DIETARY DATA AND MORTALITY PATTERNS IN COUNTRIES OF THE BLACK SEA REGION

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Sustainable exploitation of bioactive components from the Black Sea Area traditional foods – the BaSeFood project

Collaborative research program funded by the EC 7th Framework Programme

**Coordinated** by the University of Bologna (*project Coordinator: Prof. Filippo D’Antuono*)

**Participants**: 13 European countries (Bulgaria, Georgia, Romania, Russian Federation, Turkey and Ukraine from the coastal nations of the Black Sea area)
Workpackage 1: Surveying, recording and describing traditional foods
Leader: Hellenic Health Foundation

Deliverable 1.2: Report based on FBS, HBS and WHO data describing the dietary habits and the mortality patterns of the Black Sea Area Countries

Available at: http://www.basefood-fp7.eu/dissemination/public_deliverables/
Material - Methods

- **Setting**: Six countries in the region (Bulgaria, Georgia, Romania, Russian Federation, Turkey and Ukraine)

- **Dietary data**: Food Balance Sheet (FBS) and Household Budget Survey (HBS) data of the early 2000s

- **Mortality data**: Standardized Death Rates (SDRs) for mortality by any cause, diseases of the circulatory system or cancer (WHO, *European mortality database* [http://data.euro.who.int/hfamdb](http://data.euro.who.int/hfamdb))


- **Analysis**: Partial rank correlation coefficients estimated between overall and cause-specific mortality and each of four food groups, adjusting for the countries’ GDP and use of tobacco products.
Dietary data

Food Balance Sheets

- Information on food supply at population level in terms of the major food commodities that are assumed to be available for human consumption in the country.

  - Accuracy of data dependent on the reliability of the underlying basic statistics

Household Budget Surveys

- Systematic collection of data on availability of foods in country representative samples of households

  - Information on demographic and socio-economic characteristics available

  - No records on eating out, food losses and waste, foods given to pets and meals offered to guests.
Sources of daily per person energy supply (kcals) per country and survey year

Source: Food Balance Sheets
http://faostat.fao.org/site/368/default.aspx#ancor

Sources of daily per person fat supply (g) per country and survey year

Source: Food Balance Sheets
http://faostat.fao.org/site/368/default.aspx#ancor

### SDRs for mortality overall and by major groups of causes (per 100000)

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>1255.91</td>
<td>995.39</td>
<td>813.14</td>
<td>611.28</td>
<td>158.49</td>
<td>173.1</td>
</tr>
<tr>
<td>Georgia*</td>
<td>915.25</td>
<td>894.43</td>
<td>648.57</td>
<td>475.96</td>
<td>97.42</td>
<td>102.83</td>
</tr>
<tr>
<td>Romania</td>
<td>1190.28</td>
<td>964.34</td>
<td>730.1</td>
<td>558.32</td>
<td>167.83</td>
<td>181.32</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>1334.49</td>
<td>1300.52</td>
<td>722.05</td>
<td>724.24</td>
<td>194.9</td>
<td>180.41</td>
</tr>
<tr>
<td>Ukraine</td>
<td>1286.3</td>
<td>1308.09</td>
<td>745.71</td>
<td>781.39</td>
<td>174.74</td>
<td>158.23</td>
</tr>
<tr>
<td><strong>European region</strong></td>
<td><strong>963.15</strong></td>
<td><strong>845.37</strong></td>
<td><strong>475.27</strong></td>
<td><strong>404.94</strong></td>
<td><strong>186.59</strong></td>
<td><strong>169.51</strong></td>
</tr>
</tbody>
</table>

* Data available for 1998 and 2009
No data available for Turkey

Source: WHO European Health for All mortality database
[http://data.euro.who.int/hfamdb/](http://data.euro.who.int/hfamdb/)

Partial rank correlation coefficients* between mortality rates and Food Balance Sheet (FBS) or Household Budget Survey (HBS)-derived dietary variables, in countries of the Black Sea Region

<table>
<thead>
<tr>
<th></th>
<th>Total mortality</th>
<th></th>
<th>Mortality from diseases of the circulatory system</th>
<th>Total cancer mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FBS</td>
<td>HBS</td>
<td>FBS</td>
<td>HBS</td>
</tr>
<tr>
<td>Vegetables/legumes</td>
<td>-0.46</td>
<td>+0.70</td>
<td>-0.16</td>
<td>+0.89</td>
</tr>
<tr>
<td>Fruit (including juices)</td>
<td>-0.70</td>
<td>-0.03</td>
<td>-0.89</td>
<td>-0.33</td>
</tr>
<tr>
<td>Meat</td>
<td>+0.85</td>
<td>+0.70</td>
<td>+0.64</td>
<td>+0.89</td>
</tr>
<tr>
<td>Added lipids</td>
<td>-0.07</td>
<td>+0.37</td>
<td>+0.25</td>
<td>+0.64</td>
</tr>
</tbody>
</table>

*Adjusting for Gross Domestic Product and tobacco smoking expressed in number of cigarettes consumed per person per year.
Conclusions

- Cereal-based diet, including several sources of animal fat
- Vegetable oils have traditionally been consumed in the region
- Religious and cultural norms differentiate the type of meat consumed (pork meat was preferred in Bulgaria, Romania and Ukraine; poultry in Turkey; and, beef in the Russian Federation and Georgia)
- Household Budget Survey data state clearly the high dependence of diet on socio-demographic factors, including residential area, educational attainment and income
- Diseases of the circulatory system are the main cause of death in these countries, with rates being substantially higher to those of the European Union.
Thank you

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