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## Original article

# Assessing the magnitude of osteoarthritis disadvantage on people's lives: the MOVES study



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## ABSTRACT

**Introduction:** Osteoarthritis (OA) is one of the ten most disabling diseases in developed countries and one of the leading causes of pain and disability over the world. Early diagnosis increases the likelihood of preventing disease progression.

**Objectives:** To estimate the prevalence of self-reported osteoarthritis and quality of life in Portuguese adults with 45 or more years old.

**Methods:** Observational, cross-sectional study, implemented in households by face-to-face interview.

**Results:** 1039 subjects with mean age of 62 years and 54.2% female were included. The prevalence of self-reported osteoarthritis was 9.9%. Knees and hands were the most frequent site of disease. The prevalence of OA was higher in women and in participants without professional activity. Presence of OA was higher in participants with comorbidities. Most subjects have done some treatment at some point in time for this disease: 94.5% had drug therapy, 49.5% physiotherapy, and 19.8% physical activity. Pain was associated with height, with some disease locations specifically neck, lower spine and shoulders, SF12 scores of quality of life, and measurements of impact in daily living, severity of disease and disability. The impact of OA in daily living was greater in subjects that had been on sick leave or stopped working due to OA, had worse physical and mental health, and with more severe of disease. **Conclusion:** This study confirmed that osteoarthritis is a very relevant disease with a high potential impact on quality of life, function and work ability and because of its prevalence with a very high growing social impact.

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## Avaliação da magnitude da desvantagem da osteoartrite na vida das pessoas: estudo MOVES

### R E S U M O

#### Palavras-chave:

Osteoartrite

Qualidade de vida

Auto-relato

**Introdução:** A osteoartrite (OA) é uma das dez doenças mais incapacitantes nos países desenvolvidos e uma das principais causas de dor e incapacitação no mundo. O diagnóstico precoce aumenta a probabilidade de prevenção da progressão da doença.

**Objetivos:** Estimar a prevalência de osteoartrite auto-referida e a qualidade de vida em adultos portugueses com 45 ou mais anos de idade.

**Métodos:** Estudo observacional, transversal, implementado em domicílios por entrevista interpessoal.

**Resultados:** Foram incluídos no estudo 1039 indivíduos com idade média de 62 anos, sendo 54,2% do gênero feminino. A prevalência de osteoartrite auto-referida foi de 9,9%. Os joelhos e as mãos foram o local mais freqüente da doença. A prevalência de OA foi maior em mulheres e em participantes sem atividade profissional. A presença de OA foi maior em participantes com comorbidades. A maioria dos indivíduos já tinham passado por algum tratamento em alguma ocasião de suas vidas para esta doença: 94,5% tiveram tratamento farmacológico, 49,5% fisioterapia, e 19,8% atividade física. A dor estava associada com a estatura, com alguns locais da doença, especificamente pescoço, coluna lombar e ombros, pontuação do SF12 para qualidade de vida, e medidas de impacto no cotidiano dos participantes, gravidade da doença e incapacitação. O impacto da OA no dia-a-dia foi maior em indivíduos que tinham gozado licença por doença ou que pararam de trabalhar por causa da OA, apresentavam-se com pior saúde física e mental, e exibiam maior gravidade da doença.

**Conclusão:** Este estudo confirmou que a osteoartrite é uma doença muito relevante, com impacto potencial elevado na qualidade de vida, no funcionamento e na capacidade para o trabalho e, por causa de sua prevalência, exerce um impacto social muito elevado e crescente.

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## Introduction

Osteoarthritis (OA) is the most important rheumatic disease, which affects all the components of joints, mainly the articular cartilage.<sup>1</sup> OA is one of the ten most disabling diseases in developed countries,<sup>1</sup> and is thought to be the most prevalent chronic joint disease.<sup>2</sup> It is, by far, the most common form of arthritis and one of the leading causes of pain and disability worldwide.<sup>1,3</sup>

Pain is the main symptom of patients with OA,<sup>4</sup> with significant impact on functional ability, causing severe disability in activities of daily living, and being associated with considerable loss in productivity and decreased quality of life.<sup>4-7</sup> Considered an age-related disease, it is most likely to affect joints that have been continually stressed throughout the years, including knees, hips, small hand joints, and lower spine region.<sup>1,4,8</sup>

Worldwide, it has been estimated that 9.6% of men and 18.0% of women aged over 60 years have symptomatic osteoarthritis.<sup>1</sup> The main risk factors associated to OA are age, gender (more frequent in women), obesity, metabolic or endocrine diseases, trauma or joint overload, and also genetic factors.<sup>8-10</sup> However, the importance of individual risk factors varies, and even differs, between joint sites.<sup>8</sup> Many lifestyle risk factors, however, are reversible or avoidable which has important implications for its prevention. Early diagnosis

increases the likelihood of preventing disease progression to situations of greater disability.

Because patients frequently disregard pain and symptoms, OA tends to progress almost silently. Patients should know their disease and have a prevention plan, avoiding mechanisms that may intensify progression of disease and using pharmacological treatments that may prevent the structural degradation of the joint.

The MOVES study aimed to estimate the prevalence of self-reported osteoarthritis and its impact on the quality of life, in Portuguese adults with 45 or more years old. In this study, we attempted to compare subjects with and without self-reported OA in some of the parameters that may contribute to a worse quality of life and loss of functionality.

## Methods

This observational cross-sectional study took place in 17 municipalities of mainland Portugal between September 27th and October 26th, 2011. To ensure representativity of the population, the sample was stratified by region (Norte, Centro, Lisboa, Alentejo and Algarve, age and gender, according to estimates of National Statistics Institute (Demographic Statistics 2008). The study was implemented in households, with street selection by random procedure. Questionnaires were administered by face-to-face interview, by specifically trained

interviewers. Subjects from the households selected were invited to participate if they were aged >45 years and agreed to participate in the study.

A sample size of 1039 participants was estimated to allow the calculation of 95% confidence intervals (95%CI) for self-reported prevalence of osteoarthritis with a precision error of 1.8%.

Collected data included, for all responders, sociodemographic variables, professional activity and working conditions, comorbidities, and self-reported aspects of the disease. For subjects reporting OA, specific data was further collected, including OA characterization (date of diagnosis, symptoms, site of disease), working abilities and sick leave, treatment and therapeutic characterization, and quality of life and functionality (SF-12 v2.0). Additionally, subjects were asked to answer to five visual analog scales (VAS) to measure pain intensity, impact of OA in daily living, severity of disease, disability level and patient's perception of the importance that the doctor gives to the disease.

### Statistical analysis

Self-reported osteoarthritis prevalence estimates were calculated for the Portuguese population, stratified by region, age and gender. Results were subdivided in two groups, subjects with self-reported OA and subjects without self-reported OA.

The scores of SF-12 v2.0 were obtained with *Health Outcomes Scoring Software* 4.5 and range between 0 and 100 (higher values indicate better quality of life/health status).

Chi-square (CS) and Fisher exact tests (FS), for small cell counts, were used to identify associations between osteoarthritis and qualitative variables. The non-parametric test of Mann-Whitney *U* was used to compare participants with and without osteoarthritis and quantitative variables, since the assumption of normality was not accepted (Kolmogorov-Smirnov). Association between quantitative variables was confirmed with Spearman correlation coefficient. Multiple logistic regression analysis results for the presence of self-reported OA are presented by odds ratio (OR) and 95% confidence intervals. All tests were two-sided considering a significance level of 5%. Statistical analyses were carried out using IBM® SPSS® Statistics 18.

This observational study was registered in ClinicalTrials.gov, under the number NCT01423097.

## Results

This study included 1039 participants with average age of 62 years (45–99 years old) and 54.2% female. Table 1 summarizes the sociodemographic and anthropometric characteristics of the total sample and by group (with or without OA).

Overall, approximately 72% of the sample lived with spouse and/or children. Overweight was observed in almost half of the subjects (47.0%), and obesity was present in 18.0%. 65% of participants did not have professional activity, most of them (76.2%) by retirement, not due to OA. The mean age of onset of labor was 15.2 years (SD = 5.7).

Hypertension was the most frequent comorbidity (32.2%), followed by diabetes (15.4%) and cardiovascular disorders (14.2%). Approximately 30% of participants reported no illness.

The prevalence of self-reported osteoarthritis, in this study, was 9.9% (95% CI: 8.1–11.7%).

The prevalence of OA was higher in women (13.3% versus 5.9%;  $p < 0.001$ ), in subjects from Norte and in participants without professional activity, as shown in Table 1. The participants with OA were older (median age = 64) and had less years of education.

For the overall sample, the self-reported prevalence of OA was 6.3% in the knees, and 5.5% and 3.1% in hands and feet, respectively. Spine had a prevalence of 2.7%, and ankles and hips, 2.2%. Fists, shoulders, elbows, neck and thoracic spine all had prevalence's under 2%.

Presence of OA was higher in participants with comorbidities (13.5% versus 1.6% without;  $p < 0.001$ ). Subjects with OA presented higher median number of comorbidities (2 versus 1 in subjects without OA;  $p < 0.001$ ).

The prevalence of OA was associated with some of the comorbidities: rheumatoid arthritis, depression, kidney problems, intestinal disorders, osteoporosis, cardiovascular disorders, diabetes and hypertension (Fig. 1).

The results of multiple logistic regressions for the presence of self-reported osteoarthritis (Table 2) showed that the risk of OA is 2 times higher for women, 2.6 times higher for subjects with rheumatoid arthritis, and 1.8 times higher for those with more comorbidities.

For the subgroup of subjects with self-reported OA, further data was collected in order to understand which variables could have had some impact on the disease. Table 3 summarizes the evaluation variables of subjects with OA.

In this group of subjects, the average age at diagnosis was 52 years old (20–85 years), and the mean time between complaint and diagnosis was 3 years, ranging from 1 month to 35 years. The mean duration of disease was 13 years (1–56 years). In most cases, the general practitioner diagnosed the disease (63.0%) and is the one who follows the patient (58.4%). Approximately 92% of self-reported prevalent subjects had X-ray confirmed diagnosis.

Among subjects with OA, knees and hands were the most frequent site of disease (63.1% and 55.3% respectively), and the thoracic spine the less frequent site registered (8.7%).

Approximately 30% of OA subjects have been on sick leave at some moment in time or stopped working due to this condition. Absenteeism ranged between 3 days and 3 years. From these, 41.4% changed their type of work, 34.5% change the way of working for reasons related to OA, and 10.3% stopped working completely because of the disease.

Most of OA prevalent subjects (88.3%) have done some treatment for this disease at some moment in time: 94.5% had drug therapy, 49.5% physiotherapy, and 19.8% physical activity; surgery and special diet were also referred. Approximately 84% of patients took NSAIDs to treat OA (42.0% used only NSAIDs), 46.9% took analgesics (3.7% used only analgesics), and 34.6% were on disease modifying drugs (6.2% used only disease modifying drugs) (Table 3).

Most of the subjects reported the intake of analgesics (52.4%) or anti-inflammatory drugs (86.9%) in the 3 months previous to the study. On average, intake of analgesics

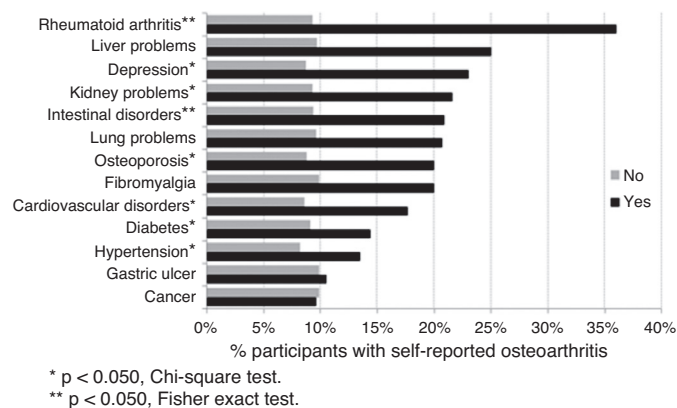
**Table 1 – Sample characteristics.**

	Total (n = 1039)		Without self-reported OA (n = 936)		With self-reported OA (n = 103)		p-value
Age (years)	62.0 (45–99)		61.0 (45–99)		64.0 (45–87)		MW:0.002
Gender†							
Female	563	54.2%	488	86.7%	75	13.3%	CS:<0.001
Male	476	45.8%	448	94.1%	28	5.9%	
Region†							
Norte	355	34.2%	309	87.0%	46	13.0%	CS:0.036
Centro	262	25.2%	243	92.7%	19	7.3%	
Lisboa	284	27.3%	253	89.1%	31	10.9%	
Alentejo	94	9.0%	88	93.6%	6	6.4%	
Algarve	44	4.2%	43	97.7%	1	2.3%	
Scholarship (years)	5.0 (0–26)		6.0 (0–26)		4.0 (0–19)		MW:0.020
Living with†							
Alone	183	17.6%	166	90.7%	17	9.3%	NA
With family/friends	105	10.1%	101	96.2%	4	3.8%	
Spouse/children	749	72.2%	667	89.1%	82	10.9%	
Retirement home	1	0.1%	1	100.0%	0	0.0%	
BMI (kg/m <sup>2</sup> )†	22.2 (15.2–42.2)		26.2 (15.2–42.2)		26.7 (16.9–40.1)		MW:0.068 CS:0.213
Underweight	6	0.6%	5	83.3%	1	16.7%	
Normal weight	356	34.4%	329	92.4%	27	7.6%	
Overweight	486	47.0%	435	89.5%	51	10.5%	
Obesity	186	18.0%	162	87.1%	24	12.9%	
Professional activity†	369	35.5%	342	92.7%	27	7.3%	CS:0.038
Comorbidities†							
Hypertension	334	32.2%	289	30.9%	45	43.7%	CS:0.008
Cardiovascular disorders	147	14.2%	121	12.9%	26	25.2%	CS:0.001
Diabetes	160	15.4%	137	14.7%	23	22.3%	CS:0.041
Osteoporosis	100	9.6%	80	8.6%	20	19.4%	CS:<0.001
Depression	87	8.4%	67	7.2%	20	19.4%	CS:<0.001
Kidney problems	51	4.9%	40	4.3%	11	10.7%	CS:0.004
Intestinal disorders	43	4.1%	34	3.6%	9	8.7%	FS: 0.031
Rheumatoid arthritis	25	2.4%	16	1.7%	9	8.7%	FS:<0.001
Lung problems	29	2.8%	23	2.5%	6	5.8%	FS:0.059
Cancer	52	5.0%	47	5.0%	5	4.9%	CS:0.939
Liver problems	16	1.5%	12	1.3%	4	3.9%	FS:0.065
Gastric ulcer	19	1.8%	17	1.8%	2	1.9%	FS:>0.999
Fibromyalgia	5	0.5%	4	0.4%	1	1.0%	FS:0.408
Other	197	19.0%	163	17.4%	34	33.0%	–
No. of comorbidities	1.0 (0–8)		1.1 (0–6)		2.1(0–8)		MW:<0.001

MW, Mann–Whitney; CS, Chi-square; FS, Fisher exact test; NA, Not applicable.

Values presented in median (minimum–maximum) except in categorical variables (†), presented n (%).

For comorbidities, the percentages were calculated within groups (with and without self-reported OA).



**Fig. 1 – Association between comorbidities and osteoarthritis.**

**Table 2 – Logistic regression for the presence of self-reported osteoarthritis.**

	OR	95% CI for OR
<b>Gender</b>		
Male	Ref.	
Female	2.017	[1.263;3.223]
<b>Rheumatoid arthritis</b>		
No	Ref.	
Yes	2.585	[1.027; 6.506]
No. of comorbidities	1.780	[1.499; 2.113]

Ref.: Category versus the one is making comparisons.

occurred 4 days/week (1–7 days per week) during 6 weeks. The intake of anti-inflammatory drugs occurred on average for 5 days/week during 7 weeks.

Results from VAS evaluation are shown in Table 3. On average, pain intensity adds up to 4.5 points while severity of disease adds up to 5.9 points, considering a mean disability level of 5.3. Impact on daily living scores 6.1 points on VAS, being the most important parameter associated to this disease from the patient's perspective. Subject's perception of doctor's importance to disease is scored with 6.4 points.

Analysis of SF-12 v2.0 demonstrated that overall score for mental health registered a higher value than overall score for physical health, suggesting that patients have a better quality of mental life than physical (45.9 points [SD=12.7] and 38.5 points [SD=9.3], respectively) (Fig. 2).

Association tests have been done to understand which variables relate to pain in OA. In the present study, pain was associated with stature ( $r_s = -0.221$ ;  $p = 0.025$ ) and some sites of disease [neck (7.9 versus 4.2 points in OA of other sites;  $p = 0.008$ ); hands (5.0 versus 3.1 points in OA of other sites;  $p = 0.029$ ); spine (7.3 versus 4.1 points in OA in other sites;  $p = 0.020$ ); and shoulders (7.2 versus 4.1 points in OA in other sites;  $p = 0.025$ )]. Pain was also associated with SF12 scores of quality of life (physical health:  $r_s = -0.479$ ;  $p < 0.001$  and mental health:  $r_s = -0.414$ ;  $p < 0.001$ ), and VAS measurements of impact of OA in daily living ( $r_s = 0.524$ ;  $p < 0.001$ ), severity

of disease ( $r_s = 0.557$ ;  $p < 0.001$ ) and disability level ( $r_s = 0.587$ ;  $p < 0.001$ ).

Furthermore, we evaluated the parameters to which the impact of OA in daily living (VAS) was related. Statistically higher scores for the impact of OA in daily living were shown by subjects that had been on sick leave or stopped working due to OA (8.1 points versus 6.0 points;  $p = 0.001$ ). In addition, a higher impact of OA on daily living was associated with worse physical health ( $r_s = -0.582$ ;  $p < 0.001$ ), mental health ( $r_s = -0.460$ ;  $p < 0.001$ ), and with higher severity of disease ( $r_s = 0.506$ ;  $p < 0.001$ ).

## Discussion

This epidemiological study aimed to evaluate osteoarthritis in adult individuals over 45 years of age in Portugal. The results suggest that the prevalence of self-reported OA in the Portuguese population with 45 or more years of age is between 8.1% and 11.7%. This result is similar to the prevalence results reported in countries like Canada, United States, UK, Australia, New Zealand, Belgium, and the Netherlands.<sup>11,12</sup> The overall prevalence of OA among Norwegian inhabitants was 12.8%, being significantly higher among women than men.<sup>13,14</sup> In Dutch population with OA, the prevalence of knee osteoarthritis was higher than hip one, which is also reported in other countries,<sup>12,14</sup> as well as in our study in Portugal.<sup>15</sup> In Poland, OA was diagnosed in 14.7% of participants. The occurrence of OA increased with age, being highest in the group aged more than 50 years, and more frequent in women.<sup>14</sup> Spain has shown an estimated prevalence of symptomatic knee OA of 10.2% in general adult population over 20 years old, and 6.2% for symptomatic hand OA. These results were mainly related to a high rate of knee pain in women aged more than 55 years.<sup>14,16-18</sup>

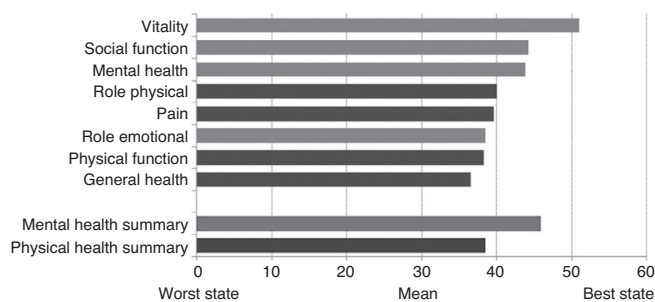
However, most of the published studies<sup>11,13-15</sup> report prevalence data from knees, hands and hip symptomatic OA. Information about other sites of disease is very scarce.

This study uses self-reported information, which has some limitations, once it did not require medical confirmation of the diagnosis. As such, it is possible that some subjects report as diagnosed when they were not, and, on the contrary, some

**Table 3 – Characterization of subjects with OA.**

With self-reported OA (n = 103)		
Age at diagnosis, years (SD)		52.3 (12.0)
Time from complaint to diagnosis, years (SD)		2.9 (4.8)
Duration of disease, years (SD)		12.7 (10.4)
Site of disease	N	%
Knees	65	63.1%
Hands	57	55.3%
Feet	32	31.1%
Lumbar spine	28	27.2%
Hips	23	22.3%
Ankles	23	22.3%
Fists	20	19.4%
Shoulders	19	18.4%
Elbows	16	15.5%
Neck	12	11.7%
Thoracic spine	9	8.7%
Working abilities and sick leave (last year)	N	%
Changed the type of work due to OA	12	41.4%
Changed the way of working due to OA	10	34.5%
Reduced nr. of working hours due to OA	1	3.4%
Did not work some days due to OA	2	6.9%
Stopped working completely due to OA	3	10.3%
Other	1	3.4%
Have done any treatment (ever) for OA	91	88.3%
Drug therapy	86	94.5%
Physiotherapy	45	49.5%
Physical activity	18	19.8%
Surgery	9	9.9%
Special diet	1	1.1%
Other	7	7.7%
Drug therapy for OA over the last 3 months	N	%
NSAIDs	34	42.0%
NSAIDs + Analgesics	16	19.8%
NSAIDs + Analgesics + Disease modifying	14	17.3%
Disease modifying	5	6.2%
Analgesics + Disease modifying	5	6.2%
NSAIDs + Disease modifying	4	4.9%
Analgesics	3	3.7%
Total	81	100.0%
Visual Analog Scales – VAS (SD)		
Pain intensity		4.5 (3.3)
Impact of OA in daily living		6.1 (2.8)
Severity of disease		5.9 (2.4)
Disability level		5.3 (2.7)
Subject's perception of doctor's importance to disease		6.4 (3.0)

Values presented in mean (SD) except in categorical variables (†), presented n (%).

**Fig. 2 – Scores of quality of life and functionality (SF-12 v2.0).**

might think they have been diagnosed with another condition but were diagnosed with OA, implying a risk of false-positive or false-negative diagnosis. In summary, assessment of disease through self-report information can lead to some misdiagnoses, nevertheless self-reported information is considered an important indicator of a person's condition, even though it is dependent on how one perceives and acknowledges his or her disease.

Not surprisingly, in our study the most common sites for OA were also knees and hands. However, despite high evidence of hip OA reported in other countries,<sup>13,19-21</sup> this has not been demonstrated in this population.

Age, gender, obesity, injuries, occupation and physical activity are some of the risk factors associated with OA that have been extensively discussed previously on published literature.<sup>14,22-24</sup>

The oxidative damage that occurs with age is one of the main responsible for the development of OA. Women are more likely to have OA than men and also to develop more severe forms of disease. The results from this study confirm these findings with prevalence of OA being higher in women than in men, in line with results reported from other countries.<sup>11,13,16,18,25,26</sup> Also in line with other studies,<sup>2,11,13,16,18,25,27</sup> age was associated with OA, with a higher median age in subjects with OA.

Some studies have shown that risk factors for OA of different localization may vary. In Italy, hip OA results showed correlations with weight, genetic factors, gender, previous traumas, occupational factors, and age, while knee OA had great correlation with weight, lifestyle, and physical activity.<sup>14</sup> Obesity and overweight have long been recognized a potent risk factor for OA, especially OA of the knee.<sup>2,7,22,27</sup> Also, BMI appears to play important roles in determining disability of individuals.<sup>28</sup> In the present study, however, OA was not associated with BMI, as opposed to data from a population survey in Norway,<sup>13</sup> where BMI was significantly associated with hip and knee OA.

It has been shown that, in OA patients, comorbid conditions may affect not only disease progression, but also their psychological well-being, independently of the extent of disease.<sup>29,30</sup> In our study, the prevalence of OA was higher in subjects with hypertension, cardiovascular disorders and diabetes. These comorbidities have also been reported by other authors, along with depression, dyslipidemia or other musculoskeletal conditions.<sup>31-33</sup> Our findings showed a risk of OA higher for subjects with more comorbidities which result in an increased need for attention, investigate and treat those comorbidities in order to try to diminish the associated disability and decrease in QoL in patients with those conditions.

Our results showed that OA was associated with less years of education and absenteeism, which was also one of the findings from the Norwegian<sup>13</sup> and Spanish<sup>16,18</sup> studies, in which an increased occurrence of OA was observed in people with less than 12 years of education and in those out of work.

Concerning absenteeism or working conditions associated to OA, the results of the present study were in line with those reported in the US,<sup>4</sup> with similar percentage of subjects, changing type or way of working due to OA in our study compared to overall work and activity impairment registered in US. Employment reduction due to OA might also be

dependent on the site affected by OA.<sup>34</sup> In the US study,<sup>4</sup> workers with OA pain reported significantly lower SF-12 health status when compared to workers without OA pain. Likewise, we also found lower scores on physical components which, not surprisingly, have been proved to be associated to pain, since OA and pain affect physical functioning.<sup>4,13,30</sup>

In our study, pain measured by VAS was also associated with impact on daily living, severity of disease and disability level. According to literature, pain relief is the main motivator in patients with OA seeking medical attention.<sup>14</sup> Given the relationship between pain and quality of life, it is important to seek proper ways to provide patient's with better quality of life. It is important to understand the relationship between OA, self-reported pain and disability measures, to develop a better knowledge of the effect that OA has on a patient's life, progression of disease, and effective pathways for intervention.<sup>29,30</sup>

For some authors,<sup>22,30</sup> pain and function are assumed as symptomatic outcomes of OA that may frequently be considered by patients as part of the pharmacologic efficacy evaluation, associated with one's perceptions of severity and improvement. In our study, the results point out to a relationship between impact on daily living, severity and disability, which were the outcomes most considered as being associated to this disease, from the patients' perspective. Statistically, neck has been the most painful site of disease for the subjects in this study, which is quite uncommon in other similar studies already published. Along with neck, also lumbar spine and shoulders were statistically significant for pain and overall these pain levels might be responsible for the results, from the patients' perspective for impact on daily living and disability. Some studies<sup>5,14,28,29</sup> reported that the presence of pain in osteoarthritis of the hip and knees were strongly associated with perceptions of disability in basic activities of daily living.

Associations between self-reported OA, severity and other patient-reported outcomes indicate the clinical relevance of asking patients to self-evaluate their condition.<sup>14</sup> This approach may represent an additional way to assess OA in clinical practice, although further data is needed to confirm the utility of this method.

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## Conclusion

There are a few studies assessing self-reported OA and its impact on daily life. With this study we attempted to understand how patients are affected by this disease.

Our study confirms that the prevalence of osteoarthritis was higher in women and is associated with age. Among subjects with OA, knees and hands were the most frequent site of self-reported disease. OA was associated with fewer years of education and absenteeism. Impact on daily living was patients' most important parameter associated to this disease, which was also associated with worse physical and mental health, and with higher severity of disease.

Overall, our study confirms that the impact of OA is very significant on patients over 45 years old and that is also present in patients with several other diseases. That might indicate a profile of patient with lower global health status in whom OA contributes for a diminished quality of life.

In a growing-old population, that has to work for more years, OA has to be considered in terms of prevention and treatment in order to control the global impact of the disease not only on patients, but also on society.

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## Conflicts of interest

The authors declare no conflicts of interest.

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