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Caution required when relying on a colleague's advice; a comparison between professional advice and evidence from the literature
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Abstract

Background: Occupational Physicians rely especially on advice from colleagues when answering their information demands. On the other hand, Evidence-based Medicine (EBM) promotes the use of up-to-date research literature instead of experts. To find out if there was a difference between expert-based practice and EBM we compared professional advice on occupational health topics with best evidence from the literature.

Methods: We asked 14 occupational physicians to consult their usual information sources on 12 pre-conceived occupational health problems. The problems were presented in the form of case vignettes which contained sufficient clinical information to be used by the occupational physicians for the consultation of their experts. We had searched the literature for the best available evidence on the 12 problems, which made it possible to answer the clinical questions with a clear yes or no.

Results: The cases could be used by the occupational physicians as arising from their own practice. All together the occupational physicians consulted 75 different experts. Almost half of the consulted experts were near colleagues, 10% were industrial hygienists, 8% medical specialists and the rest had a varied background. Fifty three percent (95% confidence interval 42% to 65%) of all professional advice was not in line with the research literature. In 18 cases (24%) professional advice explicitly referred to up-to-date research literature as their used source. These cases were substantially less incorrect (17%) than advice that had not mentioned the literature as a source (65%) (difference 48%, 95% Confidence Interval from 27% to 69%).

Conclusion: Advice that occupational physicians routinely get in their daily practice differs substantially from best evidence from the literature. Occupational physicians who ask professional advice should always ask about the evidence of this advice.

Background

Occupational physicians (OPs) in their daily routine are confronted with a large variety of occupational health problems. From previous research we know that in
attending these problems OPs mostly rely on their own experience and on information from consulting an experienced colleague [1]. On the contrary, Evidence-Based Medicine proposes to use evidence from the up-to-date research literature as most reliable source. Reasons for OPs to still prefer working experience- or authority-based are the relatively easy way to obtain and the attributed validity of the information. Evidence-based medicine, although much-supported, is still not a customary way for occupational physicians (OPs) to address problems that arise in their daily work [2]. OPs like other physicians do not quite see its benefits.

Relying on your own or on others’ expertise knows some drawbacks. For example, Slawson et al described that the information can be out of date and that there could be the matter of reverse gullibility [3-5]. In this study we want to challenge the belief of OPs that asking for professional advice from a colleague, even if this colleague is considered an expert on the subject, is a good source for information. We will compare professional advice given by experts to answers based on best evidence derived from the literature.

**Methods**

We asked a convenience sample of fourteen acquainted OPs working scattered over four different regions of the Netherlands to collect data for us. Our main criteria to ask a physician to participate were that he or she had to be professionally sufficiently experienced. Next, we took care that there was variation in location to avoid the situation that the same professional expert would be asked about the same case vignette by different OPs. Even though we tried to vary age, gender and professional experience, the majority was over 40, male and had a long standing professional experience and three OPs had achieved a doctor’s degree. (Table 1) All OPs were considered experienced and professionally motivated, and agreed to participate. The OPs were requested to obtain two professional advices on each of three case vignettes which would lead to a maximum of 84 cases. To be able to show that a relevant 15% of the answers would not be in line with the literature with $\alpha = 0.05$ and $\beta = 80\%$ we would need about 53 cases. A professional advice was defined as an advice from a person who was considered by the OP to be an expert on the subject and who would also be consulted in the normal course of daily routine.

Twelve cases were selected on the basis of a clear occupational health problem, resemblance to daily practice for an OP and assumption that there would be sufficient literature (Table 2, See Additional file 1). The cases represent a broad variety of occupational health practice ranging from return to work interventions in workers with musculoskeletal disorders to the causality of stress in case of a myocardial infarction. The case vignettes ended in a clear clinical question that could be answered by a simple yes or no. For example, ‘does continuous years of work stress increase the risk of a myocardial infarction?’ and ‘is it useful to take melatonin to prevent jetlag?’

The OPs were asked to draw their own conclusion on the case vignettes and to provide the professional advice of all the experts that were consulted. The OP could decide for himself whether or not to rely on the advice received. All cases had to be advised on by the experts with yes or no accompanied by a motivation for the answer. The experts were kept unaware by the consulting OP that the cases presented were fictive.

These professional advices were compared to evidence from the literature in the form of a critically appraised topic (CAT). Critically appraised topics are considered as the best way to retrieve an answer to a question arising from practice from the literature. We followed the guidelines for making critically appraised topics as formulated by Sacket et al.[6] We used Medline, the Cochrane Library and the Dutch clinical guideline database (CBO) to search for relevant evidence to the clinical questions. We used the best available evidence that we could find on a certain topic. In three cases we could use a Cochrane systematic review, in four cases we could use a systematic review and in 5 cases we relied on original studies as the best evidence because no systematic review was available. We felt that for none of the cases the evidence was novel or surprising, but that the available recent literature all pointed in the same direction. All CATs are described in the appendix together with the search strategy and the evidence that was used to answer the clinical question. [See Additional file 1]

| N (%) |
|---|
| North | 4 (29) |
| South | 3 (21) |
| West | 4 (29) |
| East | 3 (21) |
| Certified occupational physician | 12 (86) |
| Professional Experience (> 10 years) | 12 (86) |
| Occupational Health Service | 14 (100) |
| Academic Status (PhD) | 3 (21) |
| Other | 7 (50) |
| Abounie | 7 (50) |

Note: Values are presented as N (%) except for age and gender, which are presented as N.
A professional advice was considered correct if both the 'yes or no answer' and the motivation were in line with the evidence from the literature as summarised in the CAT. The conclusions of the OPs were assessed only by their 'yes or no answer'.

The first two authors (FS and JV) checked and evaluated both the professional advices and the answers from the OPs separately. We measured the proportion of advices and answers that were not correct.

**Results**

The occupational physicians consulted 84 different experts of which 75 answered (89% response; 75 out of 84). This resulted in 39 answers to the case vignettes from the 14 participating OPs (93% response; 39 out of 42) on the 12 cases. All cases were perceived as being from daily practice by both the OPs and the consulted experts. Each individual case was advised on at least five times by an expert, except for one case where we had only two advices from experts. Table 3 shows the profession of the consulted experts which are comparable to the type of experts occupational physicians usually consult in daily practice [1]. Most experts were consulted via e-mail (37.3%), by telephone (28.0%) or directly (13.3%). Of the 75 professional advices, 28 (37%, 95% Confidence Interval from 26% to 48%) were incorrect. If we also took the motivation related to the answers in consideration, 40 answers were incorrect (53%, 95% Confidence Interval from 42% to 65%). Of the 39 conclusions of the OPs, based on the experts' advice 17 (44%, 95% Confidence Interval from 28% to 59%) were incorrect. There was no difference in the rate of incorrect advice per type of profession per consulted expert or per case vignette.

The motivations of the experts for their advices were based 18 times (24%) on the literature. The rate of incorrect advices by experts was 17% if their advices were explicitly based on the up-to-date research literature versus 65% incorrect if these advices were not based on the literature.
cases we found good systematic reviews which can be considered as high quality evidence. However, in some we had to rely on single original studies that were not always evaluation studies. This leaves some room for discussion about the credibility of the evidence. However, none of the results of the studies used as evidence were really novel or surprising but all were in line with general trends in the literature such as the approach to musculoskeletal diseases or advice about return to work. Moreover, the results were not related to the type of case and therefore not to the quality of the evidence provided.

Conclusion
Our findings urge for more and better research into professional knowledge management. For now we conclude that better use of the available research literature is possible and should be stimulated among occupational physicians. If professionals considered an expert on the subject, are asked for advice, occupational physicians should still make sure that the expert also provides the evidence for his advice.

Competing interests
The author(s) declare that they have no competing interests. The views expressed in this article represent those of the authors and are not necessarily the views of the official policy of The Cochrane Collaboration.

Authors’ contributions
JV designed the project plan. FS and JV carried out the project. FS wrote the first draft of the manuscript. All authors commented equally on the project plan and all drafts of the manuscript and read and approved the final manuscript.

Additional material

Additional File 1
We give the 12 Critically Appraised Topics that we used as the literature standard to compare the experts’ advice with as well as the search strategy and literature references on which the CATs conclusions are based. Click here for file [http://www.biomedcentral.com/content/supplementary/1472-6963-5-59-S1.doc]

References
1. Schaafsma FG, Hulshof CT, van Dijk FJ, Verbeek JH: Information demands of Occupational Physicians and their attitude towards Evidence-Based Medicine. Scand J Work Environ Health 2004, 30:327-330.
2. Verbeek JH, van Dijk FJ, Malmivaara A, Hulshof CT, Rasanen K, Kankaanpaa EE, Mukala K: Evidence-based medicine for occupational health. Scand J Work Environ Health 2002, 28:197-204.
3. Slawson DC, Shaughnessy AF: Obtaining useful information from expert-based sources. BMJ 1997, 314:947-9.
4. Antman EM, Lau J, Kupelnick B, Mosteller F, Chalmers TC: A comparison of results of meta-analyses of randomized control trials and recommendations of clinical experts. Treatments for myocardial infarction. JAMA 1992, 268:240-8.
5. Riffenburgh RH: Reverse Gullibility and Scientific Evidence. Arch Otolaryngol Head Neck Surg 1996, 122:600-601.
6. Sackett DL, Straus SE, Richardson WS, Rosenberg W, Haynes RB: Evidence-based medicine. How to practice and teach EBM. New York: Churchill Livingstone; 2000.

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