12-month prevalence of osteoporosis in Germany

Abstract
Osteoporosis is a systemic skeletal disease associated with increased bone fragility, which correspondingly leads to increased bone fractures. In the GEDA 2014/2015-EHIS survey, 7.8% of women and 2.0% of men aged 18 and over reported suffering from osteoporosis during the past 12 months. The share of people reporting osteoporosis increases considerably in the age group 65 and over. Elder women significantly more often report osteoporosis than men. As this was the first time the present indicator for the 12-month prevalence of osteoporosis was evaluated in the context of the European Health Interview Survey (EHIS) 2014/2015, there is no comparative data available.

Introduction
The Umbrella Organization for Osteology (Dachverband Osteologie) defines osteoporosis as a systemic skeletal disease that is characterised by low bone mass and a microarchitectural deterioration of bone tissue which results in greater bone fragility [1]. With osteoporosis patients, external causes that would not normally affect a healthy bone can already cause bone fractures (fragility fractures). These fragility fractures most commonly occur in the vertebrae, the upper parts of the thigh bone close to the hip (femoral neck and trochanteric region) as well as the forearm close to the wrist (in particular the distal radius) [2].

Various factors contribute to osteoporosis. There are behavioural risk factors, which persons can influence such as a lack of physical exercise and dietary habits, as well as further risk factors such as underlying diseases and also certain medications. These risks can be reduced by treating the underlying causes or by adapting behaviour. Moreover, there are also non-modifiable factors such as age, female gender and familial predisposition [1].

Osteoporosis has health policy relevance mainly because osteoporosis incidence rates and the consequences of fragility fractures increase with age. Fractures of the thigh bone close to the hip as well as of the vertebrae particularly impact people’s quality of life and their ability to live independently. Unlike fractures of the vertebrae, which often go unrecognised, fractures of the bone close to the hip joint are rarely overlooked and therefore treated in hospital. Hip fracture surgery and subsequent rehabilitation, as well as age-related co- and multi-morbidity issues generate high costs to the health system [3, 4].

Indicator
The osteoporosis indicator in the GEDA 2014/2015-EHIS health interview survey was calculated using a self-administered paper-based or online questionnaire. Numer-
The share of people reporting osteoporosis increases considerably with age. Young and middle-aged adults only rarely report osteoporosis. Prevalence in the age group under 45 is below 1% for both genders (Table 1). In the age group 45 to 64, 4.4% of women and 1.9% of men report osteoporosis. Beyond the age of 65 osteoporosis rates increase significantly: nearly one quarter of women (24%) and 5.6% of men are affected. Osteoporosis rates are significantly higher among women in the age groups 45 to 64 and 65 and over than among men.

Osteoporosis prevalence is significantly higher among women aged 45 to 64 with a low-education background (7.2%) than among those with a medium- (4.0%) or high-education (2.9%) background. Low overall rates of osteoporosis in the other age groups allow no conclusions on the significance of levels of education for differences in osteoporosis prevalence in these groups. Possible links between prevalence and education are subject to controversial discussion among researchers [7], and need to be proved by further studies. These will also need to consider changes in the prescription of hormone replacement therapy, which also affects bone structure.

There are no regional differences in osteoporosis prevalence between federal states.

Estimates on the prevalence of osteoporosis vary depending on the type of data collection, sources and the composition of the survey population. Given that guidelines on the diagnosis and treatment of osteoporosis have changed in recent years [1], comparisons of results need to take into account the time period in which data was collected. However, sex differences regarding the preva-
Overall, the new indicator for the prevalence of osteoporosis in Germany reveals the characteristic pattern of a common and age-related chronic disease with a typically higher prevalence among women compared to men. Current recommendations for osteoporosis prophylaxis include regular physical exercise, preventing immobility and falls as well as ensuring a sufficient intake of calcium and vitamin D. Doctors should also assess whether patients take prescribed medications that increase the risk of fractures. Risks-and-benefits analyses can help to establish the usefulness of such medication on a case-to-case basis [1].

The share of people reporting osteoporosis increases considerably with age.

According to the study, around 8% of women and 2% of men aged 18 and over reported osteoporosis during the past 12 months.

### Table 1

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age Group</th>
<th>% (95% CI)</th>
<th>% (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women total</td>
<td>7.8 (7.2-8.5)</td>
<td>2.0 (1.7-2.4)</td>
</tr>
<tr>
<td></td>
<td>18-29 Years</td>
<td>0.3 (0.1-1.1)</td>
<td>0.3 (0.1-0.8)</td>
</tr>
<tr>
<td></td>
<td>Low education</td>
<td>-</td>
<td>0.5 (0.1-2.3)</td>
</tr>
<tr>
<td></td>
<td>Medium education</td>
<td>0.4 (0.1-1.8)</td>
<td>0.3 (0.1-0.9)</td>
</tr>
<tr>
<td></td>
<td>High education</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>30-44 Years</td>
<td>0.7 (0.4-1.2)</td>
<td>0.5 (0.2-1.0)</td>
</tr>
<tr>
<td></td>
<td>Low education</td>
<td>1.8 (0.6-4.8)</td>
<td>1.2 (0.4-4.2)</td>
</tr>
<tr>
<td></td>
<td>Medium education</td>
<td>0.8 (0.4-1.5)</td>
<td>0.5 (0.2-1.3)</td>
</tr>
<tr>
<td></td>
<td>High education</td>
<td>-</td>
<td>0.2 (0.0-0.8)</td>
</tr>
<tr>
<td></td>
<td>45-64 Years</td>
<td>4.4 (3.7-5.1)</td>
<td>1.9 (1.4-2.6)</td>
</tr>
<tr>
<td></td>
<td>Low education</td>
<td>7.2 (5.2-9.9)</td>
<td>2.7 (1.3-5.7)</td>
</tr>
<tr>
<td></td>
<td>Medium education</td>
<td>4.0 (3.2-5.0)</td>
<td>2.4 (1.7-3.4)</td>
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<tr>
<td></td>
<td>High education</td>
<td>2.9 (2.0-4.2)</td>
<td>0.7 (0.4-1.3)</td>
</tr>
<tr>
<td></td>
<td>≥ 65 Years</td>
<td>24.0 (21.9-26.2)</td>
<td>5.6 (4.5-6.9)</td>
</tr>
<tr>
<td></td>
<td>Low education</td>
<td>25.9 (22.9-29.1)</td>
<td>9.0 (6.3-12.8)</td>
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<tr>
<td></td>
<td>Medium education</td>
<td>23.4 (20.6-26.4)</td>
<td>5.3 (3.9-7.2)</td>
</tr>
<tr>
<td></td>
<td>High education</td>
<td>18.2 (14.0-23.2)</td>
<td>4.6 (3.2-6.5)</td>
</tr>
</tbody>
</table>

CI = Confidence interval

Source: GEDA 2014/2015-EHIS
Women aged 45 and older significantly more often report osteoporosis than men.

References


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Author details
Robert Koch Institute
Department of Epidemiology and Health Monitoring, Berlin

Corresponding author
Dr Judith Fuchs
Robert Koch Institute
Department of Epidemiology and Health Monitoring
General-Pape-Str. 62–66
D-12101 Berlin, Germany
E-mail: FuchsJ@rki.de

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Editors
Susanne Bartig, Johanna Gutsche, Dr Franziska Prütz, Martina Rabenberg, Alexander Rommel, Dr Anke-Christine Saß, Stefanie Seeling, Martin Thissen, Dr Thomas Ziese
Robert Koch Institute
Department of Epidemiology and Health Monitoring
General-Pape-Str. 62–66
D-12101 Berlin
Phone: +49 (0)30-18 754-3400
E-mail: healthmonitoring@rki.de
www.rki.de/journalhealthmonitoring-en

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