Physical risk factors for musculoskeletal disorders in nursing professions

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- Annual prevalence of back pain in nursing is 50-55%
- 369,500 German nurses have back pain every 12 months at least once
- 1,012 nurses per 24 hours
- 21 nurses during this presentation

Back Pain in Germany
OECD Stat Germany 2012 data (October 2013), Hoffman et al.

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Back Pain nursing students NL
Prevalence Last 12 months (n=200)

If the work is intrinsically unsafe, no amount of training can correct the situation.

David Stubbs, 1983

The Royal College of Nursing (RCN, UK) started condemning manual transfer techniques in the mid nineties.
Cornerstone # 1 (guidelines and regulations):


The employer shall take appropriate organizational measures, or shall use the appropriate means, in particular mechanical equipment, in order to avoid the need for the manual handling of loads by workers. The manual handling of a load may present a risk particularly of back injury if it is:

- too heavy or too large,
- difficult to grasp,
- unstable,
- with a bending or twisting of the trunk

1. What are typical MPH-activities?

- Raising a patient from lying to sitting at the edge of the bed
- Moving a patient towards the head of the bed
- Lifting a leg of a lying patient
- Inclining the head of the bed with the patient in it
- Moving from bed to a chair
- etc.

3. Which forces act on the lumbar spine?

Recommended threshold for day-related cumulation

so .... it simply is too heavy!

CEN ISO TR 12296: manual handling of people in the health care sector
CEN ISO TR 12296: Mobility levels

A B C D E

Pressure on L5S1 (female 168 cm, 63 kg)

<table>
<thead>
<tr>
<th>weight to be lifted</th>
<th>0 kg</th>
<th>10 kg</th>
<th>20 kg</th>
<th>30 kg</th>
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</thead>
<tbody>
<tr>
<td>Lumbosacral (LoS)</td>
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<tr>
<td>0 degrees</td>
<td>24 kg</td>
<td>36 kg</td>
<td>48 kg</td>
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1. What are typical awkward postures?
Total time (min) a nurse spends in awkward postures per shift.

- Inclination > 20° [min]
- Inclination > 60° [min]

Neigung > 20° [min]
Neigung > 60° [min]

Transfers

Florence Nightingale (1859)

Cornerstone # 2: (social partners)

ArboConvenanten (‘working condition convenants’):
- employers, unions and government work together
- they set goals, produced one page (!) guidelines,
  training material, made plans, intervened, monitored
  and funded (!)

Cornerstone # 2: (social partners: support ErgoCoaches):

- ErgoCoaches: opinion leaders, change agents, peer leaders, key figures
- role, field of attention: not a new profession
- 18,500 ErgoCoaches registered in NL
- bottom-up (started as ‘lifting specialists’)•
- span of ‘control’: 1 ErgoCoach for 31 health care workers in NL
- supported by social partners (website, conference, magazine, etc)
Facilities with ErgoCoaches have less sick leave due to back pain (n=90 facilities, n=5834 nurses, Knibbe & Knibbe 2010)

<table>
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<tr>
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<th>With ErgoCoaches</th>
<th>With ErgoCoaches and guidelines</th>
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<tr>
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<td>10</td>
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<tr>
<td>2,5</td>
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Source: www.zorginwoningen.nl

Cornerstone # 4 (training)

Overhead lifters: less space transfer to/from toilet (D, E)

YouTube (200 films, 500,000 views)

- Free e-learning (social partners!) about sliding sheets, lifters, infection control, obesity, pushing and pulling, etc.
  - 10,000 nurses per month
  - 18 modules so far
  - www.free-learning.nl

www.goedgebruik.nl, 200 instruction movies, 1,000,000 YouTube views

www.ergofilm.nl, 62 ‘teach-each-other’ YouTube videos
... combine verbal information, e-learning, printed information

News & Knowledge
Mal au dos
You Tube

Thank you very much for your attention!

National survey % last 12 months back pain prevalence

Messages:
- cooperate (employers, unions, inspectorate)
- address all four cornerstones (gadgets, social partners, architecture, training)
- 100 delegates = 3 messages * 4 colleagues = 5 hospitals * 400 nurses * 25
effectiveness = 600,000 backs saved
- start, keep going, save backs, save careers, reduce costs, improve patient care!

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