Letters to the editor

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Evidence in occupational medicine

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Evidence in occupational medicine

In the third issue of the *Scandinavian Journal of Work Environment & Health* this year, Verbeek et al explore the potentials of evidence-based medicine for occupational health (1). Stating that evidence-based medicine has developed into a generally accepted method of linking the results of research to the practice of medicine, the authors present four clinical problems and examine the evidence relevant to the management of these problems through an appropriate search strategy. They conclude that the methods applied for a scientific review of evidence contribute to other methods used in evidence-based medicine, such as the use of guidelines.

Although we agree that scientific evidence is an absolutely necessary basis for modern medical practice, evidence may have other origins as well, such as narrative evidence (2) and intuition (3). This kind of evidence is useful for any practice of medicine, including occupational medicine. Indeed, the patient's story is more than a list of present or absent symptoms, which act as the stepping-stone to the scientific databases. Some symptoms are related; others are not. They can vary in "time" and "place" and constitute metaphors for another meaning. The way the story is told, including the expression of nonverbal signs and the like, is also noteworthy. Together with the patient, the doctor must delve into history coherence and meaning, which should be adequate in relation to the iatrogenic question raised. In occupational medicine, the challenge is not only to put forward a clinical diagnosis and an appropriate therapy. The work-relatedness of the disease and the prognosis in terms of work ability is always on the agenda, and relevant clues in this respect are often presented through the patient's history.

Thus, by combining narrative evidence with scientific evidence, further and more satisfying conclusions can be reached than the (very) modest and perhaps not very useful ones Verbeek and his colleagues seem to end up with in each of their studied cases. We venture to emphasize conclusions or suggestions that meet the patients' questions and needs — obviously not in conflict with any evidence, but rather by triangulating the various sources of evidence.

In their first example, a case of eye symptoms related to computer work, the authors conclude, for example, that "also psychosocial conditions, like job satisfaction, could contribute to these problems" [p 200]. In our opinion, the doctor's job will not be finished until a more ambitious conclusion is reached. A more personal feedback would be required. The patient is not only interested in knowing whether her problems are likely to be related to stress. She also has a need for a deeper realization of the possible mechanism behind the troublesome condition and potential solutions — at least some ideas to go home with and to test further at the workstation.

In the second example, the preventive aspects of hepatitis A among sewage workers is limited to a matter of vaccination, for which, however, advice is not given due to insufficient evidence in the reviewed scientific literature. Irrespective of the evidence, the best advice to the healthy worker would be to assure an adequate hygienic level, washing facilities, workclothes, and protection against aerosols. To ensure the adequacy of the advice, the doctor must not only be familiar with the scientific evidence, but also with the conditions in the actual workplace, for example, the assumed risk of transmission and the potentials for different preventive strategies. One factor here is the patient himself, for example, his skills for complying with directives for behavior, his fears, and the like.

The scientific evidence in the third example, emanating from an extensive number of revealed articles on the treatment of work-related burnout, was eventually limited to a single article advocating cognitive behavioral therapy in combination with relaxation therapy to reduce stress. Now stress and burnout are two different things, and we are convinced that the advice given was not really the best help to the teacher to promote his return to work. Continued suboptimal teaching of the children would hardly be influenced by the suggested therapy (if at all available) in absence of intervention directed towards relevant environmental (psychosocial) factors. Anyhow, a balanced view on whether environmental intervention or individual therapy is needed necessitates a careful evaluation of the patient's story. Even though burnout is more a descriptive label than a representative one for a specific disease entity, each case of burnout is as distinct as individuals differ. Burnout is probably more a kind of existentialistic crisis. Thus the management of the burnt out patient must be based on the patient's specific story. Any burnt out patient doubtlessly asks himself: "Why did I break down?" "What does that breakdown mean to me?" "How can I live with it?" "How can I go on?"

Compared with the three first examples the critical appraisal in the fourth example (which is a question of

whether a pregnant hypertonic nurse should be advised go on sick leave) seems to provide the highest levels of evidence. Apparently, however, the references on which the scientific evidence is founded are mainly based on dichotomous exposures: work or absence from work. While this approach may sufficiently satisfy other physicians, the hallmark in occupational medicine is a more detailed appraisal of the exposure and the exposure-effect relationship. It is more than likely that the blood pressure of a pregnant worker is affected differentially with various work exposures. Some jobs may have a highly significant influence, and other jobs may be irrelevant. The patient's history may also disclose nonoccupational factors that could influence blood pressure, such as anxiety, overweight, problems or stress in the home environment, and the like. The intervention in this case is not necessarily a question of work or sick leave, but rather advice based upon a thorough examination of the full story.

The authors conclude that the method of evidence-based medicine seems to be feasible also for occupational medicine. As to the question of whether evidence-based medicine is sufficient, there are no comments. Literature reviews remain important sources of evidence. However, as the examples seem to demonstrate, their yield may often be limited. Patients may not be really better informed, and health may not necessarily be improved if any action is based on evidence-based medicine only. The optimal selection and interpretation of scientific evidence deriving from the literature is highly dependent on the background, experience, and communication skills of the occupational physician. Of particular importance is the ability to ask relevant questions, to achieve patient confidence, and to identify objects for preventive activities that may differ from those coming up from a Medline search.

Of course, we are not in favor of loose talk and ad hoc ideas, notions, or concepts. We suggest, however, that the clinician should be well aware of the possibilities of basing assistance to the patient on broader evidence, which, as brilliantly presented in a number of articles in the *British Medical Journal* (eg, reference 2), may derive from ample sources apart from the strictly scientific one. Indeed, any credible feedback to the patient and, not the least, any reassurance has to build on a more personal and committed approach.

References

1. Verbeek JH, van Dijk FJ, Malmivaara A, Hulshof CT, Räsänen K, Kankaanpää EE, Mukula K. Evidence-based medicine for occupational health. Scand J Work Environ Health 2002;28(3):197–204.
2. Greenhalgh T, Hurwitz B. Why study narrative? BMJ 1999;318:48–50.
3. Philipp R, Philipp E, Thorne P. The importance of intuition in the occupational medicine clinical consultation. Occup Med 1999;49(1):37–41.

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Authors' reply

We thank our colleagues Anders Ingemann Larsen and Jørgen Riis Jepsen for their interest in our paper and are pleased that they have started discussion on the current topic of how to utilize evidence-based medicine (EBM) in occupational health. The main argument of Drs Larsen & Jepsen (1) is that, in addition to scientific evidence, also other sources of evidence should be used in clinical practice, such as narrative evidence and intuition. All the authors of our paper (2) do agree on this proposition. Furthermore, we find it totally consistent with the definition of evidence-based medicine. According to Sackett et al (3) "EBM is the integration of the best (clinically) relevant research evidence with the clinical expertise of the physician and with patient values [p 1]." We agree with the authors that, in addition to scientific evidence, clinical skills, in-

cluding good communication, are needed in the encounter with a patient.

Considering the arguments that our conclusions are too modest and not very useful for the patients, we clearly disagree. One may speculate about what these patients would have wanted in addition to the questions that are stated**,** but that is not the relevant issue in our article. In addition, Larsen & Jepsen make some unjustified critical remarks, as they suggest that the literature cited offers only limited evidence. In our opinion, most of the sources cited offer rather convincing evidence from, for example, meta-analyses and will really prevent "loose talk and ad hoc ideas [1, p 359]."

With respect to our second case history, Larsen & Jepsen suggest that they are not interested in the evidence about vaccination in their recommendation that advice about hygienic work practices is always needed irrespective of the evidence. We agree that primary preventive measures are important. Nevertheless, the fact should be taken into consideration that protection against aerosols is not simple to implement. There is evidence from other branches that even a class P3 respiratory protection mask is not enough to prevent exposure to aerosols (4). After we had done our search, a systematic review about the hepatitis vaccination problem was published (5). In this review (5), the authors come to the same conclusion: "These results do not suggest that all workers systematically have to be vaccinated against hepatitis A . . . . Vaccination might be discussed for those workers heavily exposed to sewage [p 767]". This is the same advice given to our sewage worker.

In the third example, on burnout, Larsen & Jepsen state that we relied on one article only. However, this article was a systematic review of 64 studies comparing different approaches. Larsen & Jepsen promote interventions directed towards environmental psychosocial factors. However, according to the review by van der Klink et al (6), there is insufficient evidence in favor of these kinds of organizational interventions. From a preventive viewpoint, it is probably worthwhile to try to change work conditions, but work conditions in teaching are difficult to change in the short term. When we combine this problem with the evidence on cognitive behavioral therapy, we are of the opinion that the proposed therapy would be the most beneficial to the teacher in question. This decision does not rule out the importance of assessing the specific work conditions of the teacher by the occupational physician and taking them into account in the therapeutic process.

The statement of Larsen & Jepsen with respect to the fourth case is exactly in line with what we advised. Considering the remark on the exposure-effect relationship of physically demanding work and pregnancy, Larsen & Jepsen have clearly not studied the meta-analysis of Mozurkewich (7), in which a dose-response relationship was demonstrated.

Finally, Larsen & Jepsen state "of particular importance is the ability to ask relevant questions, to achieve patient confidence, and to identify objects for preventive activities . . . [1, p 359]." We fully agree and would like to call the use of this ability evidence-based medicine!

References

1. Larsen AI, Jepsen JR. Evidence in occupational medicine Scand J Work Environ Health 2002;28(5):358–9.
2. Verbeek JH, van Dijk FJ, Malmivaara A, Hulshof CT, Räsänen K, Kankaanpää EE, Mukula K. Evidence-based medicine for occupational health. Scand J Work Environ Health 2002;28(3):197–204.
3. Sackett DI, Straus SE, Richardson WS, Rosenberg W, Haynes RB. Evidence-based medicine: how to practice and teach EBM. Edinburgh, etc: Churchill Livingstone, 2000.
4. Larsson BM, Larsson K, Malmberg P, Palmberg L. Airways inflammation after exposure in a swine confinement building during cleaning procedure. Am J Ind Med 2002;41:250–8.
5. Glas C, Hotz P, Steffen R. Hepatitis A in workers exposed to sewage: a systematic review. Occup Environ Med 2001;58: 762–8.
6. van der Klink JJ, Blonk RW, Schene AH, van Dijk FJ. The benefits of interventions for work-related stress. Am J Public Health 2001;91:270–6.
7. Mozurkewich EL, Luke B, Avni M, Wolf FM. Working conditions and adverse pregnancy outcome: a meta-analysis. Obstet Gynecol 2000;95(4):623–35.

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