Scand j work environ health 8 (1982): suppl 1, 97—99

Drawbacks of clinical diagnoses in epidemiologic research on work-related musculoskeletal morbidity

by Gustav Wickström, MD [1]

WICKSTRÖM G. Drawbacks of clinical diagnoses in epidemiologic research on work-related musculoskeletal morbidity. *Scand j work environ health* 8 (1982): suppl 1, 97—99. Register data on musculoskeletal morbidity in various occupational groups are difficult to use in evaluating possible effects of work because of the inexactness of the definition of the clinical diagnoses and their use in ordinary medical practice. A more precise classification of disorders and ailments would provide a better possibility to establish those relations between work and disease which do exist. Internationally recommended methods for epidemiologic research on occupational musculoskeletal disorders are needed.

Key terms: diagnosis, epidemiology, occupational.

For a determination of the possible unfavorable effects of work on the musculoskeletal system, it is necessary to establish the occurrence of disease or pathological findings in defined occupational groups. Existing register data can be used, or new data can be gathered for specific purposes. The use of register data implies considerable drawbacks, but there are also difficulties involved in the use of specifically gathered new data.

Use of register data

It is often possible to get data on sick leaves and disability pensions for various occupational groups. Mostly the data also contain information about the type of incapacity by clinical diagnoses according to the International Classification of Diseases, which has been built up over the years in accordance with the development of medical knowledge. Some of the diagnoses are based on the etiology of the diseases, others on the pathological processes, the forms of manifestation, etc. Because of this variety in the basis for diagnosis, some of the entities overlap. The diseases of the musculoskeletal tissues are primarily grouped in a section of their own, but for certain back conditions diagnoses from the section on neurological diseases may be used as well.

There is a tendency for the international classification to be a little out of date. The diseases that played a central role in the first part of this century, such as bacterial infections, are covered rather well by the classification. On the other hand, those diseases brought about by recent technological development still have little or no place. For the musculoskeletal system, for instance, upper-limb morbidity caused by repetitious, monotonous work movements is inadequately covered by the classification.

Originally, the purpose of the diagnoses was to form a basis for decision on the treatment of the individual case. Today, however, diagnostic classification is also used for several other purposes, such as the evaluation of work capacity, the planning of health care organization, etc. Because the diagnoses have to fulfill several

[1] Turku Regional Institute of Occupational Health, Turku, Finland.

Reprint requests to: Dr G Wickström, Turku Regional Institute of Occupational Health, Hämeenkatu 10, SF-20500 Turku 50, Finland.

0355-3140/82/050097-03USD1.75

functions at the same time, they probably fulfill none of them perfectly.

The determination of a clinical diagnosis is not only the objective recording of a biological process, comparable to the determination of the species of a plant found beside the road, it also reflects the features of the human society in which it is made, primarily the social security system and the demands at work.

In an attempt to establish the relationships between work and musculoskeletal morbidity, all the factors mentioned diminish the usefulness of register data. A more precise disease classification would provide a better possibility to find those relationships between work and disease which do exist.

Gathering of new data

When an epidemiologic field study to gather data on the occurrence of pathological findings in a population is carried out, the setting differs from that which exists when cases of disease are diagnosed in medical practice. The persons examined in a field study are deliberately asked to participate, and they get no immediate benefit from the investigation. The situation and attitudes of the persons examined in an epidemiologic study thus clearly differ from those of patients going to a doctor to seek treatment for some disease.

Also from the physician's point of view there is a considerable difference between the two settings. In an epidemiologic field study he is not required to take any immediate action on the individual level on the basis of clinical findings. He need not decide upon therapy or work capacity, but may freely register the findings, person after person, according to clearly determined criteria for each variable.

The diagnoses of the International Classification of Diseases are not accompanied by instructions on procedures to be used in examinations of a person or on criteria to be followed when a certain diagnosis is being assigned. For the epidemiologic investigation of the occurrence of musculoskeletal diseases in various populations, no internationally accepted methods have emerged which are comparable to those for classifying chronic bronchitis, angina pectoris, or electrocardiographic changes.

Cases of severe disease are not to be expected when persons in active work are examined. Rather, one looks for the early signs of declining health, those not serious enough to interfere with work capacity. Also residual signs (sequelae) from previous diseases can be sought for. As the International Classification of Diseases primarily covers the acute form of diseases, it contains very few entities on slight decline in health and on residual signs suitable for epidemiologic field studies.

When embarking on a new study, most investigators put together a number of questions on symptoms and tests for function considered relevant for getting an answer to the problem to be solved. In a comparison of age- and sex-adjusted results between various groups, it is possible to determine if a certain symptom or finding is more common in one group than in another. The presentation of results in this detailed form may at times be more confusing than helpful for the reader. It would often be desirable to combine single variables into more comprehensive entities when the level of health in certain topographical parts of the musculoskeletal system is described.

The relationships between the various variables may be analyzed through the determination of correlation coefficients between all the variables and through the cross-tabulation of the variables of particular interest with one another. The variables may be grouped together into "syndromes" if positive findings for two, three, or more variables are required before the person is classified as a "case." However, this grouping together of variables is, today, arbitrary, and it depends on the knowledge, experience, and ideas of each investigator.

Conclusions

The clinical diagnoses used in medical practice have several drawbacks when employed in research on the effects of work on the musculoskeletal organs. Consequently the results from single variables obtained in epidemiologic field investigations should be combined into larger entities. It is neither possible nor desirable to limit the methods to be used in scientific

research, as they should be free to develop continuously. However, some recommendations on methods to be used for data gathering and for combining single findings into pathological entities would be very welcome and would facilitate even a tentative comparison of results from different studies.