



IPP-aMSD

Work package 3

Documentation of indices and indicators concerning the effects of particular musculoskeletal disorders (MSD) when determining prioritization of relevant prevention topics

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Outline

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 - Parameters / Indicators
 - Data sources
- Results
 - M54 back pain
 - Occupational diseases
 - MSD indirect costs / loss of gross value
- Discussion
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Introduction 1

Aim of work package 3

Compilation of **parameters** and **indicators**
for the effect of certain musculoskeletal disorders (MSD)
in order to inform priority setting for prevention measures

Introduction 2

Parameters / Indicators



- Number of **jobs affected**
- **Treatment costs:** *outpatient* and *inpatient*
- Proportion of **days lost due to work incapacity**
- **Loss of production costs / gross value**
- Number of cases and costs for **early retirement**
- Number of cases and costs for recognised **occupational diseases (OD)**

Methodology

Data sources

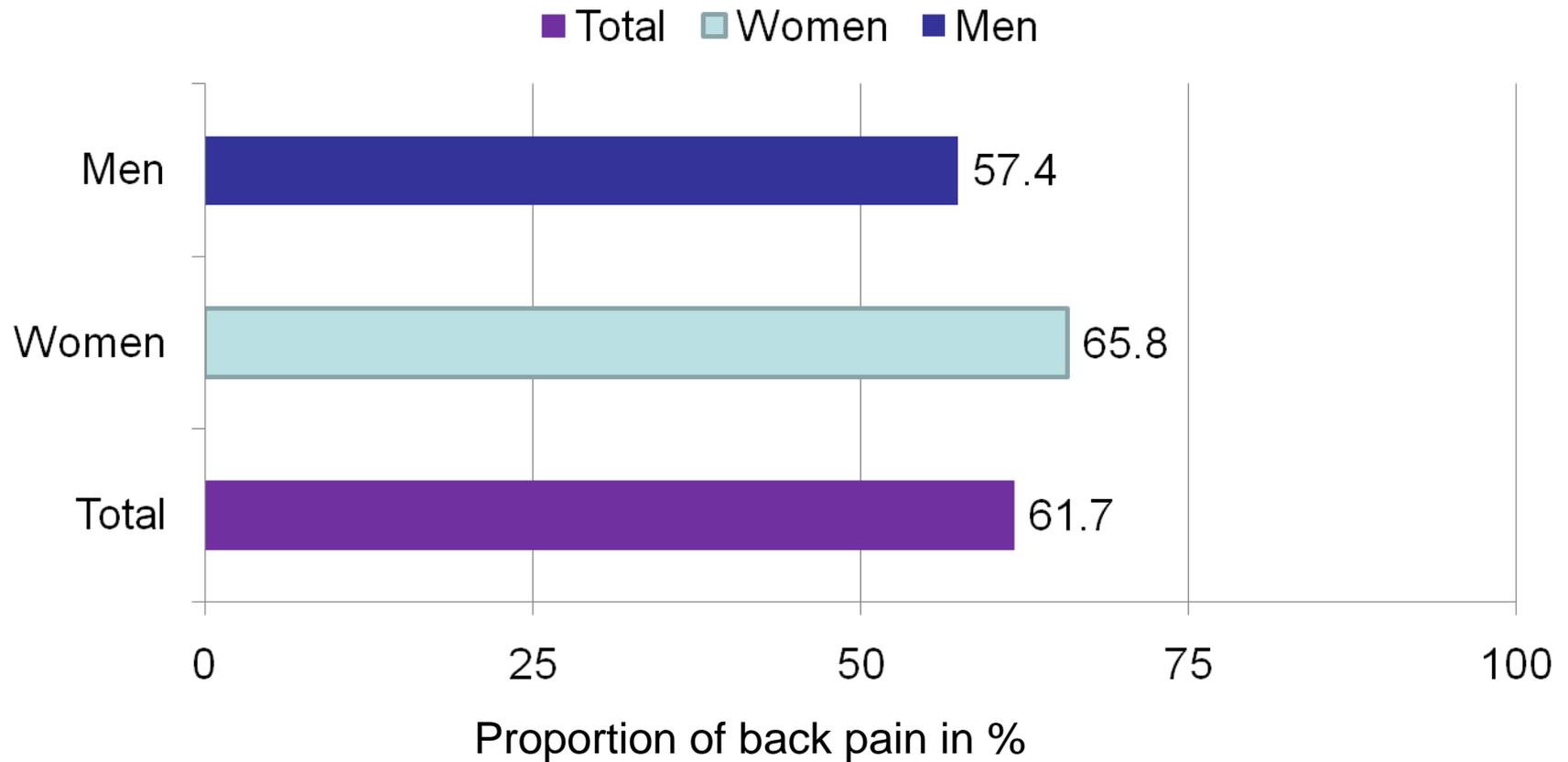
- Data held by the **statutory health insurance (SHI)**
 - Health reports and current statistics
 - Analysis of cross-sectional samples from 2002 of persons insured under the SHI according to the German Social Code §268
- Data held by the **statutory accident insurance**
- Data held by the **social pension fund**
- Data retrieved through the **2003 telephone-based health survey** conducted by the Robert Koch Institute
- **Scientific publications**

Results

M54 Back pain



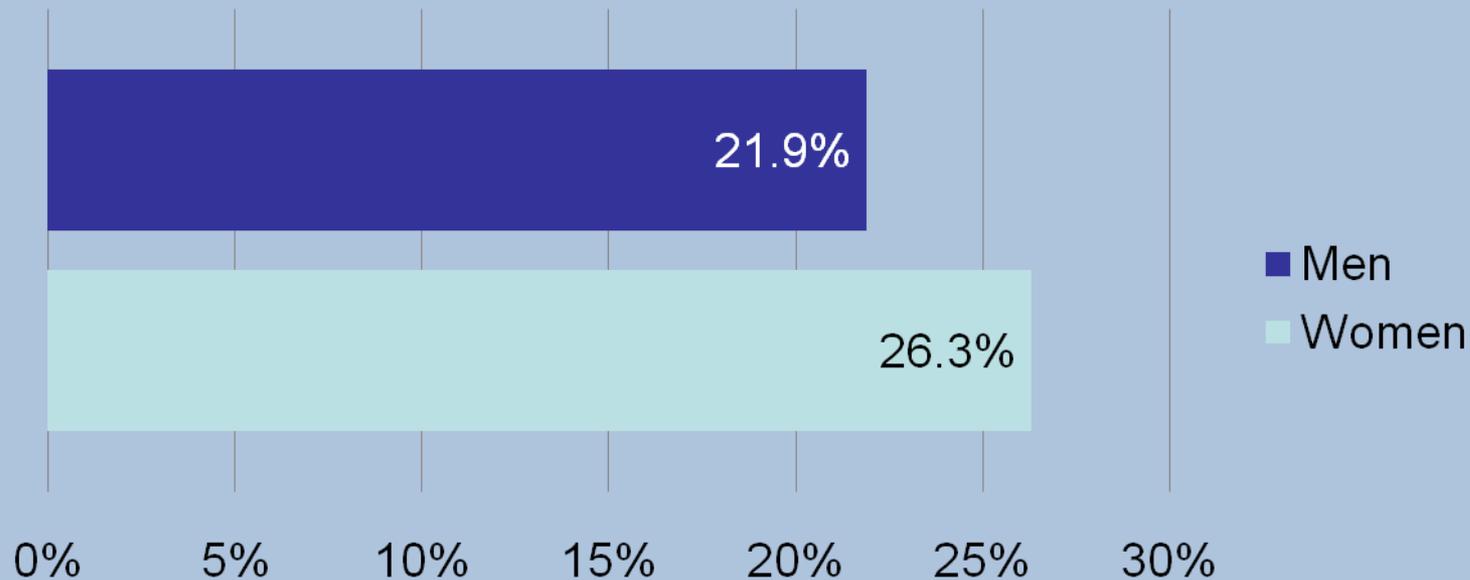
Prevalence of back pain among the general population



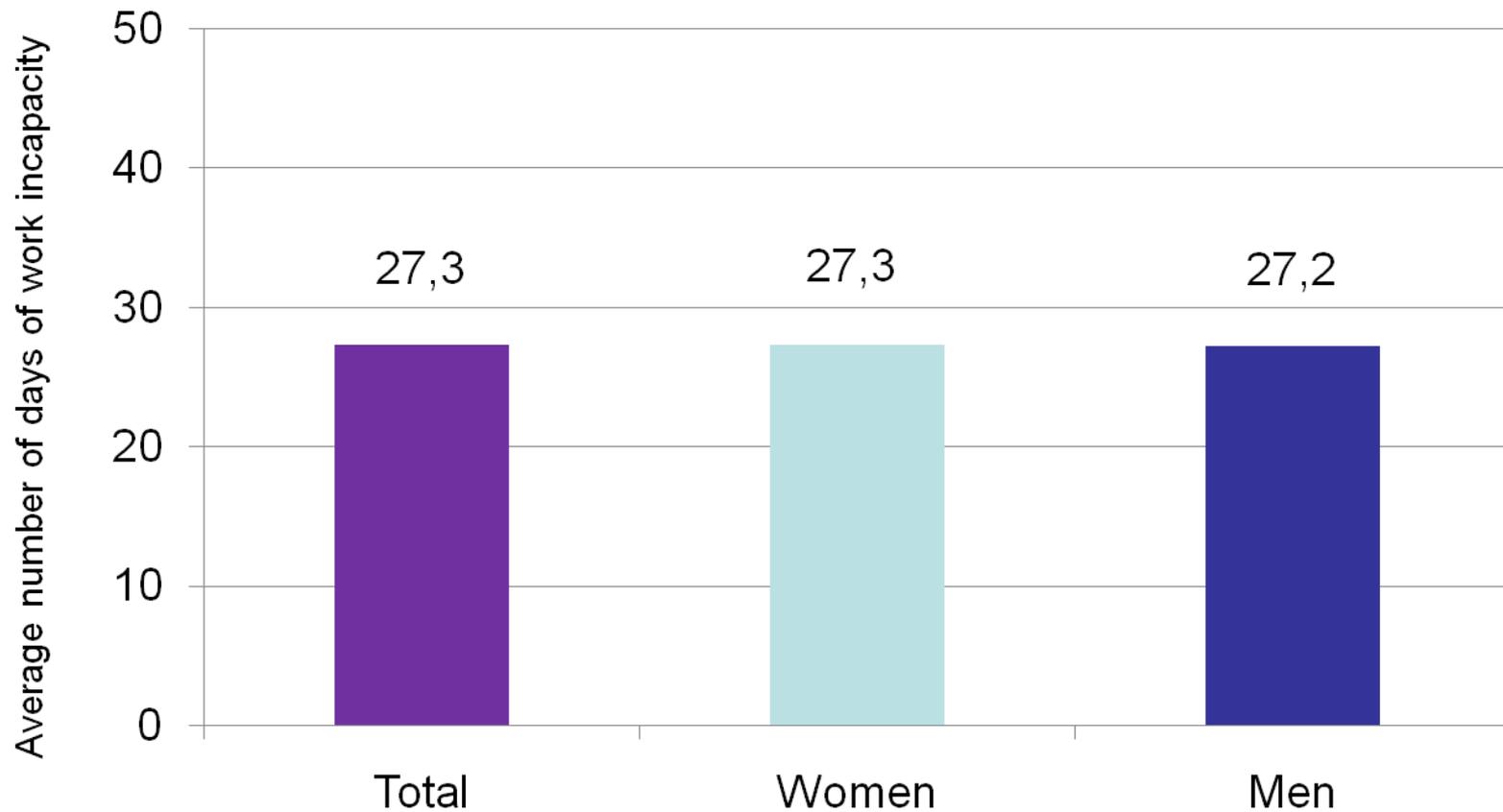
Period prevalence (2002) for M54 by gender (15-64 years of age)

- Period prevalence in the total sample: **24.4%**
(approx. 367,900 persons diagnosed with M54, n=1,520,127)

Distribution of M54 back pain, divided by gender

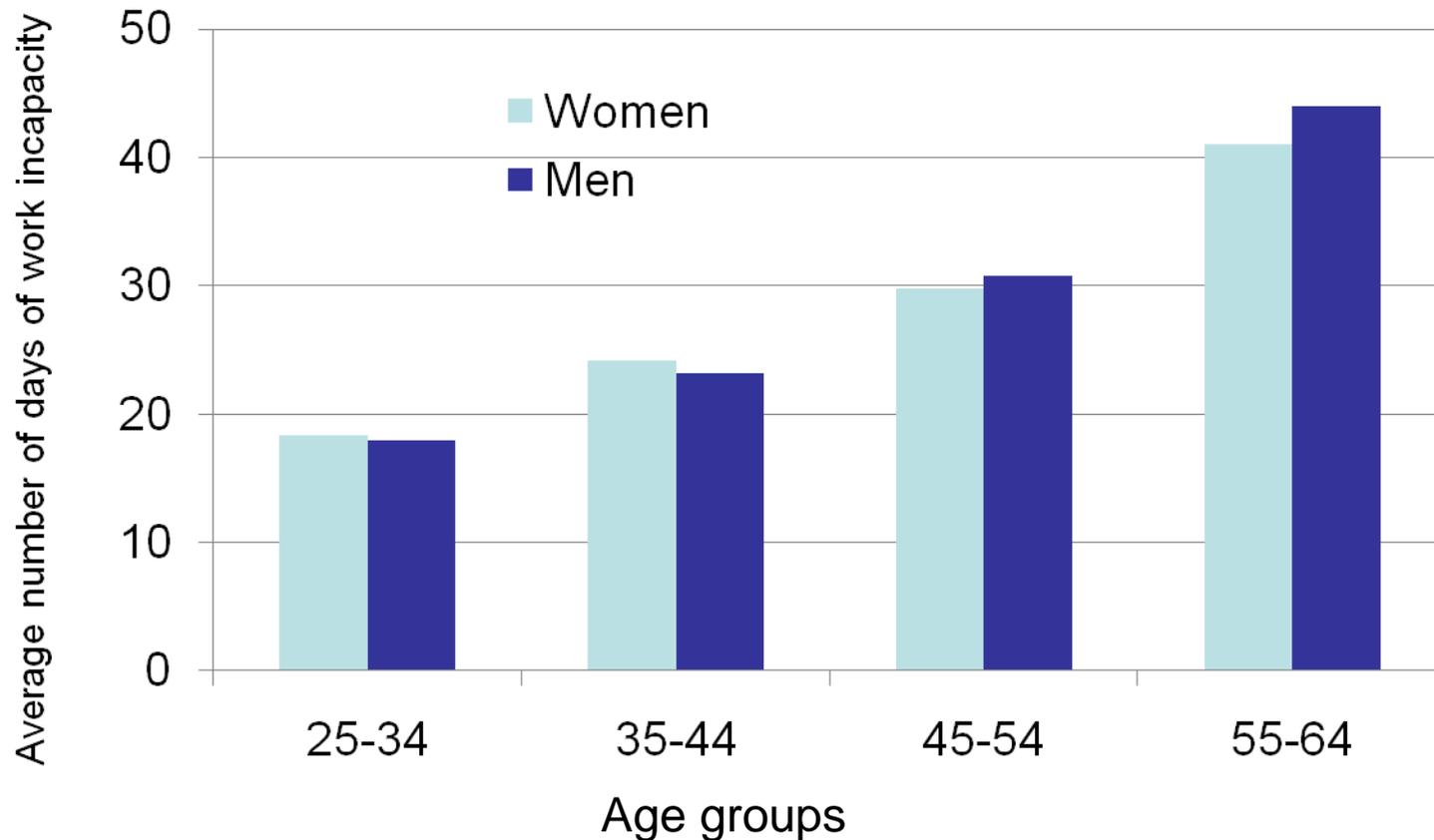


Average number of days lost due to work incapacity per patient on sick leave due to M54 by gender



Data source: *Cross-sectional sample 2002 according to German Social Code 268; own analysis*

Average number of work days lost due to incapacity per patient on sick leave due to M54 by gender and age

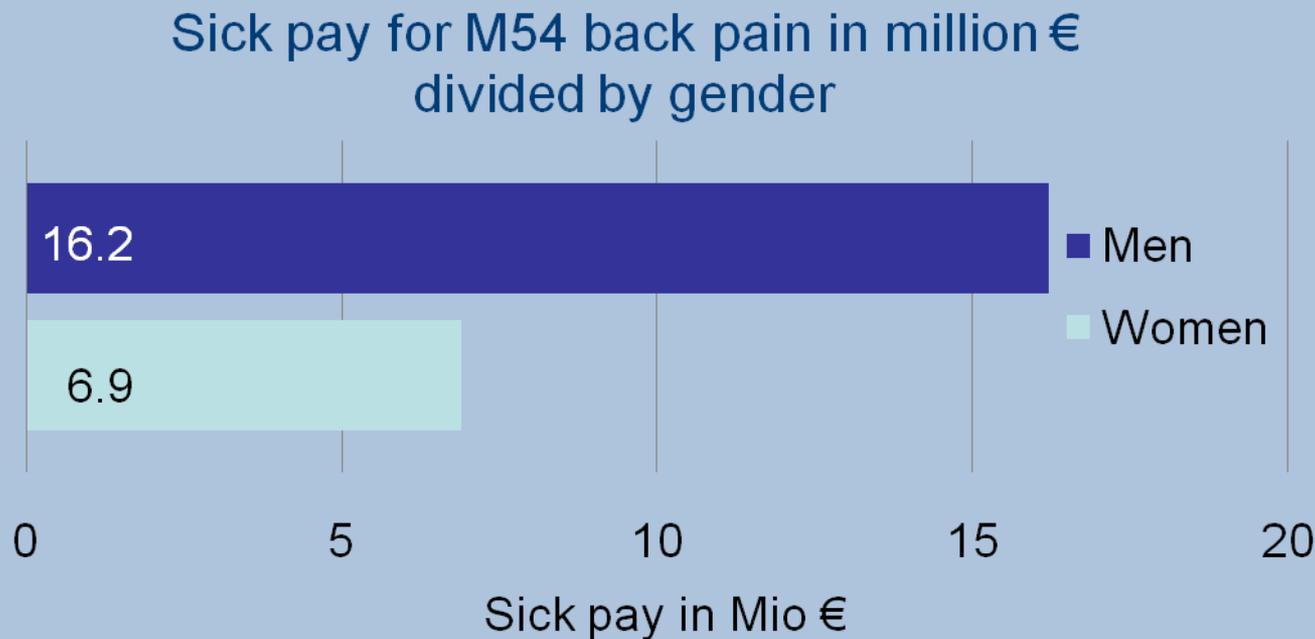


Data source:

Cross-sectional sample 2002 according to German Social Code 268; own analysis

Sick pay (2002) for M54 by gender (15-64 years of age)

- Sick pay for M54 in total: approx. **23.1 m €**



Treatment costs for M54 (2002), for patients with MSD as the sole diagnosis divided by gender (15-64 years of age)

- **Costs for outpatient care** for M54 in total:
approx. **4.6 m €** (129,333 cases)
 - for men: approx. 2.2 m € (62,758 cases)
 - for women: approx. 2.4 m € (66,575 cases)
- **Costs for inpatient care** for M54 in total:
approx. **3.6 m €** (2,072 cases)
 - for men: approx. 1.9 m € (1,059 cases)
 - for women: approx. 1.7 m € (1,013 cases)

Data source:

Cross-sectional sample 2002 according to German Social Code 268; own analysis

Results

Occupational diseases (OD)

A note on our methodology

- Data held by the **German statutory accident insurance**
- Analysis of occupational diseases as registered on **24 June 2009**
- Analysis for **period of 2003-2007**
- **Selection** of certain occupational diseases

Selected occupational diseases (OD)

Number of specific OD	Description
2101	Diseases of the tendon, the tendon sheath and the paratenon...
2102	Diseases of the meniscus after years of constant or repetitive strain of the knee
2103	Diseases caused by vibration of compressed air machines...
2105	Chronic diseases of the bursae caused by constant pressure
2107	Tear-off fracture of a vertebral body
2108	Erosion of the intervertebral disc of the lumbar spine caused by years of lifting and carrying weights...
2109	Erosion of the intervertebral disc of the cervical spine caused by years of carrying heavy weights on one's shoulders...
2110	Erosion of the intervertebral disc of the lumbar spine caused by years of mainly vertical exposure to oscillation of the whole body while being seated...

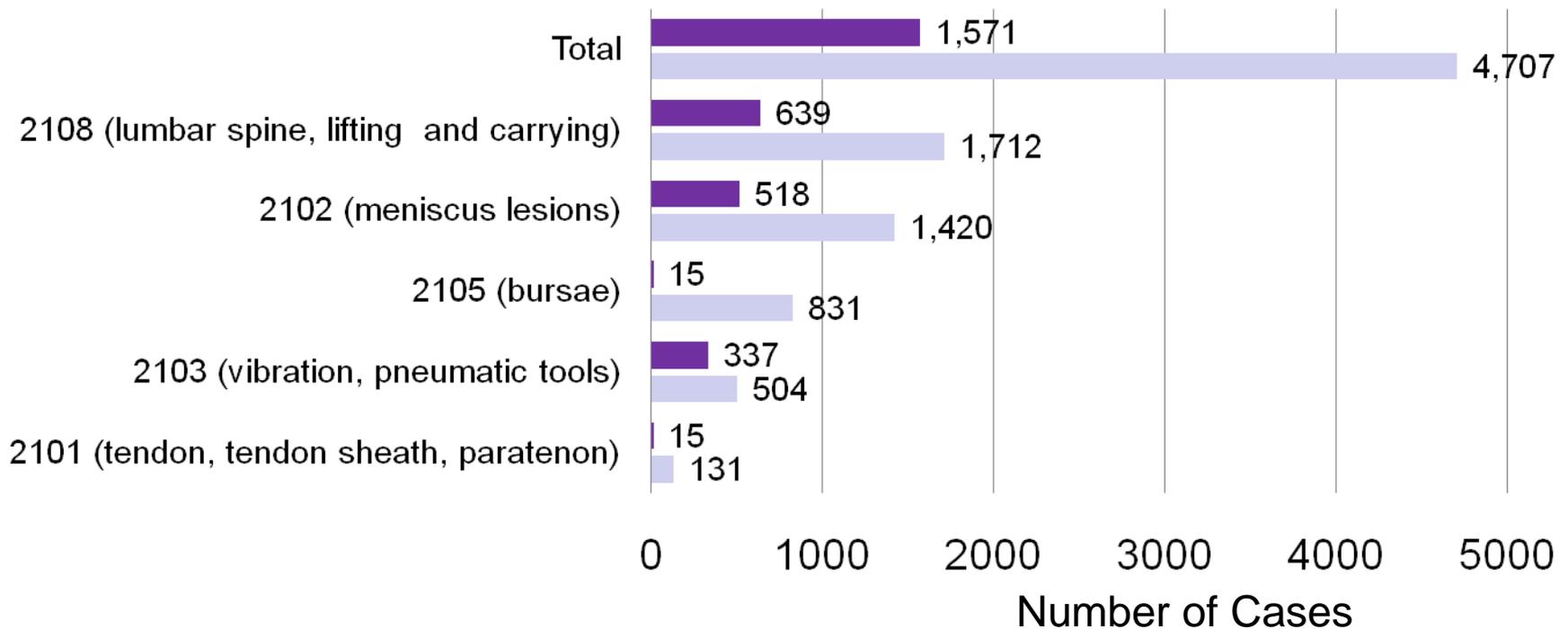
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Number of cases of selected occupational diseases (2003-2007)

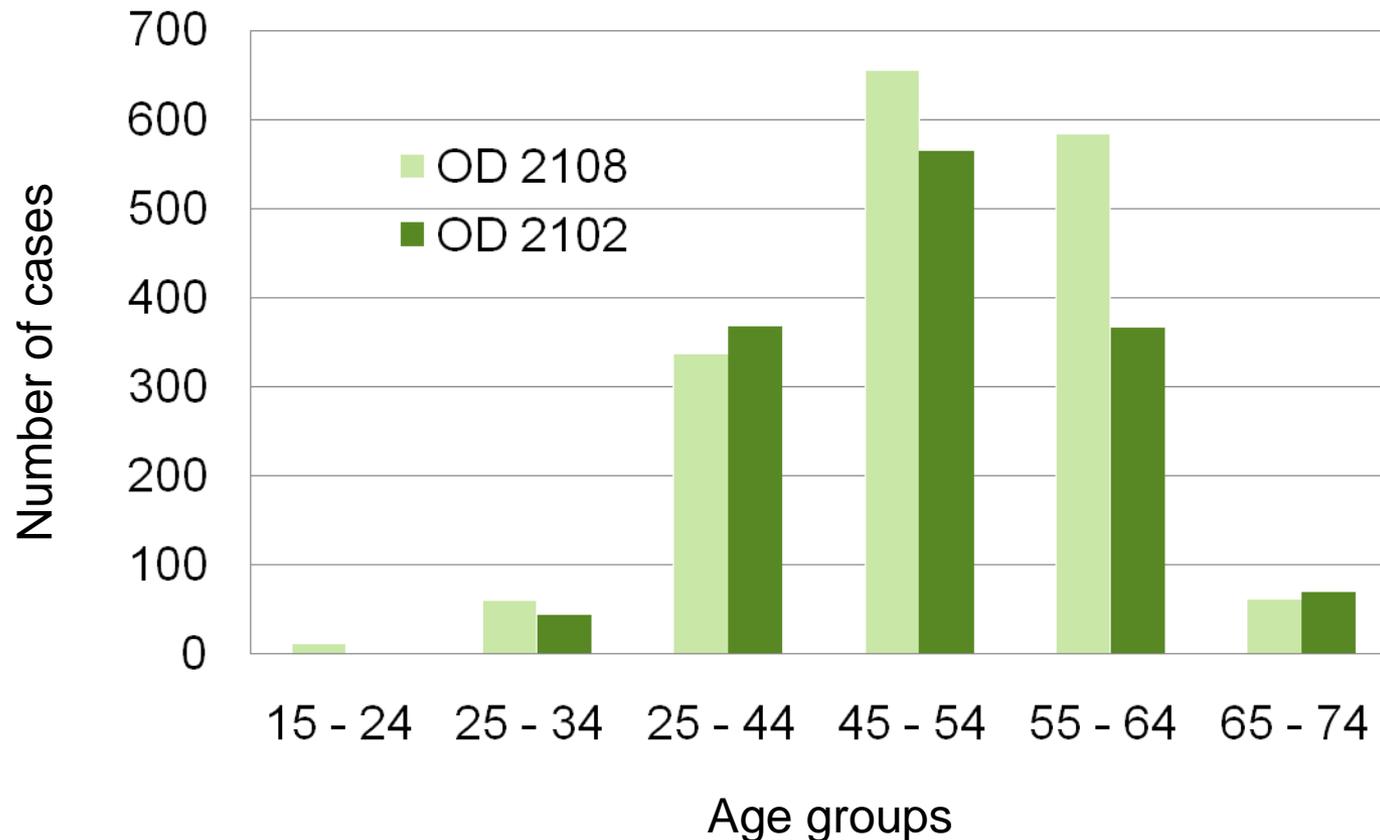
Commercial and public sector

- “New occupational diseases – pensions”
- “Confirmed suspected cases”



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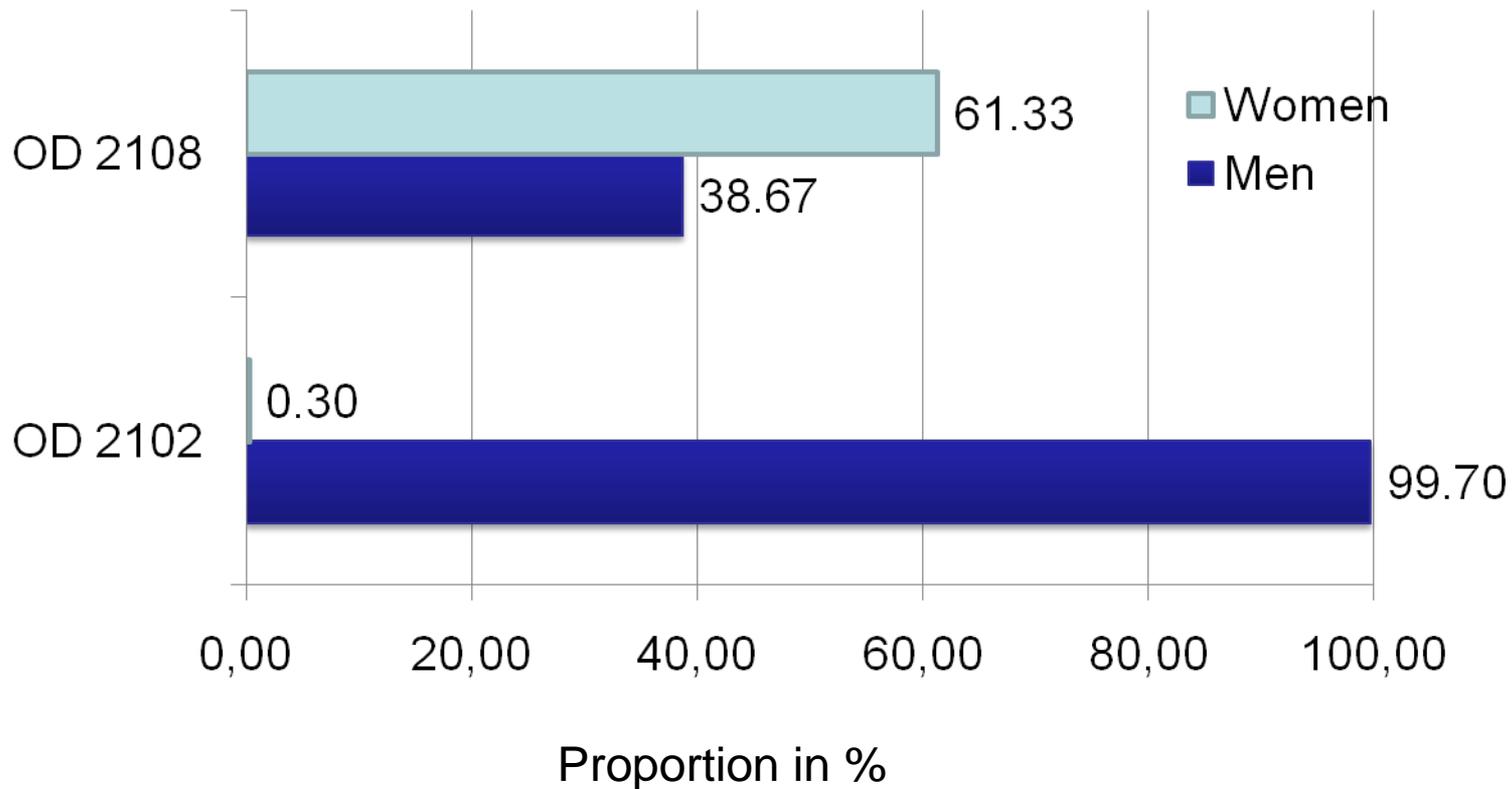
Age of patient when registered with occupational diseases for OD 2102 (meniscus lesions) and 2108 (lumbar spine, lifting and carrying)



Data source:

German statutory accident insurance statistics; generated on 24 June 2009; own analysis of data

Gender distribution for OD 2102 (meniscus lesions) and OD 2108 (lumbar spine, lifting and carrying)



Data source:

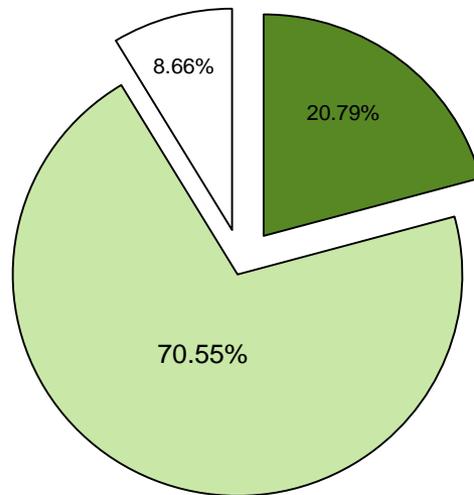
German statutory accident insurance statistics;
generated on 24 June 2009; own analysis of data

Registered cases of occupational diseases and their costs

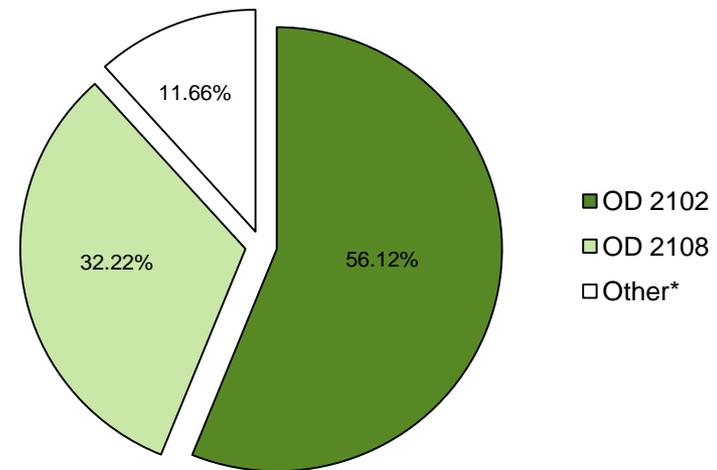
Data collected by Employers' Liability Insurance Association

Costs for outpatient care: 15,488,015 €
Costs for inpatient care: 18,029,484 €

Cost for outpatient care 2003-2007



Cost for inpatient care 2003-2007



* Other: OD 2101, OD 2103, OD 2105, OD 2107, OD 2109, OD 2110

Data source:

German statutory accident insurance statistics;
 generated on 24 June 2009; own analysis of data

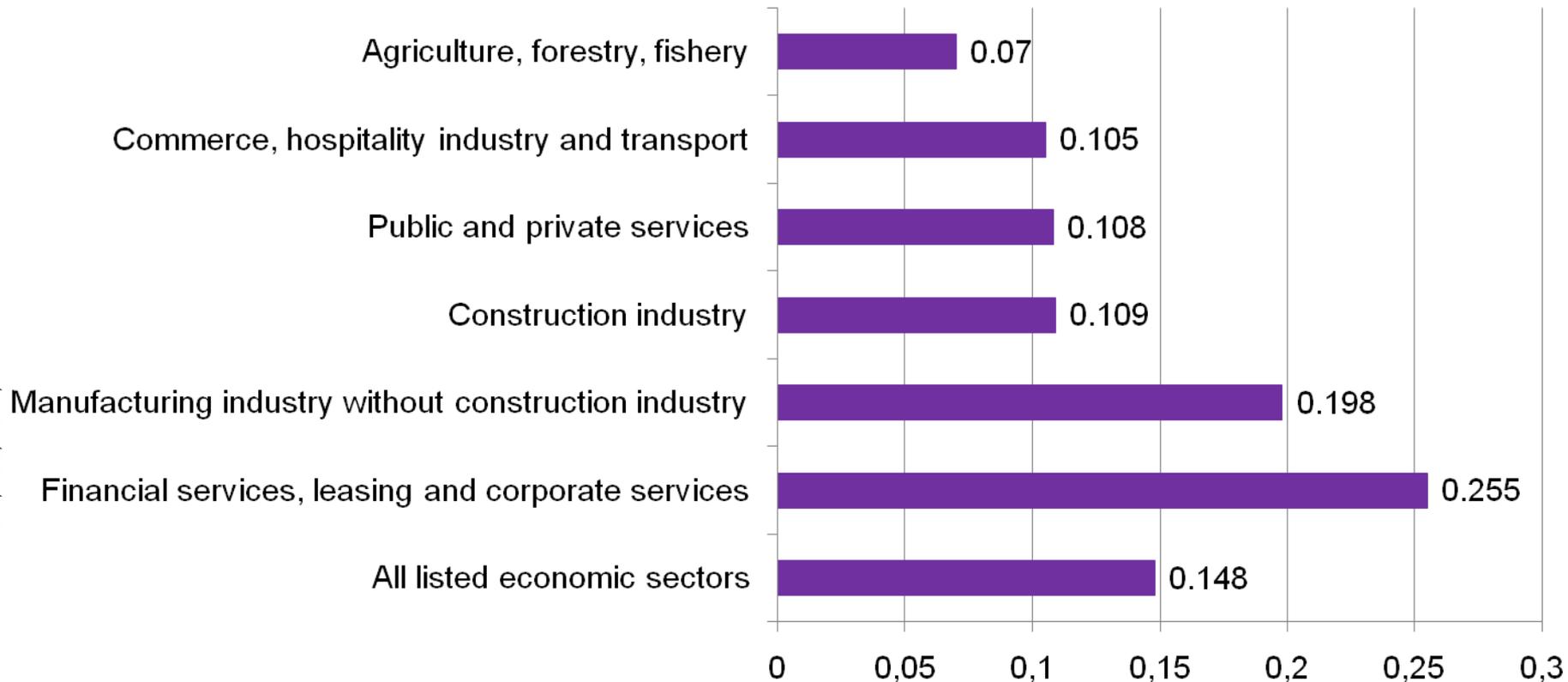
Indirect costs caused by MSD

Data source	Year	Base year	Loss of production costs (estimated on the basis of salary costs)	Loss of gross value
Statutory health insurance* (BMAS, BAuA)	2008	2006	8.5 bn €	15.4 bn €
	2009	2007	9.5 bn €	17.3 bn €

* Data are based on 31 million persons insured through the statutory health insurance

Loss of gross value due to MSD

In billion € per 1 million days of sick leave



Discussion

Summary of results

- High prevalence of MSD in the general population
- M54 Back pain is the most common diagnosis of all MSD among people of working age (age range of 15-64)
- Approximately every 6th pension admission in 2007 caused by MSD
- OD 2108 (lumbar spine, lifting and carrying) and 2102 (meniscus lesions) are the cause of a high number of cases and costs
- High loss of productivity and gross value due to MSD
- Differences in gender and age distribution

Discussion

Critique 1: Indicators for sick leave

➔ Sick notes are not suitable as a measure to assess jobs affected

1. Sick notes usually have to be handed in on the third day of sickness
2. Sick leave is not documented when outpatient or inpatient care is provided as a health protection or rehabilitation measure
3. Sick notes are at the discretion of the doctor
4. Sick note indicators partly refer to the primary diagnosis and partly to the secondary diagnosis

Discussion

Critique 2 : Health reports by the statutory health insurance companies

➔ The reports do not provide a sufficient basis to inform priority setting of prevention measures

1. No standardised procedure
2. Based on different populations
3. Rare information about specific occupations
4. Due to general and compiled analysis, health risks cannot be differentiated by work sectors, occupations or certain diagnoses

Discussion

Critique 3

➔ The results from the international literature are insufficient: Standardisation is necessary

1. Different health systems and costings
2. Different definitions of costs
3. Different methods of calculating parameters
4. Methodology used is not always sufficiently explained
5. Different samples/populations and inclusion criteria

Discussion

Conclusions

- It is NOT possible to set priorities for prevention measures according to costs of specific diseases
- Decisions about prevention measures should not depend solely on cost parameters, e.g. sickness benefit (which is dependent on the patient's salary)
- A uniform German system for data collection and calculation of parameters is urgently needed

Future prospects

➔ **Generation of valid and comprehensive data on occupational factors affecting MSD**

1. Analysis of data which company physicians collect when doing check-ups
2. Cross-sectional study in major companies with the option of conducting a prospective study to test interventions
3. Implementation of a work-specific module for MSD as part of the Helmholtz-cohort

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Thank you for your interest and attention!