

Prevalence of musculoskeletal complaints and disability in Cuba. A community-based study using the COPCORD core questionnaire

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ABSTRACT

Objective

Rheumatic diseases are prevalent conditions around the world, but precise information is not easily obtainable in developing countries. The aim of this study was to estimate the prevalence of musculoskeletal complaints in the community in Cuba using the ILAR/COPCORD core questionnaire and published methodologies.

Methods

The ILAR/COPCORD core questionnaire was administered in the form of a home survey to 300 adult subjects. Cases, defined as those with present pain and no trauma, underwent a physical examination and selected laboratory or X ray evaluations.

Results

The questionnaire was filled out in a mean time of 8 minutes. Ninety-one subjects had present musculoskeletal pain not related to trauma and 83 had had pain in the past. The most frequently affected regions were the lower back (14%); cervical spine (14%); knee (11.5%) and shoulders (10%). Osteoarthritis was the most common diagnosis (19.6%). A total of 166 subjects sought professional help; 56 were treated by a rheumatologist. Most subjects were satisfied with the results of their medical treatment.

Conclusions

Musculoskeletal symptoms were prevalent in this community. A larger study will be necessary to obtain a better estimate of diagnoses with a low prevalence.

Introduction

Rheumatic diseases are prevalent conditions in the adult population and represent an important cause of morbidity in developed countries (1). Such disorders comprise a heterogeneous group of diseases which range in severity from mild and self-limited to life-threatening conditions (2). They are not usually included in the list of health priorities by policy makers (1), even though it is estimated that 10% of the population has a rheumatic disorder and that this frequency may increase to 22% in subjects older than 16 years old. Data from the National Health Interview Surveys in the United States (1989-1991) showed that 15% of population had some form of

arthritis, and that this rate increased with age (3). In another survey conducted in Ontario, Canada (4), it was reported that 21.6% had a chronic musculoskeletal disorder; this prevalence rate as well increased with age.

Death is not a common outcome in rheumatic diseases, but many studies have shown an association of rheumatic diseases and disability (3-7). This has also been detected in Cuba (8, 9). Disability can be extremely serious and therefore is probably the most important outcome to be considered (10, 11). Disability is associated with a poor quality of life, having important repercussions on the patient's personal, vocational, family, and social roles. It is widely accepted that an early diagnosis should be followed by appropriate therapy and adequate follow up.

Few epidemiologic studies have been carried out in developing countries to estimate the prevalence and impact of rheumatic diseases. Data from developed countries does not necessarily represent what may be seen in other parts of the world (12-14). No reliable statistical information is available in Cuba regarding the prevalence of rheumatic disorders and disability. Data generated in tertiary care centers does not always reflect the information usually obtained in the community. It is important to have this data, which would be useful for policy makers to improve the allocation of human and economic resources for the better treatment of these diseases. We decided to evaluate the COPCORD core questionnaire in a community survey to obtain this information.

The COPCORD questionnaire (Community Oriented Programme for the Control Of Rheumatic Diseases) was developed in 1981 (15) out of a project proposed and supported by ILAR to estimate the burden of illness of rheumatic disorders. It takes into account pain and disability as the main elements for case detection. The questionnaire has been used in several surveys in Australia, The Phillipines, Indonesia, Brazil, Chile, and Mexico among other countries (16-19). It has been found to be a useful screening instrument for community studies in different languages. The original version has undergone various modifications and

its sensitivity, specificity, and predictive values have been estimated; from this process a core questionnaire has been developed.

Our objectives were to detect the prevalence and patterns of rheumatic disorders, disability, and coping behaviour in an urban population in Cuba, using the ILAR/COPCORD core questionnaire as developed by Bennett *et al.* (19).

Patients and methods

The questionnaire. The ILAR/COPCORD consists of nine sections, including an explanatory introduction, and sections to elicit demographic data, work history, pain in the last 7 days, pain in the past, disability, therapeutic measures, coping and a subject evaluation of the questionnaire.

The community. This study was carried out in Santa Catalina, a urban community in La Habana with a standard socioeconomic and cultural level for an urban population. A comparison of the sociodemographic characteristics of the sample and the general population in Cuba is presented in Table I using data from the 1981 census.

The sample. Three hundred adult subjects were selected without using any specific randomization process. Special

care was taken to obtain a balance in terms of gender and sampling from different areas in the community. Only adults were invited, and all of them agreed to participate in a home interview. No refusals were reported. The sample size was calculated, with an estimated prevalence of 30% for musculoskeletal symptoms.

The interview. Three trained rheumatologists applied the questionnaire during non-working hours to avoid sample bias. These rheumatologists performed a physical examination and ordered focused laboratory or radiologic evaluations based on the clinical data. Ten percent of the subjects who tested negative for rheumatic diseases on the questionnaire underwent a clinical examination. Five principle diagnoses emerged from the evaluation of this patient series: rheumatoid arthritis (RA), osteoarthritis (OA), soft tissue rheumatism, low back pain and systemic lupus erythematosus (SLE). Diagnoses for RA, SLE, and OA were established following the ACR classification criteria (20, 21), and the others according generally accepted definitions among rheumatologists.

Cases consisted of those subjects with present pain and no trauma, according to Bennet *et al.* (19). All cases were eval-

uated by a rheumatologist. All of them also completed the sections regarding health seeking behaviour and coping, and the modified HAQ.

Descriptive statistics are presented among different diagnoses.

Results

Three hundred adults answered the COPCORD Core questionnaire in Santa Catalina, Municipio Cerro, La Habana, Cuba (mean administration time 8 minutes): 176 were male (59.6%) and 124 female; 218 were white (72.6%), 54 (18%) were black; and 28 (9.3%) mestizos. Most subjects were married (179/ 60.5%). All participants had some level of education, most of them higher than secondary school. Working status showed that 158 were working; 142 did not report a working obligation, and out of this last group 56 subjects were retired. Fourteen subjects had retired due to health problems, rheumatic disorders being the main cause. The main occupations were technical or professional (103/ 34.3%); 55/12.6% were gray collar; 38/12.6% were housewives. This information is summarized in Table I.

Pain emerged as a very important symptom in this questionnaire. Pain in the last 7 days was reported by 102 (34.5%) subjects; in 11 patients it was associated with trauma. Pain in the past was reported by 83 subjects (27.6%); in 14 it was trauma related. Musculoskeletal pain with no trauma, either present or past, was reported by 58% (174 cases). This was more prevalent in the older subjects. The most frequently cited regions were the lower back (14.2%); neck (14.2%); knees (11.5%) and shoulders (10.1%).

Disability was reported by 22 subjects (7.4%). This information pertained to either present or past disability. These subjects completed the modified HAQ, and their mean score was 0.87.

Less than 10% of the patients required laboratory or X-ray examinations. A total of 174 subjects (58%) reported pain in the last seven days and/or in the past. More than half of the subjects (166/ 56.1%) had a previous rheumatic diagnosis. Definite diagnoses were established by a rheumatologist in 75% of these (126/166). The most frequent diagnoses were osteoarthritis 58 (19.6%);

Table I. Demographic characteristics

Variable	Study sample	General pop. in Cuba*
Subjects	300	11,139,000
Gender M/F	176 / 124	5.57 / 5.56 millions
Race: White/black/mestizo	72.7/18/9.3%	66/12/21%
Education		
Elementary	78 (26%)	60% **
Secondary	99 (33%)	21%
College	47 (15%)	14%
University	76 (21%)	3.5%
Working status		
Yes	158 (52%)	3.7 million (33%)
No	142 (48%)	
Retired	56 (18%)	208,000 (18%)
Occupation		
Technical or professional	103 (34%)	799,200 (7%)
Graycollar	55 (18%)	
Housewives	38 (11%)	1,134,800 (10%)

*Estimated population in year 1999; **data available from 1981 Cuban Census. Information obtained from the Anuario Estadístico de Cuba. Habana Cuba 1999.

Table II. Most common diagnoses.

Diagnosis	n	%
Osteoarthritis	58	19.6
Soft tissue rheumatism	18	6.1
Low back pain	17	5.7
Rheumatoid arthritis	8	2.7
Fibromyalgia	2	0.7
Systemic lupus erythematosus	2	0.7

Table III. Help-seeking behavior.

Type of service	Number
Professional help	166
General practitioner	77
Rheumatologist	56
Orthopedic surgeon	62
Physiotherapist	37
Self medication	12
Non-conventional therapy	12
Traditional healer	6

soft tissue rheumatism 18 (6.1%); low back pain 17 (5.7%); rheumatoid arthritis 8 (2.7); fibromyalgia and systemic lupus erythematosus 2 each (0.7%). This data is summarized in Table II.

Regarding health-seeking behaviour, the COPCORD questionnaire elicited the following findings: 166 (56%) patients sought some form of professional help. A total of 77 (26%) were treated in a hospital; 60 subjects (20.3%) by a general practitioner; 56 (18.9%) by a rheumatologist; 62 (20.9%) by an orthopedic surgeon; 6 patients (2%) by a traditional healer; 37 subjects were treated by a physiotherapist while 12 patients (4%) opted for self-medication and non-conventional therapy. This data is summarized in Table III. Among those treated by a physician, 95% reported improvement with medication.

Discussion

This community-based study was carried out on a sample composed primarily of white, male, married persons. This distribution is similar to that reported in our country, but some differences which appear in Table I can be explained by: the fact that only adults were included in our study; the pool they were drawn consisted of an urban population; and the information on education was drawn

from the 1981 census. Our sample was balanced in gender and occupation. Persons of Caucasian and African origin were over-represented, as were persons with higher education levels. We are not certain whether this reflects the actual profile in Cuba; more information is needed to answer this question.

More than 65% of the sample had completed 9 years of formal schooling. All subjects had some level of education and 26% had a university degree. This is important since the level of formal education has been cited as a marker of a poor prognosis in several chronic diseases, as for example in RA (22). This is probably related to complex mechanisms including poor habits and low compliance. In our study, 28% were not working; 12% of these were housewives. A higher number of workers has been found in other Latin American countries (19). Disability due to rheumatic diseases was the main cause of retirement due to an illness in our series. Similar findings have been reported by the Work Institute in Cuba (23). In Cuba, 1 out of every 7 consultations are related to rheumatic disorders.

Pain was prevalent in our sample, but the data are not easily compared to other studies, which are more diagnostically oriented (4). Nevertheless, in a similar study Darmawan *et al.* found a prevalence of 23.6% and 31.3% respectively in a rural and urban populations in Indonesia (16). This information is relevant, since similar studies in rural areas in Cuba would be of special interest.

Self-reported functional disability was high in our study (7.4%) compared with 2.8% in rural areas and 0.9% in urban areas in Indonesia (16) and only 1.8% in the Phillipines. Cultural differences could explain this difference in self-reported disability. Data from Canada show that rheumatic disorders are responsible for 2.5% of disability among adults (4,24).

It is worth pointing out that a high proportion of our subjects (56/166) sought professional help; 56/166 were treated by rheumatologists and 77/166 were treated by a general practitioner. Only 12 subjects resorted to non-conventional therapy and 6 subjects went to a traditional healer for treatment. These data

could be related with the excellent national health care system that exists in Cuba. In other studies most patients were not treated by rheumatologists, a common and expected finding (25,26). In the Phillipines only 10.8% were treated by a doctor (18), although elderly patients tended to seek professional help more often than younger patients – 29.3% of those >45 years of age in contrast to 4.8% of those <45 years of age. In Indonesia 50% of urban residents with musculoskeletal symptoms reported visiting a doctor whereas only 25% in rural areas did so. This help-seeking behaviour could have multiple explanations – cultural and behavioural, as well as the availability of health care facilities (16). More studies are needed to estimate the importance of each variable in these findings. Non-conventional therapies have different economic and therapeutic implications (26-29). Rheumatologists should be aware of them to provide advise to potential users.

This study highlights the prevalence and patterns of musculoskeletal symptoms, disability, and health-seeking behavior in an urban community in Cuba using a common and standardized methodology based on a validated questionnaire proposed by COPCORD. Another study using a larger sample, and comparing urban and rural areas, will be performed in order to obtain further data.

References

1. BADLEY EM, THOMSON RP, WOOD PNH: The prevalence and severity of major disability conditions: A reappraisal of the government social survey on the handicapped and impaired in Great Britain. *Int J Epidemiol* 1978; 7: 145-51.
2. ACR Ad Hoc Committee on Clinical Guidelines: Guidelines for the initial evaluation of the adult patient with acute musculoskeletal symptoms. Special article. *Arthritis Rheum* 1996; 39: 1-8.
3. Centers for Disease Control and Prevention: Arthritis prevalence and activity limitation: United States, 1990. *Morb Mortal Wkly Rep* 1994; 43: 433-8.
4. BADLEY EM, RASSOLY I, WEBSTER GK: Relative importance of musculoskeletal disorders as a cause of chronic health problems, disability, and health care utilisation: Findings from the 1990 Ontario Health Survey. *J Rheumatol* 1994; 21: 505-14.
5. LEE P, HELEWA A, SMYTHE HA, BOMBARDIER C, GOLDSMITH CH: Epidemiology of musculoskeletal disorders (complaints). *J Rheumatol* 1985; 12: 1169-73.

6. BADLEY EM, TENNANT A: Impact of disablement due to rheumatic disorders in British population: Estimates of severity and prevalence from the Calderdale Rheumatic Disablement Survey. *Ann Rheum Dis* 1993; 52: 6-13.
7. MAKELA M, HELIOVAARA M, SIEVERS K *et al.*: Musculoskeletal disorders as determinants of disability in Finns aged 30 years or more. *J Clinical Epidemiol* 1993; 46: 549-59.
8. REYES LLERENA GIL A, GUIBERT TOLEDANO M, HERNÁNDEZ MARTÍNEZ A *et al.*: Actualización acerca del impacto de las enfermedades reumáticas sobre la calidad de vida en Cuba (parte II). *Rev Cub Reumatol* 1998; 1: 12-23.
9. REYES LLERENA GIL A, GUIBERT TOLEDANO M, HERNÁNDEZ MARTÍNEZ A: Rheumatology and care for the rheumatic diseases in Cuba. *J Clin Rheumatol* 1999; 5: 289-92.
10. FRIES JF, SPITZ P, KRAINES RG, HOLMAN HR: Measurement of patients outcome in arthritis. *Arthritis Rheum* 1980; 23:137-45.
11. BELL MJ, BOMBARDIER C, TUGWELL P: Measurement of functional status, quality of life, and utility in rheumatoid arthritis. *Arthritis Rheum* 1990; 33: 591-600.
12. CUNNINGHAM LS, KELSEY JL: Epidemiology of musculoskeletal impairments and associated disability. *Am J Public Health* 1984; 74: 574-9.
13. REYNOLDS DL, CHAMBERS LW, BADLEY EM *et al.*: Physical disability among Canadians reporting musculoskeletal diseases. *J Rheumatol* 1992; 19: 1020-30.
14. LAWRENCE RC, HOCHBERG MC, KELSEY JL *et al.*: Estimates of the prevalence of selected arthritis and musculoskeletal diseases in the United States. *J Rheumatol* 1989; 16: 427-41.
15. WHO Official Report: Rheumatic disease prevention and control in the community. 1981; NCD/OND/81.1.
16. DARMAWAN J, VALKENBURG HA, MUIRDEN KD, WIGLEY RD: Epidemiology of rheumatic diseases in rural and urban populations in Indonesia: a World Health Organization International League against Rheumatism COPCORD study, Stage I, Phase 2. *Ann Rheum Dis* 1992; 51: 525-8.
17. MUIRDEN KD: The developing relationship between the World Health Organization and the International League against Rheumatism. *J Rheumatol* 1991; 18: 793-5.
18. WIGLEY R, MANAHAN L, MUIRDEN KD *et al.*: Rheumatic diseases in a Philippine village. II: A WHO-ILAR-APPLAR COPCORD study. Phases II and III. *Rheumatol Int* 1991; 11: 157-61.
19. BENNETT K, CARDIEL MH, FERRAZ MB, RIEDEMANN P, GOLDSMITH CH, TUGWELL P: Community screening for rheumatic disorders: characteristics of the "COPCORD" core questionnaire in Brazil, Chile and Mexico. *J Rheumatol* 1997; 24: 169-168.
20. ARNETT FC, EDWORTHY SM, BLOCH DA *et al.*: The American Rheumatism Association 1987 revised criteria for the classification of rheumatoid arthritis. *Arthritis Rheum* 1988; 31: 315-24.
21. ALTMAN RD: Criteria for classification of clinical osteoarthritis. *J Rheumatol* 1991; 18 (Suppl. 27): 10-12.
22. PINCUS T, CALLAHAN LF: Formal education as a marker for increased mortality and morbidity in rheumatoid arthritis. *J Chronic Dis* 1985; 38: 973-84.
23. La seguridad social en Cuba. *Conferencia Internacional de Seguridad Social*. Serie Monográfica del Instituto de Medicina del Trabajo, La Habana 1994.
24. Statistics Canada: Report of the Canadian Health and Disability Survey 1983-1984. Catalogue No. 82-555 E. Ottawa, Statistics Canada 1986.
25. EISEMBERG DM, KESSLER RC, FOSTER C, NORLOCK FE, CALKINS D, DEL BANCO T: Unconventional medicine in the United States: Prevalence, costs, and patterns of use. *N Engl J Med* 1993; 328: 246-52.
26. CRONAN TA, KAPLAN RM, POSNER L, BLUMBERG E, KOZIN F: Prevalence of the use of unconventional remedies for arthritis in a metropolitan community. *Arthritis Rheum* 1989; 32: 1604-7.
27. BROWN JH, SPITZ M, FRIES JF: Unorthodox treatments in rheumatoid arthritis. *Arthritis Rheum* 1980; (Suppl. 23): 657-8 (abstract).
28. ANDRADE LEC, FERRAZ MB, ASTRA E, CASTRO A, SILVA MSM: A randomised controlled trial to evaluate the effectiveness of homeopathy in rheumatoid arthritis. *Scand J Rheumatol* 1991; 20: 204-8.
29. REYES LLERENA GIL A, GUIBERT TOLEDANO M, HERNÁNDEZ MARTÍNEZ A: Comportamiento comunitario en la búsqueda de ayuda y uso de terapia no convencional en afecciones reumáticas en Cuba. *Rev Colomb Reumatol* 1999; 6: 23-9.