Osteoporosis trends in South Australian adults, July 2002 to December 2015

This short biannual report presents trends on the proportion of South Australians with osteoporosis using data collected between July 2002 to December 2015 among people aged 18 years and above.

Overall, the prevalence of osteoporosis has changed in South Australian adults for the period July 2002 to December 2015.

SA Monitoring & Surveillance System (SAMSS)

The South Australian Monitoring and Surveillance System (SAMSS)\(^1\) is owned by SA Health and is an epidemiological monitoring system, provided by Population Research & Outcome Studies (PROS) within the Discipline of Medicine, the University of Adelaide. SAMSS aims to detect and facilitate understanding of trends in the prevalence of chronic conditions, risk and protective factors, and other determinants of health. These data monitor departmental, state and national priority areas and are linked to key indicators.

Each month since July 2002, a sample of South Australians was randomly selected from the Electronic White Pages (EWP). Introductory letters were sent out to each household selected to inform them of the upcoming telephone survey, inviting the person who had the last birthday in the household to participate in a telephone interview. The survey was conducted by professional interviewers, using Computer Assisted Telephone Interview (CATI) technology. Approximately 600 respondents participate in each SAMSS survey. Proxy respondents (usually the parent) complete the survey when the selected person in the household is under the age of 16. For further information on SAMSS, please see http://health.adelaide.edu.au/pros.

Methods

The proportion of people with osteoporosis was presented in a fractional polynomial plot using time (in months or quarters) as the continuous variable. Logistic regression was used to test the trend across the period July 2002 to December 2015. Analyses were conducted using chi-squared test for trend to detect differences in prevalence over time: where indicated, ‘changed’ signifies that there was a change (p<0.05) in the prevalence estimates and ‘no change’ (p>0.05) signifies there were no changes in the prevalence estimates over time. All ‘don’t know’ responses were treated as missing values. Please note that results are not reported by all demographic breakdowns due to insufficient cases.

Methodological changes to SAMSS in 2015

The South Australian Monitoring and Surveillance System (SAMSS) presents estimates using weighted data to reflect the South Australian population. From 2002 to 2014, SAMSS used a weighting technique called post stratification where data was weighted by age, sex and area of residence. In 2015, a new weighting technique, raked weights, has been used which includes other population characteristics including education level, renting status, country of birth, marital status and employment status. These additional characteristics provide a more accurate representation of the South Australian population.

As these two weighting techniques may result in difference estimates, this report is not comparable to any previously published report or SAMSS data.
Osteoporosis

Osteoporosis is the thinning and weakening of bones that often occurs with age, increasing the risk of fracture in both males and females. Bone loss occurs when the bone remodelling process begins to favour bone breakdown. Fractures after minimal trauma, such as minor bumps or falls from a standing height, are a hallmark of osteoporosis. They can cause both acute and chronic pain and can significantly affect daily life.

From a question asking “Have you ever been told by a doctor that you have osteoporosis?” the proportion of South Australian people aged 18 years and over reporting an osteoporosis diagnosis are reported below.

Results

Overall

Table 1: Annual prevalence of osteoporosis, July 2002 to December 2015

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</thead>
<tbody>
<tr>
<td>Overall (%)</td>
<td>3.5</td>
<td>3.9</td>
<td>4.7</td>
<td>4.6</td>
<td>4.6</td>
<td>4.5</td>
<td>4.6</td>
<td>4.7</td>
<td>5.2</td>
<td>4.7</td>
<td>5.0</td>
<td>4.7</td>
<td>4.8</td>
<td>4.4</td>
<td>Changed</td>
</tr>
</tbody>
</table>

Figure 1: Prevalence of osteoporosis among people aged 18 years and over

Overall, the prevalence of osteoporosis has changed over time.
Table 2: Annual prevalence of osteoporosis by age group, July 2002 to December 2015

<table>
<thead>
<tr>
<th>Year</th>
<th>40-59 years (%)</th>
<th>60 years and over (%)</th>
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</thead>
<tbody>
<tr>
<td>2002</td>
<td>2.2</td>
<td>10.5</td>
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<tr>
<td>2003</td>
<td>2.2</td>
<td>11.6</td>
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<tr>
<td>2004</td>
<td>3.4</td>
<td>13.0</td>
</tr>
<tr>
<td>2005</td>
<td>3.0</td>
<td>12.8</td>
</tr>
<tr>
<td>2006</td>
<td>2.6</td>
<td>13.1</td>
</tr>
<tr>
<td>2007</td>
<td>2.3</td>
<td>13.6</td>
</tr>
<tr>
<td>2008</td>
<td>3.0</td>
<td>12.9</td>
</tr>
<tr>
<td>2009</td>
<td>3.2</td>
<td>12.7</td>
</tr>
<tr>
<td>2010</td>
<td>2.7</td>
<td>14.6</td>
</tr>
<tr>
<td>2011</td>
<td>3.0</td>
<td>12.3</td>
</tr>
<tr>
<td>2012</td>
<td>2.3</td>
<td>13.2</td>
</tr>
<tr>
<td>2013</td>
<td>2.0</td>
<td>13.0</td>
</tr>
<tr>
<td>2014</td>
<td>2.3</td>
<td>13.2</td>
</tr>
<tr>
<td>2015</td>
<td>2.3</td>
<td>12.0</td>
</tr>
</tbody>
</table>

Trend: No change

Note: age group of 18 to 39 years not reported due to insufficient cases
Table 3: Annual prevalence of osteoporosis by sex, July 2002 to December 2015

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</thead>
<tbody>
<tr>
<td>Male (%)</td>
<td>0.5</td>
<td>1.1</td>
<td>1.7</td>
<td>1.5</td>
<td>1.4</td>
<td>1.5</td>
<td>1.9</td>
<td>1.8</td>
<td>1.9</td>
<td>1.7</td>
<td>2.1</td>
<td>2.1</td>
<td>1.7</td>
<td></td>
<td>Changed</td>
</tr>
<tr>
<td>Female (%)</td>
<td>6.2</td>
<td>6.5</td>
<td>7.4</td>
<td>7.4</td>
<td>7.7</td>
<td>7.4</td>
<td>6.9</td>
<td>7.4</td>
<td>8.2</td>
<td>7.4</td>
<td>8.0</td>
<td>7.0</td>
<td>7.1</td>
<td>6.8</td>
<td>No change</td>
</tr>
</tbody>
</table>

Figure 3: Prevalence of osteoporosis by sex
The prevalence of osteoporosis has changed in males over time.
Table 4: Annual prevalence of osteoporosis by education, July 2002 to December 2015

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</thead>
<tbody>
<tr>
<td>No school to secondary (%)</td>
<td>4.7</td>
<td>4.9</td>
<td>5.8</td>
<td>5.6</td>
<td>6.2</td>
<td>6.1</td>
<td>6.2</td>
<td>6.3</td>
<td>7.0</td>
<td>5.8</td>
<td>6.7</td>
<td>6.5</td>
<td>6.3</td>
<td>6.3</td>
<td>Changed</td>
</tr>
<tr>
<td>Trade, cert. or diploma (%)</td>
<td>1.6</td>
<td>2.4</td>
<td>2.8</td>
<td>3.1</td>
<td>2.6</td>
<td>2.4</td>
<td>2.6</td>
<td>3.0</td>
<td>3.4</td>
<td>3.8</td>
<td>3.7</td>
<td>3.5</td>
<td>3.7</td>
<td>3.0</td>
<td>Changed</td>
</tr>
<tr>
<td>Degree or higher (%)</td>
<td>1.1</td>
<td>1.4</td>
<td>2.9</td>
<td>2.4</td>
<td>2.0</td>
<td>2.7</td>
<td>1.7</td>
<td>2.2</td>
<td>2.3</td>
<td>2.6</td>
<td>2.4</td>
<td>2.2</td>
<td>2.7</td>
<td>1.8</td>
<td>No change</td>
</tr>
</tbody>
</table>

Figure 4: Prevalence of osteoporosis by education level

The prevalence of osteoporosis has changed in those with no school to secondary and trade, certificate or diploma education levels over time.
Table 5: Annual prevalence of osteoporosis by Local Health Network, July 2002 to December 2015

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Central Adelaide (%)</td>
<td>4.5</td>
<td>5.1</td>
<td>4.7</td>
<td>4.9</td>
<td>4.8</td>
<td>5.3</td>
<td>4.7</td>
<td>6.3</td>
<td>4.0</td>
<td>5.7</td>
<td>4.8</td>
<td>6.1</td>
<td>4.5</td>
<td></td>
<td>No change</td>
</tr>
<tr>
<td>Southern Adelaide (%)</td>
<td>3.5</td>
<td>3.4</td>
<td>5.2</td>
<td>4.4</td>
<td>4.9</td>
<td>4.7</td>
<td>4.6</td>
<td>5.2</td>
<td>5.0</td>
<td>4.8</td>
<td>4.2</td>
<td>5.5</td>
<td>4.4</td>
<td>5.1</td>
<td>No change</td>
</tr>
<tr>
<td>Northern Adelaide (%)</td>
<td>2.5</td>
<td>3.6</td>
<td>3.3</td>
<td>4.3</td>
<td>4.5</td>
<td>4.2</td>
<td>4.8</td>
<td>5.3</td>
<td>5.1</td>
<td>4.8</td>
<td>5.1</td>
<td>4.8</td>
<td>5.3</td>
<td>4.8</td>
<td>Changed</td>
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<tr>
<td>Country SA (%)</td>
<td>3.3</td>
<td>3.4</td>
<td>5.1</td>
<td>4.5</td>
<td>4.3</td>
<td>4.3</td>
<td>3.7</td>
<td>3.9</td>
<td>4.6</td>
<td>5.2</td>
<td>5.0</td>
<td>3.9</td>
<td>3.6</td>
<td>3.4</td>
<td>No change</td>
</tr>
</tbody>
</table>

Figure 5: Prevalence of osteoporosis by Local Health Network

The prevalence of osteoporosis has changed in the Northern Adelaide Local Health Network over time.
Osteoporosis: adults aged 18 years and over, July 2002 to December 2015
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Household Income

![Prevalence of osteoporosis by annual household income](image)

The prevalence of osteoporosis has changed in adults living in all household income groups over time.

Table 6: Annual prevalence of osteoporosis by annual household income, July 2002 to December 2015

<table>
<thead>
<tr>
<th>Year</th>
<th>$20,001 or more (%)</th>
<th>Less than $20,001 (%)</th>
<th>Not stated (%)</th>
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<tbody>
<tr>
<td>2002</td>
<td>1.2</td>
<td>9.3</td>
<td>2.7</td>
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<tr>
<td>2003</td>
<td>1.7</td>
<td>9.6</td>
<td>3.4</td>
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<tr>
<td>2004</td>
<td>3.2</td>
<td>10.1</td>
<td>3.3</td>
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<tr>
<td>2005</td>
<td>2.8</td>
<td>11.5</td>
<td>4.3</td>
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<tr>
<td>2006</td>
<td>2.5</td>
<td>12.2</td>
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<td>13.4</td>
<td>3.5</td>
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<tr>
<td>2008</td>
<td>2.8</td>
<td>13.0</td>
<td>4.3</td>
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<tr>
<td>2009</td>
<td>2.8</td>
<td>16.3</td>
<td>4.7</td>
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<tr>
<td>2010</td>
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<td>2011</td>
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<tr>
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<td>3.1</td>
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<td>5.6</td>
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References


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