Bicycle accidents:
A new trend for Hospital Admissions?

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Background

Bicycle riding is an increasing trend in Portugal:
• Improving cycling conditions in Portuguese cities
• Affordable transportation (avoiding rising fuel costs)
• Growing outdoor sports, such as mountain biking

National Agency for Road Safety (www.ansr.pt) data shows accidents involving bicycles are also increasing:
• 2003: 1405 accidents leading to 1370 victims
• 2013: 1762 accidents leading to 1708 victims

Methods

Data from Portuguese National Hospital Registry:
• All hospitals in Portugal
• All admissions
• Coded into
  • ICD9-CM
  • DRG Diagnosis-Related Groups (“GDH”)

Data comparison:
• between 2003 and 2013
• from all Portuguese hospitals
• with ICD9-CM code: E826 (Pedal Cycle Accident)

Results

Between 2003 and 2013:
• 7170 victims involved in bicycle accidents
  • 651,8 yearly average
• 85.7% male
• 11% increase (652 to 725 victims)

Accidents involving bicycles are decreasing in proportion of external causes and all cause admissions:
• 2003: 0.061% of all admissions and 0.57% of external causes
• 2013: 0.043% of all admissions and 0.42% of external causes

Table 1 – Bicycle accident victims by year and sex, external causes and all cause hospital admissions, Portugal, 2003-2013

<table>
<thead>
<tr>
<th>Year</th>
<th>Bicycle accident victims</th>
<th>All external causes</th>
<th>All admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>2003</td>
<td>652</td>
<td>546</td>
<td>106</td>
</tr>
<tr>
<td>2004</td>
<td>607</td>
<td>522</td>
<td>85</td>
</tr>
<tr>
<td>2005</td>
<td>617</td>
<td>512</td>
<td>105</td>
</tr>
<tr>
<td>2006</td>
<td>706</td>
<td>587</td>
<td>119</td>
</tr>
<tr>
<td>2007</td>
<td>661</td>
<td>576</td>
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</tr>
<tr>
<td>2008</td>
<td>637</td>
<td>538</td>
<td>99</td>
</tr>
<tr>
<td>2009</td>
<td>623</td>
<td>535</td>
<td>88</td>
</tr>
<tr>
<td>2010</td>
<td>561</td>
<td>494</td>
<td>67</td>
</tr>
<tr>
<td>2011</td>
<td>677</td>
<td>598</td>
<td>79</td>
</tr>
<tr>
<td>2012</td>
<td>704</td>
<td>604</td>
<td>100</td>
</tr>
<tr>
<td>2013</td>
<td>725</td>
<td>631</td>
<td>94</td>
</tr>
<tr>
<td>Total</td>
<td>7 170</td>
<td>6 143</td>
<td>1 027</td>
</tr>
</tbody>
</table>

Figure 1 – Bicycle accident victims by year, Portugal, 2003-2013

Conclusions

Limitations include:
• Only more severe cases registered (many accidents do not require Hospital care/admission)
• No description on causes for the accident

11% increase in total admissions connected with bicycle accidents
However, a decrease in proportion to external causes and admissions in general
Further studies required