International monitoring of musculoskeletal complaints

A need for consensus

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Musculoskeletal pain is the complaint most frequently reported in health interview surveys. There is a confusing magnitude of names given to musculoskeletal pain complaints reflecting diverging opinions and a lack of consensus of what it is all about. This article discusses how to monitor the occurrence of unspecified musculoskeletal complaints and possible sources of information are presented. The main focus of the article is on how to include musculoskeletal complaints in health interview surveys, and a standard question to be included in all general health questionnaires is recommended.

Keywords: monitoring musculoskeletal complaints, health interview surveys, health questionnaires

Musculoskeletal complaints are a heterogeneous group of conditions with poorly understood causes. This group includes clear cut diagnoses, biologically defined such as rheumatoid arthritis and sciatica, less clearly defined as diagnoses but still biologically defined such as osteoporosis and arthrosis, as well as controversial conditions like unspecified low back pain, fibromyalgia and myofascial pain syndromes. A generic approach encompasses all complaints from the musculoskeletal system, the unspecified and the specific conditions mentioned earlier, as well as malformations, consequences of injuries, infections and tumours. Musculoskeletal pain is the most frequently reported complaint in health interview surveys.1 The magnitude of names given to musculoskeletal pain complaints is confusing. This reflects not only diverging opinions but also a lack of consensus regarding what this is all about.

The International Classification of Diseases, latest edition (ICD10) illustrates the problem of classifying the unspecified musculoskeletal complaints, first of all the widespread conditions. Conditions related to the musculoskeletal system are placed under different chapters. Under the chapter M ‘Diseases of the musculoskeletal system and connective tissue’, we find M79 ‘Other soft tissue disorders, not elsewhere classified, excluding: soft tissue pain, psychogenic (F 45.4)’. In addition M79.0 ‘Rheumatism, unspecified’, includes fibromyalgia and fibrositis. Chronic widespread muscle pain syndromes should have been included under this chapter, but are not stated explicitly. If the musculoskeletal origin of pain is questioned, then generalized pain might be registered under chapter R, ‘Symptoms, signs and abnormal clinical or laboratory findings, not elsewhere classified’. Under R52 ‘Pain, not elsewhere classified’ we find R52.9 ‘Pain unspecified, including Generalized pain, not otherwise specified’ at the very end of the pain section.

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The International Association for the Study of Pain (IASP) suggests in the second edition (1994) a detailed classification of chronic pain with five axes based on region, system, temporal characteristics, intensity and aetiology.2 According to their definitions, fibromyalgia is classified as a ‘relatively generalized syndrome’ in the musculoskeletal system. They make a note to differentiate fibromyalgia from chronic myofascial pain, because myofascial pain syndromes might include localized muscular pain. For our purposes they also include what they call ‘Pain of psychological origin’, subdivided into

- Muscle tension;
- Delusional or hallucinatory;
Hysterical, conversion, or hypochondriacal;
- Associated with depression.

IASP's focus on pain, does not include chronic widespread pain as a condition beyond fibromyalgia.
The World Organization of Family Physicians (WONCA) recommends the use of the International Classification of Primary Care (ICPC) in the diagnosis of diseases. Today, this system is introduced in several of the countries of the European Community. It consists of 17 chapters, L: (locomotor system) includes 23 components of complaints and symptoms, and 30 components of diagnosis/disease with reference to the corresponding ICD numbers. ICPC Chapter L, also includes trauma, infections and tumours in the musculoskeletal system. Several of the diagnoses are further briefly explained by inclusion, exclusion and diagnostic criteria. L03 Low back symptom/complaint includes back pain (lumbar or sacroiliac), coccydynia, lumbago, lumbalgia, but excludes thoracic back and sciatica. L84 Back syndrome without radiating pain has as criteria: back pain without radiation plus limitation of movement confirmed at medical examination. L88 Rheumatoid arthritis includes allied conditions such as ancylosing spondylitis and juvenile arthritis, but has so far got no diagnostic criteria.

The contributions of ICD, IASP, and ICPC in the classification and understanding of musculoskeletal complaints is limited, and underline the confusion and lack of consensus.

The common denominators are pain and reduced function, resulting from some disturbances in the musculoskeletal system ensuing mainly from inflammation, degenerative processes and trauma.

There seems to have been a slight shift in focus when judging the importance of different disease categories. In the last decades, the dramatic, life threatening, often acute illnesses as cancer and coronary heart disease have been the most prestigious, dominating public interest and health care as well as research.

Over the last few years there has been an increasing interest in chronic conditions with marginal effect on life expectancy, traditionally less prestigious, but with great impact on quality of life and functional capacity such as mental illness and musculoskeletal complaints.

A notable shift is visible within the research community, the health care system, among politicians, the media as well as among the public.

Several reasons could explain the increased interest in musculoskeletal conditions, both the developments in treatment and prevention (rheumatoid arthritis and osteoporosis) as well as recognition of the great societal expenditures (mostly the ‘unspecific conditions’). The costs incurred by musculoskeletal disorders are stunning.

In the Netherlands (1999) diseases of the musculoskeletal system, were the fourth largest diagnostic group after mental disorders, diseases of the circulatory system and diseases of the digestive system, accounting for 5.5% of the health care costs. A large part of the cases under chapter; Symptoms, signs and ill-defined conditions (accounting for 6.6% of the costs) and of those that could not be allocated to specific diseases (accounting for 17.8% of the costs) are probably musculoskeletal. These costs include nursing homes but not social security. In Norway, one third of all disability pensioners and half of sick leave exceeding 16 days is attributed to diagnoses of the musculoskeletal system. Social security expenditures resulting from musculoskeletal conditions are several times the health care costs.

This article aims to capture those in the population with musculoskeletal complaints of such seriousness that it represents a public health problem. In addition this paper also discusses possible sources of information. Principles for monitoring unspecified musculoskeletal complaints will be presented, as well as recommended questions to be included in future health interview studies.

**Sources of information**

Information on musculoskeletal health can be obtained from a wide variety of sources (table 1).

**Health interview and health examination studies**

As pain is the principal common denominator, the main way of monitoring unspecified musculoskeletal complaints is through health interview surveys. For such conditions, health examination studies do not yield additional information.

Under the Health Monitoring Program, one project has looked into the numerous national and regional health interview and health examination studies (cfr. the article in this edition of Paivikki Koponen). Musculoskeletal complaints have been included in most European countries. The project documents the lack of harmonisation and standardization with regard to the study instruments, in particular reaching a consensus with regard to the formulation and content of questions.

Theoretically we have a complicated matrix that includes the condition itself as well as the time dimension (table 2).

**The condition**

- **Diagnosis**

Some health interview surveys include specific questions on diagnosis, such as ‘has a doctor ever told you that you

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have osteoporosis?’. Such questions are irrelevant for unspecified musculoskeletal complaints.

- **Nature of complaint**
  Although most questionnaires ask for pain, other complaints are also relevant and have partly been used, for example swelling, discomfort, stiffness and reduced mobility. One of the earlier instruments, ‘The Nordic questionnaire’ asks for ‘any pain or discomfort’.5
- **Origin of complaint**
  Most questionnaires seek answers to complaints of the musculoskeletal system, although respondents might not be able to distinguish between complaints coming from other structures and organs, referred pain, and pain from the musculoskeletal system, while other questionnaires as SF 36 ask for pain in general.
- **Localisation of complaint**
  For complaints that are musculoskeletal of nature, information with regard to the site of the complaint is essential. Two methods have been used, either a body manikin with the possibility to mark the relevant body areas, or specific questions such as ‘Have you had low back pain’, or a combination of both.
- **Severity of complaint**
  Severity might be monitored with questions regarding the intensity of complaint/pain, the duration of the complaint and the consequences of the complaint such as reduced function. Attempts have been made to construct severity indexes based on such questions.

**The time dimension**

- **Start**
  Normally one aims at defining the start of any condition. In the case of bodily pain, frequently reported already at school age, and as it is often recurrent, defining a starting point might be difficult. Nevertheless many questionnaires include questions regarding the length and duration of the respondent’s complaints.
- **Prevalence and incidence**
  The occurrence of chronic conditions is usually described by prevalence and incidence. As established earlier, a precise start is often hard to determine, thereby making it difficult to determine incidence of several musculoskeletal conditions, (although of great importance for some of the specific conditions as rheumatoid arthritis).

In trying to determine the prevalence, the choice of period; today, all last week, during last week, all last year, during last year, is essential. Seemingly small differences in the formulation of the question may give rise to dramatic differences in answers. ‘Today’ encompasses all the chronic conditions whereas the broader the time window, the more isolated episodes will be included.

- **Mode**
  Musculoskeletal conditions might be chronic, frequently recurring, seldom recurring and isolated episodes. The occurrence of musculoskeletal complaints is so high that it could be considered in many cases as a normal condition. It is therefore important to make a distinction between insignificant, time limited complaints and chronic or frequently recurrent complaints. Whether the situation is stable or has deteriorated is also of interest.

**Linking**

Many respondents in health interview surveys report complaints from various sites. To make the matrix even more complicated, there is a need for relating the different locations to the different time dimensions and the complaint characteristics. This could be done by separate questions for the different locations. For specific surveys on musculoskeletal complaints this should be a requirement, but in the case of general health surveys, space restrictions limit the level of detail.

**Health care utilisation**

With a trend towards decreasing attendance rate in health interview studies there is an urgent need for alternative, simple ways of monitoring important public health problems.

For unspecified musculoskeletal conditions, hospital data are considered to be of limited interest as they only cover a selected group of the affected persons.

A greater and wider section of the population will consult a general practitioner. In some countries, information from consultations including main diagnosis is gathered routinely from general practitioners. Such information might be useful for the L chapter as a whole; the validity of the more specific diagnoses is however limited. In order to obtain more valid information with uniform diagnostic criteria, special sentinel stations are established in many countries partly based on continuous registration and partly on time limited ad hoc registrations.

In the years to come, data from general practice will be more accessible and might serve as a proxy for the occurrence of different conditions in the population (c.f. article on sentinel practice networks in this volume).

**Social insurance**

The publication of social security expenditures according to medical diagnoses are one of the reasons of the increased attention of musculoskeletal conditions among administrators as well as politicians.

Social security systems vary considerably from country to country both for coverage (eligibility for benefits), and for definition of different conditions. Persons included under
RECOMMENDATIONS FOR MONITORING MUSCULOSKELETAL CONDITIONS

In spite of decreasing attendance rates in health interview surveys, we will be dependant on such surveys to monitor musculoskeletal complaints, its occurrence and trends. To be able to make international comparisons and to make research projects more meaningful there is a need for consensus on measures to capture the most important dimensions mentioned above. We propose that the following core question be included in all HIS questionnaires.

‘In the last year have you had pain in your muscles or joints that lasted at least one week and has limited your ability to carry out the activities of daily living?’ – please indicate which areas were affected on the manikin’.

This question covers in part the nature of the complaint (pain), its origin (muscles or joints), the localisation (body manikin), and degree of severity (which has limited your ability to carry out the activities of daily living). The latter relates to reduced function as a consequence of the complaint.

The question includes a one year prevalence of complaints of at least one week duration. The wide time window (last year) will inevitably include a number of isolated episodes. This is partly balanced by the aim of differentiating between minor and more significant conditions by specifying complaints of at least one week duration and those that affect functional capacity.

However this question does not include intensity of pain, nor does it include start or total duration. The question is unable to link complaint and severity to localisation.

As any interview based on recall, the recommended question is influenced by recall bias. Including complaints of a certain severity reduces this problem, but does not eliminate it.

Instruments for monitoring musculoskeletal complaints in health interview surveys have not been properly validated in an international setting. There might be cultural differences in the interpretation of such a general question as the one suggested, as well as differences in reporting. An apparent increase in self reporting of musculoskeletal complaints in Norway has been interpreted as a possible result of an increasing public awareness of such complaints, more than a real increase in occurrence.

CONCLUDING REMARKS

Monitoring musculoskeletal complaints is both important and difficult. There have been several successful examples of international standardization of diagnostic criteria and definitions of medical conditions in research. It is therefore timely that this consensus is reached also for un-specified musculoskeletal complaints.

This article presents the basis for construction of a question, and has as well proposed such a question.

For monitoring purposes we hope musculoskeletal complaints will be included as a basic generic condition in future general health surveys, together with mental problems and function.

REFERENCES


3 http://www.rivm.nl/kostenavanzieten

