

# Prevalence of the Rheumatic Diseases in Urban Vietnam: A WHO-ILAR COPCORD Study

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**ABSTRACT. Objective.** To determine the prevalence rates of musculoskeletal disorders in an urban Vietnamese population.

**Methods.** The Community Oriented Program for Control of Rheumatic Disease (COPCORD) Stage I study was carried out in 16 groups in the Trung Liet Commune, Dong Da District, Hanoi City, Vietnam. Phase 1: the WHO ILAR COPCORD Core Questionnaire was applied by primary health care workers to 2119 urban subjects aged 16 years and over. Phase 2: 276 positive responders who had musculoskeletal complaints were interviewed by nurses and examined one week later. Phase 3: 261 positive responders in phase II were examined by 3 rheumatologists and 38% of these subjects required radiographic and blood tests to classify rheumatic disease categories.

**Results.** The response rates were 94.4%, 86.2%, and 94.6% in phases 1, 2, and 3, respectively. The prevalence of musculoskeletal pain was 14.9%. The most common musculoskeletal complaints were knee pain 18.2%, low back pain 11.2%, and soft tissue disorder 15.4%. Functional disability was reported in 6.04% of the survey population. The prevalence of rheumatic diseases was OA 4.1%, rheumatoid arthritis 0.28%, osteoporosis 0.47%, connective tissue disease 0.09%, and gout 0.14%.

**Conclusion.** The prevalence of musculoskeletal pain in 2119 adults in an urban population in Vietnam was 14.5%, and osteoarthritis was the most commonly found arthritis. (J Rheumatol 2003;30:2252-6)

*Key Indexing Terms:*

COPCORD

RHEUMATIC DISEASE

VIETNAM

URBAN

The Community Oriented Program for Control of Rheumatic Disease (COPCORD) consists of 3 stages<sup>1</sup>, with each stage subdivided into several phases. Stage I includes epidemiologic or population surveys of rheumatic disease in 1-4 phases. Stage II involves education of primary health care professionals in the optimal management of common rheumatic diseases. Stage III measures improved health care, quality of life, and environmental etiologic research of rheumatic disease including genetic research in cooperation with an advanced international center abroad. In Stage I, phase 1 involves screening a minimum of 1500 people 15

years of age and over from the total population of a designated area for recent (within one week) rheumatic pain. A standard WHO-ILAR COPCORD Questionnaire<sup>2</sup>, with queries on musculoskeletal pain, disability, and help-seeking behavior is either applied by primary health care workers for those who are illiterate, or self-administered in literate population samples. In phase 2, the responders with recent rheumatic pain (positive responders) are interviewed (or self-administered) with a more detailed questionnaire by a nurse to select the serious or chronic arthritis cases for physical examination. When resources and skills are adequate, phases 1 and 2 are combined into one phase 3 epidemiological research study that includes radiological and serological measures (phases 1 and 2 should be completed within 1 day to avoid symptoms of soft tissue rheumatism and acute gouty arthritis resolving within 7 days: this prevents a lower prevalence rate of rheumatic pain, soft tissue rheumatism, and gout in particular). In cooperation with an advanced international center, genetic risk factors of rheumatic disease can also be examined using molecular biologic research.

Pilot epidemiological surveys have been completed in Mexico<sup>2,3</sup>, Brazil<sup>4</sup>, Chile<sup>2,4</sup>, The Philippines<sup>5-7</sup>, Indonesia<sup>8-13</sup>, Malaysia<sup>14</sup>, Australia<sup>15</sup>, China<sup>16,17</sup>, Thailand<sup>18</sup>, India<sup>19-21</sup>, Pakistan<sup>22,23</sup>, Cuba<sup>24</sup>, Kuwait<sup>25</sup>, and Bangladesh (publication in process), with half the world population living in these countries.

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There were no existing population data on musculoskeletal disorders in Vietnam. Therefore, our aim was to collect epidemiological data on rheumatic diseases in an urban population of Vietnam. Trung Liet Commune, 6 km from the center of Hanoi, is geographically well-defined and typically urban with convenient transportation and a good health care system. It is representative of urban communes in the cities of Vietnam. The commune has electricity and a tap water supply. The target population was 8290 with 98% Vietnamese spread over an area of 10-12 km<sup>2</sup>. There are 2308 households, each consisting of 2-10 members (average 5.4 ± 2.5). In June 2000, the registered commune population was 8290 with an annual growth rate of 1.5% and a life expectancy of 68 years (65 for men and 70 for women). Of the total population, 64.2% are over 16 years of age, and 42.3% are married. The total population of Trung Liet main and side streets were surveyed, totaling 2119/2930 (72.3%) individuals aged 15 and over who were registered for the study.

## MATERIALS AND METHODS

*Study design.* The investigation was carried out from September 20 to December 25, 2000. Three rheumatologists from Bach Mai Hospital, 7 retired doctors from the Red Cross, and 3 nurses from the Community Health Care Center were given a short course on the protocols and execution of COPCORD (October 1-3, 2000).

*Patient evaluation.* In phase 1, 2119 people aged 16 and over were assisted by primary health care workers in the completion of the Vietnamese Adjusted Core Questionnaire. Positive responders answered yes to the question: have you had any musculoskeletal pain during the last 7 days? A no answer defined the subjects as negative responders. Disability questions covered difficulty in dressing, eating, walking, hygiene, reaching, gripping, running errands, and shopping. The Likert-type scale<sup>26</sup> was used to grade the severity of pain, which was divided into 5 levels: no pain, mild, moderate, severe, and extreme pain depending on the responder's report. The Functional Status Index (FSI)<sup>27</sup> was used to grade functional disability. Seven retired doctors and 3 nurses made home visits and 320/339 (94.4%) completed the phase 1 interviews (October 7-18, 2000); 276/320 (86.2%) positive responders in phase 1 with musculoskeletal complaints were interviewed by 3 retired doctors with a more detailed questionnaire in phase 2 (October 22-28, 2000). One week after phase 2, 261/276 (94.6%) positive responders were examined by 3 rheumatologists (November 1-10, 2000). Depending on the medical history and physical examinations, additional laboratory tests and radiological evaluations were conducted as indicated.

The bone mineral density (BMD) measurements (PIXI Lunar-DEXA, USA) were undertaken for all positive responders who showed signs of osteoporosis on radiographic film. The following diagnoses were established based on the American College of Rheumatology (ACR) classification criteria: osteoarthritis (OA)<sup>28</sup>, gout<sup>29</sup>, and rheumatoid arthritis (RA)<sup>30</sup>. Laboratory tests were done in the Hematology, Biochemistry, Radiology, and Rheumatology departments of Bach Mai Hospital (November 3-20, 2000).

*Statistical analysis.* The data were coded and analyzed using the EPI. INPO 6.0 program.

## RESULTS

The response rates in phases 1, 2, and 3 were 94.4%, 86.2%, and 94.6%, respectively. The mean age of the target population was 40.1 ± 17.2 years (range 16-93). Blue-collar workers included laborers 18.6%, farmers 0.3%, and factory

workers 24.6%. White-collar workers comprising 17.8% of the study population included secretaries, shop waitress/waiters, and office workers. Students and pupils made up 14.3%, and 24.4% were housewives, unemployed, and retired people. Based on the Likert-type scale, the 261 responders experienced little pain (25.5%) or moderate pain (71.3%) (Table 1).

Functional disability was reported in 128 positive responders (6.04% of the survey population). In 40.6% (52/128), treatment was sought from doctors. Fifteen positive responders refused to come for the physical examination. In phase 3, only 100/261 (38%) of positive responders had their diagnoses confirmed by rheumatoid factor (RF), radiographic, BMD, or serum uric acid testing. There were 254/261 (97.3%) responders who had musculoskeletal complaints in the previous week, and 7/261 (2.7%) patients had complaints during the week of the examination. The demographics of the study group, negative responders, and responders with complaints are shown in Table 1. Neck, upper back, and lower back pain were common and occurred at a similar rate in men and women in the survey population with prevalences of 6.6%, 7.3%, and 11.2%, respectively. The prevalences of musculoskeletal pain were 3.6%, 11.7%, and 44.4% in the groups under 35 years, 35-54 years, and over 55 years of age, respectively. Soft tissue rheumatism was also common in the survey population (15.4%), with 68% of those reporting low back pain and pain any site, and 32% De Quervain's stenosing tenosynovitis, tibial tubercle apophysitis, plantar heel pain, and medial epicondylitis. The age and sex-specific distribution of low back pain, knee pain, shoulder pain, hip pain, and soft tissue pain in any site is summarized in Table 2. Among 308 individuals (14.5%) who had musculoskeletal complaints in this study, 4.2% (11/261) were seen by a rheumatologist, 31.4% (81/216) were seen by general practitioners. Thirty-five percent reported treatment by prescription, and 40.5% reported treatment by acupuncture, massage, and other traditional medicines. The rest of the responders reported self-medication because in Vietnam most medications can be bought at pharmacies without prescription, and half used corticosteroids for relief of pain without a diagnosis.

The prevalence rates of the different categories of the rheumatic diseases in 2119 urban Vietnamese are shown in Table 3. OA (n = 86) was the most common arthritis identified (4.1%); 60% involved OA of the knees and the frequency was higher in women (78%) than in men. Six positive responders (0.28%) satisfied ACR criteria for RA, with disease duration from 1 to 12 years. Again, the frequency was higher in women than in men, with a ratio of 5:1. Only 2/6 were diagnosed and treated before the survey. Three responders were diagnosed with gout with a history of past gout. All patients were male from 42 to 65 years of age, with disease duration of 1 to 3 years (with 1-3 acute gouty attacks per year) and without a tophus or impaired renal

Table 1. Demographics of the whole study population, responders and positive responders.

Age	Population Investigated (n = 2930)		Total Reponders (n = 2119)		Total Positive Responders (n = 261)	
	Men	Women	Men	Women	Men	Women
16–24	245	267	222	262	3	5
25–34	242	275	203	235	12	18
35–44	246	293	193	218	18	27
45–54	298	359	179	197	24	35
55–64	187	243	93	117	25	40
65+	118	157	91	109	21	33
Total	1336	1594	981	1138	102	158

Table 2. Age and sex-specific distribution of low back pain, knee pain, shoulder pain, and hip pain of positive responders.

	Age 16–34 (n = 38)		Age 35–54 (n = 104)		Age 55–64 (n = 65)		Age over 65 (n = 54)	
	Men (n = 15)	Women (n = 23)	Men (n = 42)	Women (n = 62)	Men (n = 25)	Women (n = 40)	Men (n = 21)	Women (n = 33)
Low back pain	3	4	12	8	19	25	18	27
Knee pain	2	6	19	18	20	26	37	39
Shoulder pain	1	4	18	18	15	24	13	25
Hip pain	3	2	6	4	12	17	14	13
Soft tissue, any site	6	8	12	22	6	12	5	15

Table 3. The prevalence of rheumatic disease in a Vietnamese urban community (n = 2119).

Disease	Men	Women	Total	Prevalence (%)
Osteoarthritis	33	53	86	4.1
Rheumatoid arthritis	1	5	6	0.28
Spondyloarthropathy	4	2	6	0.28
Connective tissue disease	0	2	2	0.09
Gout	3	0	3	0.14
Osteoporosis	1	9	10	0.47
Trauma	6	1	7	0.33
Juvenile arthritis	0	1	1	0.05
Soft tissue rheumatism	24	48	72	3.4
Non-specific musculoskeletal pain	31	37	68	3.2

function. Seronegative spondyloarthropathy was identified in 6 responders<sup>28</sup>. There was 1 subject with ankylosing spondylitis, 1 with psoriatic arthritis, and 4 with reactive arthritis. Ten responders were diagnosed with osteoporosis with a BMD T-score from -2.6 to -3.2 with prevalence of 0.5% in the investigated population. There were 6/10 responders with osteoporosis type II, 2 responders with osteoporosis type I, and 2 responders with osteoporosis due to longterm corticosteroid treatment (for asthma treatment).

## DISCUSSION

The prevalence rate of 14.5% in our population is similar to the prevalence rate of musculoskeletal complaints in urban Filipinos<sup>5</sup> (16.3%) and rural Thailand<sup>18</sup> (18%) but significantly lower than the 31.3% found in the Indonesian population<sup>9</sup>. This may be because both the rural Thailand<sup>18</sup>, urban Filipinos<sup>5</sup>, and Vietnamese surveys applied the standardized WHO-ILAR COPCORD Core questionnaire, while the

Indonesian urban survey applied an older, more cumbersome questionnaire. The prevalence of knee pain we observed of 17.4% was higher than the 12.7% in the Indonesian population<sup>1</sup>. However, knee pain and shoulder pain occurred in women more frequently than in men. This may be due to the custom of Vietnamese women carrying loads on their shoulders.

Functional disability in our study was reported in 41.6% of positive responders (6.04% of the entire survey population); this is higher than the reported 2.5% in The Philippines<sup>5</sup>, and in the Indonesian urban community<sup>8,13</sup>. The most frequently reported disabilities were difficulty when walking, sitting down, standing up, holding a bowl, and picking up objects from the floor. Self-medication was reported by 25.5% responders, which is similar to the Philippine<sup>5</sup> and Indonesian studies<sup>9-13</sup>. This might be explained by the fact that in most developing countries, medical services are usually unavailable, inaccessible, or unaffordable.

Table 4. Comparative prevalence of rheumatic disease in Vietnamese and Filipino urban populations.

Diagnosis	Vietnamese, %	Filipino <sup>5</sup> , %
OA	4.1	4.13
RA	0.28	0.17
Gout	0.14	0.13
Soft tissue disorder	3.4	3.83
Connective tissue disorders	0.09	0.03
Ankylosing spondylitis	0.05	0.03

OA (4.1%) was the most common rheumatic disease diagnosed, with a prevalence similar to the Philippine urban population<sup>5,7</sup>, but lower than Western studies<sup>31</sup>. More than half (52/86) involved the knees with crepitus, and difficulty standing and squatting. Only 3.4% (3/86) had OA of the hip<sup>28</sup>, which may be explained by a mean body mass index in the adult Vietnamese population of  $19.72 \pm 2.81$  in males and  $19.75 \pm 3.41$  in females. The prevalence of OA in this study is similar to that in a Filipino urban population<sup>5,7</sup> (Table 4). The low prevalence of hip OA and high prevalence of knee OA may be due to a protective effect of squatting to the hips and a detrimental effect of squatting to the knees. This needs to be further investigated. The prevalence of gout was 0.14% which is similar to the Philippines<sup>6,7</sup> (0.13%), but this prevalence was significantly lower than the 1.7% seen in Indonesian population<sup>10,11</sup>. It is interesting that infectious diseases such as tuberculous arthritis, suppurative arthritis, and rheumatic fever were not found in this survey population compared to 3.1%, 2.3%, and 1.8%, respectively in a 1980 population study<sup>17</sup>. This indicates that the standards of living and health care in urban Vietnam have improved. The urban prevalence of rheumatic diseases needs to be compared with the rural prevalence. If there are differences, we would also like to determine whether there are environmental factors involved. Toward this end, a COPCORD Stage I rural survey has almost been completed.

The different educational backgrounds of the interviewers in phases 1 and 2 may have caused interobserver variation in interpretation and application of the Core Questionnaire and may have biased results. Despite this limitation, the functional disabilities were very similar in this survey compared to others<sup>8-13</sup>.

The profile of rheumatic diseases, and their prevalence estimates, observed in the Trung Liet COPCORD study provide an excellent projection of the likely burdens of rheumatic disease in the urban Vietnamese population. There is a need to set up COPCORD studies in other parts of Vietnam.

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