Education in Rheumatology

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Abstract

The increasing burden of arthritis and musculoskeletal conditions in both developed and developing societies is shown by national and community-based surveys. Many complaints are sufficiently severe to cause disability and loss of time from work. Medical care is provided most often by primary health care physicians who are often inadequately trained to handle these conditions. Better medical student education that focuses on common community problems remains crucial. Strong rheumatology units with a commitment to teaching and research are necessary to redress any imbalance as new curricula are developed. Such units also have to take responsibility for primary health care physician and nurse education in how to manage common musculoskeletal problems.

Arthritis Foundations and patient support groups have a role in public education and in increasing community knowledge on the causes and prevention of some common conditions so as to assist in improving overall care. New initiatives in professional and public education have given encouraging results, but further changes in community attitudes and perceptions of chronic conditions are necessary and are within the scope of most Arthritis Foundations' key objectives.

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The Burden in the Community of Musculoskeletal Conditions

The fact that there is an increasing and growing need in societies for care of sufferers of rheumatic conditions can be shown from national statistics. In Australia, for example, arthritic and related musculoskeletal diseases may not dominate mortality statistics but they figure in the top three causes of acute illness, chronic illness and disability using Australian Bureau of Statistics (ABS) data.' These figures clearly show that arthritis is not a group of conditions that is confined exclusively to elderly people. The most recently released ABS National Health Survey is from 1995. These figures showed that, on a self reporting basis, 23% of the population experienced a form of musculoskeletal disease whilst 12.4% reported a long-term experience with arthritis.' More surprising was that there was a 46% increase in arthritis over the previous survey performed in 1990.[2] The other interesting and concerning data are that age categories are broader in this report than in previous surveys with the median age around 60 years. There is a clear indication of the dramatic growth in the experience of arthritis in this community from age 24 years onwards. And in addition to pain, a significant number of sufferers from arthritis will be either disabled or handicapped by their condition. In economic terms the ABS surveys strongly support the concept that arthritis is a major cause of people leaving the workforce. In Australia, 7.5% of people aged 15 to 65 years in the workforce reported experiencing arthritis.[3] This is half the number of the total population in this age range reporting arthritis. A survey conducted in the USA showed that overall labour force participation rates amongst persons with musculoskeletal conditions declined from 71% to 56% during a ten-year period from 1987. Much of the decline was concentrated among men, especially men 55 to 64 years of age, but women were also significantly affected.[4]

Can these figures be compared with the situation in developing or Third World countries? Community Orientated Program for the Control of Rheumatic Diseases (COPCORD) is relevant to this discussion on education and to date more than 18 000 subjects of 15 years and older have been surveyed in rural and urban communities in the Philippines, Indonesia, Malaysia, Thailand, China, India and Pakistan as well as Australia.[5] The focus on collecting community data on rheumatic complaints and disability is followed by an education phase for health workers and the public. The most comprehensive COPCORD survey has been in Indonesia, thanks to the initiative of Dr John Darmawan.[6] More than 4500 subjects have been surveyed and a large cohort of people with complaints were subsequently examined medically. The prevalence of joint, neck or back pain was 24% rural and 32% urban and disability assessed by inability to walk, lift, carry or dress was 2.8% rural and 0.9%

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urban. Over 70% of rural and urban people with rheumatic complaints had to stop work due to the disability induced by these complaints. This indicates that these rheumatic conditions including arthritis are important in functional terms and cannot be considered as trivial.

Who Provides Treatment for Musculoskeletal Complaints in Various Societies?

In Australia, ABS statistics show that musculoskeletal disease including arthritis is the second most common cause of visiting a doctor and accounts for 9% of such visits.[3] Hospital outpatient departments experience about twice the rate of general practitioner practice. More than 70% of patients with musculoskeletal conditions took some form of medicine during the two-week period before the survey and there is concern that as well as "over the counter" analgesics and vitamins, alternative therapies are widely used.[7] Randomised trials for alternative therapies have been limited and have not usually demonstrated clear therapeutic benefits. A range of adverse affects have been reported and alternative therapies are frequently costly and disabled arthritis patients are not always the most affluent group in a community and able to experiment with such "remedies".

Who provides treatment in developing countries and how it effective is it? The extensive Indonesian COPCORD survey has indicated that existing health care resources are limited and that paramedical and medical staff are inadequately trained to handle musculoskeletal diseases.[6] Twice as many urban respondents visited a doctor (50%) compared with rural respondents (25%). Traditional health care and self medication were the common practices and readily available medications included phenylbutazone and prednisolone as well as paracetamol and aspirin. These could be purchased without prescription and potent drugs like corticosteroids were made to look like a herbal treatment and dispensed as such. In Indonesia, 80% of the population live in rural areas, yet there were no rheumatological or laboratory facilities in rural areas. The inadequate training of health care workers and the unrestricted availability of potent drugs are seen as potentially preventable health care risks.

Education and the Significance of COPCORD

The COPCORD model is based on collecting community data on rheumatic complaints and disability and then, following the identification of the significant problems, a search-is made for disease risk factors and an education phase is recommended from which will flow improved health care. The primary and ultimate objective is the community control of rheumatic diseases by both prevention and treatment of complaints and disability.[5]

The initial application and development of COPCORD in the Philippines provided early experience with Third World conditions and emphasised the inappropriateness of many attempts to apply European/North American clinical experience and education programmes to the developing world. In addition to ethnic and cultural considerations, allowance needs to be made for the varying experience, training and resources of local health providers. COPCORD has stimulated a number of education initiatives and these have not ignored the importance of community education. Some of the initiatives have been unique and highly imaginative.

1. Arthritis community education by Wayang-the Leather Puppet Shadow Play in rural Indonesia:[8]

   The traditional and popular cultural activity in rural Java has been used by Dr John Darmawan to educate people with rheumatic complaints identified by the COPCORD data collection stage I. From 1105 respondents recording recent musculoskeletal pain, 844 were randomly selected and half attended a puppet show incorporating the education programme, the other half matched for age, sex and education level who did not see the Wayang, served as controls. A questionnaire containing choices of correct or incorrect ways of performing activities of daily living to minimise problems was administered to the whole group one month and six months after the Wayang. Significantly increased knowledge in the intervention compared with the control group at both time intervals was demonstrated. This was true even of subjects who were illiterate although retention rates were better in people with higher levels of education. Thus, in the absence of adequate numbers of skilled primary health care professionals, public education programmes utilising traditional forms of entertainment need to be considered, especially in rural communities in developing countries.

2. The publication of a booklet entitled "Aches and Pains-Living with Arthritis and Rheumatism":

   International League of Associations for Rheumatology (ILAR) commissioned this booklet which was produced by Janie Hampton under the direction of Rodney Grahame.[9] Ten simple key messages are directed to the public, in particular, people in developing countries. Originally written in English, the publication has now been translated into more than 10 languages including Chinese, Urdu and Arabic. The publication has been used as a starting point for the COPCORD Stage II Gout Education Program in Sulawesi.

3. The Gout Education Program in Sulawesi, Indonesia—COPCORD Stage II and III:[10]

   The finding of a high prevalence of gout in Central Java and the knowledge that severe tophaceous gout occurred in Sulawesi has been the first important

finding to test the full COPCORD protocol. That is how a major health problem in the community might more adequately be treated and possibly prevented. The first object of the Sulawesi study undertaken by Cecilia Padang was to document clinical features including complications of gout and to look for risk factors causing or contributing to the high prevalence. The second objective was to develop education strategies for the treatment of affected patients based on risk factor identification and compliance with appropriate long-term therapy. This study also aims to provide persuasive data so that community health centres will receive adequate supplies of drugs for treating gout. The results revealed that alcohol consumption and certain food habits were associated with gout as was a positive family history and being overweight. Renal impairment was found in no less than 87.5% of patients and hypertension and nephrolithiasis were both more likely to be associated with gout. The education programme directed at physicians, nurses and patients with gout showed a significant benefit with regard to compliance with allopurinol treatment and consequently the frequency of attacks of gout decreased. Further renal studies of patients with early gout are now being undertaken by Dr Padang. The importance to the community based on the effectiveness of the COPCORD programme with regard to gout cannot be overestimated.

The Education Role of Arthritis Foundations

The community based Arthritis Foundations or Societies can play an important role in public, patient and family education. They can usually marshal more resources than individual disease support groups, such as those for lupus or fibroymyalgia and their broader focus can be an advantage. The key objective of most Arthritis Foundations is to raise funds for research into the causes and treatment of arthritis. However, they also may function to promote community awareness of the problems confronting patients and to provide support counselling information for those with arthritis and their families. Some see their role as helping to educate medical and health professionals in the treatment of arthritis. In this they can liaise and cooperate with Associations or Colleges of health professionals that might include rheumatologists, orthopaedic surgeons and allied health professionals. In some countries, running a National Arthritis Week is the responsibility of the local Foundation. This activity is usually sponsored with considerable time and effort spent by volunteers and professionals in advertising various activities. The main purpose is to improve community awareness about various forms of arthritis and related conditions and deliver the message that something tangible can be done to improve pain and disability. New therapeutic developments are highlighted but some Foundations see their main role as promoting self-help and educating people with arthritis. Here, they largely follow a programme developed by Dr Kate Lorig from Stanford University, California, that has shown that health education for self management in patients with chronic arthritis has sustained health benefits while reducing health care costs.[11] Pain management strategies may be stressed and that high profile alternative therapies may be costly and not have clear therapeutic benefits. In Australia, with reduced government funding for public hospitals and particularly for allied health services, the State Arthritis Foundations have partly filled the gap by providing water exercise (hydrotherapy) which is of great benefit to patients with musculoskeletal disabilities. The patient support groups can also fill an important educational role.

Other Issues in Rheumatology Education

In all parts of the world, the majority of patients with rheumatic conditions are treated not by rheumatologists but by primary health care physicians. And although postgraduate lectures, courses and other teaching initiatives can play an important role, attention must be primarily directed at educating medical students, if the needs of patients with musculoskeletal diseases are to be met.[12] There is then a dependency on the quality of the clinical training period that includes the range of clinical material available to examine as well as the enthusiasm, experience and ability of the teacher. One of the problems is that rheumatology units have not been developed sufficiently to carry a major educational load in all teaching institutions. Orthopaedic surgeons have often had the responsibility for instruction on musculoskeletal diseases, yet our colleagues can more than fill their allocated teaching time by concentrating on the management of fractures. Frequent soft tissue rheumatic complaints including low back pain might be ignored as less tangible and exciting. A rheumatologist whose main interest has been in immunology, can also steer clear of these less defined conditions.

Rheumatology units essential commitment to research as well as to patient care do provide an important stimulus to education. Clinical research projects can frequently involve an allied health professional or a trained nurse whose role is to check outcome and to otherwise measure the effect of treatment. Such personnel, who are sometimes called “metrologists”, can also provide a valuable clinic resource for both patient care and patient education. Within the broader frameworkof rheumatology rehabilitation responsibility for patient education resides as much with the physiotherapists, occupational therapists and nurses as with the medical officers concerned.

Admissions to teaching hospitals in countries such as the USA and Australia are now influenced by case mix considerations.[12] This has reduced the exposure of students to many common rheumatological problems. Medical students spend time in primary care yet the physicians who supervise their work may be poorly trained to instruct on musculoskeletal conditions. There is concern that the routine admission examination of a patient in a hospital bed would inevitably include a note on the cardiovascular, respiratory and gastrointestinal systems and probably the central nervous system. But there seems little compulsion to include a routine statement that the joints are normal or not.

My experience working at a large teaching hospital for a number of years is that medical students are capable of assessing a patient with leukaemia or even an ill patient with systemic lupus erythematosus (SLE) yet the cases they will see everyday in primary care, such as a rotator cuff tendonitis, plantar fasciitis, tennis elbow and mechanical low back pain are conditions they have scarcely heard of. Much less are they able to sort out the aetiological factors and understand the treatment principals.

However, all is not doom and gloom. International congresses and teaching seminars held over the last two to three years in. Singapore, Melbourne, Hanoi and Beijing, to name a few, attracted large numbers of registrants from the developed and developing Asia-Pacific countries. A flow on to both clinical care and teaching can be anticipated. Fellowships are available for young graduates with initiative who wish to train in rheumatology in some reputable centres. Newer diagnostic and therapeutic tools are having an educational impact and an element of drama in sorting out a clinical problem is what helps to hold it in the minds of students, interns and residents alike. Abnormal physical findings are often clearly evident and the multisystem nature of complex rheumatological problems makes their presentation at "grand rounds" appropriate and memorable.

For units who do not wish to develop a teaching programme from scratch, the American College of Rheumatology has developed a Core Curriculum in clinical rheumatology as a resource for those involved in rheumatology education.[12] This contains problem-based tutorials and multiple choice questions for tutorial discussions. Specific educational goals are provided for each tutorial session and can be used to guide students self study and to develop test questions. The curriculum is applicable for students and teachers in different settings outside major teaching hospitals.

Final Points and Summary

COPCORD studies carried out largely in tropical Asia-Pacific countries have indicated that the burden of musculoskeletal conditions as far as pain and disability as well as from an economic point of view are substantial. WHO's call for increased educational activities and research into the causes and consequences of chronic diseases and in particular rheumatic diseases needs to be further acted upon.[5] To the problem of an increasing ageing population can be added the rapid growth of urban populations, new occupational stresses, lifestyle changes and a number of other changes.

The common community-based rheumatic diseases are not rheumatoid arthritis or SLE that dominates admissions to western hospital arthritis clinics. Pain and disability are most often caused by osteoarthritis, especially knee OA and various soft tissue rheumatic problems producing neck, back, shoulder and elbow pain.[5,6] Complications from osteoporosis (although not normally considered a rheumatic condition) are a significant threat to ageing populations worldwide. Education directed at primary health care physicians and nurses with the stimulus coming from rheumatologists and orthopaedic surgeons is crucial and many preventative measures are now recognised.

Whether we are talking about developed or developing countries, community education is an essential part of prevention and treatment, reducing disability and improving quality of life. Education helps to influence not only knowledge but also skills and attitudes. A modern attitude about the potential control of disease may negate the fatalism of certain societies where the individual believes that there is little that can be done to protect either against a limited life span or aches and pains that are seen simply as a natural consequence of physical work, age or damp conditions. It may be said that a change in public perceptions concerning arthritis needs to hurdle a sizeable information deficit. Public education requires different approaches in different societies. However, as it has been shown in Indonesia,[8] less literate rural communities spared the pervasive influence of television can show the benefit of public education if this is provided with imagination, skill and knowledge of local conditions.

REFERENCES

1. Australian Bureau of Statistics. 1995 National Health Survey. Canberra: ABS, 1996. Catalogue No. 4392.0.
2. Australian Bureau of Statistics. 1989-1990 National Health Survey, Summary of Results. Canberra: ABS, 1991. Catalogue No. 4364.0.
3. Australian Bureau of Statistics. 1989-1990 National Health Survey, Musculoskeletal Conditions. Canberra: ABS, 1991. Catalogue No. 4374.0.
4. Yelin E H, Katz P P. Labour force participation among persons with musculoskeletal conditions, 1970-1987. Arthritis Rheum 1991; 34:1361-70.
5. Muirden K D. The origins, evolution and future of COPCORD. APLAR J Rheumatol 1997; 1:44-8.
6. Darmawan J, Valkenburg HA, Muirden K D, Wigley R D. Epidemiology of rheumatic complaints in a rural and urban population in Indonesia. Ann

Rheum Dis 1992; 51:525-8.

7. MacLennan A H, Wilson D H, Taylor A W. Prevalence and cost of alternative medicine in Australia. Lancet 1996; 347:569-73.
8. Darmawan J, Muirden K D, Wigley R D, Valkenburg H A. Arthritis community education by leather puppet shadow play in Indonesia. Rheumatol Int 1992; 12:97-101.
9. Hampton J. Aches and pain-Living with arthritis and rheumatism. Oxford: Nuffield Press, 1992.
10. Padang C. Progress in the COPCORD stage II and III gout program in Sulawesi, Indonesia. APLAR Bull 1995; 13:32-3.
11. Lorig K R, Mazonson P D, Holman H R. Evidence suggesting that health education for self management in patients with chronic arthritis has sustained health benefits while reducing health care costs. Arthritis Rheum 1993; 36:439-46.
12. Mahowald M L. Issues in rheumatology education: Challenges for the nineties. J Rheumatol 1993; 20:931-4.