osteoarthritis: a network meta-analysis of randomised controlled trials. Br J Sports Med. 2023 Aug;57(15):990-996. doi: 10.1136/bjsports-2022-105898. Epub 2023 Jan 2. PMID: 36593092; PMCID: PMC10423468.