References


Short Report

Risk assessment and risk communication in environmental health in Poland

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Introduction

Health problems related to the environment have become a major source of concern on an international basis and it has been suggested that insufficient actions have been taken with to address potential medical problems caused by environmental factors. Estimates recently updated by the World Health Organization (WHO) for its 193 Member States indicate that 24% of the human disease burden, measured as ‘healthy life years lost’, and 23% of premature mortality may be attributable to environmental factors. It has also been reported that over 40% of the global burden of disease attributed to environmental factors affects children under 5 years of age, though that group accounts for only ~10% of the world population. Each year, at least three million children under the age of 5 years reportedly die due to environment-related diseases. Mortality from pediatric acute respiratory infections is estimated to exceed two million for children under the age of 5 years, with as much as 60% attributed to environmental conditions. That estimated contribution to disease burden, while large, is likely to be a conservative estimate because evidence is incomplete for many diseases.

Efficient prevention activities can reduce disease, caused by environmental factors as well as costs to the health-care system, but it is impossible without understanding by the society of when, where, how and why exposures occur. Physicians and other health-care professionals may have an important role to play in communication of these potential dangers as the public requires information from knowledgeable and trusted sources about environmental risks and methods to avoid them. Epidemiological study in Poland shows that the health risk awareness in the society is not satisfactory and improvement of communication processes is essential to reduce individual risk factors.

Methods

In the EU project, awareness of environmental risk was explored through a questionnaire and door-to-door survey of 2491 residents in DG and 580 residents in KTW (total population of DG is 128,025 and KTW is 307,179 residents). It was done by trained public health students. The study questionnaire assessed knowledge and the source of information as well as evaluation of environmental health risks and individuals’ attitudes towards a number of environmental and other health-related issues.

Results

Respondents were asked which environmental factors have the greatest influence on health and which sources of information about environmental risk they considered to reliable and persuasive (Table 1). A majority of respondents (55%) believe that the environment may cause serious disorders or premature mortality. Nevertheless, it appears that they do not indicate environmental hazards properly in the place where they live. Only a few individuals were aware of the indoor environmental risk thus indoor pollution contribute considerable to overall human exposure. Clearly, subjective reporting of health status is not always easy to reconcile with empirical observations. For example, in the study only 12% of respondents associated respiratory disease, allergies and headaches with environmental exposures. The respondents express an opinion that the outdoor environment exerts a major influence upon

### Table 1 Respondents’ opinions regarding factors having the greatest influence on health and the reliable sources of information

<table>
<thead>
<tr>
<th>Factors having the greatest influence on health</th>
<th>Katowice people, n (%)</th>
<th>Dabrowa Gornicza people, n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The state of environment indoors</td>
<td>25 (4.33)</td>
<td>29 (1.16)</td>
</tr>
<tr>
<td>The state of environment outside</td>
<td>198 (34.26)</td>
<td>1695 (67.77)</td>
</tr>
<tr>
<td>Lifestyle</td>
<td>308 (53.28)</td>
<td>675 (26.91)</td>
</tr>
<tr>
<td>Genetic code</td>
<td>46 (7.96)</td>
<td>95 (3.80)</td>
</tr>
<tr>
<td>Other</td>
<td>1 (0.17)</td>
<td>9 (0.36)</td>
</tr>
<tr>
<td>Source of information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radio and television</td>
<td>386 (66.53)</td>
<td>1707 (67.98)</td>
</tr>
<tr>
<td>Press</td>
<td>285 (49.14)</td>
<td>1320 (52.57)</td>
</tr>
<tr>
<td>Family doctor</td>
<td>97 (16.72)</td>
<td>730 (29.07)</td>
</tr>
<tr>
<td>Ecological NGO’s</td>
<td>94 (16.21)</td>
<td>245 (9.76)</td>
</tr>
<tr>
<td>Internet</td>
<td>83 (14.31)</td>
<td>279 (11.11)</td>
</tr>
<tr>
<td>Local government</td>
<td>41 (6.88)</td>
<td>221 (8.80)</td>
</tr>
<tr>
<td>Family and/or acquaintance</td>
<td>36 (6.21)</td>
<td>185 (7.37)</td>
</tr>
<tr>
<td>Other</td>
<td>7 (1.17)</td>
<td>28 (1.12)</td>
</tr>
</tbody>
</table>

Source: E. Marchwinska et al., unpublished results from EU Project DROPS

Note: Percentages do not equal 100% as a result of respondents reporting reliability of more than one information source.
the health state; the indoor environment is regarded as the least important (1.16% in case of DG and 4.33% of KTW). The indoor concentrations of respirable particulates, nitrogen dioxide, carbon monoxide, formaldehyde are often much higher than outdoor concentrations. Every third respondent reported that polluted air and the bad quality of drinking water pose the greatest risk to health. Lifestyle factors are considered important by 26.9 and 53.3% of respondents of the DG and KTW, respectively.

**Discussion**

The results suggest a need for enhanced social awareness of environmental risks, and effective communication regarding those risks. Proper education on environmental risks and health effects is essential. Parents are effective teachers of health habits at home when prompted by health educators. Education also may be achieved by the mass media and by physicians. However, it seems that the influence of physicians or other health-care professionals is underestimated or undervalued. Only 17% of respondents in KTW and about 29% in DG consider a family doctor to be an appropriate source of environmental health risk information (table 1). It may result from poor communication between doctors and patients.

According to WHO, each year, about 1.5 million deaths are associated with the indoor combustion of solid fuels; in the European Union (EU) alone, combustion, chemicals from building materials and dampness cause an annual loss of over 2 million years of healthy life due to premature death or to chronic diseases, such as asthma and cardiovascular diseases. People, spending an increasing amount of time indoors, are exposed to pollutants generated outdoors that penetrate to the indoor environment and also to pollutants produced indoors, for example as a result of space heating, cooking and other indoor activities, or emitted from products used indoors. The fact that the studied population does not see the problem of indoor pollution is very disturbing as over 40% of respondents declare having individual coal furnaces in their homes.

As Galvez et al. noted, paediatric health-care providers should be prepared to communicate health risks of environmental exposures. Clinicians are generally trusted and can play important roles as educators, alert practitioners or advocates addressing health risks with individuals and groups. The evolution of environmental risk perception, risk communication and education about environmental health suggests need for a system that more actively includes physicians. However, it seems that the influence of physicians or other health-care professionals is underestimated or undervalued. Only 17% of respondents in KTW and about 29% in DG consider a family doctor to be an appropriate source of environmental health risk information (table 1).

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