

Patterns of Mortality

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@Reference Book: Population Geography by John. I. Clarke

Introduction

- **Morbidity** The frequency of disease, illness, injuries, and disabilities in a population.
- **Mortality** refers to deaths that occur within a population

Measures of mortality

- Death Rate
- Age-Specific Death Rate
- Cause-Specific Death Rate
- Proportion Dying From a Specific Cause
- Infant Mortality Rate
- Maternal Mortality Ratio

Death Rate

- The death rate (also called the crude death rate) is the number of deaths per 1,000 population in that population in a given year.

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$$\frac{\text{Number of deaths}}{\text{Total population}} \times K = \frac{8,504,709}{1,149,285,000} \times 1,000 = 7.4$$

In the 2008, the death rate in India was 7 per 1,000.

In 2009, Zambia's death rate was estimated at 16 per 1,000, while Singapore's was 4.

Age-Specific Death Rate

- Death rates can be calculated for specific age groups in order to compare mortality at different ages or at the same age over time

$$\frac{\text{Deaths of population ages 15-24}}{\text{Population ages 15-24}} \times K = \frac{32,208}{42,546,900} \times 1,000 = 0.8$$

In the United States in 2008, the age-specific death rate for ages 15 to 24 was 0.8 per 1,000.

By comparison, Puerto Rico's 2008 age-specific death rate for ages 75 to 84 was 50.2 per 1,000.

Cause-Specific Death Rate

- Cause-specific death rates are usually expressed in deaths per 100,000

$$\frac{\text{Deaths from heart disease}}{\text{Total population}} \times K = \frac{617,527}{304,050,700} \times 100,000 = 203.1$$

In 2008, 203 people per 100,000 died of heart disease, the leading cause of death in the United States.

Proportion Dying From a Specific Cause

- Deaths from a specific cause can be expressed as a percentage of all deaths

$$\frac{\text{Number of deaths from heart disease}}{\text{Total deaths}} \times K = \frac{617,527}{2,472,699} \times 100 = 25.0$$

In 2008, 25 percent of all deaths in the United States were from heart disease.

Infant Mortality Rate

- the number of deaths of infants under age 1 per 1,000 live births in a given year.
- good indicator of the health status of a population

$$\frac{\text{Number of deaths of infants under age 1 in a given year}}{\text{Total live births in that year}} \times K = \frac{78,400}{3,227,000} \times 1,000 = 24.3$$

There were 24 deaths of infants under age 1 per 1,000 live births in Brazil in 2007.

In 2009, Sweden reported the world's lowest infant mortality rate, 2.2 per 1,000. An example of a high national rate would be Chad's, which was estimated at 130 between 2005 to 2010.

Types of infant mortality rates

- Perinatal : during pregnancy and labour
- Neonatal: during first four weeks of life after birth
- Post-neonatal : occurring within first year excluding first four weeks

Maternal Mortality Ratio

- The number of women who die as a result of complications from pregnancy or childbearing in a given year per 100,000 live births in that year.* (Deaths due to abortions are included)

$$\frac{\text{Number of maternal deaths}}{\text{Total live births}} \times K = \frac{670}{1,713,900} \times 100,000 = 39$$

There were an estimated 39 maternal deaths per 100,000 live births in Russia in 2008.