

Incidence of musculoskeletal pain in adult Kuwaitis using the validated Arabic version of the WHO-ILAR COPCORD Core Questionnaire

Adel M. Al-Awadhi,* Samuel O. Olusi,† Khaled Al-Saeid,‡ Mohamed Moussa,§ Dia Shehab,*
Naji Al-Zaid,|| Adeeba Al-Herz,¶ Khalid Al-Jarallah*

BACKGROUND: The WHO-ILAR Community Oriented Program for Control of Rheumatic Diseases (COPCORD) primarily aims to estimate the burden of musculoskeletal symptoms/disorders. We estimated the incidence of musculoskeletal pain in the first community-based COPCORD study in Kuwait.

SUBJECTS AND METHODS: The validated Arabic version of the WHO-ILAR COPCORD Core Questionnaire was used in a survey of 2500 randomly selected Kuwaiti households to assess the frequency of musculoskeletal pain, disability, and health-seeking behavior in adult Kuwaitis. Those subjects reporting no musculoskeletal pain were identified and followed-up for a period of one year by contacting them every 2 weeks. Once a respondent reported pain, an appointment to report to hospital was offered and the subject was examined by a rheumatologist using American College of Rheumatology (ACR) criteria.

RESULTS: Of 5159 adults who were non-complainers in an earlier prevalence phase of the study, 3341 responded to phone calls (response rate of 65%). The incidence of musculoskeletal pain was 6.6% (95%CI, 3.4%-9.7%). Age- and sex-adjusted incidence rates were 7.2% (95%CI, 3.4%-10.5%) for females and 6.1% (95%CI, 3.1%-9.2%) for males. The incidence rate increased with increasing age, body mass index, and with being married. The common sites of pain were knee, low back and shoulder.

CONCLUSION: The incidence of musculoskeletal pain among Kuwaiti adults is reported for the first time. Further studies adopting the same instrument in other communities are warranted to compare with our findings.

*From the Kuwait University, Faculty of Medicine, Departments of *Medicine, †Pathology, ‡Pediatric, §Community Medicine, and ||Physiology, and ¶Ministry of Health, Mubarak Al-Kabeer Hospital, Department of Medicine, Kuwait.*

*Correspondence:
Dr. Adel M. Al-Awadhi
Department of Medicine
Faculty of Medicine
Kuwait University
P.O. Box 24923
Al-Safat 13110
Kuwait
Tel: 965-531-9596
Fax: 965-533-3955
adelalawadhi@yahoo.com*

*Accepted for publication
August 2005*

Ann Saudi Med 2005;25(6):459-462

The World Health Organization (WHO) and International League Against Rheumatism (ILAR) Community Oriented Program for the Control of Rheumatic Disease (COPCORD) consists of three stages. In stage I, epidemiological data on rheumatic diseases are collected. In stage II, primary health care professionals are trained in the management of the most common rheumatic diseases. In stage III, improved health care is attained. Stage I optimizes the use of the local skilled staff and the available resources in a three-phase collection of data on rheumatic diseases.¹ A number of countries have participated and used the WHO-ILAR COPCORD Core Questionnaire (CCQ) to determine the prevalence rates of rheumatic diseases in their communities.²⁻¹⁰ Recently, we estimated the prevalence of musculoskeletal (MSK) pain in adult Kuwaitis¹¹ using the

validated Arabic version of the COPCORD-CCQ instrument.¹²

To the best of our knowledge, no studies have been conducted to determine the incidence of MSK pain using this instrument. This stimulated us to conduct this follow-up study to determine the incidence of MSK pain in the adult Kuwaiti nationals using the validated Arabic version of the WHO-ILAR COPCORD Core Questionnaire over a period of one year.

Subjects and Methods

During an earlier prevalence phase of the study,¹¹ 5159 respondents had not complained of MSK pain during administration of the questionnaire. All participants were Kuwaiti nationals with a similar cultural background, nobody was prohibited from responding to the questionnaire. All households in the sample gave home contact telephone numbers and all were regularly contacted by telephone every 2 weeks for a period of one year from March 2002 to March 2003. Once a respondent reported pain (complainer), an appointment was offered to see a rheumatologist within 7 days, at either Al-Amiri or Mubarak Al-Kabeer teaching hospitals where they were clinically examined. The rheumatologist was blinded to the CCQ results. Reimbursement was provided for those who did not own a private means of transportation. Each complainer was given the option to choose a male or a female rheumatologist.

Diagnoses of rheumatic diseases were based on the American College of Rheumatology (ACR) criteria. Further confirmatory laboratory and radiological investigations, which were paid for by the health care system, were carried out when the clinical findings were not adequate to make a definitive diagnosis.

Privacy and confidentiality of data were maintained, and ethical approval of the Medical Research Ethics Committee of Kuwait University was obtained. Written informed consent was signed by each subject before participation. In addition to the consent of the subjects who were under the age of 18 years, the guardians' co-signatures were obtained.

Data were coded and analyzed using the Statistical Package for Social Sciences (SPSS). The cut-off level of significance was set at $\alpha=0.05$, as a type I error threshold. The incidence rate and 95% confidence interval (CI) were calculated. Incidence rates were adjusted to the 1999 Kuwait population by age and sex using the direct standardization method. The independent t-test was used to evaluate the signifi-

cance of difference between means of two quantitative variables, and the chi-square test was used to assess the significance of the difference between two proportions.

Results

Of 5159 non-complainers, 3341 responded to the phone calls for a response rate of 65%. Thirty-five percent could not be reached for various reasons (no answer, wrong number, travelling, or death). Out of the 3341 respondents, 220 complained of new onset musculoskeletal pain, giving an incidence of MSK pain of 6.6% (95% CI, 3.4%-9.7%). The incidence rate increased with increasing age ($P<0.001$) and body mass index ($P<0.01$), and being married ($P<0.05$) (Table 1). The age- and sex-adjusted incidence rate was 7.2% (95% CI, 3.4%-10.5%) for females and 6.1% for males (95% CI, 3.1%-9.2%). Table 2 shows that in the complainer group, there were 114 males and 106 females for a male:female ratio of 1.1:1. The mean age (\pm SD) of the complainers (36.9 \pm 16.1 years) was significantly higher than that of the non-complainers (30.0 \pm 12.7 years) ($P<0.001$). Sixty-four percent of the complainers were married and 35.2% were unemployed. Body mass index (BMI)

Table 1: Incidence of musculoskeletal pain

	Incidence (%)	P value
Age (years)		<0.001*
<20	3.4	
20-34	5.8	
35-49	7.7	
50+	15.7	
Sex		0.218†
Male	6.1	
Female	7.2	
Body mass index		0.004*
≤25	5.1	
>25-30	8.0	
>30-40	7.2	
>40	13.5	
Marital status		0.012†
Single	5.4	
Married	7.6	
Work status		0.39†
No	6.3	
Yes	7.0	

*Chi-square for linear trend

†Chi-square test

was significantly higher ($P<0.001$) in the complainers (26.6 ± 5.0 kg/m²) compared to non-complainers (25.7 ± 4.9 kg/m²) ($P<0.01$). The common sites for MSK pain as reported over the phone were knee, low back, shoulder and leg pain (Table 3).

Only 29 of the 220 individuals responded to appointments and reported for clinical examinations. All 29 individuals had rheumatic conditions. There were 18 females and 11 males for a female:male ratio of 1.6:1. The mean age for women was 47 years compared to 43.5 years for men. Soft tissue rheumatism (n=17) was the most common rheumatic disease identified and the most common types were low back pain (30%, n=5), regional myofascial pain syndrome (24%, n=4), peri-shoulder arthritis (18%, n=3), and fibromyalgia (12%, n=2). Nine cases (31%) of osteoarthritis (OA) were identified, all of whom had knee OA. Two cases had patello-femoral syndrome and one case had osteoid osteoma.

Discussion

This study is unique because it is the first to use the Arabic version of the WHO-ILAR COPCORD-CCQ in estimating the incidence of MSK pain in an Arabic-speaking community. Our study identified the factors that were associated with an increase in the incidence of MSK pain. These factors were female sex, marriage, advancing age, and obesity. This finding is in concert with our previous study on the prevalence of MSK pain.¹¹ Knee, low back, and shoulder pain were the most frequent sites for MSK pain in the present survey, which is consistent with the prevalence study. Our clinical findings correlated well with the sites of pain reported by the complainers. Knee OA, LBP and peri-shoulder arthritis were the commonest rheumatic diagnoses in our series.

In this study, the accuracy of the estimated proportions of medical diagnosis was affected by the response rate of the population. Only 13% (29/220) of the complainers reported for the examination phase. Nobody (males or females) declined participation based on the gender of the rheumatologists. Although the health services in Kuwait are free of charge for Kuwaiti nationals, some people might find it inconvenient to report for clinical examination during working hours since they would need to obtain permission for an absence from their work places. It would have been better for complainers to be seen in the evenings at polyclinics near their residences, but this was not possible because of the few rheumatologists in Kuwait. Some might have tolerable pain without functional disability, and therefore,

Table 2. Demographic and anthropometric characteristics of the Kuwaiti musculoskeletal pain complainers and non-complainers using the Arabic COPCORD-CCQ.

	Complainers (n = 220) n (%)	Non-complainers (n = 3121) n (%)	P value*
Gender			0.22†
Male	114 (51.8)	1750 (56.1)	
Female	106 (48.2)	1370 (43.9)	
Marital status			<0.05†
Single	79 (35.9)	1390 (44.6)	
Married	141 (64.1)	1724 (55.4)	
Age (years)			<0.001†
15-19	26 (11.8)	740 (23.8)	
20-34	84 (38.2)	1368 (44.0)	
35-49	62 (28.2)	747 (24.0)	
50-59	22 (10.0)	159 (5.1)	
60-69	19 (8.6)	70 (2.3)	
70+	7 (3.2)	28 (0.9)	
Mean±SD	36.9±16.1	30.0±12.7	<0.001‡
Body mass index			<0.01†
≤25 (normal)	82 (37.8)	1524 (49.1)	
>25-30 (overweight)	93 (42.9)	1075 (34.6)	
>30-40 (obese)	37 (17.1)	474 (15.3)	
>40 (super obese)	5 (2.3)	32 (1.0)	
Mean±SD	26.6±5.0	25.7±4.9	<0.01‡
Current occupation			0.11†
Employed	106 (49.1)	1355 (44.3)	
Unemployed	76 (35.2)	1296 (42.4)	
Retired	32 (14.8)	210 (6.9)	
Student	44 (20.4)	1038 (34.0)	
Others§	–	48 (1.6)	
Housewife	34 (15.7)	405 (13.3)	

The number does not add to the total in variables due to missing numbers

* P value between complainers and non-complainers

† Chi-square test

‡ Student t-test

SD=Standard deviation

§Others includes fresh graduates, disabled persons, businessmen, and non-working persons

Table 3: Sites of musculoskeletal pain in the 220 patients.

Sites	n (%)
Knee	61 (27.7)
Low back	50 (22.7)
Shoulder	38 (17.3)
Leg	31 (14.1)
Hand	16 (7.3)
Muscles	16 (7.3)
Foot	3 (1.4)
Neck	2 (1.0)
Bones	2 (1.0)
Thigh	1 (0.5)

References

- Grabaukas V. A World Health Organization perspective. *J Rheumatol Suppl.* 1983;10:5-6.
- Manahan L, Caragay R, Muirden KD, Allander D, Valkenburg HA, Wigley RD. Rheumatic pain in a Philippine village. A WHO-ILAR COPCORD study. *Rheumatol Int.* 1985;5:149-153.
- Dans LF, Tankeh-Torres S, Amanta CM, Penserga EG. The Prevalence of Rheumatic Disease in a Filipino Urban Population: A WHO-ILAR COPCORD study. *J Rheumatol.* 1997;24:1814-1819.
- Darmawan J, Valkenburg HA, Muirden KD, Wigley RD. Epidemiology of rheumatic disease in rural and urban populations in Indonesia: A World Health Organization International League Against Rheumatism COPCORD study, stage 1, phase 2. *Ann Rheum Dis.* 1992;51:525-528.
- Chou CT, Pei L, Chang DM, Lee CF, Schumacher HR, Liang NH. Prevalence of rheumatic disease in Taiwan: A population study of urban, suburban, rural differences. *J Rheumatol.* 1994;21:302-306.
- Chaiamnuay P, Darmawan J, Muirden KD, Assawatanabodee P. Epidemiology of Rheumatic Disease in Rural Thailand a WHO-ILAR COPCORD study. *J Rheumatol.* 1998;25:1382-1387.
- Chopra A, Saluja M, Patil J, Tandale HS. Pain and disability, perceptions and beliefs of a rural Indian population: A WHO-ILAR COPCORD study. *J Rheumatol.* 2002;29:614-621.
- Wigley R, Zhang NZ, Zeng QY, et al. Rheumatic diseases in China: ILAR-China study comparing the prevalence of rheumatic symptoms in northern and southern rural populations. *J Rheumatol.* 1994;21:1484-1490.
- Farooqi A, Gibson T. Prevalence of major rheumatic diseases in the adult population of north Pakistan. *Br J Rheumatol.* 1998;37:491-495.
- Bennett K, Cardiel MH, Ferraz MB, Riedemann P, Goldsmith CH, Tugwell P. Community screening for Rheumatic Disorder: Cross Cultural Adaptation and Screening characteristics of the COPCORD Core Questionnaire in Brazil, Chile and Mexico. *J Rheumatol.* 1997;24:160-168.
- Al-Awadhi A, Olusi S, Moussa M, Shehab D, Al-Zaid N, Al-Herz A et al. Musculoskeletal Pain, Disability and Health-Seeking Behavior in Adult Kuwaitis Using Validated Arabic Version of the WHO-ILAR COPCORD Core Questionnaire. *Clin Exp Rheumatol.* 2004;22:177-183.
- Al-Awadhi A, Olusi S, Moussa M, et al. Validation of the Arabic Version of the WHO-ILAR COPCORD Core Questionnaire for Community Screening of Rheumatic Diseases in Kuwaitis. *J Rheumatol.* 2002;29:1754-1759.

found it unnecessary to respond to invitations to report to the hospital for clinical examination.

Despite these limitations, this study showed that MSK pain is common among Kuwaiti nationals. Further studies in other communities using the same instrument are needed to confirm our findings.

This study was sponsored by the Kuwait University and Kuwait Foundation for Advancement of Science, Grant number MM 01/01 and KFAS 2000.07.01.