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Title: Population based prospective study of self-care restriction in older adults with joint pain

Background: Self-care restriction is a frequent form of disability in older adults and is associated with joint pain. The natural history of self-care restriction in older adults with joint pain is unknown.

Objectives: To (i) describe the frequency of onset and persistence of self-care restriction (ii) establish whether joint-specific characteristics are associated with onset and persistence (iii) identify potential predictors of onset and persistence of self-care restriction in community-dwelling older adults with joint pain.

Methods: Data was collected in a population-based prospective cohort study (baseline and 3-year follow-up) of joint pain in adults aged 50 years and over in the North Staffordshire Osteoarthritis Project (n=3147). Perceived self-care participation restriction was measured using one item from the Keele Assessment of Participation (“During the past 4 weeks my self-care needs (examples are washing, bathing, toileting, dressing, feeding and maintaining health) have been met, as and when I have wanted”) at baseline and three year follow-up. A single item at baseline was used to classify chronicity. Severity of hand, hip, knee, and foot pain were assessed at baseline by single items and subscale scores from the AUSCAN (hand), WOMAC (hip/knee) and MFPDI (foot). Binary logistic regression was used to estimate the association between joint specific characteristics and onset and persistence of self-care restriction at 3 years, before and after adjusting for covariates previously shown to be associated with restricted self-care in the general population (age, activity limitation (SF-36 PF-10), depression (HAD), cognitive complaint (SIP), perceived adequacy of income and educational attainment). Results were summarised as odds ratios (OR) with 95% confidence intervals (CI).

Results: The frequencies of onset and persistence of self-care restriction at 3 years were 7.5% (95%CI: 6.6, 8.6) and 39.7% (34.2, 45.4) respectively. Chronic joint pain, severe pain and stiffness were associated with onset and persistence of self-care restriction at 3 years (i.e. for onset, severe vs. non-severe pain: crude OR 3.0 (2.1, 4.0), chronic vs. non-chronic pain (<3 months): 1.9 (1.3, 2.8), severe vs. non-severe stiffness: 2.7 (1.9, 3.7); for persistence, 2.0 (1.0, 3.8); 1.4 (1.0, 2.8); 1.7 (1.0, 2.8) respectively). For all joint pain factors, adjustment for the factors associated with self-care restriction in the general population attenuated all associations. Being aged 80 years and over, lower educational attainment, higher levels of activity limitation, depression and cognitive impairment were independently associated with onset. Only depression was associated with persistence of self-care restriction (adj. OR 2.4 (1.1, 5.4)) after adjustment for all other covariates.

Conclusions: Perceived self-care restriction, as assessed by the KAP, changes over time. Older adults with chronic and severe peripheral joint pain have an increased risk of developing self-care restriction and of this persisting. In a multivariable model these joint-specific characteristics were found not to be independent predictors, suggesting that, in the absence of significant bias or confounding, the effect of joint pain on self-care restriction may be through its effects on activity limitation, depression, and cognitive complaint.