

EPOSA FACT

Osteoarthritis, comorbidity and pain: their role in determining physical function limitations in older adults

Osteoarthritis and functional limitations

Osteoarthritis (OA) is a major contributor to functional impairment and loss of independence in older adults. Osteoarthritis is characterized by joint pain and high comorbidity rates.

In EPOSA, we evaluated the role of comorbidity and pain in the association between hip/knee osteoarthritis and functional limitations in older adults from the general population.



Osteoarthritis and functional limitations

Clinical hip/knee OA was significantly associated with more self-reported as well as performance-based functional limitations.

Pain

The odds ratio for physical function limitations was 4.73 times greater for OA than non-OA when the effects of pain and of other variables were considered.



Comorbidity

Comorbidity, in particular obesity, cognitive/ emotional impairments, and vascular diseases, was independently associated with functional limitations, but it did not affect the association of knee/hip OA with functional limitations.

Multivariate logistic regression analyses for the association of WOMAC physical function for hip/knee subscale score (worst vs. all others) with clinical hip/knee osteoarthritis*						
Model	Clinical hip/knee osteoarthritis	β	SE	P	$\Delta\beta\%^\dagger$	OR (95% CI)
1	+ sex, age, country	3.07	0.13	< 0.001		21.55 (16.71–27.80)
2	+ sex, age, country, education less than secondary	3.06	0.13	< 0.001	0.3	21.35 (16.54–27.55)
3	+ sex, age, country, education less than secondary, comorbidity ≥ 3 diseases	2.96	0.13	< 0.001	3.3	19.35 (14.94–25.07)
4	+ sex, age, country, education less than secondary, comorbidity ≥ 3 diseases, WOMAC pain ‡	0.75	0.19	< 0.001	295.7	2.12 (1.46–3.07)
5	+ sex, age, country, education less than secondary, comorbidity ≥ 3 diseases, WOMAC pain, clinical hip/knee osteoarthritis \times WOMAC pain (interaction) ‡	1.55	0.33	< 0.001	-	-
	WOMAC pain = 0 ‡					4.73 (2.48–9.00)
	WOMAC pain = 5 ‡					3.73 (2.29–6.00)
	WOMAC pain = 15 ‡					2.45 (1.67–3.60)
	WOMAC pain = 25 ‡					1.58 (1.03–2.43)

* Worst = WOMAC physical function for hip/knee scores > quartile 3. WOMAC = Western Ontario and McMaster Universities Osteoarthritis Index; OR = odds ratio; 95% CI = 95% confidence interval.
 † Adjustment = $100 \times (\beta \text{ previous model} - \beta \text{ model}) / \beta \text{ model}$.
 ‡ Pain for hip/knee ranges 0–100 (normalized $\times 100/20$), with 0 indicating no pain. Model 5: clinical hip/knee osteoarthritis. Controlled direct effect: $P < 0.001$, OR 4.73 (95% CI 2.48–9.00); natural direct effect: $P = 0.49$, OR 0.75 (95% CI 0.33–1.71); natural indirect effect: $P < 0.001$, OR 9.25 (95% CI 5.08–16.87); total effect: $P < 0.001$, OR 22.19 (95% CI 13.55–36.33).