



Health Policy



Subject 2

Health Transition and Demographic Transition

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Population

A group of individuals or items that **share one or more characteristics** from which data can be gathered and analyzed.

Important characteristics of a population, besides its **size and growth rate**, are the way in which its members are **distributed according to age, sex**, and urban/rural status.

Demography

the study of statistics such as **births, deaths, income**, or the **incidence of disease**, which illustrate the changing structure of human populations.

The **composition of a particular human population**.

Age Composition or Structure:

The age structure of a population refers to the number of people in different age groups.

- A larger size of population in the age group of 15-59 years indicates the chances of having a larger working population.
- If the number of children <15 yrs. in the population is high, the dependency ratio will be high.
- Middle age group” (15 – 45 years) : productive age group.
- A large population in the age group of 60 plus (elderly) indicates greater expenditure on the care of the aged and dependency ratio will be high also.

There are 2 types of nations or countries

Developing countries:

- High crude birth rate (20-40 /1000)
- High infant mortality rate
- high percentage of children <15 yrs
- low percentage of elderly people >65 yrs
- Short life expectancy

Developed countries

- Low crude birth rate (<10/1000)
- Low infant mortality rate
- low percentage of children <15 yrs.
- high percentage of elderly people >65 yrs
- Long life expectancy

Sex Composition :

- The relative numbers of **males and females** in each age group

$$\text{Sex Ratio} = \frac{\text{number of males}}{\text{number of females}}$$

- **Sex ratio is affected by:**

1. **Sex ratio at birth:** a greater number of males born than females.
2. Differential **patterns of mortality (death)** for males and females: a greater number of death among males than females.
3. Differential **patterns of migration** for males and females in population

Age and Sex Composition: Why We Should Know It?

■ **Age and Sex Composition** has considerable impact on health, social and economic processes, both at present and future.

■ For example, **different age-sex compositions** result in :

1. different proportions of the population in the labor (work) force or in school,
2. **different medical or health problems**
3. as well as having **different medical needs**,
4. **different health services**

Health Transition

As a result of socioeconomic development (improvement) , the following situation occur:

1. **mortality and fertility** rates **shift from high to low rates**,
2. populations get **larger and older**, and
3. disease pattern shifts from one **dominated by infectious (communicable) diseases, perinatal diseases and nutritional disorders** to one dominated by **noncommunicable diseases** .

Health Transition

A term refers to the change in the disease 'mix' of a population as it undergoes “westernization” which, in general, is marked by an:

- increased lifespan (lifetime) and
- reduction in death due to infection
- changes and transitions in the world's health needs,
- an increase in cancer, diabetes and cardiovascular mortality

Health transition relates to the role that the cultural, social and behavioral determinants of health play in:

- rising life expectancy at birth .
- the decreasing proportion of all deaths caused by infectious diseases .

The institutional changes associated with the cultural aspects of the health transition include the :

- ❑ systematic promotion of the techniques of disease control and,
- ❑ health care associated with modern medicine instead of folk (traditional) medicine.

Causes of health transition

Health transition is the result of efforts to improve maternal and child health through primary health care services, and such efforts have been responsible for a:

- ↓ decrease in the birth rate;
- ↓ reduced maternal mortality;
- ↓ improved preventive services;
- ↓ reduced infant mortality, and
- ↓ the increased life expectancy that defines the transition.

❖ At present, **lifestyle and behavior** are linked to 20-25% of the **global burden of disease**. This proportion is rapidly increasing in poorer countries.

❖ In the developing countries, **noncommunicable diseases** such as **depression and heart disease, as well as road traffic deaths, cancer and diabetes mellitus** are fast replacing the **infectious diseases** and **malnutrition**, as the leading causes of disability and premature death.

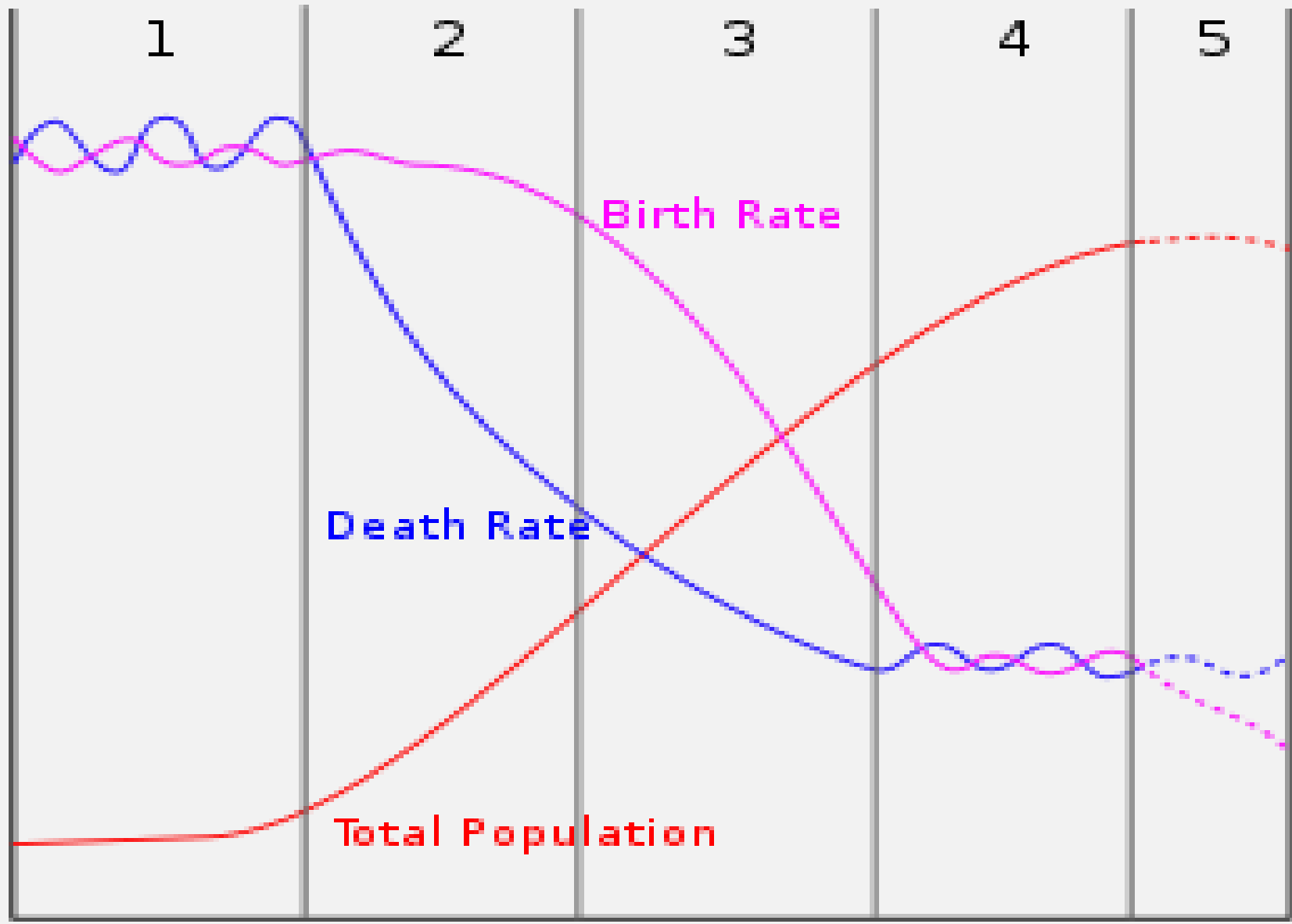
❖ **Injuries**, also growing in importance as a source of ill-health.

❖ It was previously thought that, as countries **develop**, **noncommunicable disease replaced communicable disease** as the main source of ill-health.

Demographic transition

- **Demographic transition** is a model used to explain the process of transition from high birth rates and high death rates to low birth rates and low death rates as part of the economic development of a country from a pre-industrial to an industrialized economy.
- The model consists of 4 stages.
- Most developed countries are already in stage four of the model, most developing countries are in stage 2 or stage 3, and no country is currently still in stage 1.
- The model has explained human population evolution (development) relatively well in Europe and other highly developed countries.
- Many developing countries have moved into stage 3. The major exceptions are poor countries, mainly in sub-Saharan Africa and some Middle Eastern countries.

Births/ Deaths per 1000



1

2

3

4

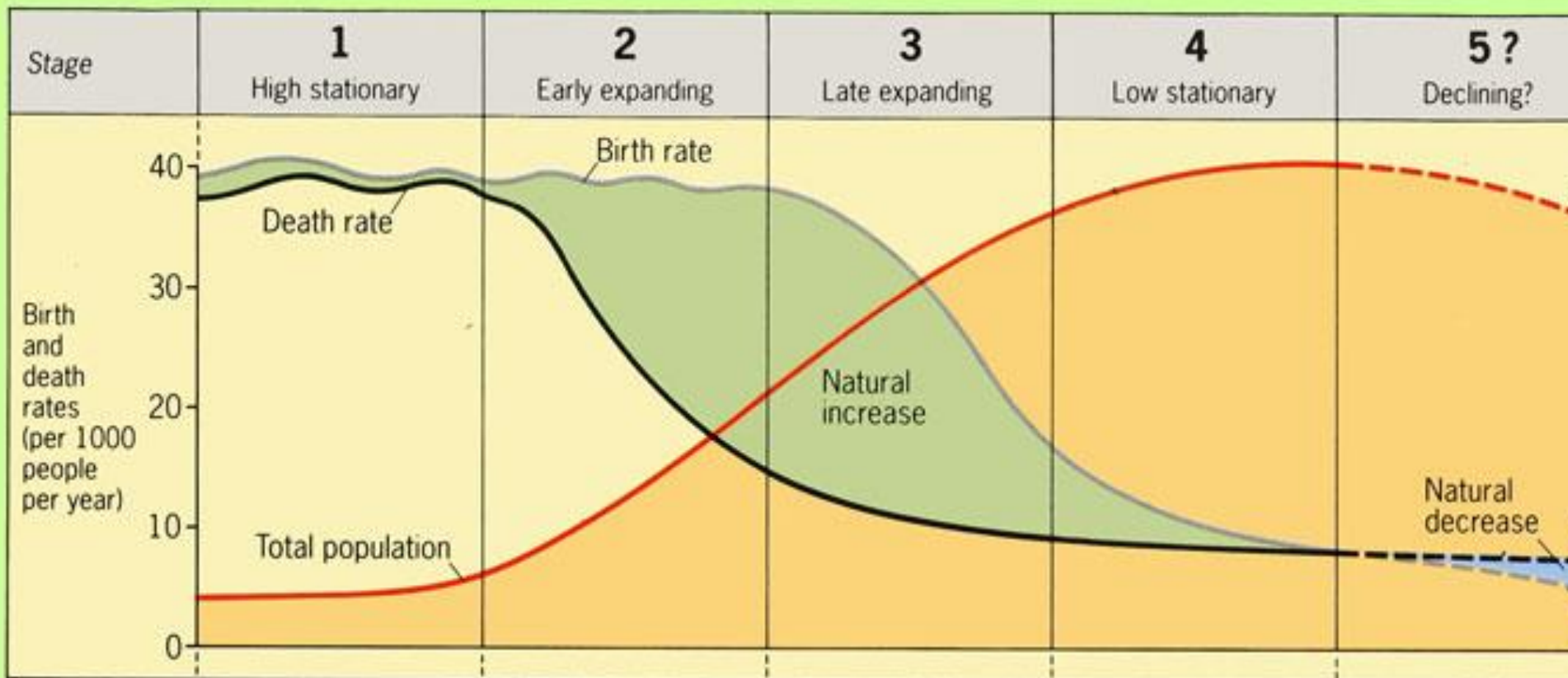
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Birth Rate

Death Rate

Total Population

Time



Examples	A few remote groups	Egypt, Kenya, India	Brazil	USA, Japan France, UK	Germany
Birth rate	High	High	Falling	Low	Very low
Death rate	High	Falls rapidly	Falls more slowly	Low	Low
Natural increase	Stable or slow increase	Very rapid increase	Increase slows down	Stable or slow increase	Slow decrease
Reasons for changes in birth rate	Many children needed for farming. Many children die at an early age. Religious/social encouragement. No family planning.		Improved medical care and diet. Fewer children needed.	Family planning. Good health. Improving status of women. Later marriages.	
Reasons for changes in death rate	Disease, famine. Poor medical knowledge so many children die.	Improvements in medical care, water supply and sanitation. Fewer children die.		Good health care. Reliable food supply.	

Stage 1 (pre-industrial society)

- Is the most **primitive** of the stages , this stage characterized by:
 - high fluctuating birth and death rate.
 - no great **population growth**.
 - **High death** rates are due to poor levels of hygiene and nutrition with a high incidence of disease and famine.
- These countries or even tribes have very **basic living standards** such as those in the Amazon rainforest .
- they **hardly have any education and health care**.
- Other factors involved are **no family planning**.

Stage 2

❖ This is a period of :

- high birth rates;
- the death rate has gone down specially among infants.

❖ This results in a rise in population due to the fact that more infants are surviving.

❖ Reasons for slight increase in the population may be:

- better health care,
- improved sanitation such as water and hygiene.
- more transports and medical care.

❖ In other words, this stage involves:

- a slight modernization in health care ,
- raising people's living standards
- Increasing life expectancy

❖ Another characteristic of Stage Two of the demographic transition is a change in the **age structure** of the population.

❖ In Stage One, most **deaths are concentrated in the first 5–10 years of life.**

❖ Therefore, the **decline in death rates** in Stage Two causes the **increasing survival of children and a growing population.**

❖ Hence, the **age structure** of the population becomes increasingly **youthful** and more of these children enter the **reproductive cycle** of their lives while maintaining the high fertility rates of their parents.

Stage 3

The stage in which the **birth rate begins to fall** whilst there is **already a low death rate** as well leading to a **slight increase in population**.

The **reasons** for the fall in births may be due to:

- ✓ family planning,
- ✓ better education,
- ✓ lower infant mortality rate,
- ✓ a more industrialized way of life
- ✓ the want for more material possessions
- ✓ women being able to go out to work.

In other words, these countries are in the final stages of becoming like the western countries such as the states and those in Europe.

Stage 4

This is the stage at which Switzerland and other European countries are.

There is a :

- **stable population** without much change because
 - both the **death and birth rate are low**, and, in some cases, there are
 - **more deaths than births** therefore leading to a possible stage five.

- Several countries have tried to **force the natural rate of change** by **initiating policies to reduce birth rates**.
e.g., China and Malaysia

Stage 5

A country such as **Sweden** is currently entering into the **negative growth rate** meaning that:

- there are less births than deaths so that
- the **country's population size is decreasing** leading to problems.

The fall in birth rate may be due to:

- increasing liberation and financial independence of women.
- The present economic problem within some European countries where financial concerns may lead to **a lack of children**.
- The **ageing population** may **increase the death rate**.

Criticisms of the DTM Strengths include:

- ✚ The model is **Eurocentric** (European countries) and assumes that all countries will pass through the same stages.
- ✚ Some developing countries appear to skip stages, e.g. China's **one child policy** implemented in 1980 resulted in a **rapidly declining birth rate**.
- ✚ It **does not take migration into account** as a component of population growth/decline.
- ✚ Some developing countries appear to be stuck in stage 2. Their **death rates have fallen**, but their **birth rates remain high**, due to cultural or religious reasons.

- ✚ Some countries in the low economically developed countries had a much **larger base population** than those in Europe at the start of the transition, so **the impact of population growth** during stage 2 and early part of stage 3 has been **far greater**.
- ✚ Model **remove major fluctuations** caused by **natural disasters, wars** etc.
- ✚ Originally **no fifth stage** in the model
- ✚ It does **not take in the recent phenomena such as AIDS**. With 2/3 of the children of sub-Saharan African countries are projected to have HIV infection by the time they have reached age 50, the impact of their demographic development is obvious;
- ✚ It does not consider the positive and indeed negative **roles that governments may play**;
- ✚ Or the role of **migration**

On the positive side:

- ✿ it is easy to understand, and countries can be compared;
- ✿ it can be applied globally to all countries;
- ✿ it provides a starter for all demographic studies
- ✿ The model provides a useful generalization of population change over time.
- ✿ It can be used to compare rates of growth between different countries at a given point in time.
- ✿ Can be a useful predictive tool, so that future changes can be predicted.
- ✿ It can be used to estimate population structure

