



Finnish Institute of
Occupational Health

WELL-BEING
THROUGH WORK

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



Editorial

Scand J Work Environ Health [2018;44\(5\):441-442](#)

doi:10.5271/sjweh.3764

Could we have better occupational health guidelines, please?

by [Verbeek J](#)

Affiliation: Finnish Institute of Occupational Health, Cochrane Work, Kuopio, Finland. jos.verbeek@ttl.fi

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



European Heart Journal (2016) **37**, 2315–2381
doi:10.1093/eurheartj/ehw106

JOINT ESC 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)

How to estimate total cardiovascular risk

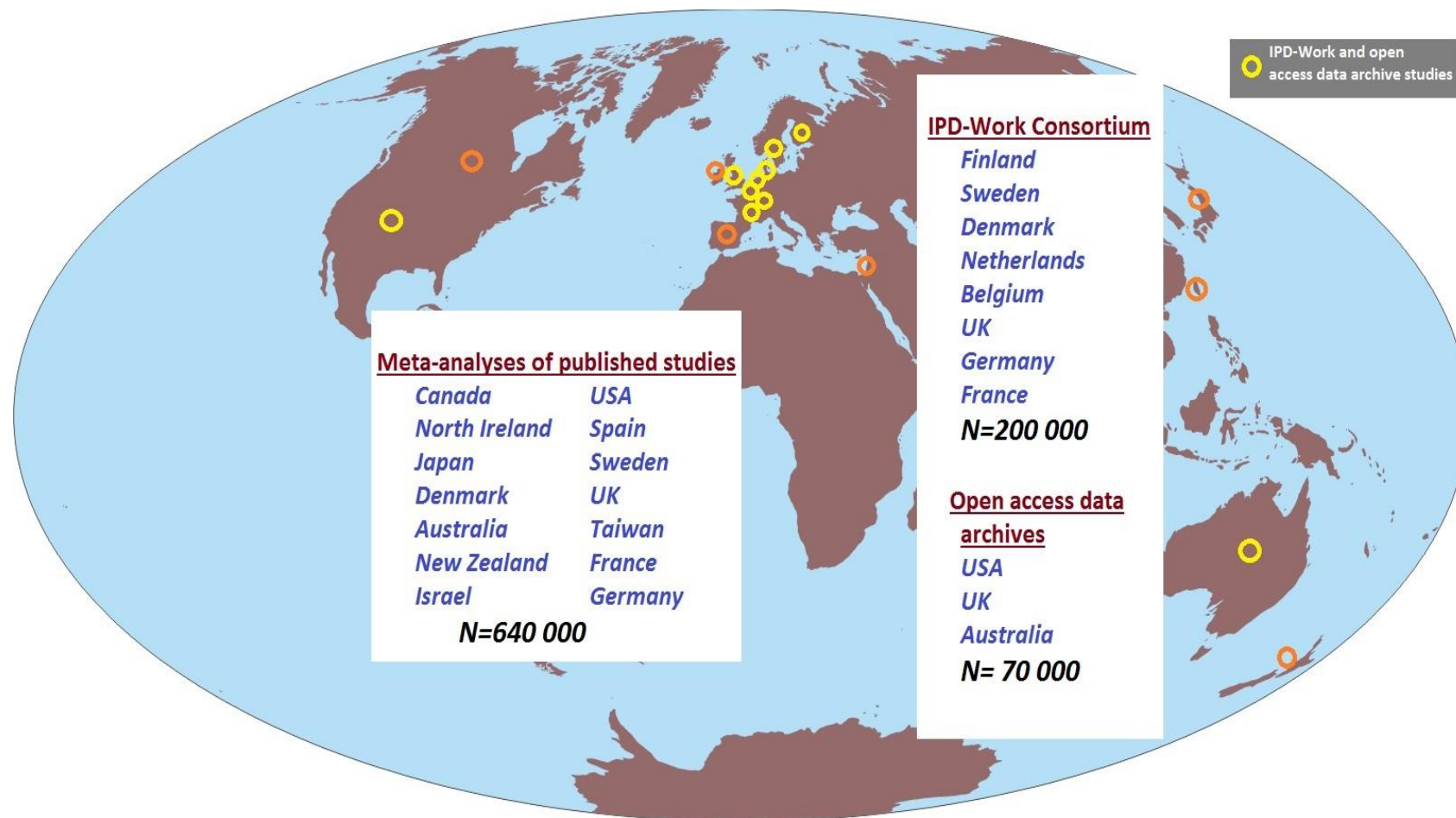
2.4.2 Psychosocial risk factors

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.

98. Kivimäki M, Nyberg ST, Batty GD, Fransson EI, Heikkilä K, Alfredsson L, Björner JB, Borritz M, Burr H, Casini A, Clays E, De Bacquer D, Dragano N, Ferrie JE, Geuskens GA, Goldberg M, Hamer M, Hooftman WE, Houtman IL, Joensuu M, Jokela M, Kittel F, Knutsson A, Koskenvuo M, Koskinen A, Kouvonen A, Kumari M, Madsen IE, Marmot MG, Nielsen ML, Nordin M, Oksanen T, Pentti J, Rugulies R, Salo P, Siegrist J, Singh-Manoux A, Suominen SB, Vaananen A, Vahtera J, Virtanen M, Westerholm PJ, Westerlund H, Zins M, Steptoe A, Theorell T. Job strain as a risk factor for coronary heart disease: a collaborative meta-analysis of individual participant data. *Lancet* 2012;**380**:1491–1497.

100. Kivimäki M, Jokela M, Nyberg ST, Singh-Manoux A, Fransson EI, Alfredsson L, Björner JB, Borritz M, Burr H, Casini A, Clays E, De Bacquer D, Dragano N, Erbel R, Geuskens GA, Hamer M, Hooftman WE, Houtman IL, Jockey KH, Kittel F, Knutsson A, Koskenvuo M, Lunau T, Madsen IE, Nielsen ML, Nordin M, Oksanen T, Pejtersen JH, Pentti J, Rugulies R, Salo P, Shipley MJ, Siegrist J, Steptoe A, Suominen SB, Theorell T, Vahtera J, Westerholm PJ, Westerlund H, O'Reilly D, Kumari M, Batty GD, Ferrie JE, Virtanen M. 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. *Lancet* 2015;**386**:1739–1746.



Articles

Job strain as a risk factor for coronary heart disease: a collaborative meta-analysis of individual participant data



Mika Kivimäki, Solja T Nyberg, G David Batty, Eleonor I Fransson, Katriina Heikkilä, Lars Alfredsson, Jakob B Bjorner, Marianne Borritz, Hermann Burr, Annalisa Casini, Els Clays, Dirk De Bacquer, Nico Dragano, Jane E Ferrie, Goedele A Geuskens, Marcel Goldberg, Mark Hamer, Wendela E Hooftman, Irene L Houtman, Matti Joensuu, Markus Jokela, France Kittel, Anders Knutsson, Markku Koskenvuo, Aki Koskinen, Anne Kouvonen, Meena Kumari, Ida E H Madsen, Michael G Marmot, Martin L Nielsen, Maria Nordin, Tuula Oksanen, Jaana Pentti, Reiner Rugulies, Paula Salo, Johannes Siegrist, Archana Singh-Manoux, Sakari B Suominen, Ari Väänänen, Jussi Vahtera, Marianna Virtanen, Peter J M Westerholm, Hugo Westerlund, Marie Zins, Andrew Steptoe, Töres Theorell, for the IPD-Work Consortium

www.thelancet.com Published online September 14, 2012 [http://dx.doi.org/10.1016/S0140-6736\(12\)60994-5](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

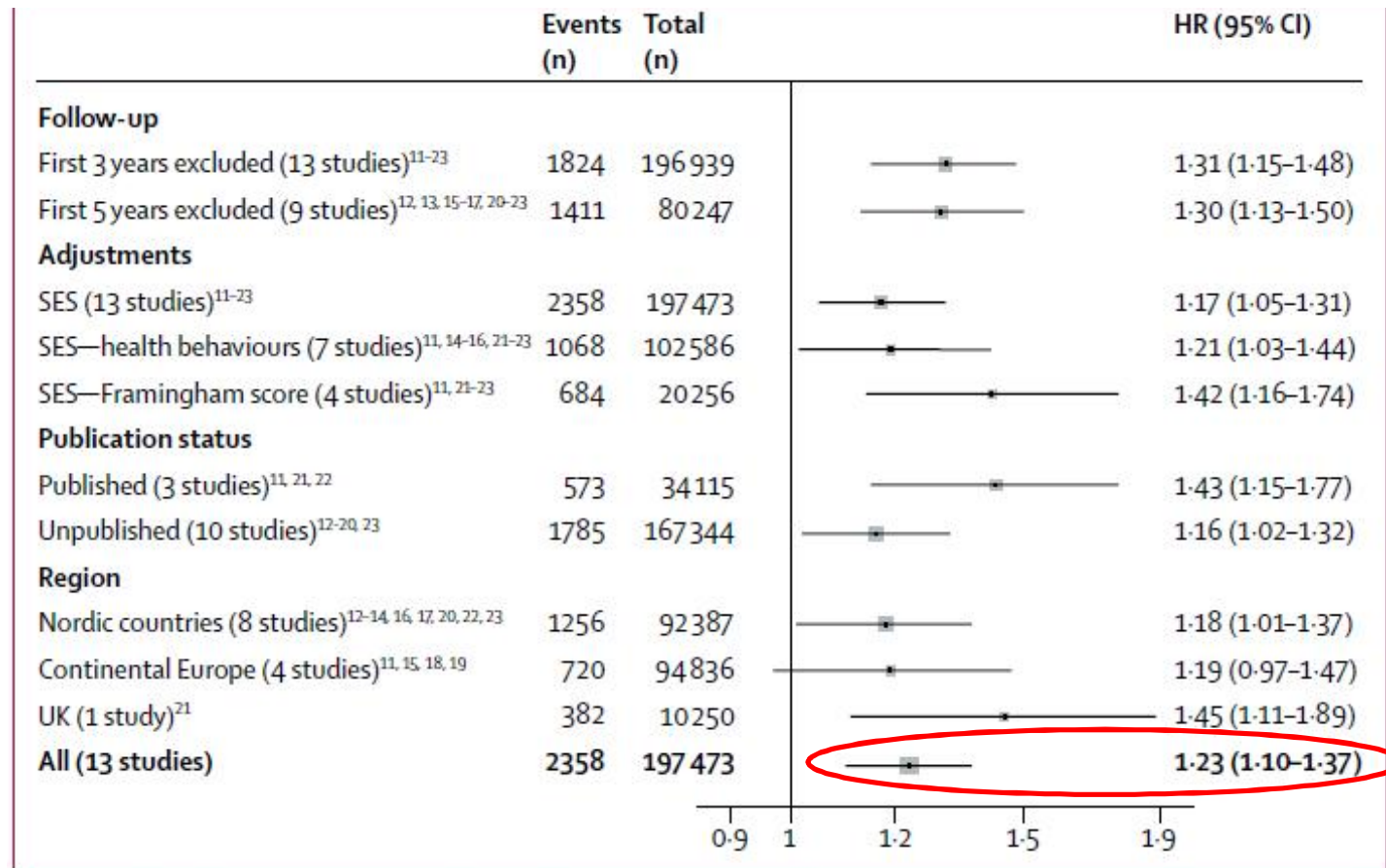


Figure 2: Association of job strain with incident coronary heart disease in relation to study follow-up periods, adjustments, publication status for data, and geographical region

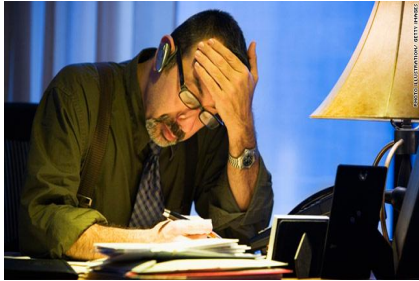
Conclusions in a nutshell

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 .

Kivimäki M et al. *Lancet* 2012;380:1491-1497.

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

Mika Kivimäki, Markus Jokela, Solja T Nyberg, Archana Singh-Manoux, Eleonor I Fransson, Lars Alfredsson, Jakob B Bjorner, Marianne Borritz, Hermann Burr, Annalisa Casini, Els Clays, Dirk De Bacquer, Nico Dragano, Raimund Erbel, Goedele A Geuskens, Mark Hamer, Wendela E Hoofman, Irene L Houtman, Karl-Heinz Jöckel, France Kittel, Anders Knutsson, Markku Koskenvuo, Thorsten Lunau, Ida E H Madsen, Martin L Nielsen, Maria Nordin, Tuula Oksanen, Jan H Pejtersen, Jaana Pentti, Reiner Rugulies, Paula Salo, Martin J Shipley, Johannes Siegrist, Andrew Steptoe, Sakari B Suominen, Töres Theorell, Jussi Vahtera, Peter J M Westerholm, Hugo Westerlund, Dermot O'Reilly, Meena Kumari, G David Batty, Jane E Ferrie, Marianna Virtanen, for the IPD-Work Consortium

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](http://dx.doi.org/10.1016/S0140-6736(15)60295-1)

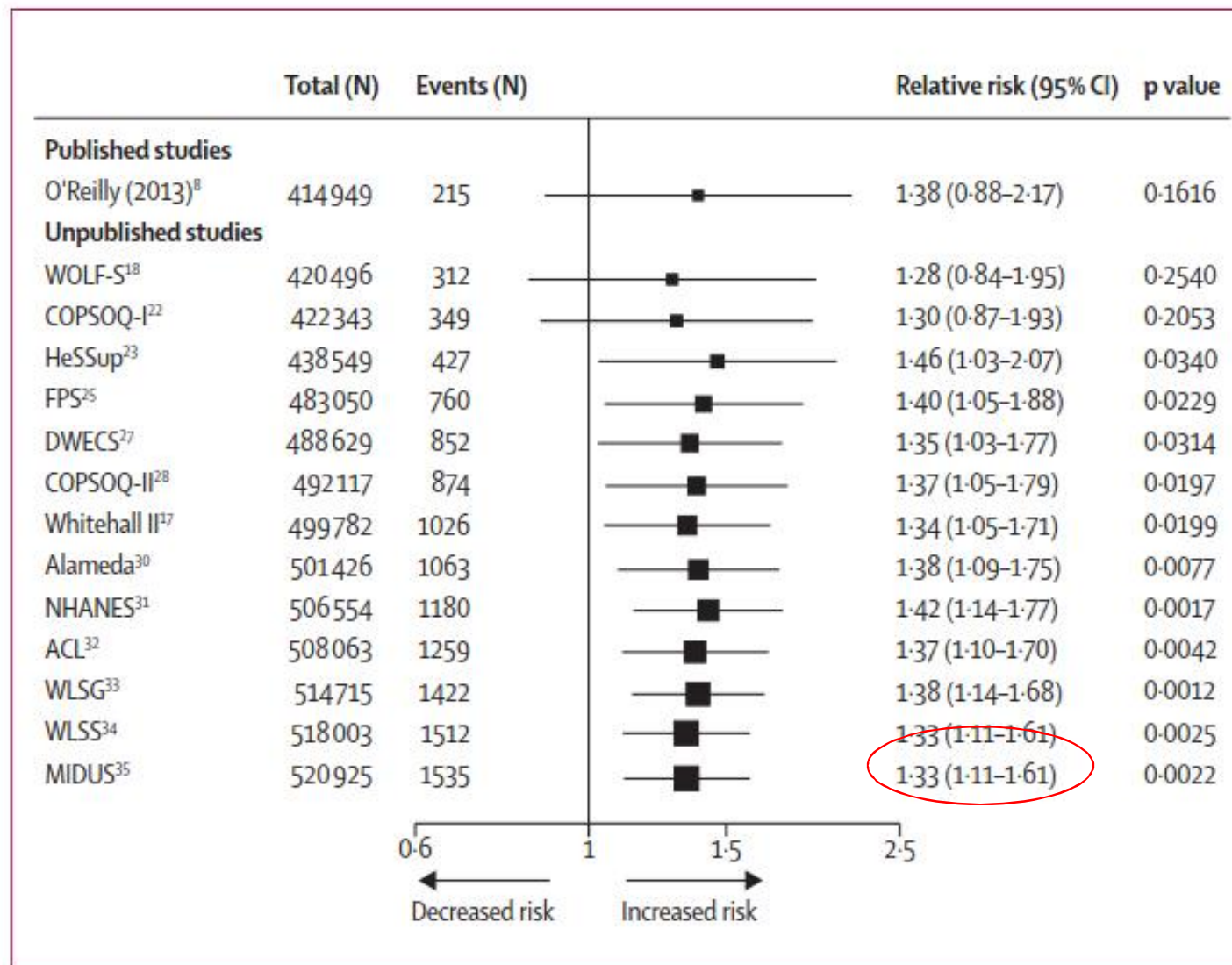


Figure 3: Cumulative meta-analysis of published and unpublished data of the association between long working hours and incident stroke

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

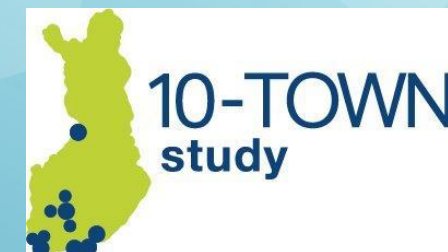
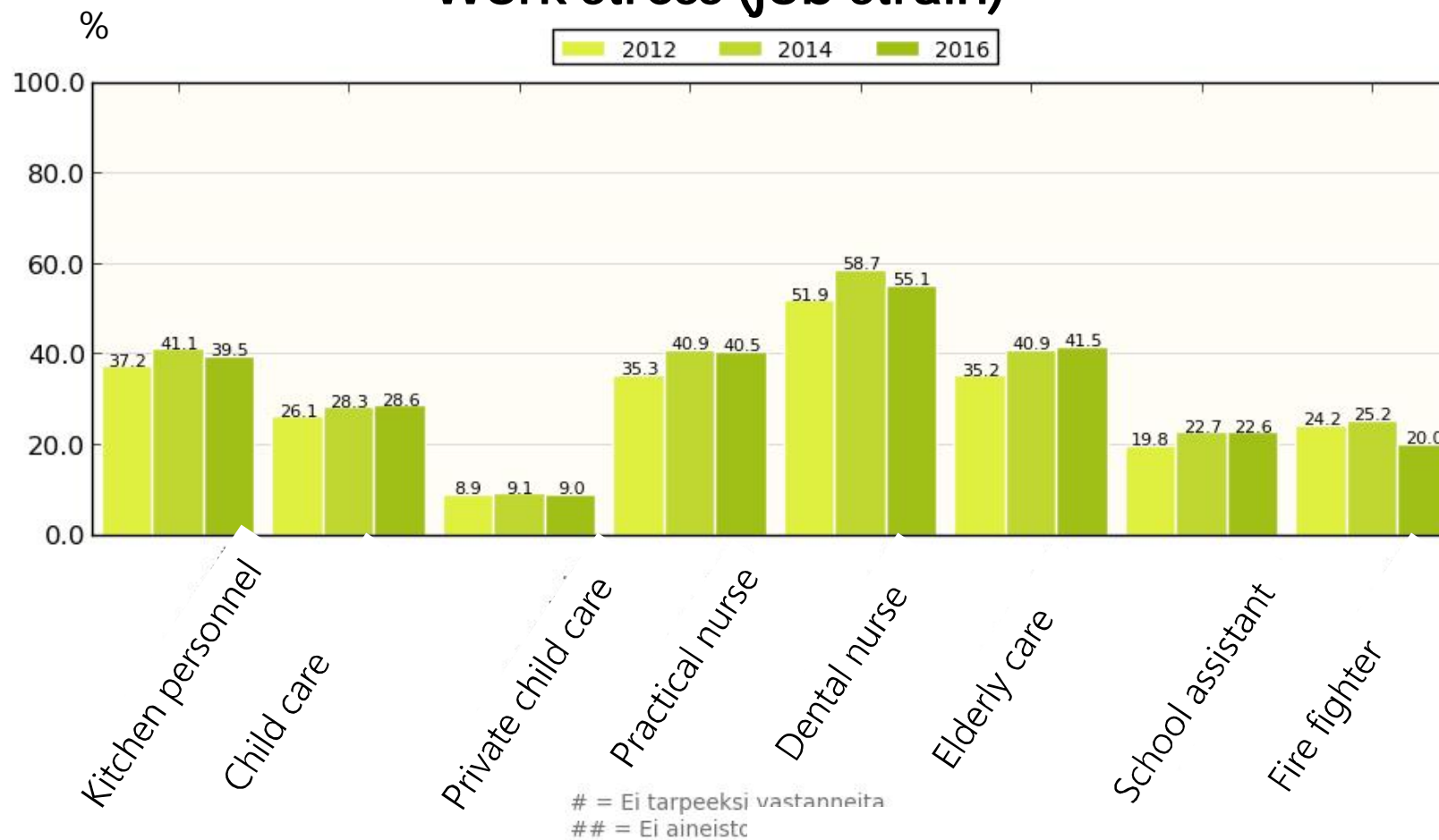
PI Mika Kivimäki

Hospital districts of Varsinais-Suomi, Pirkanmaa, Kanta-Häme and Vaasa

Pietarsaari health and social services, Municipal Authority of Wellbeing in Forssa district

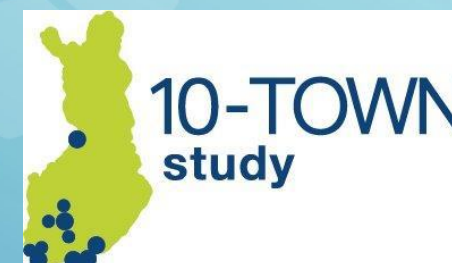
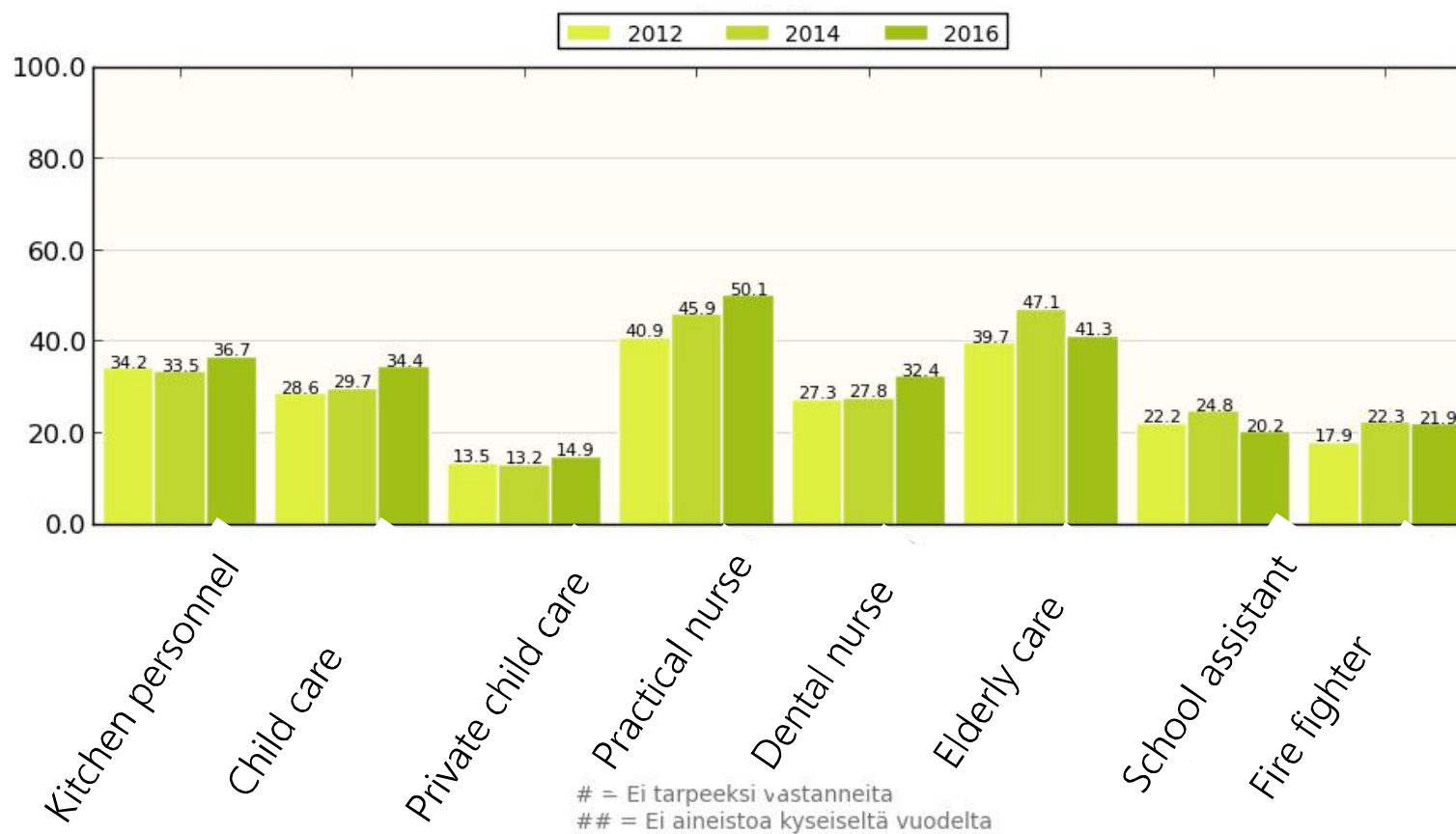
Biannual surveys sent to 110 000 employees, response rates 65-74 %

Work stress (job strain)



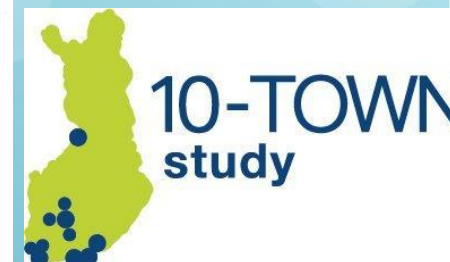
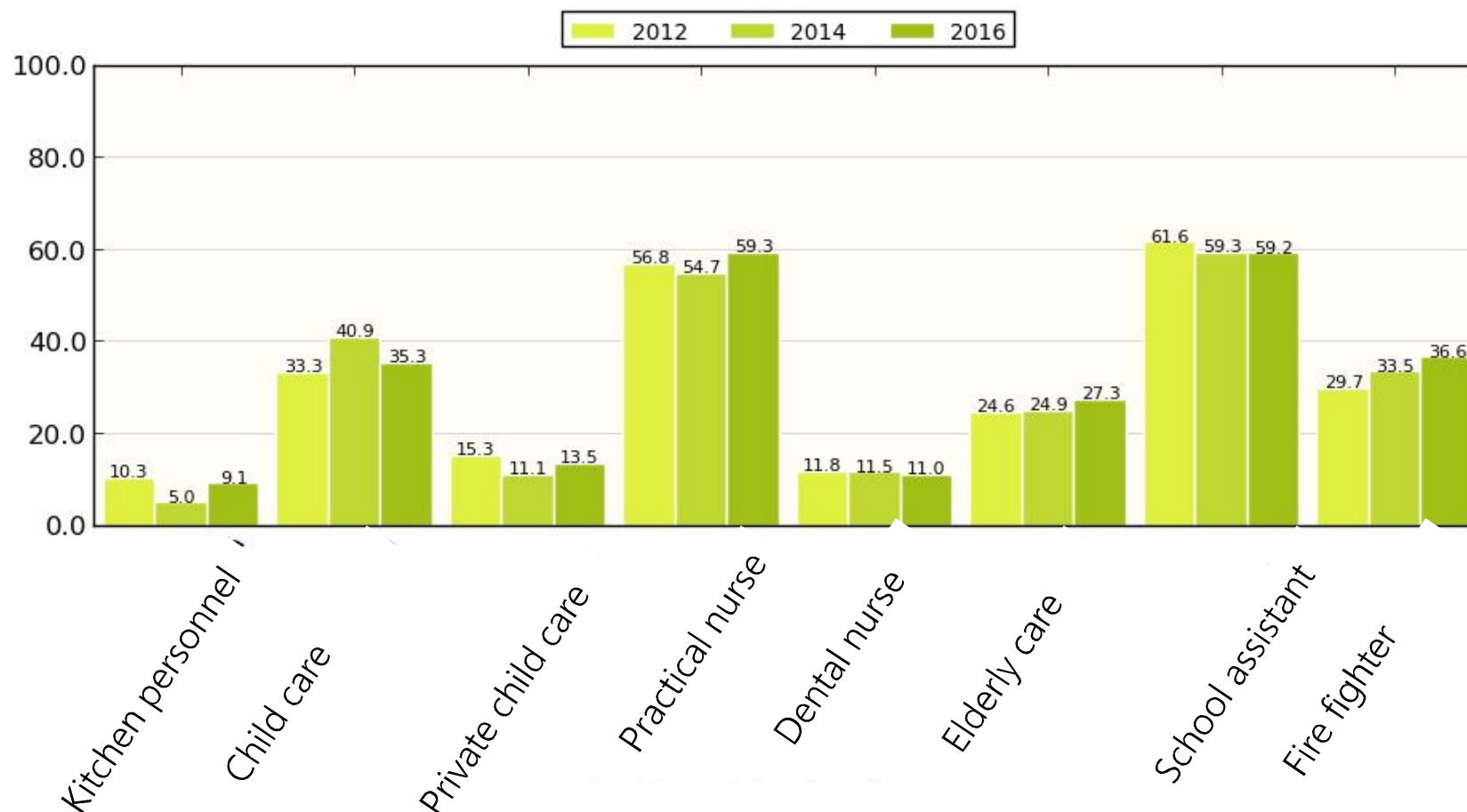
10Town study-level	
2012	20,8 %
2014	23,5 %
2016	22,3%

Work load exceeds my tolerance



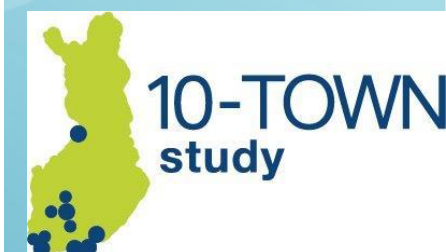
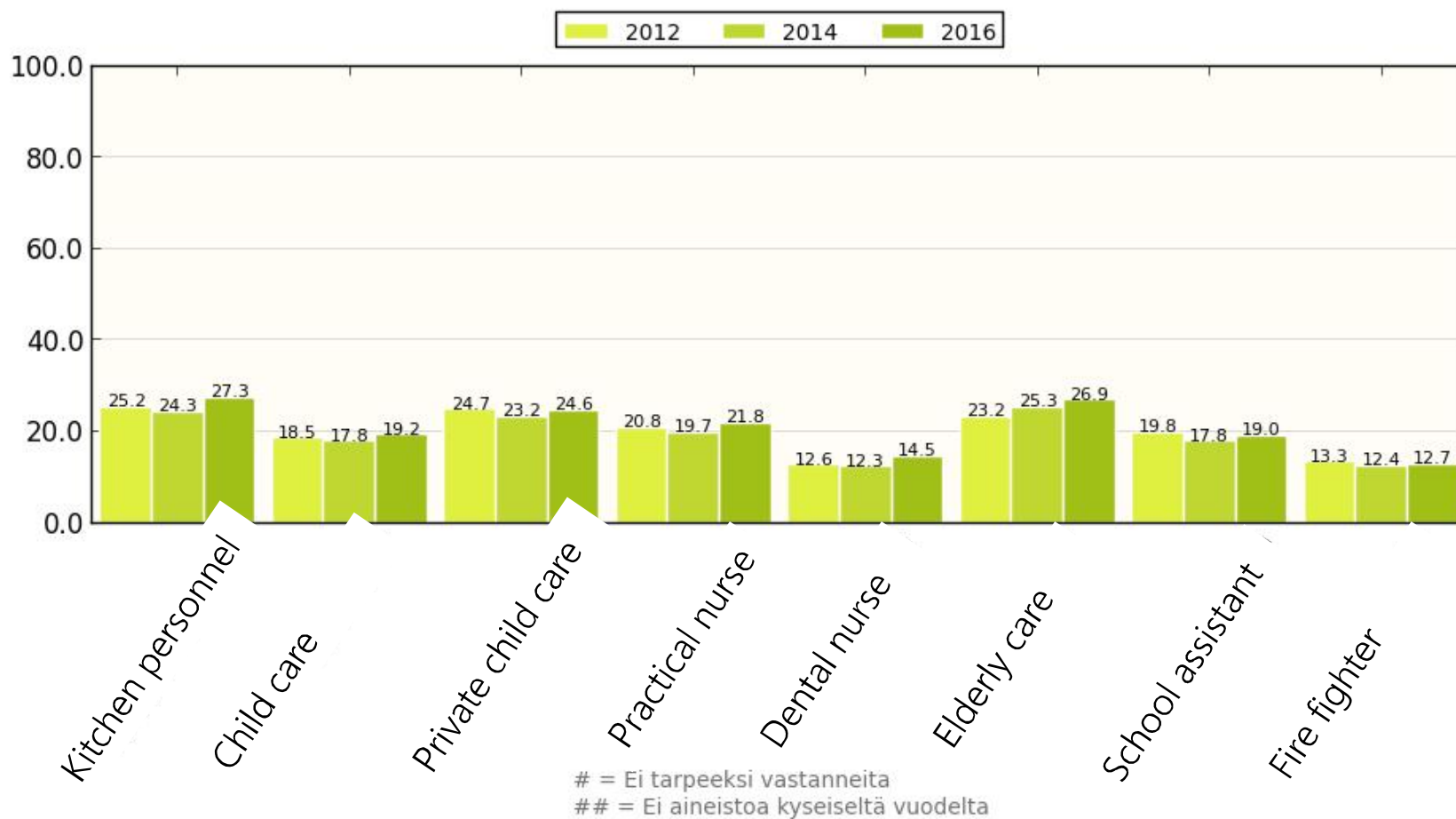
10Town study-level	
2012	30,6 %
2014	33,4 %
2016	38,6%

Experienced violence from customers/patients



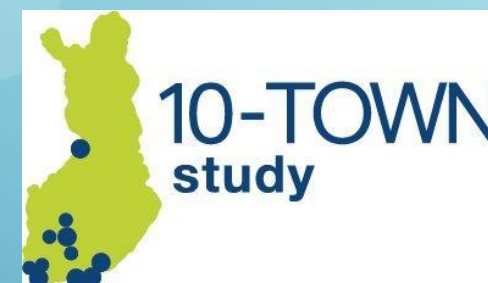
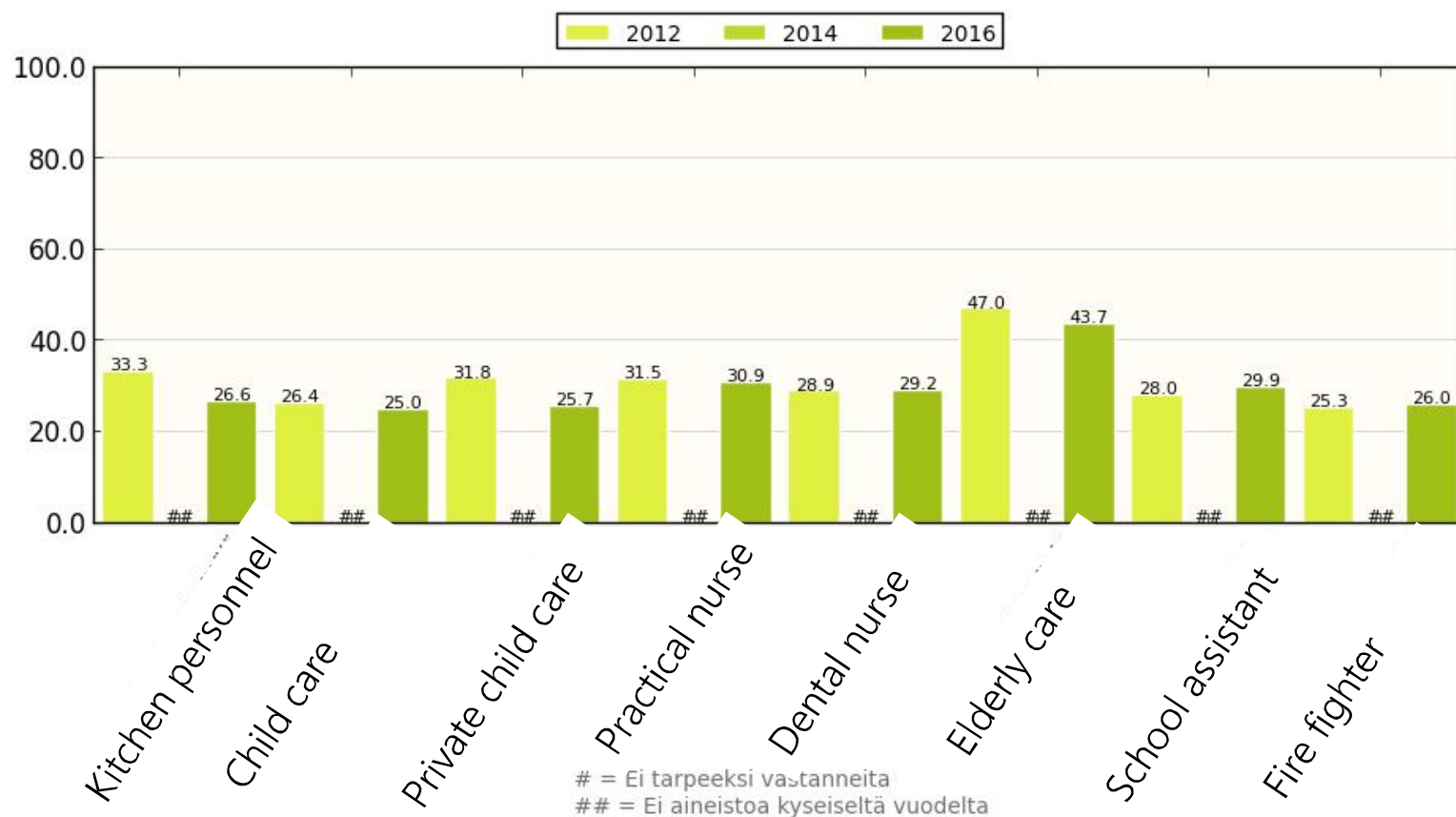
10Town study-level	
2012	28,6 %
2014	28,4 %
2016	30,1%

Obesity (BMI > 30)



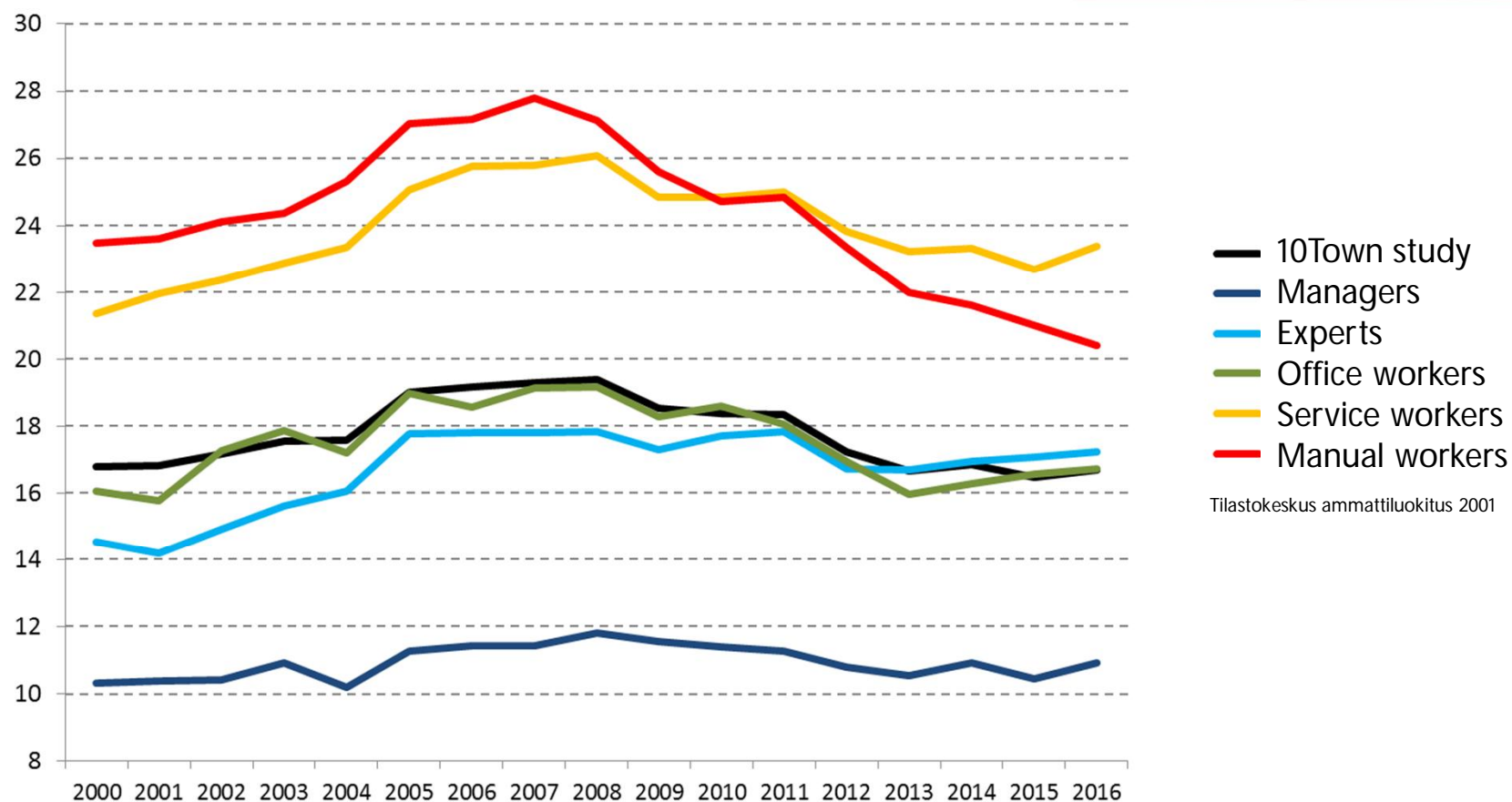
10Town study-level
2012 16,6 %
2014 16,2 %
2016 17,7%

Poor work ability



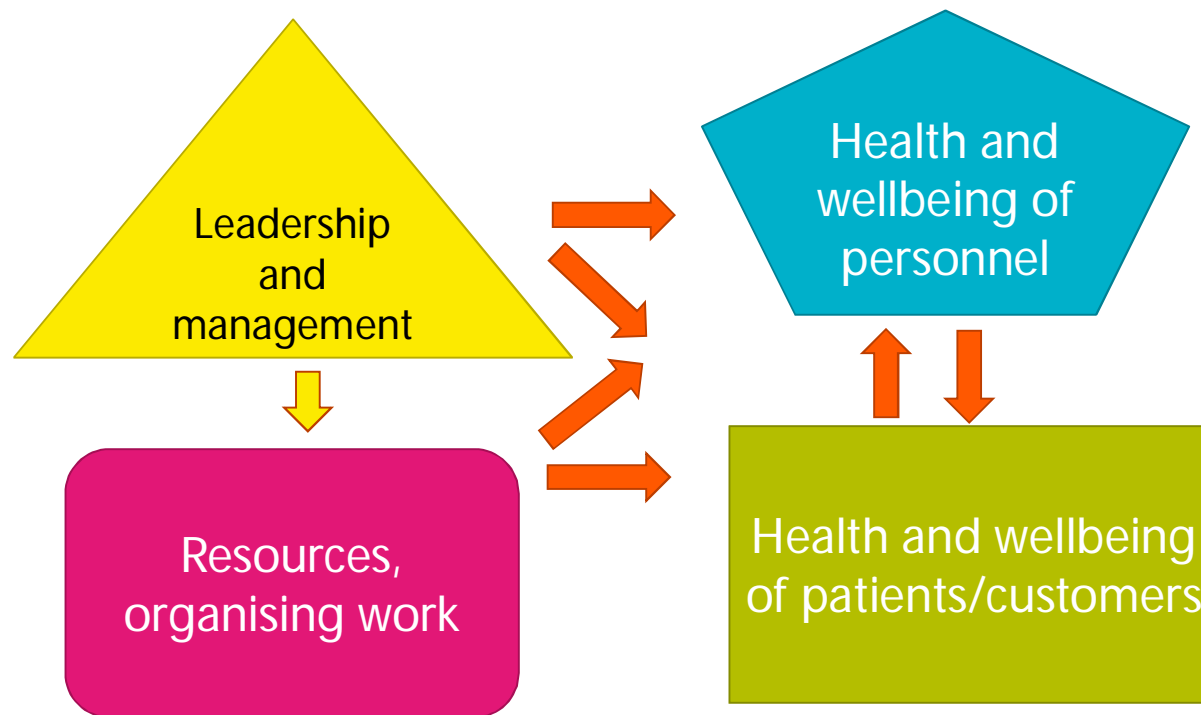
10Town study-level
2012 25,8 %
2014
2016 24,6 %

Occupational health inequalities in sickness absence



Source: 10Town study, FIOH

Work and health at the workplace



References: Kivimäki et al. Lancet 2012, Kivimäki et al. Lancet 2015. Kivimäki et al. Lancet Diabetes Endocrinol 2015. Juvani et al. SWJEH 2016. Virtanen et al. BMJ 2013. Virtanen et al. BrJPsych 2011. Virtanen et al. AmJPsych 2008. Virtanen et al. MedCare 2012. Ervasti et al. EJPH 2012. Virtanen et al. AJE 2010. Oksanen et al. JHypertens 2012.

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



Välkommen till ett
rökfritt sjukhusområde
Welcome to a non-smoking hospital



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.





Finnish Institute of
Occupational Health



Promo@Work

Evidence-based health promotion @work

PI Jaana Laitinen, co-PI Tuula Oksanen

Funding period: 1 April 2016 to 31 August 2019



ACADEMY OF FINLAND



UNIVERSITY OF OULU



UNIVERSITY
OF TAMPERE



Universität zu Köln

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:

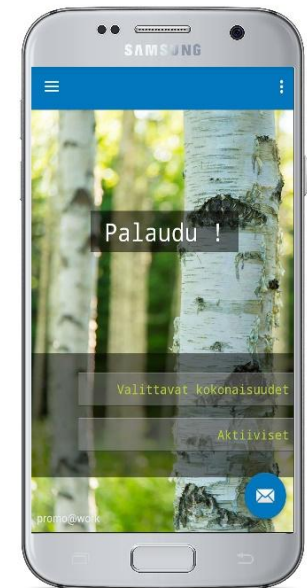
Workability
Stress management
Efficient working time
Recovery from work every day
Sleep
Dietary habits
Physical activity

Behaviour change techniques

Persuasive Systems Design

Self Determination Theory
Transtheoretical Change model

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; Mänttari, 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

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

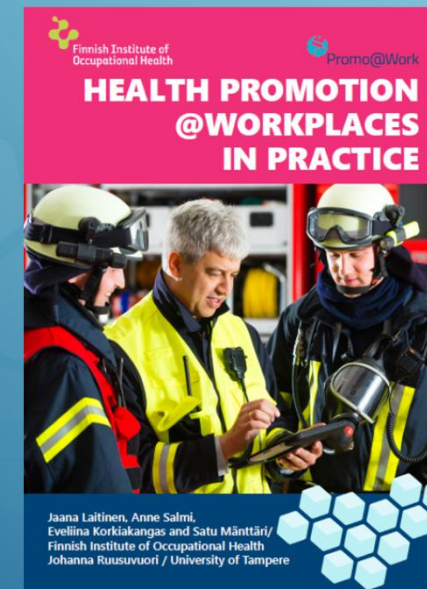


TOIMIHENKILÖKESKUSJÄRJESTÖ



eBooks available

- <https://www.openaccessgovernment.org/wp-content/uploads/2017/10/Evidence-Based-Health-Promo-ebook-web.pdf>
- <https://www.openaccessgovernment.org/health-promotion-in-the-workplace/45608/>





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Thank you for your attention!

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