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Title: The relationship between attitudes to ageing, severity of knee pain and mobility limitations among older adults with knee pain: Analysis of the Oxford Pain, Activity and Lifestyle cohort study.

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ABSTRACT

Purpose

Knee pain attributable to osteoarthritis is a common cause of mobility limitations among older adults. Attitudes to ageing are beliefs and expectations held by an individual about their own ageing. Negative attitudes to ageing have been associated with worse health outcomes among older adults. However, it remains unclear what impact attitudes to ageing have on the effect of severity of knee pain on mobility limitation in older adults.

The objectives of this study were threefold: 1) to describe attitudes to ageing among older adults with knee pain attributable to osteoarthritis, and by age group; 2) to explore the impact of attitudes to ageing on mobility limitations; and 3) to examine whether attitudes to ageing moderate the effect of severity of knee pain on mobility limitations in each age group. Findings of this study will aid in the development of tailored education for older adults with painful knee osteoarthritis.

Methods

Data from community-dwelling adults aged 65 years or older who completed the Oxford Pain, Activity and Lifestyle (OPAL) Study Year 1 postal questionnaire was analysed. Participants provided demographic information, indicated if they had pain in different body areas and reported current health conditions.

Attitudes to ageing were assessed using the Attitudes to Ageing Questionnaire (AAQ) physical change subscale (8 items). Total scores (range 8 to 40), and individual attitude ratings (range 1 to 5) were analysed. Higher scores indicate more positive attitudes towards physical ageing.

Mobility limitations were assessed by response to the question "How would you rate your usual outdoor walking pace?" on a 6-point Likert Scale. Participants were dichotomised as having 'No mobility limitations' (Normal speed; Fairly brisk; Fast) or 'Mobility limitations' (Unable to walk; Very slow; Stroll at an easy pace).

Participants who indicated that they had knee joint pain were asked 'How troublesome has your knee pain been during the past 6 weeks?'. Responses were categorised as 'Mild' (Slightly troublesome); 'Moderate' (Moderately troublesome) or 'Severe' (Very troublesome; Extremely troublesome).

Multivariable logistic regression models were used to estimate independent effects of attitudes to ageing and severity of knee pain on mobility limitations. To test whether attitudes to ageing moderated the effect of severity of knee pain on mobility limitations, an interaction term was added

to the models. Models were adjusted for the following covariates: sex, body mass index, smoking status, living alone, physical demands of occupation, Index of Multiple Deprivation, number of health conditions and number of other musculoskeletal pain sites. Analyses were stratified by age category (65 – 74 years and ≥ 75 years).

Results

Of the 1,845 participants with knee pain who had complete datasets for the variables analysed 943 were 65 to 74 years of age, and 902 were aged ≥ 75 years. Compared to those aged 65 to 74 years, adults aged ≥ 75 years were more likely to report moderate or severe knee pain (33.6%/16.7% vs 26.4%/14.0%), and mobility limitations (65.7% vs 38.8%). Total attitudes to ageing scores were significantly more positive among those aged 65 to 74 ($p=0.002$). A higher proportion of the adults aged ≥ 75 years responded negatively to the attitude statements regarding the importance of exercise ($p=0.007$); not feeling old ($p=0.003$); identity not being defined by age ($p<0.001$); and problems with physical health not holding them back from doing what they want ($p<0.001$). A higher proportion of the adults aged 65 to 74 years disagreed that their health was better than expected for their age ($p=0.001$).

Increasing severity of knee pain and negative attitudes to ageing were significantly associated with mobility limitations across both age groups (Table 1). Disagreement with the statement 'My health is better than I expected for my age' was most strongly associated with mobility limitations among respondents 65 to 74 years of age (OR: 10.88; 95%CI: 6.37 – 18.58), while disagreement with the statement 'I keep as fit and active as possible by exercising' was most strongly associated with mobility limitations among those aged ≥ 75 years (OR: 13.12; 95%CI: 5.19 – 33.16). We did not observe any significant moderator effects of attitudes to ageing on the relationship between knee pain severity and mobility limitations in either age group.

Conclusion

We observed that negative attitudes to ageing were more common among adults aged ≥ 75 years compared to those aged 65-74 years. We found that negative attitudes to ageing were significantly associated with mobility limitations, but we did not find evidence that attitudes to ageing moderate the relationship between severity of knee pain and mobility limitations. Research is needed to assess the impact of targeting attitudes to ageing among older adults with knee osteoarthritis on mobility limitations.

Table 1. Adjusted* odds ratios (95% CI) for limitations in mobility by knee pain severity and attitudes to ageing

	Odds Ratio (95% Confidence Interval)		
	All participants (n = 1,845)	Age 65-74 years (n = 943)	Age ≥75years (n = 902)
Knee pain severity (compared to mild knee pain)			
Moderate knee pain	3.10 (2.43 to 3.95)	2.84 (2.00 to 4.03)	3.44 (2.42 to 4.89)
Severe knee pain	10.67 (7.11 to 16.00)	11.45 (6.79 to 19.31)	9.71 (5.11 to 18.47)
Attitudes to ageing†			
Attitudes to physical ageing total score‡	0.86 (0.84 to 0.88)	0.85 (0.83 to 0.88)	0.86 (0.83 to 0.89)
It is important to take exercise at any age	0.99 (0.58 to 1.68)	0.80 (0.29 to 2.23)	1.37 (0.35 to 5.38)
Growing older has been easier than I thought	4.76 (3.78 to 6.00)	6.04 (3.70 to 9.88)	3.82 (2.38 to 6.13)
I don't feel old	3.45 (2.72 to 4.36)	3.39 (2.09 to 5.51)	2.28 (1.39 to 3.73)
My identity is not defined by my age	2.48 (1.83 to 3.36)	3.35 (1.82 to 6.87)	2.28 (1.17 to 4.43)
I have more energy now than I expected for my age	8.60 (6.77 to 10.90)	6.28 (3.96 to 9.95)	8.52 (4.78 to 15.18)
Problems with my physical health do not hold me back from doing what I want	7.22 (5.83 to 8.95)	5.60 (3.69 to 8.51)	5.04 (3.22 to 7.90)
My health is better than I expected for my age	10.42 (7.95 to 13.64)	10.88 (6.37 to 18.58)	7.72 (4.09 to 14.60)
I keep as fit and active as possible by exercising	6.21 (4.82 to 7.98)	5.97 (3.64 to 9.80)	13.12 (5.19 to 33.16)

OR: Odds Ratio; CI: Confidence Interval

* Adjusted for: sex, body mass index, smoking status, living alone, physical demands of occupation, Index of Multiple Deprivation, number of health conditions and number of other musculoskeletal pain sites

† Individual attitudes to physical ageing reference category: Strongly agree / Agree

‡ Total attitudes to physical ageing score (maximum 40) = higher score more positive attitude