Evidence-based health promotion at workplaces

Tuula Oksanen
MD, PhD, Adj. prof. (social epidemiology)
Outline

• Why the topic is important
• Opportunities, needs and challenges in workplace health promotion (WHP)
• Universal or tailored approach?
• Evidence-based health promotion at the workplace
Interestingly, the guidelines only considered evidence of risks of adverse health effects and not evidence of the effectiveness of the recommended interventions. However, we know that evidence for OSH interventions is available (14) (see work.cochrane.org). It is especially disturbing that the guidelines published by the European Union in 2014, as a trusted source of information, were of the lowest quality and did not use systematic review of the evidence. Even though the EU supports evidence-based policy, this does not seem to be the case in OSH.
Clinical/ occupational health guidelines

2016 European Guidelines on cardiovascular disease prevention in clinical practice

The Sixth Joint Task Force of the European Society of Cardiology and Other Societies on Cardiovascular Disease Prevention in Clinical Practice (constituted by representatives of 10 societies and by invited experts)
2.4.2 Psychosocial risk factors

Key messages

- Low socio-economic status, lack of social support, stress at work and in family life, hostility, depression, anxiety and other mental disorders contribute to the risk of developing CVD and a worse prognosis of CVD, with the absence of these items being associated with a lower risk of developing CVD and a better prognosis of CVD.

- Psychosocial risk factors act as barriers to treatment adherence and efforts to improve lifestyle, as well as to promoting health in patients and populations.


The IPD-Work Consortium, led by professor Mika Kivimäki

Meta-analyses of published studies

- Canada
- North Ireland
- Japan
- Denmark
- Australia
- New Zealand
- Israel

N=640,000

IPD-Work Consortium
- Finland
- Sweden
- Denmark
- Netherlands
- Belgium
- UK
- Germany
- France

N=200,000

Open access data archives
- USA
- UK
- Australia

N=70,000
Job strain as a risk factor for coronary heart disease:
a collaborative meta-analysis of individual participant data


www.thelancet.com  Published online September 14, 2012  http://dx.doi.org/10.1016/S0140-6736(12)60994-5
Job strain as a risk factor for coronary heart disease: a collaborative meta-analysis of individual participant data

<table>
<thead>
<tr>
<th></th>
<th>Events (n)</th>
<th>Total (n)</th>
<th>HR (95% CI)</th>
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<tr>
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<tr>
<td>First 3 years excluded</td>
<td>1824</td>
<td>196,939</td>
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<td>1411</td>
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<td>SES (13 studies)</td>
<td>2358</td>
<td>197,473</td>
<td>1.17 (1.05-1.31)</td>
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<tr>
<td>SES—health behaviours</td>
<td>1068</td>
<td>102,586</td>
<td>1.21 (1.03-1.44)</td>
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<tr>
<td>SES—Framingham score</td>
<td>684</td>
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<td><strong>Publication status</strong></td>
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<td>573</td>
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<td>92,387</td>
<td>1.18 (1.01-1.37)</td>
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<td>720</td>
<td>94,836</td>
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<td>1.45 (1.11-1.89)</td>
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<tr>
<td>All (13 studies)</td>
<td>2358</td>
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<td>1.23 (1.10-1.37)</td>
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*Figure 2: Association of job strain with incident coronary heart disease in relation to study follow-up periods, adjustments, publication status for data, and geographical region*
Conclusions in a nutshell
IPD-Work -consortium

- Job strain is associated with a 20% increased risk of CVD
- If job strain was removed, CVD events and deaths would decrease by approximately 3 out of 1000 stressed employees in 10 years
- Leading a healthy lifestyle would decrease CVD events and deaths by approximately 17 out of 1000 employees with unhealthy life style in 10 years.


Interpretation
Our findings suggest that prevention of workplace stress might decrease disease incidence; however, this strategy would have a much smaller effect than would tackling of standard risk factors, such as smoking.
Long working hours and risk of coronary heart disease and stroke: a systematic review and meta-analysis of published and unpublished data for 603,838 individuals


Interpretation Employees who work long hours have a higher risk of stroke than those working standard hours; the association with coronary heart disease is weaker. These findings suggest that more attention should be paid to the management of vascular risk factors in individuals who work long hours.

Published Online
August 20, 2015
http://dx.doi.org/10.1016/S0140-6736(15)60295-1
### Figure 3: Cumulative meta-analysis of published and unpublished data of the association between long working hours and incident stroke

Estimates adjusted for age, sex, and socioeconomic status.
Finnish Public Sector study 1997/98-2030

10Town study
PI Tuula Oksanen (2016-)
Helsinki, Espoo, Vantaa, Turku, Tampere, Oulu
Nokia, Naantali, Raisio, Valkeakoski, Virrat
Altogether ca. 30% of Finnish public sector employees

Hospital personnel well-being and health study
PI Mika Kivimäki
Hospital districts of Varsinais-Suomi, Pirkanmaa, Kanta-Häme and Vaasa
Pietarsaari health and social services, Municipal Authority of Wellbeing in Forssa district

Biannual surveys sent to 110 000 employees, response rates 65-74 %
Work stress (job strain)

<table>
<thead>
<tr>
<th>Job Category</th>
<th>2012 %</th>
<th>2014 %</th>
<th>2016 %</th>
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<tr>
<td>Kitchen personnel</td>
<td>37.2</td>
<td>41.1</td>
<td>39.5</td>
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<tr>
<td>Child care</td>
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<td>28.6</td>
<td>26.1</td>
</tr>
<tr>
<td>Private child care</td>
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<td>9.1</td>
<td>8.9</td>
</tr>
<tr>
<td>Practical nurse</td>
<td>40.9</td>
<td>40.5</td>
<td>35.3</td>
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<tr>
<td>Dental nurse</td>
<td>51.9</td>
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<td>55.1</td>
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<tr>
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<tr>
<td>School assistant</td>
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<td>22.7</td>
<td>22.7</td>
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<tr>
<td>Fire fighter</td>
<td>25.2</td>
<td>23.2</td>
<td>20.0</td>
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</tbody>
</table>

10Town study-level

2012 20.8%
2014 23.5%
2016 22.3%
Work load exceeds my tolerance

<table>
<thead>
<tr>
<th>2012</th>
<th>2014</th>
<th>2016</th>
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<td></td>
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# = Ei tarpeeksi vastanneita
## = Ei aineistoa kyseiseltä vuodelta

10Town study-level
2012  30.6 %
2014  33.4 %
2016  38.6%

© FIOH
Experienced violence from customers/patients

Source: 10town study, FIOH

10Town study-level
2012 28.6%
2014 28.4%
2016 30.1%
Obesity (BMI > 30)

- **2012**: 16.6%
- **2014**: 16.2%
- **2016**: 17.7%

Source: 10Town study, FIOH
Poor work ability

<table>
<thead>
<tr>
<th>Occupation</th>
<th>2012</th>
<th>2014</th>
<th>2016</th>
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<tbody>
<tr>
<td>Kitchen personnel</td>
<td>33.3</td>
<td>26.6</td>
<td>26.4</td>
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<tr>
<td>Child care</td>
<td>25.0</td>
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<tr>
<td>Practical nurse</td>
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<td>Dental nurse</td>
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Source: 10Town study, FIOH
Occupational health inequalities in sickness absence

Source: 10Town study, FIOH
Work and health at the workplace

Leadership and management

Resources, organising work

Health and wellbeing of personnel

Health and wellbeing of patients/customers

Challenges/initiatives in the workplace

- Occupational health & safety
- Socially sustainable development/risk factor clustering
- Health inequalities between occupations
- The added complexity of resources, employee well-being, and the quality of care

Workplace health promotion
Workplace health promotion for all workers
Traditional workplace health promotion for all
Make healthy choices available for all
Workplace health promotion for high-risk groups
New approach for health promotion at workplaces?

Workplace health promotion is often disease-prevention-oriented:
• Interventions target individuals with health risks, such as developing diabetes. Thereby, the main motivation is the long-term benefit, for example, by not getting type 2 diabetes in 20 years time.

Great opportunity is to move the goal to promotion of work ability (recovery from work) and safety.
• Health promotion actions at workplaces could/should be tailored according to the demands and effects of work and occupation for/on health. This brings short-term benefits.
Different demands and effects of work and occupation for/on health

Non-alert truck driver in a night shift

Obese nurse that cannot help patients out of bed

Exhausted expert in the 5th Nordic Work and Rehabilitation conference
Why health promotion @ workplaces is important?

- Workplace is an potential arena for health promotion, but underused.
- We spend up to 1600 hours per year in the workplace – small actions daily mean a lot
- Prevention of chronic diseases is important to prevent work disability. But the prevention of diseases is not enough in specific occupations for example in construction workers. We need to look at work ability, recovery from work and thereby safety at work.
- Work ability and recovery from work and safety at work can be enhanced by healthy lifestyles.
- It is important to take into account the demands and effects of the occupation and work tasks in the promotion of healthy lifestyles.
Evidence-based health promotion @ work

PI Jaana Laitinen, co-PI Tuula Oksanen

Funding period: 1 April 2016 to 31 August 2019
Evidence-based health promotion @ workplaces (Promo@Work)

- The effects of counseling delivered through a native mobile application on microentrepreneurs’ work ability and work recovery (Promo@Work entrepreneurs) – intervention study

- Guidelines for health promotion at workplaces
  - Tailored WHP guidelines for microenterprises
The effects of counseling delivered through a mobile application on microentrepreneurs’ work ability and work recovery

Themes:
- Workability
- Stress management
- Efficient working time
- Recovery from work every day
- Sleep
- Dietary habits
- Physical activity

Behaviour change techniques
Self Determination Theory
Transtheoretical Change model

Persuasive Systems Design
Outcomes: Perceived work ability and Need for recovery

• Co-created with microentrepreneurs in design workshops
Production of evidence-based WHP guidelines

Evidence based WHP guidelines are planned to contain:

1) review of research background,
2) from research into practice: practical implications (co-created and evaluated with stakeholders and actors),
3) tools and measures to improve and evaluate the effectiveness of the actions,
4) examples and operational plan of WHP actions for workplaces

- Scoping and systematic reviews
- Workshops with stakeholders and actors
  - Advocacy and co-creation
- Lists/action tools including effective intervention actions at workplaces (from reviews)
- Development of operational plan
- Policy briefs
- Road show to implement WHP guidelines 11/2018-3/2019
Promo@Work - reviews of interventions at workplaces...

- to enhance recovery from cognitive or physical workload in healthy workers (scoping review)
- to promote work ability by increasing physical activity at workplaces among sedentary workers
- to promote work ability by increasing physical activity among workers with physically strenuous work
- for increasing physical activity and/or promoting healthy dietary habits among workers in small businesses
- to promote healthy dietary habits at workplaces
- to promote sleep among workers at workplaces
- predictors of psychological well-being among microentrepreneurs
Interventions to enhance recovery from work in healthy workers, a scoping review

Verbeek, Jos; Ruotsalainen, Jani; Laitinen, Jaana; Korkiakangas, Eveliina; Lusa, Sirpa; Mänttäri, Satu; Oksanen, Tuula. Accepted for publication in Occupational Medicine.
A scoping review to examine the range and nature of the evidence: recovery from work

- We focussed on the two most general types of workload, cognitive and physical, and excluded recovery from specific working conditions such as heat stress or shift work.
- We found 28 studies, of which 18 were RCTs, evaluating seven types of interventions
  - For **person-directed** interventions aiming at behaviour change, we found relaxation techniques, training of recovery experiences, promotion of physical activity, and stress management. The most promising interventions seem to be to educate workers in effective personal strategies
  - For **work-directed** interventions aiming at changes in work organisation or work tasks, there were participatory changes, breaks, and work load changes.
  - Study authors reported a beneficial effect of the intervention in 14 studies.
  - We found no association between the type of work and recovery outcomes.
WHP nutrition review

Aims:

to identify effective diet-related workplace interventions and
to assess whether they were tailored according to occupation

Simunaniemi, Korkiaotangas, Vehmas, Oksanen & Laitinen
13 effective studies were reviewed

- We identified 3,199 articles and 13 articles met the final inclusion criteria of diet-related interventions conducted at workplaces that reported statistically significant intervention effects.

- Randomized controlled trials (RCTs) were eligible if they were not exclusively focused on high-risk individuals.

- Effective interventions consisted of:
  - combinations of delivery of nutritional and educational information,
  - individual and group counselling,
  - modification of food content, availability and price,
  - education of cafeteria workers.
WHP guidelines - co-creation and advocacy in collaboration with

- Ministry of Social Affairs and Health and different committees of the Parliament
- Trade unions, employers’ organizations, insurance companies
- Health care practitioners, counselling professionals, work safety network
- Occupational health, work safety networks, different size workplaces/enterprises
eBooks available


- [https://www.openaccessgovernment.org/health-promotion-in-the-workplace/45608/](https://www.openaccessgovernment.org/health-promotion-in-the-workplace/45608/)
Thank you for your attention!

Tuula.oksanen@ttl.fi