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Health Examinations Should Expand Their Scope to Musculoskeletal Conditions: Estimation of Burden of Musculoskeletal Pain on AMHTS Population in Terms of Prevalence and Interference with Daily Activities

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ABSTRACT

Objectives To estimate the prevalence of musculoskeletal pain and their interference with daily activities (IDA) in Japan.

Design A cross sectional survey with a self administered questionnaire.

Setting N/A.

Participants Participants in AMHTS at three Japanese health care centers in October and November 2003.

Results Overall prevalence of musculoskeletal pain was 41.2% (Men 40.7%, Women 42.0%) with a significant increase with age. One person in five described IDA due to the pain (prevalence 8.4%; Men 8.2%, Women 8.7%).

Conclusions Because of high prevalence and IDA, musculoskeletal conditions should be identified as the major health problem in Japan. Health examinations should expand their scope to musculoskeletal conditions, following internal and mental conditions.

Key Words Musculoskeletal Conditions, Pain, Interference with Daily Activities, Prevalence, Questionnaire Survey

INTRODUCTION

Live long, Live well is a hope of every nation. In Japan, health examinations play an important part in the national health strategies and contribute to the national well-being on the basis of established legal systems. Early identification of diseases and their risk factors enables us to take preventive measures and receive medical treatment at the earliest opportunity, which may improve our health and quality of life (QOL). Recent changes in environment and lifestyle has brought about great changes in morbidity and mortality. Health examinations should be sensitive to the health needs of the times and deal with health problems that have great impacts on the national health and QOL for the time being.

Musculoskeletal conditions are prevalent and their burden is pervasive. They are the major cause of long-term pain and physical disability and substantially affect health and QOL. WHO identifies musculoskeletal conditions as a target and started a global campaign called the Bone and Joint Decade 2000–2010 (http://www.bonejointdecade.org). One of the most important activities of the Decade is data collection, which enables the development of policies and strategies to improve the prevention and treatment of musculoskeletal conditions in consideration of ethnic, geographic, and socioeconomic backgrounds.[1] In Japan, population based data on musculoskeletal conditions are scarce, and there has been no report on overall prevalence of musculoskeletal conditions in the general population. According to the 2001 National Life Survey, those who described stiff shoulders, lumbago, and arthralgia in hands and feet accounted for 9.3%, 9.6%, and 5.9%, respectively.[2] Overall prevalence of musculoskeletal conditions should be considerably higher than that reported in the national survey, because musculoskeletal conditions include a variety of disease and even complaints without objective findings. Moreover, an increasing number of elderly people will lead to an increasing incidence of musculoskeletal conditions. As part of the Decade, we conducted a cross sectional survey with a self administered questionnaire to participants in AMHTS at three Japanese health care centers. In the questionnaire, subjects were asked whether they had experienced pains in predefined body regions and whether the pain had interfered with daily activities if they had experienced a pain. Here, we give a summary of the questionnaire survey. Our results demonstrate that because of high prevalence and interference with daily activities (IDA), musculoskeletal conditions should be identified as the major health problem in Japan. Health examinations should expand their scope to musculoskeletal conditions, following internal and mental conditions.

SUBJECTS AND METHODS

We conducted a cross sectional survey with a self administered questionnaire to participants in AMHTS at three health care centers: (1) Niigata healthcare association (Niigata, Niigata prefecture), (2) Tsukuba multiphasic health examination center (Tsukuba, Ibaraki prefecture), and (3) Seirei health examination center (Hamamatsu, Shizuoka prefecture). The questionnaire was personally delivered with a regular health examination questionnaire in October and November 2003. In each health care center, about one thousand participants in AMHTS were asked to complete the questionnaire anonymously. After reading the intent and purpose of the questionnaire survey, most of them agreed to the questionnaire

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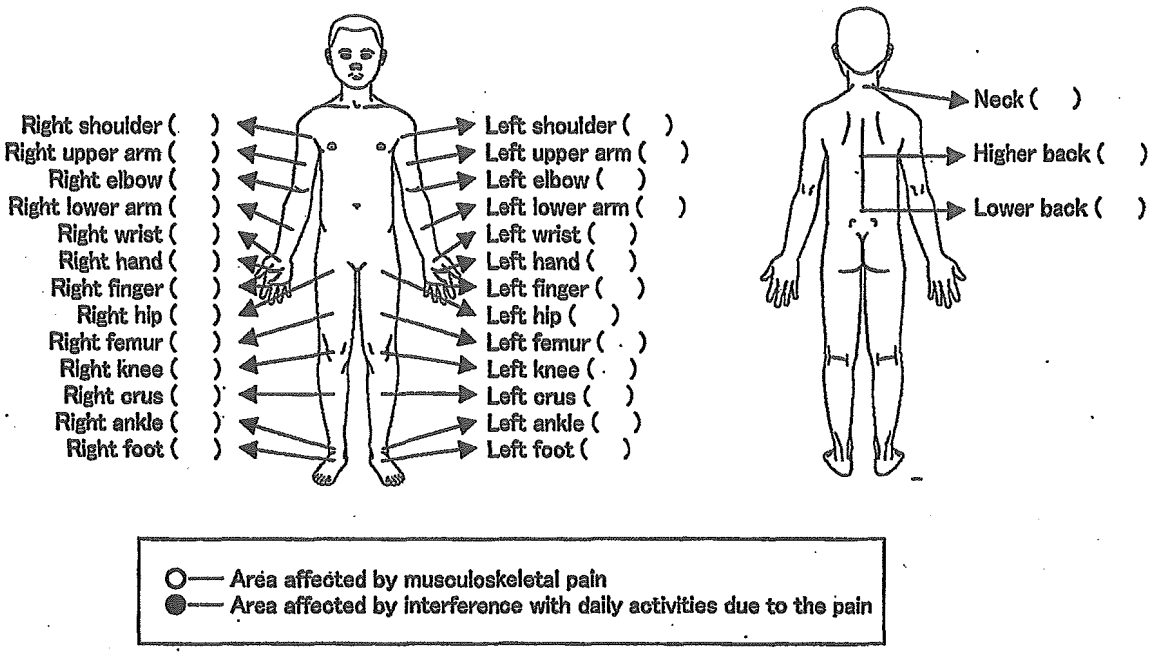

Fig. 1 Drawing with predefined body regions used in the questionnaire.

Table 1 Age and sex distribution of study subjects.

	Total	Age, y.o.					
		20–29	30–39	40–49	50–59	60–69	70–
Total	3,208	174	497	1,055	1,003	407	72
		17.3%	15.5%	32.9%	31.3%	12.7%	2.2%
Men	1,970	107	322	647	599	252	43
		17.9%	16.3%	32.8%	30.4%	12.8%	2.2%
Women	1,238	67	175	408	404	155	29
		16.6%	14.1%	33.0%	32.6%	12.5%	2.3%

survey and turned in their questionnaires then and there.

Subjects were asked whether they had experienced a pain in the following regions for more than one week during the last month: neck, shoulder (right/left), higher back, lower back, upper arm (right/left), elbow (right/left), lower arm (right/left), wrist (right/left), hand (right/left), finger (right/left), hip (right/left), femur (right/left), knee (right/left), crus (right/left), ankle (right/left), and foot (right/left). Subjects were also asked whether the pain had interfered with daily activities if they had experienced a pain. On a drawing with predefined body regions (Fig. 1), the regions affected by pain were marked by a white circle and the regions affected by IDA due to the pain were marked by a black circle.

The questionnaire survey was approved by the ethics committee of St. Marianna University School of Medicine in September 2003.

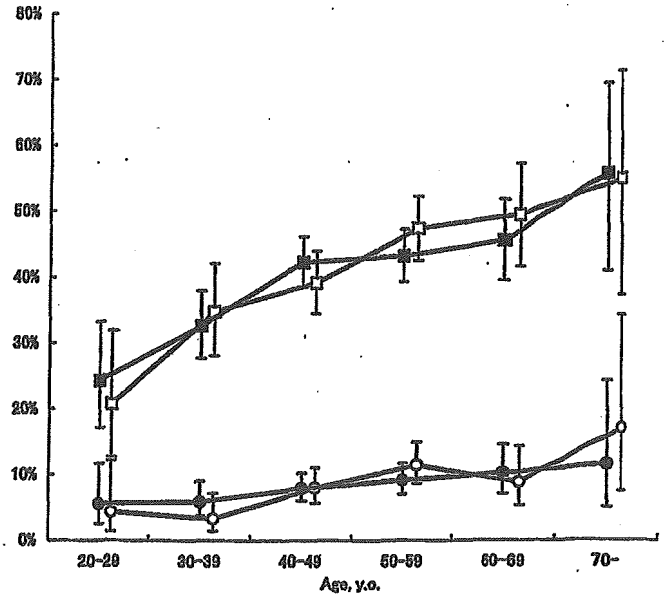

Fig. 2 Prevalence of musculoskeletal pain (■ men; □ women) and interference with daily activities due to the pain (● men; ○ women).

RESULTS

Among the total of 3,273 respondents, we obtained 3,208 eligible subjects who had information on age, sex, and treatment for musculoskeletal disorders available. Table 1 shows the age and sex distribution of study subjects. No significant difference by sex was found in the age distribution.

Overall prevalence of musculoskeletal pain and IDA due to the pain were 41.2% (95% CI: 39.5–42.9; Men 40.7%, 95% CI: 38.6–42.9; Women 42.0%, 95% CI: 39.3–44.8) and 8.4% (95% CI: 7.5–9.4; Men 8.2%, 95% CI: 7.1–9.5; Women

8.7%, 95% CI: 7.3–10.4), respectively. The rates were much the same after adjusted for the Japanese national census population in October 2003 (http://www.stat.go.jp/data/jinsui/2003np/index.htm). No significant difference by sex was found in the prevalence of musculoskeletal pain and IDA due to the pain. Figure 2 shows the age and sex specific prevalence of musculoskeletal pain and IDA due to the pain. The prevalence of musculoskeletal pain was significantly increased with age and exceeded 40% in the age groups of 40 years or older. Correspondingly, the prevalence of IDA due to the pain was significantly increased with age and exceeded 10% in the age groups of 50 years or older.

DISCUSSION

To our knowledge, this is the first study to estimate overall prevalence of musculoskeletal conditions in Japan. Previous studies showed the prevalence of specific diseases (e.g. rheumatoid arthritis, osteoarthritis, osteoporosis) and subjective complaints in specific body regions (e.g. stiff shoulders, lumbago, arthralgia in hands and feet), and there has been no report on overall prevalence of musculoskeletal conditions in the general population. Musculoskeletal conditions include a variety of disease and subjective complaints, which are usually associated with pain. On the other hand, pain is defined as the major component of QOL in most tools for assessing QOL.[3]-[6] Therefore, we conducted the questionnaire survey of musculoskeletal pain and their IDA to examine the impact of musculoskeletal conditions on Japanese health and QOL.

Overall prevalence of musculoskeletal pain was 41.2% (Men 40.7%, Women 42.0%) with a significant increase with age. According to the fifth National Circulatory Disease Survey in 2000, the prevalence of hypertension and hypercholesterolemia were 33.4% (Men 37.3%, Women 30.7%) and 31.5% (Men 28.3%, Women 35.1%), respectively.[7] According to the 2002 National Diabetes Survey, the prevalence of diabetes was 9.0%.[8] Our study subjects were participants in AMHTS, who are more likely to have awareness of their own health. Because of the selection bias, the prevalence of musculoskeletal pain may be overestimated. However, it is worth pointing out that the prevalence of musculoskeletal pain is equal to or higher than that of the major chronic diseases. Moreover, an increasing number of elderly people will lead to an increasing incidence of musculoskeletal conditions. One person in five described IDA due to the pain (prevalence 8.4%; Men 8.2%, Women 8.7%). Musculoskeletal pain is associated with both physical and mental distresses, which significantly deteriorate QOL. Because of high prevalence and IDA, musculoskeletal conditions should be identified as the major health problem in Japan.

In Japan, health examinations play an important part in the national health strategies on the basis of established legal systems. To be effective health strategies, health examinations should deal with health problems that have great impacts on the national health and QOL for the time being. Existing systems of health examinations focus on cancers and cardiovascular diseases, which are the major cause of death in Japan. Regular health examinations have hardly dealt with musculoskeletal conditions. To be sure, musculoskeletal conditions are usually nonfatal, but these diseases substantially affect health and QOL. As expressed in the words of Live long, Live well, the improvement of health and QOL in life is as important as longevity. Musculoskeletal conditions, as well as cancers and cardiovascular diseases, should deserve attention to promote the national well-being. Some randomized controlled trails for musculoskeletal pain showed that early identification and early interventions could relieve pain, prevent physical disability, and reduce health care consumption.[9]-[11] As mentioned by the U.S. Preventive Services Task Force, health examinations should select target conditions on the basis of burden and potential effectiveness of preventive intervention.[12] Musculoskeletal conditions meet the two requirements. Health examinations should expand their scope to musculoskeletal conditions, following internal and mental conditions.

We hope that every health examination organization takes an active interest in preventive measures for musculoskeletal conditions to improve the national health and QOL. Information on musculoskeletal pain and IDA due to the pain was briefly collected from the questionnaire, which demonstrates great potential of the questionnaire as a tool of assessing musculoskeletal conditions in health examinations. If the questionnaire is used as a supplement to a regular health examination questionnaire, health examinations will help early identification and early interventions for musculoskeletal conditions.

CONCLUSION

To estimate the prevalence of musculoskeletal pain and their IDA in Japan, we conducted a questionnaire survey on participants in AMHTS at three Japanese health care centers. Our results demonstrate that because of high prevalence and IDA, musculoskeletal conditions should be identified as the major health problem in Japan. Health examinations should expand their scope to musculoskeletal conditions, following internal and mental conditions.

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