EASOM Summer School
Amsterdam

Prof. Frank van Dijk
28 August 2008

Challenges for application of Evidence-Based Practice in Occupational Health
This introduction

• Short history EBM in the Netherlands
• What is EBM
• Why is EBM important
• Two main challenges
• Access to knowledge
• Training in evidence-based practice
• Conclusions
Introduction to Evidence-based Occupational Medicine

ICOH Workshop

Amsterdam 2002
Short history of EBM in the Netherlands

- 2002 ICOH workshop Introduction in EBM
- Development NSPOH training program
- Lectures in various countries, articles in journals
- EBM Plus experiment and KIS program 2003-07
- WHO publication 2006
- EBM E lesson R&D 2008
- Question and Answer project toward workers, companies, branch organisations 2007-2011
- EBM ‘experts’ innovations 2007-2011
Evidence based practice
adapted from
David Sackett 2001
integration of
1. professional expertise
2. best available scientific evidence
3. values and expectations of workers, companies and government

The EBM Triad
The Five Steps of EBM

1. Frame Patient Scenario into a Clinical Question
2. Systematically retrieve best evidence available
3. Critically appraise evidence
4. Apply results to patient
5. Evaluate decision making
Sources for information in the order of search priority for practitioners (partly similar with levels of evidence)

- evidence-based guidelines
- syntheses
- systematic reviews (Cochrane Collaboration), other reviews
- scientific articles
- evidence-based practice and measurement protocols
- handbooks for professionals, professional websites, etc
Why evidence-based practice?

• Occupational health services are knowledge-intensive organizations

• Every 4 - 8 years half of the professional knowledge becomes outdated

• Public accountability

• Professionals want to improve their quality

• Evidence-based practice and an adequate knowledge management is not a question but a basic need for Occupational Health Services and professionals
Changing problems and aims means demands for new knowledge

- nanoparticles
- violence at work
- new medical screening tools
- ageing work force
- threats of new infectious diseases
- protection of pregnancy
- rehabilitation during and after treatment for cancer, RA and depression
- participatory approaches
- implementation of preventive policy
Genetic polymorphism of metabolic enzymes modifies the risk of chronic solvent-induced encephalopathy.

Kezic S, Calkoen F, Wenker MA, Jacobs JJ, Verberk MM.

Coronel Institute, Academic Medical Center, University of Amsterdam, The Netherlands. s.kezic@amc.uva.nl

In the present study, we investigate whether genetic polymorphism in enzymes involved in the metabolism of organic solvents influences susceptibility to chronic solvent encephalopathy (CSE), which is one of the major effects of long-term exposure to organic solvents. Polymorphisms in the genes encoding CYP1A1, CYP2E1, EPHX1, GSTM1, GSTT1 and GSTP1 enzymes were determined in a group of male CSE patients (N = 97) and controls (N = 214). The selection of the patients was based on a standard diagnostic protocol, including interviews, neuropsychological tests and questionnaires directed to somatic, cognitive and mood symptoms and exposure, in combination with well-defined decision rules. As controls, healthy workers of similar socio-economic background, without memory problems and with no known exposure to organic solvents, were included in the study. Comparing patients and controls, higher frequencies of the variant *5B allele of the CYP2E1 gene (OR: 5.8; 95% CI: 1.8-18.8) and of the variant GSTP1*C allele (OR: 0.40; 95% CI: 0.17-0.94) were found. Homozygous carriers of the exon 4 EPHX1 Arg139 variant allele had a lower risk (OR: 0.25; 95% CI: 0.06-1.13). The present study indicates that genetic polymorphism of CYP2E1, EPHX1 and GSTP1 modify the risk of developing CSE.
How can we help employees with chronic diseases to stay at work? A review based on an empowerment perspective

The subject matter expertise of occupational health professionals is the added value for companies, workers and government.
• How to access and disseminate knowledge?

• How to use knowledge effectively and efficiently?
Teacher for 4 weeks at home, sickness absence. I can not function as a teacher because I have a nervous breakdown and I am depressive. I have serious complaints of chronic fatigue.
Atlantic Canada Human Resources Awards recognized on October 4, 2007, the Canadian Mental Health Association - PEI Division and HRA, an Atlantic Canada labour relations and human resource management firm, for their strategic partnership to deliver Complex Issues Clear Solutions to employer [Read more]

"It's not the work...it's the way the work is organized...that matters" Study ranks most stressful jobs, see Oct 4, 2007 National Post article for full story. [source]

Treating depressed workers boosts productivity, retention: Study
CBC reports on study "Enhanced Depression Treatment and work Outcomes" released in the Sept 26th issue of the Journal of the American Medical Association (JAMA). [Source]

Finding right balance improves mental equilibrium; Psychologists put together online workbook dealing specifically with work-related depression [Read more]

Employer Innovations: Employer Innovations Online helps employers take action to address mental health at the workplace by providing case examples of successful corporate approaches. [Read more]

When mental health issues affect the workplace [article]

Canada Workplaces deal with Anxiety and Depression [article]
their regular activities.

The truth is, if depression is not treated, it can last for months or even years. A person can become so withdrawn they simply can’t get out of bed. Feeling isolated from family, friends and co-workers and unable to seek help. 15% of people with severe depression commit suicide.

**How to seek help for yourself or someone you know**

If, after reading this information carefully, you feel that you or someone you know may be experiencing depression, the first step is the most important.

Remember, help is the key: 80% of people with depression can recover if they get help. Do not try to diagnose the problem yourself. That is for a trained health professional to do.

If you think a co-worker may be experiencing depression, you should continue to show them respect. Help make the person aware of their value in the workplace and to their colleagues. Offer encouragement and pay genuine compliments every day.

Finally, use the trust between you to encourage the person to seek help and/or continued treatment. Encourage your co-worker to speak to their health professional, an on-site occupational health nurse, or your employee assistance professional. These people can direct a person with depression toward appropriate treatment such as counseling, self-help groups, family and peer support, or provide referrals to specialists who may recommend medication or psychotherapy. Used alone or in combination, these treatments are highly successful, but they will only work if the depressed person takes the first step.

Seek help immediately—it can make a difference.
Information on a website

CFS is a serious disabling disease that mostly is permanent

www.nieuwsbank.nl/inp/2005/09/27
Is this the right solution?
So, what to do with this worker/patient?

When observed in practice, every day occupational physicians have knowledge questions, partly medical questions.

Not many occupational physicians search in literature databases, some do on high quality websites but there are not many good websites for OH professionals.
From knowledge to practice

Scientific articles, reviews, books

Knowledge products: guidelines, measurement protocols, search tools, TLVs, national journals, websites, educ. materials

OH professionals

Workers, companies

Storage and access: virtual OH library OH portal clearing house OH guidelines repository OH educ. materials

Education and training in OH

Coronel Instituut

AmCOGG
Two main challenges today

• OH professionals need better facilities for access to knowledge and knowledge products

• OH professionals need to be trained better in the access and use of knowledge and knowledge products
Access to what?

- literature databases for titles and abstracts
- full text articles from journals
- reviews from journals or Cochrane Library
- evidence-based practice guidelines
- evidence-based assessment protocols
- educational materials
- search tools

- part of the challenge is the development of a virtual library (accessible via a portal) for OH professionals that orders everything that has quality and offers easy access
What is available now?
Searches in PubMed 1997-2005

(Steinbrook R. N Engl J Med 2006;354:4-7)
[Introductie]

Welkom bij 'Begeleiding bij psychische klachten in het werk'.

Om u te ondersteunen in de begeleiding van werknemers met psychische klachten is de Les Online opgezet. De Les Online is gebaseerd op kennis van de website Psychisch & Werk.

Na het doorlopen van de Les Online kunt u beter

boven één van de onderwerpen te

doorgaan tijd ongeveer 30 minuten.

ik dan op Help.

Gerold in PDF formaat; download z.n.

vraag en

wetenschappelijke kennis te doen. In

cijfer, bijvoorbeeld door artikelen in een specifieke discipline, bijvoorbeeld psychologie. Hierdoor wordt informatie beter onthouden en eerder toegepast in de praktijk.
Depressive disorders and productivity
mental health at work website
News 26-8-08

- Sinclair RC, Lavis CA. Are Happy workers better workers?”
Welcome to the home page of Cochrane Occupational Health Field!

To gather evidence on the effectiveness of occupational health interventions.
To stimulate the completion of systematic reviews on these interventions.

To reach our targets the field:

- maintains specific databases of occupational interventions and systematic reviews
- organises hand searching of occupational health journals
- has developed search strategies for finding OH studies in PubMed
- maintains a wish list of desirable systematic reviews
- organises funding for systematic reviews
- develops methodological support for occupational health review authors
- communicates with those interested in the field

For more detailed information about COHF contact: Field co-ordinator Jos Verbeek; firstname.lastname@ttl.fi    tel. +358 30 474 7289
Effect of training and lifting equipment for preventing back pain in lifting and handling: systematic review

Kari-Pekka Martimo, Jos Verbeek, Jaro Karppinen, Andrea D Furlan, Esa-Pekka Takala, P Paul F M Kuijer, Merja Jauhiainen and Eira Viikari-Juntura

Conclusions There is no evidence to support use of advice or training in working techniques with or without lifting equipment for preventing back pain or consequent disability. The findings challenge current widespread practice of advising workers on correct lifting technique.
Guidelines of Occ Health Clin Effect Unit

(NHS, UK)

Gepubliceerd/geautoriseerd:

Low back pain
Workplace interventions for common mental health problems
Care of contact dermatitis
Occupational asthma
Return to work following elective surgical procedures
Chronic fatigue syndrome

Lopende trajecten:

Alcohol
New and expectant mothers (shiftwork, material handling)
Latex allergy
Identification and management of infected food handlers

Wensen/ Priority list:

Upper limb disorders
Dermatitis and fitness for work
Diabetes and fitness for work
Influenza prophylaxis
Epilepsy and fitness for work
Development of tools

Search strategies to search more easy and effective in literature databases

etiology of occupational diseases

consequences of diseases for work

interventions that have effect on work outcomes
Consequences of a disease for work, or medical aspects for fitness for work

- Use the MeSH term for the disease
- Use the following terms for work
- if you want to have more hits you have to connect all terms with OR

<table>
<thead>
<tr>
<th>Work capacity</th>
<th>Work disability</th>
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<tr>
<td>Vocational rehabilitation</td>
<td>Occupational Health</td>
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<tr>
<td>Sick Leave</td>
<td>Absenteeism</td>
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<td>Return to work</td>
<td>Retirement</td>
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<tr>
<td>Employment status</td>
<td>Work status</td>
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Copy Paste for a search in PubMed as an example for epilepsy:

("work capacity" OR "work disability" OR "vocational rehabilitation" OR "occupational health" OR "sick leave" OR absenteeism OR "return to work" OR retirement OR "employment status" OR "work status") AND "Epilepsy"[Mesh]
A PRACTICAL GUIDE FOR THE USE OF RESEARCH INFORMATION TO IMPROVE THE QUALITY OF OCCUPATIONAL HEALTH PRACTICE

PROTECTING WORKERS' HEALTH SERIES NO 7

WORLD HEALTH ORGANIZATION

Challenges for access to knowledge

- A wide variety of facilities is already available
- New efforts are needed for the development of a virtual library in a high quality portal
Virtual library for OH professionals

Enormous amount of information, dispersed present
Not everything is relevant
Quality is not easy to judge
‘Difficult’ tools such as filters, Mesh terms, clinical queries, limits
Very limited time

We need a systematic online virtual library that is attractive, effective, efficient and easy to use for OH professionals
Prices for regular issues

Individuals:

EUR 30.00 per copy in Scandinavian countries
EUR 34.00 per copy in other countries

The prices of single issues of supplements are determined separately. See Supplement orders for the pertinent information.

Payment
• Springer Open Choice™
• Your Research. Your Choice.
• Springer operates a program called Springer Open Choice. It offers authors to have their journal articles made available with full open access in exchange for payment of a basic fee ('article processing charge').
• With Springer Open Choice the authors decide how their articles are published etc
Other challenges for access to knowledge

- realization of access to literature databases that are not for free
  - OSHrom, Cochrane, Embase, Psycinfo
- free access to full text scientific articles
- development of expert networks, free accessible for professionals (and public)
Two main topics

- OH Professionals need facilities for access to knowledge

- OH Professionals need to be trained in the access and use of knowledge
Available to use in education and training

- E lesson introductory course
- WHO publication
- Sackett, also chapter on training
- Oxford training in EBM
- Cochrane field OH materials
- PubMed tutorials etc
- Experiences from large Dutch CME project for OPs as published
- Much more
**Introductory course EBM**

<table>
<thead>
<tr>
<th>Introduction</th>
<th>Topic</th>
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<td></td>
<td>Basic principles</td>
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<td>Types of questions in practice</td>
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<td>The PICO method</td>
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<td>Information sources and search strategies</td>
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<td>Searching in Medline with PubMed</td>
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<td>Evaluating results</td>
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<td><strong>Answering a question</strong></td>
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<td></td>
<td>- outline the problem</td>
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<td></td>
<td>- distinguish between different types of questions from the field</td>
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<td>- make a link between the type of question, an appropriate information source, and a suitable search strategy</td>
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<td>- formulate questions from the field so that it enables you to look for an answer in the most appropriate information source such as guidelines, journal articles, or websites</td>
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<td>- perform a focused search action using the PICO method on internet in the Medline database using the PubMed search engine</td>
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<td>- globally assess the scientific articles found in terms of quality and relevance to the question asked</td>
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<td>- formulate an answer to the question based on the information found</td>
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Start the module by selecting one section from the topic menu. Completing all the sections will take approximately 60 minutes. If you have any questions about the structure or the way of working, click on help.

**http://www.nspoh-on-line.nl/ebm/**
Potential developments in favor of EBM education and training

– National journals may show abstracts of international articles to motivate course participants to shop more ‘international’
– Elaborated examples can be published to show the need and benefits of EBM for OH, as EBM for OH is not the same as EBM in health care in general
– Training of EBM trainers for OH
– Good collaboration with medical librarians
Potential developments in favor of EBM education and training

– Consider a discussion about differentiation in participants (users vs. do-ers) in discussion with the field
– Development of a standard for what is a good EBM search result
– Development and sharing of tests to evaluate quality of EB practice
– Collaboration with other actors as schools are mostly not the main actor to implement EBM in practice
Potential developments in favor of EBM education and training

– Develop tools to support in language problems
– Organize a public debate about the phenomena that routine practice for OPs often suffocates any progress
And? Does good access and training work?

Teacher for 4 weeks at home, sickness absence.
I can not function as a teacher because I have a nervous breakdown and I am depressive.
I have serious complaints of chronic fatigue.
EBM strategies and search methods

- PICO,
- MeSH terms,
- clinical queries
- limits

Is an effective treatment or guidance method available?
What are work-related risk factors?

To be able to assess whether a mental health disorder is work-related or even can be diagnosed as an occupational disease, knowledge about work-related risk factors is invaluable. In addition, this knowledge provides points of departure for the development of measures that can prevent work-related mental health disorders. Unfortunately, knowledge about work-related risk factors of mental health disorders is scarce. By clicking the items below, the available knowledge about work-related risk factors of mental health disorders will be presented.

- Work-related risk factors of nervous breakdown
- Work-related risk factors of depression
- Work-related risk factors of anxiety disorders

For more information on relevant literature that describes the relationship between work and mental health click here.
Mental Health & Work
Mental health complaints and fatigue at work

Questions & Answers  Tools & Checklists  E-learning  Projects  Literature  Links

Contact
Mental Health and Work has been developed by the Coronel Institute on behalf of The Netherlands Organization for Scientific Research (NWO). For questions, contact the editorial staff.

Emar de Croon
Frank van Dijk
Nathalie Hugenholtz
Karen Nieuwenhuijsen
Monique Loo

Questions and Answers

Questions about mental health disorders
Which interventions are effective?

Questions about fatigue at work
Make your choice...

Which interventions are effective?
Knowledge about the effectiveness of interventions is indispensable for the proficient guidance of employees who are absent from work due to mental health complaints. For this purpose, during the past ten years five Dutch effect-evaluation studies have been conducted among employees who are absent from work because of mental health complaints. These studies were conducted within the framework of the Dutch concerted program of Fatigue at Work. The main outcomes of these studies are described below.

Activating interventions by occupational physicians
Van der Klink et al. (2003) and Nieuwenhuijsen et al. (2002) evaluated the effect of an activating intervention among Dutch employees who were absent due to mental health complaints. The intervention was based on the Dutch practice guidelines for managing adjustment disorders in occupational and primary health care. More information on these guidelines can be found in Van der Klink and Van Dijk (2003). The main outcomes of these two studies are:

- In the Van der Klink Study, at 3 months, significantly more patients in the intervention group (78%) had returned to work compared with the control group (53%). Decrease of complaints/symptoms did not differ between the control and intervention group.

- In the Nieuwenhuijsen study, the mean sickness absence duration among the employees who were not treated in accordance with the practice guidelines was 247 days. By contrast, the mean sickness absence duration of the employees who were treated in accordance with the practice guidelines was 167 days. Treatment according to the guidelines did not affect symptom recovery.
Reducing long term sickness absence by an activating intervention in adjustment disorders: a cluster randomised controlled design.

van der Klink JJ, Blonk RW, Schene AH, van Dijk FJ

Coronel Institute for Occupational and Environmental Health, Academic Medical Center, Netherlands. j.j.vanderklink@amc.uva.nl

AIMS: To compare an innovative activating intervention with "care as usual" (control group) for the guidance of employees on sickness leave because of an adjustment disorder. It was hypothesised that the intervention would be more effective than care as usual in lowering the intensity of symptoms, increasing psychological resources, and decreasing sickness leave duration. METHODS: A prospective, cluster randomised controlled trial was carried out with 192 patients on first sickness leave for an adjustment disorder. Symptom intensity, sickness duration, and return to work rates were measured at 3 months and 12 months. Analyses were performed on an intention to treat basis. RESULTS: At 3 months, significantly more patients in the intervention group had returned to work compared with the control group. At 12 months all patients had returned to work, but sickness leave was shorter in the intervention group than in the control group. The recurrence rate was lower in the intervention group. There were no differences between the two study groups with regard to the decrease of symptoms. At baseline, symptom intensity was higher in the patients than in a normal reference population, but decreased over time in a similar manner in both groups to approximately normal levels. CONCLUSION: The experimental intervention for adjustment disorders was successful in shortening sick leave duration, mainly by decreasing long term absenteeism.

Publication Types:
- Clinical Trial
- Comparative Study
Cumulative risk on long-term sickness absence for common mental health disorders
Effectiveness of cogn. behav. treatment
Thank you for the evidence-based therapy and guidance!
Conclusions

Evidence-based occupational health practice is an asset and a necessity.

Today we can achieve much more than yesterday.

Still there are many challenges in the access to knowledge and in training.

So, let us collaborate more.

Thank you for your attention!