

Risk factors in health and disease

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Introduction

Health and wellbeing are affected by many factors – those linked to poor health, disability, disease or death, are known as risk factors. A risk factor is a characteristic, condition, or behaviour that increases the likelihood of getting a disease or injury. Risk factors are often presented individually, however in practice they do not occur alone. They often coexist and interact with one another. For example, physical inactivity will, over time, cause weight gain, high blood pressure and high cholesterol levels. Together, these significantly increase the chance of developing chronic heart diseases and other health related problems. Ageing populations and longer life expectancy have led to an increase in long-term (chronic), expensive-to-treat diseases and disabilities.

There is a rising demand for healthcare, placing the sector under increasing budget pressure which is not always met. It is important that we, as a society and users of healthcare systems, understand the causes and risk factors behind diseases, so that we can actively take part in available cost effective prevention and treatment programmes.

In general, risk factors can be categorised into the following groups:

- Behavioural
- Physiological
- Demographic
- Environmental
- Genetic

These are described in more detail below.

Types of risk factors

Behavioural risk factors

Behavioural risk factors usually relate to 'actions' that the individual has chosen to take. They can therefore be eliminated or reduced through lifestyle or behavioural choices. Examples include:

- smoking tobacco
- drinking too much alcohol
- nutritional choices
- physical inactivity
- spending too much time in the sun without proper protection
- not having certain vaccinations
- unprotected sex.

Psychological risk factors

Physiological risk factors are those relating to an individual's body or biology. They may be influenced by a combination of genetic, lifestyle and other broad factors. Examples include:

- being overweight or obese
- high blood pressure
- high blood cholesterol
- high blood sugar (glucose).

Demographic risk factors

Demographic risk factors are those that relate to the overall population.

Examples include:

- age
- gender
- population subgroups, such as occupation, religion, or income.

Environmental risk factors

Environmental risk factors cover a wide range of topics such as social, economic, cultural and political factors as well as physical, chemical and biological factors.

Examples include:

- access to clean water and sanitation
- risks in the workplace
- air pollution
- social settings.

Genetic risk factors

Genetic risk factors are based on an individual's genes. Some diseases, such as cystic fibrosis and muscular dystrophy, come entirely from an individual's 'genetic make-up'. Many other diseases, such as asthma or diabetes, reflect the interaction between the genes of the individual and environmental factors. Other diseases, like sickle cell anaemia, are more prevalent in certain population subgroups.

Global risks for mortality and demographic factors

The number of total global deaths for any cause in 2004 was 59 million people.

The table below shows the ten most common risk factors that caused a large portion of total global deaths in 2004 according to the World Health Organisation (WHO). The top six leading risk factors are all linked to potential development of long-term diseases, such as heart disease, diabetes, and cancers.

Table: WHO numbers of the 10 leading global risks for mortality (death), 2004

Rank	Risk factor	% of total deaths
1	High blood pressure	12.8
2	Tobacco use	8.7
3	High blood glucose	5.8
4	Physical inactivity	5.5
5	Overweight and obesity	4.8
6	High cholesterol	4.5
7	Unprotected sex	4.0
8	Alcohol use	3.8
9	Childhood underweight	3.8
10	Indoor smoke from solid fuels	3.0

The ranking seen in the table above differs if income and other demographic factors are considered.

Income

For high and middle-income countries, the most important risk factors are those related to long-term diseases, whereas in low-income countries, factors such as childhood malnutrition and unprotected sex are much more widespread.

Age

Risk factors also change with age. Some risk factors almost exclusively affect children such as malnutrition and indoor smoke from solid fuels. For adults, there are considerable differences depending on age:

- Unprotected sex and addictive substances (e.g. tobacco and alcohol) account for most of the health problems in younger adults
- Risk factors for long-term diseases and cancers mainly affect older adults.

Gender

Gender differences also exist. For example, men are much more likely to be at risk of factors associated with addictive substances. Women are prone to suffer from iron deficiency during pregnancy.

Reducing exposure to risk factors

Reducing contact (exposure) to risk factors would greatly improve global health and life expectancy by many years. This would therefore reduce healthcare costs. See also the SCORE Project fact sheet as an example of how risk factors would greatly influence health and life expectancy.

References

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