

Musculoskeletal disease in Denmark

The Danish Health and Morbidity Survey 1986-87

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The Danish Health and Morbidity Survey of 1986-87 demonstrates a high prevalence of musculoskeletal disorders in the population over 15 years of age. The point-prevalence for long-standing illnesses of the musculoskeletal system was 13 percent. Half of the respondents had had pain during the last 2 weeks. Back disorder was the specific disease that was most frequent. Diseases and symptoms of the

musculoskeletal system were frequent in the age groups over 44 years old, and occurred more often in women than in men. Back disorders were reported more often by blue-collar workers and self-employed persons than by white-collar workers. The study has contributed to an action program in the Danish government program on health.

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For the last 20 years, health and morbidity surveys have been carried out regularly in Finland, Norway, and Sweden, hereby making it possible to monitor time trends in health conditions (Statistisk Sentralbyrå 1987, Statistiska Centralbyrå 1985, Kalimo et al. 1988). Results from the surveys have had a major role in the evaluation of changes in the health services (especially in Finland), and have been used for the defining of health policy and for the planning of national and regional health services. Moreover, the surveys have been used as reference material for more specific epidemiologic investigations, and they have resulted in the formulation of hypotheses on health and morbidity conditions, which have been tested in more detailed and refined investigations.

This article presents data collected in the general Danish Health and Morbidity Survey carried out in 1986-87.

Material and methods

The survey was carried out on a random sample of Danish citizens, 16 years old or older at the time of the study, who were living in Denmark (Rasmussen et al. 1988). Collection of data was carried out by professional interviewers. Interviews were obtained from 4,753 persons; 80 percent of the original sample participated in the study. Twelve percent did not want to participate, 5 percent were not at home, and 2 percent did not participate because of illness or handicap, and the remaining 1 percent could not participate for various other reasons. The nonrespondents were

overrepresented by elderly, by residents in the metropolitan area, and by single persons.

Three different interrogatory techniques for elucidating of the occurrence of musculoskeletal diseases and symptoms were used.

Primarily, the prevalence of long-standing illness was studied using a so-called open question as to whether the participants suffered from any long-standing illness, i.e., lasting more than 6 months. The answers to the open question were subsequently classified according to the Danish version of the *International Classification of Diseases*, 8th revision, modified in order to include lay descriptions of disease. The modification was partly based on experiences from the Swedish Living Conditions' Surveys. Secondly, a list of specific diseases was presented to the respondents to check whether they presently or previously had suffered from musculoskeletal disorders. Finally, the respondents were asked whether they, during the past 2 weeks, had

Table 1. Prevalence of long-standing illness of the musculoskeletal system in men and women in different age groups. Point prevalence (percentage)

Age in years	Sex		Sex differences (P-values)
	Men	Women	
16-24	5	7	
25-44	9	7	
45-66	15	21	< 0.01
> 67	20	26	< 0.05
Total	13	14	

experienced pain in their shoulders or neck, pain in the back and loin, or pain in the arms, hands, legs, knees, hips, or joints. Further, they were questioned as to whether or not they had been bothered a lot or just a little, and whether they had suffered from it for a long time.

Chi²-tests and multivariate analyses, called "log linear model for contingency tables" (Bishop et al. 1975), were used.

Results

Long-standing illnesses of the musculoskeletal system

A disorder of the musculoskeletal system was the commonest one reported as a cause of long-standing illness in the population over 15 years of age. The point prevalence was 13 percent. Illnesses of the musculoskeletal system constituted 30 percent of the long-standing illnesses. Approximately 60 percent of the reported long-standing illnesses of the musculoskeletal system had lasted for at least 10 years.

Back disorders

Among 22 specific diseases presented on a list, back disorders were the most frequently mentioned. The point prevalence for back disorders was 12 percent. The lifetime prevalence was 18 percent.

Musculoskeletal symptoms and complaints

45 percent of the respondents had experienced pain in the musculoskeletal system during the last 2 weeks. Twenty percent of the respondents had been bothered a lot by pain or complaints. Nine out of 10 stated that the symptoms of the musculoskeletal system were long-lasting, either constantly or periodically.

Specific diseases were reported to be the cause of 37 percent of all the complaints; more than one third of these were musculoskeletal diseases.

Sex and age

The frequency of people with long-standing musculoskeletal illnesses increased with age (Table 1). Every fifth individual over 60 years of age reported a musculoskeletal illness with a slight preponderance of women.

Table 2. Point prevalence (percentage) of back disorders among men and women in different age groups.

Age in years	Sex		Sex differences P-values
	Men	Women	
16-24	7	7	
25-44	13	9	< 0.05
45-66	14	18	< 0.05
> 67	11	16	< 0.05
Total	12	13	

Table 3. Prevalence of symptoms and complaints (percentage) in the musculoskeletal system during the past 2 weeks among men and women

Symptoms	Sex	
	Men	Women
Pain or complaints of the shoulder or neck	18	29
Very bothered	6	13
Pain or complaints of the back and loins	20	25
Very bothered	7	12
Pain or complaints of the arms, hands, legs, knees, hips, or joints	19	21
Very bothered	8	12
Percentages with one or more symptoms	41	49
Very bothered	16	24

Women outnumbered men in all the data ($P < 0.001$).

Back disorders were frequent in the 45-66-year-old age group for both men and women (Table 2). In the 25-44-year-old age group, slightly more men than women suffered from back disorders, while in the older age group, more women than men reported they had back disorders.

Table 3 demonstrates that more women than men reported that they had been bothered by musculoskeletal pain or complaints.

Socioeconomic background factors

Back disorders were more often reported by workers and self-employed persons than by white-collar workers (Table 4; $P < 0.05$). Moreover, it appeared that the prevalence of the disease increased with age among white-collar workers. The highest frequency

Table 4. Back disorders (diseases presented in a list) as percentages in different age groups according to occupation.

Age in years	Blue-collar workers	White-collar workers	Self-employed
16-24	9	7	0
25-44	15	9	12
45-66	13	12	13
Total	13	10	13

was observed among the 25-44-year-old blue-collar workers.

Discussion

The validity and reliability of interview reports on rheumatic disorders in a Swedish nationwide health survey showed that in a subject-to-subject comparison the overall agreement between the medical examination and the lay reinterview was 84 percent ($Kappa$ 0.35) regarding presence of rheumatic disorders, and 57 percent ($Kappa$ 0.41) regarding matching of rheumatic diagnostic groups (Mägi et al. 1984).

Methodologic studies have demonstrated that respondents in an interview survey report less morbidity and fewer symptoms of musculoskeletal diseases than would be found at a medical check-up (Johansson 1970) or from medical records in general practice (Bjerkedal 1975). Other surveys have demonstrated that the most serious diseases are reported best. Thus, it must be assumed that the diseases and symptoms reported in this survey, on an average, are serious and cause more inconvenience than the ones that are not reported.

A comparison of the prevalence of long-standing illnesses has demonstrated that in Denmark 32 percent reported one or more long-standing illnesses, whereas 44 percent (Statistiska Centralbyrån 1985) was found in Sweden, 41 percent (Sievers and Klaukka, this issue) in Finland, and 46 percent (Statistisk Sentralbyrå 1987) in Norway. In spite of some discrepancies between the studies, we can conclude, with some caution, that the Danish population was less inclined to report long-standing illnesses than the populations in Finland, Norway, and Sweden. The percentage of the population that suffered from long-standing musculoskeletal illnesses is higher in Finland (17 percent) and in Norway (16 percent) than in either Sweden (13 percent) or Denmark (13 percent).

The same sex and age differences were found among persons with long-standing musculoskeletal illnesses in the Swedish study on living conditions in

1980-81, the Norwegian health study of 1985, and the Finnish health study of 1987, and this study.

Our study confirms that the group of persons with a musculoskeletal disease is large. Other studies have demonstrated that diseases of the musculoskeletal system are the most frequent somatic diagnosis among early retirement pensioners (The Danish Central Bureau of Statistics 1987, Sievers and Klaukka 1991), among persons with long-standing sick leave (Bonde 1980), and among reported cases of work-related diseases in Denmark (The Danish Labour Inspection Service 1987).

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