

THE IMPACT OF CONCOMITANT PERSISTENT BACK PROBLEMS ON PARTICIPATION IN PEOPLE WITH HIP/KNEE OSTEOARTHRITIS

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BACKGROUND

Arthritis affects participation in broad roles and societal activities like employment, social involvement, personal relationships, and leisure activities. Generalized osteoarthritis (OA) typically affects the low back as well as the hips and knees. No studies have examined the impact of concomitant back problems on participation in people living with hip or knee OA.

OBJECTIVE

To examine the impact of concomitant persistent back problems on participation in life tasks among people living with long-standing hip and knee OA.

METHODS

Subjects: Individuals participating in a population-based cohort study of individuals with hip or knee OA living in Ontario, Canada. Participants were aged 55+ years with moderate to severe hip or knee OA at baseline (1995-1997).

Telephone Interview: Standardized telephone interview assessed:

- Socio-demographics (age, gender, body mass index [BMI], income, education)
- Health status (number of self-reported comorbidities, SF-36 General Health subscale)
- OA pain and disability (WOMAC pain and physical function scores)
- Presence of self-reported persistent back problems (yes / no)
- Pain attitudes (Pain Catastrophizing Scale)
- Pain coping (Vanderbilt Multidimensional Pain Coping Inventory passive and active coping scales)
- Mood - depressive symptoms (CES-D Scale); anxious symptoms (HADS anxiety)
- Social support (Lubben Social Network Scale)
- Participation (Disability component of Late-Life Function and Disability Instrument— *frequency of participation and perceived limitation in participation scores*)

Statistical Analysis: Responses were compared for those with and without self-reported persistent back problems (t tests and Wilcoxon rank sum tests for continuous variables; Chi square and Fisher's exact tests for categorical variables). Multivariable linear regression was used to examine the effect of persistent back pain on each of frequency of, and perceived limitation in, participation after adjusting for potential confounders.

RESULTS

Among respondents, 286 (39.7%) reported persistent back problems.

Comparison of those with and without Persistent Back Pain (Table 1)

Those with persistent back problems were similar to those without in age, education, income and BMI. However, those with back problems were more likely to be female and reported worse general health, more depressed mood, greater arthritis severity (pain and functional disability), and both lower active and higher passive pain coping scores (indicating poorer ability to cope), and higher pain catastrophizing. Those with persistent back problems had lower scores on both the Jette participation scales.

Correlates of Participation in Life Tasks

In univariate analyses, greater participation in life tasks (both frequency and limitation subscales) was associated with gender, general health status, mood, level of hip/knee pain and disability, social support, pain coping and presence of persistent back problems ($p < 0.001$ for all).

In multivariable models, independent correlates of greater participation were: gender (women had higher scores on participation frequency while males had higher scores on participation limitation), greater general health status, lower scores for depression and anxiety, less arthritis pain, greater social support, and greater active pain coping. Adjusting for these factors, the presence of persistent back problems remained an **independent correlate of frequency of participation, but not limitation in participation** (Table 2).

Table 1: Demographic Characteristics (n= 717)

Characteristic	Back Problems = Yes N = 286	Back Problems = No N = 434	P value
Age (years), mean	76.6	77.1	NS
Female, n (%)	234 (81.8)	316 (72.8)	0.005
BMI (kg/m ²), mean	28.8	28.4	NS
Education ≤ high school, n (%)	224/277 (80.9)	345/420 (82.1)	NS
Annual household income ≤ \$20,000, n (%)	133/226 (58.9)	185/357 (51.8)	NS
Number of comorbid conditions, mean	1.9	1.65	0.01
SF-36 General Health Scale score(/X), mean	14.3	16.2	<0.0001
WOMAC pain score (/20), mean	10.0	7.7	<0.0001
WOMAC physical function score (/68), mean	38.4	30.3	<0.0001
Pain Catastrophizing Scale, mean (/52)	11.7	7.1	<0.0001
Vanderbilt Passive Pain Coping subscale (/24), mean	7.6	5.0	<0.0001
Vanderbilt Active Pain Coping subscale (/20), mean	8.9	10.4	<0.0001
Lubben Social Network Scale, mean (/30)	19.1	21.2	<0.0001
HADS Anxiety Scale, mean (/21)	4.1	3.1	<0.0001
CES-Depression Scale (/60), mean	13.5	9.6	<0.0001
Late-Life Function and Disability Instrument			
Participation Frequency (/100), mean	42.1	43.7	0.0002
Limitation in Participation (/100), mean	56.0	60.3	<0.0001

Table 2: Results of Multivariable Linear Regression (n = 712)

Independent Variables	Dependent Variable = Late-Life Function and Disability Instrument			
	Frequency of Participation		Limitation in Participation	
	Estimate	P value	Estimate	P value
Intercept	36.15	<0.0001	47.45	<0.0001
Sex (male)	-1.12	0.0003	1.94	<0.0001
SF-36 General Health Scale	0.16	<0.0001	0.31	<0.0001
Depression score	-0.11	0.0002	-0.17	0.0003
Anxiety score	0.16	0.04	0.26	0.03
WOMAC pain	-0.26	<0.0001	-0.82	<0.0001
Social Support	0.18	<0.0001	0.18	<0.0001
Active Pain Coping	0.49	<0.0001	0.83	<0.0001
Persistent Back Problems (yes)	0.61	0.03	0.36	0.42

R² for final models are 0.64, $p < 0.0001$ for frequency and 0.72, $p < 0.0001$ for limitation.

CONCLUSIONS

In a community cohort with hip/knee OA, 39.7% reported concomitant persistent back problems. Those without back problems had worse scores on a variety of measures of quality of life and lower frequency of participation in life tasks.