

# Back pain and arthrosis in Finland

## How many patients by the year 2000?

Kai Sievers<sup>1,2</sup> and Timo Klaukka<sup>1</sup>

Four Finnish interview surveys from the years 1964, 1968, 1976, and 1987 show a rapid increase in the occurrence of self-reported chronic musculoskeletal disorders. The expected number of such patients by the year 2000 will be one fifth more than in 1987 when the changes in the age structure of the population are taken into consideration. This would amount to 850,000 cases in the year 2000, the total

population at that time being 5 million inhabitants. This would be a relative increase of 131 percent as compared with 1964. Half of the cases suffer from back disorders and one quarter from arthrosis. Musculoskeletal disorders now make up the most prevalent group of chronic diseases in the Finnish adult population.

<sup>1</sup>The Social Insurance Institution and <sup>2</sup>The University of Helsinki, Helsinki, Finland

Population surveys and invalidity statistics have shown a high prevalence rate of chronic musculoskeletal disorders in the Nordic and several other Western countries (Lawrence 1977, Bjelle et al. 1980, Rasmussen et al. 1988, Kelsey and Hochberg 1989, Rafnsson et al. 1989). Three Finnish nationwide surveys showed that the self-reported occurrence of these disorders was increasing in the adult population (Klaukka et al. 1982). Of the various disease groups, the prevalence of musculoskeletal disorders was in 1976 the second highest among adults, with cardiovascular diseases holding the lead.

The prevalence of back disorders is known to be highest in late middle age, whereas arthrosis attacks mainly the elderly. The age structure of the Finnish population is relatively young, but the proportion of those over 65 years of age will rapidly increase during the next 20 years. At the same time, the sizable generations born after the Second World War will reach an age at which a high incidence of back disorders is to be expected.

We have estimated the number of patients suffering from various musculoskeletal disorders by the year 2000. The calculations are based on observed prevalence rates of these disorders and on expected alterations in the age structure of the population.

### Material and methods

The Social Insurance Institution of Finland conducted four nationwide health interview surveys in the years 1964, 1968, 1976, and 1987. The main purpose of these studies has been to evaluate effects of Finnish health policy on health status, use of health services,

and health expenses to the population (Purola et al. 1974, Kalimo et al. 1982, Kalimo et al. 1989). The samples have been representative of the whole noninstitutionalized population, the sample size varying from 17,500 in 1968 to 13,100 in 1987. The participation rate was highest (97 percent) in 1968 and lowest (85 percent) in 1987.

The data presented here are based on self-reported chronic morbidity. The questions on this were the following: "Have you any defect or injury that lowers your working capacity or activity, or any chronic illness?" If yes: "Define or describe this injury or illness." The diseases were coded according to an ICD-based classification, aggregated in 96 categories. The subcategories for musculoskeletal disorders were rheumatoid arthritis, arthrosis, sciatica, back pain, other specified musculoskeletal disorders, and unspecified musculoskeletal symptoms.

To estimate the number of expected cases, the age-specific morbidity rates for 1987 were applied to the respective expected number of people in various age groups in the year 2000.

### Results

The reported occurrence of at least one chronic disease was in 1987 substantially more frequent (40 percent) than in 1977 (33 percent). In 1964 and 1968, chronic morbidity was the same as in 1976. The relative increase in morbidity during this period was thus 26 percent. The increase in the prevalence was in part (by 2.5 percentage points) due to an increase in the number of elderly persons in the population. The rest was related mainly to a growth in the prevalence of

Table 1. Self-reported musculoskeletal disorders in 1964, 1976, and 1987, and a prediction in 2000

| Disorders                    | 1964    |     | 1976 | 1987 | 2000    |      | Δ 1964-2000 |
|------------------------------|---------|-----|------|------|---------|------|-------------|
|                              | n       | %   | %    | %    | n       | %    |             |
| Back disorders               | 120,000 | 3.6 | 7.1  | 9.4  | 419,000 | 11.0 | 206         |
| Arthrosis                    | 23,000  | 0.7 | 3.2  | 4.3  | 214,000 | 5.1  | 628         |
| Any musculoskeletal disorder | 294,000 | 8.8 | 13.3 | 17.3 | 580,000 | 20.3 | 131         |

musculoskeletal disorders: it was 9 percent in 1964 and nearly twice as high (17 percent) in 1987 (Table 1). In comparison with the 1964 study, the reporting of back disorders rose by 160 percent and that of arthrosis by as much as 510 percent (from 0.7 percent in 1964 to 4.3 percent in 1987). During the same period, there was no increase in the prevalences of self-reported rheumatoid arthritis or unspecified musculoskeletal symptoms.

The prevalence rate of musculoskeletal disorders will be 20 percent of the adult population by the year 2000 if the age-specific morbidity figures are applied to the expected age structure at that point in time. This means a relative growth of 131 percent from the year 1964. For back disorders the respective increase would be 206 percent and for arthrosis as much as 628 percent. As a population estimate, this amounts to 850,000 people by the year 2000, of whom approximately one half suffer from back disorders and a quarter from arthrosis (Table 1). These figures overlap partly because many of the patients have had several musculoskeletal complaints simultaneously.

## Discussion

The structure of the chronic morbidity in Finland is undergoing a change. The mortality to cardiovascular diseases (group VII of the ICD classification) seems to be declining, especially among the working-age population. Musculoskeletal disorders (group XIII) are now the most frequent cause for new invalidity pensions in Finland. Thus, our population surveys showed results that accorded with what the statistics have revealed.

It has been pointed out that there is no indication of a rise in the biological occurrence of musculoskeletal disorders (Nachemson 1989). The statistics on invalidity pensions measure not only the occurrence of diseases but also—or perhaps mainly—the social consequences of chronic morbidity. Regional statistics show, for example, that invalidity pensions are strongly associated with respective variations in socioeconomic problems, such as unemployment and a

low level of education. Another factor that confounds the interpretation of these statistics is that pensions make the morbidity money-related. A better social security may thus have a strong influence on "morbidity" patterns (Allan and Waddell 1989, Editorial 1989). Thus, it is difficult to infer from these statistics a possible trend in the biological musculoskeletal morbidity.

The Finnish population surveys show a clearly increasing rate in the reporting of musculoskeletal disorders. Further, these rates are underestimates: in the Mini-Finland Health Survey, the doctors diagnosed in each age category of adults 10 percentage points more care-needing cases of musculoskeletal disorders than what the study population reported in an interview (Aromaa et al. 1989, Heliövaara et al. 1989). One of the advantages of our interview studies is that they have been methodologically similar, and the prevalence rates are technically comparable with each other. Much has changed, however, during the 23 years between the first and latest of these studies. The use of health services has multiplied, the diagnostics of musculoskeletal disorders have improved, and the population is possibly now perceiving pain and other symptoms in a different way than before. A further factor is that we did not differentiate the severity of the symptoms. Thus, the population surveys reveal a rise in the perceived and self-reported musculoskeletal disorders, rather than in the biological morbidity.

Anyway, a reality for the health care system is that an increasing proportion of the adult population is suffering from chronic musculoskeletal symptoms. This has already been clearly reflected in the use of health services: the number of ambulatory physician visits for musculoskeletal disorders increased in Finland by 42 percent between the years 1976 and 1987. This was a larger growth than for any other disease group. The age structure of the Finnish population is altering in a way that implies a further increase in the self-reported musculoskeletal morbidity. This means that the number of cases will substantially increase if the trends in the morbidity cannot be reversed. An important question is to what extent our modern medicine can influence these

trends; the nature of the phenomenon is perhaps more socioeconomic than something that can be cured with knives, physiotherapy, and drugs.

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