Evolution of the Nordic Work Environment and Health Model: 60 years experience.

Prof. Jorma Rantanen, MD, PhD
Musculoskeletal disorders
• Measurement and analysis of MS workload
• Ergonomic interventions
• Norden-wide training rounds by NIVA


Standardised Nordic questionnaires for the analysis of musculoskeletal symptoms.
Kuorinka I1, Jonsson B, Kilbom A, Vinterberg H, Biering-Sørensen F, Andersson G, Jørgensen K.

Abstract
Standardised questionnaires for the analysis of musculoskeletal symptoms in an ergonomic or occupational health context are presented. The questions are forced choice variants and may be either self-administered or used in interviews. They concentrate on symptoms most often encountered in an occupational setting. The reliability of the questionnaires has been shown to be acceptable. Specific characteristics of work strain are reflected in the frequency of responses to the questionnaires.
Collaboration on psychosocial factors

- New theoretical paradigms (Karasek)
- Branch studies
- Interventions e.g. hospitals
Health services sector
Branch surveys
Risk identification
Work environment
Model intervention
Figure 1. Consumption curve of asbestos in Finland in 1925–2008 and related health outcomes (Rantanen 2014a)
Nordic Work Environment Program 2001–2004

Four priorities:

• Full employment: Matching between supply/demand of the workforce

• Good work: Safety in the work environment and in the work life

• Lowering the borders in the Nordic Region: Further strengthening of Nordic collaboration

• Promote the Nordic welfare model, European perspective and Neighbourhood collaboration
Nordic WE Programme: Good Work

- New forms of employment,
- Working times
- Growing turnover
- New forms of organization
- Prevention of exhaustion, early exclusion
- Inter-sectorial collaboration between the OSH and health authorities
- Work environment research topics
  - work life
  - safety
  - psychosocial factors
  - work organization

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Occupational health services, OHS

Early industrialisation: Bruksläkare

1880’s Factory acts providing for health service and first aid

1912’s Swedish law on occupational safety

1920’s safety commitees

1945- Continuous systematic development of OHS
Collective agreement in Sweden
OHA Law in Finland and Norway
OSH Law in Denmark
PH Law in Iceland
Employees covered by OHS as a proportion of the total employee population (Source: Rantanen 2010)

Four service provision models:
• Municipal health centre
• Big company own OHS
• Group Service
• Private doctors’ centres
World average max.  Survey average

ICOH 47 Country survey results
- OHS policy in 70% of countries
- >50% coverage in 38% of countries
- Variation 3% - 100%, average 20%
- Estimated world coverage at the maximum 15% (Rantanen et al. SJWEH 2013)

Coverage gap
- ICOH survey 80% gap
- Global estimate 15.5%
= 2.7 billion people without services
Evolution of Safety & Health paradigms

STAGE I
Sporadic voluntary

STAGE II
Reactive
Injury treatment
Compensation

STAGE III
Risk-oriented
Preventive

STAGE IV
Structural safety
Safety culture
Sustainability
Inclusive

STAGE IV
SAFETY I
SAFETY II

Coverage


Source: Modified from Rantanen 2008
Internationally

ILO

1948 Joint ILO/WHO Definition on Occupational Health Services
1959 ILO Recommendation No. 112 On Occupational Health Services
1981 ILO Convention No. 155 on Occupational Safety and Health
1985 ILO Convention No. 161 on Occupational Health Services
1995 Joint ILO/WHO definition of Occupational Health
2001 ILO Renewed List of Occupational Diseases

WHO

1970’s WHO Guide on Occupational Epidemiology
1980’s WHO and psychosocial occupational health
1993 WHO Work-related Diseases
1996 WHO Global Strategy on Occupational Health for All
2007 WHO Global Plan of Action; Workers’ Health

In all these a strong Nordic Contribution!
LIST OF OCCUPATIONAL DISEASES
(revised 2010)

Identification and recognition
of occupational diseases:
Criteria for incorporating diseases
in the ILO list of occupational diseases
Neighbourhood: Baltic Sea network on Occupational Health and Safety

- Idea in Nov. 1995
- WHO/EURO as a godfather
- Internet chosen as a tool
- A forum for information and development
New challenges of the 21st Century

- Ageing workforce and working careers
- Psychosocial hazards: Global stress epidemic
- Work-related diseases, particularly MSDs, CVDs and Cancer
- New technologies and substances; Nano
- New biohazards (e.g. SARS, Swine Flu, Ebola...)
- Climate change
- Green technologies and green jobs
- Globalization as a whole
- New political, social and economic priorities
Work life expectancy (WLE) at 15 years and employment expectancy (EE) (years) in EU Countries 2007 (both genders) (Source: ETK Finland, 2011)
EU28 192,000 deaths

Costs:

1. Magnitude of problems, injuries and diseases
2. How many days or years lost
3. Price of lost years
4. Other

(Takala et al. 2014)
# What causes work disability?

Sterud 2013: 45% of work disability attributed to work. (N= 18679, follow-up 3 years) Scand J Work Environ Health 2013;39(5):468-476

<table>
<thead>
<tr>
<th>Factor</th>
<th>PAR (two models)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low level of supportive leadership</td>
<td>9.57- 6.55</td>
</tr>
<tr>
<td>Bullying/harassment</td>
<td>7.55</td>
</tr>
<tr>
<td>Monotonous work</td>
<td>30.37-19.29</td>
</tr>
<tr>
<td>Neck flexion</td>
<td>12.90-11.17</td>
</tr>
<tr>
<td>Awkward lifting</td>
<td>15.04</td>
</tr>
<tr>
<td>Squatting/kneeling</td>
<td>10.03</td>
</tr>
<tr>
<td>Standing</td>
<td>29.93-21.28</td>
</tr>
<tr>
<td>Heavy lifting</td>
<td>3.06</td>
</tr>
<tr>
<td>Whole-body vibration</td>
<td>3.30-3.02</td>
</tr>
<tr>
<td>Heavy physical work</td>
<td>5.09-3.45</td>
</tr>
</tbody>
</table>

Low level of education, female gender, age, psychological distress, ergonomics
The Finnish model for integrating people with lowered work ability back to work.
An action model for lowered work ability

Source: STM 20134
Evolution of OSH & OH

1850 -
Curative
General diseases

1930 -
Injuries and diseases
Correction
Accident control, First aid
OD Diagnosis, OD Treatment

1970 -
OSH reform*
Work environment*
Prevention
Production processes
Technology, Safety

1980 -
Participation*
Ergonomics*
Chemical safety
OHS*

1990 -
Work Community*
Work organisation*
Psychology*

2000 -
Safety culture
Sustainable dev.
Inclusive WL*
Work ability
WRDs*

Source: Rantanen 2014 Fukuoka
HDI and Income Index

(Source: Transparency International 2014)
Coverage of OHS vs. Competitiveness (Rantanen et al. 2014)

$y = 0.0112x + 3.9673$
$R^2 = 0.3001$

$r = 0.52723$
$CF 0.2540-0.7226$
$t 3.7228 DF 36$
$0.0005$

Coverage of occupational health services, % of workers

WEF Competitiveness index
Conclusions & Next Steps

• The 60 year history of Nordic OSH collaboration is a unique success story. No reason to think it could not continue or would not be needed.
• Collaboration between Nordic Countries can be further tightened and would be highly relevant in the contemporary globalising and Europeanising Work Life.
• The Nordic societal model (although not fashionable today even in Norden) is historically still so far the best society model when measured with maximal number of criteria (e.g. basic rights, stability, equality, transparency, quality of life, security, social protection, education, work life, environment, economy, infrastructures, productivity, competitiveness).
• The Nordic Work Life reform has been the forerunner and way-opener for European (EU) and global (ILO, WHO, UN) efforts for better conditions of work.
• The European Union has not diluted the value of Nordic Collaboration but just the opposite: its relevance and potential benefits have grown.
• Joint Nordic appearance in the EU, EEA and International Organizations should be strengthened. It would generate much more power and influence as well as concrete benefits for the Nordic Region.
• A new Nordic Work Life (Work Environment and occupational health) Strategy and Programme should be as soon as possible drawn up.
• The Nordic Governments Should ensure the necessary institutional structures, infrastructures and human resources for implementation of such Strategy and Programme.
Warmest Congratulations
to the Nordic Community for 60 years
in the World Leading Role
for the Working Life Development

In Future the Nordic Model will be needed more than ever!