DEMOGRAPHY-I

Dr. Nedal Alnawaiseh: M. B. Ch. B (MD), Baghdad, Iraq. MSc, JUST, Jordan. MSPH, Tulane University, USA. PhD, UKM, Malaysia. PhD, UNU, IIGH. Public Health & Community Medicine Department, Medical School, Mutah University, Jordan. Mobile:+962795*****

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Definition

 Demography is the science concerned with <u>the study of human population and its</u> <u>characteristics</u>,

 It provides basic data for organized planning of socio-economic, health and other community services and welfare programs

Sources Of Population Data

1. Population Census

2. Inter-censual Estimates

Sources of population data Census

Definition:

It is the process of:

- Enumeration of all persons in a country at a specified time.
- Collection of demographic data (age, sex and socio-economic status)
- 3. Analysis and publication of the data

Sources of population data Census

Timing:

- the census process is usually carried out every ten years (10) in most countries
- at a time with minimal movement of the population, whether within or outside the country such as pilgrimage and summer vacations.

Sources of population data

Census

	التعداد القانوني De jure census
 Counting individuals Wherever they actually are on the day of the Census 	 Counting individuals At their legal permanent residence regardless To whether or not they Are physically present at the time of census
 Much easy, less expensive 	 It gives a factual figure

De facto census	De jure census
 Disadvantages 1. Persons in transit may be missed 2. It may give a false impression of size for areas with high migration or high seasonal mobility (date choice is critical) 	 Disadvantages: Expensive and time consuming Some individuals may be omitted or counted twice (requires definition of permanent residence which may be difficult with high mobility)

Sources of population data

Inter-censual estimates

Methods of estimation

- 1. Actual increase method
- Used only with Inter-censual years

Population size is estimated by using the preceding census as starting point and taking into account births, deaths and migration.

Sources of population data *Inter-censal estimates*

2. <u>Arithmetical method:</u>

- Can be used with intercensal years and future years predictions.
- It can be assumed that there is a constant <u>absolute annual increase</u> in population:

Example of arithmetical estimation

1980 census pop.	400 000
1990 census pop.	500 000
Pop. increase in 10 years	100 000
Arithmetical annual increase	10 000
1982 estimated pop.	=400 000+2(10 000)= 420 000
1994 estimated pop	=500 000+4(10 000)= 540 000

Importance Of Demographic Data In Public Health

Health statistics of a community depends on the <u>dynamic relationship</u> between number of people (Size), their characteristics (Composition) and the space they occupy (Distribution).

Planning of health services can be logically guided by demographic variables.

They are needed for computing morbidity, mortality and fertility rates

Elements Of Demography

- 1. Size
- 2. Composition
- 3. Distribution
- These elements of demography are affected by three processes namely:
- 1. Fertility
- 2. Mortality
- 3. Migration

1. Size of population

The **base** for many vital statistics.

It has to be related to a place and a specific time.

To describe size one has to consider
Person, Place, Time.

2. Composition of the population

Describes the **characteristics** of pop.

It is important for the followings:

- Gives a true picture of human Resources and Needs.
- 2. Provides **Essential Data** for vital statistics.
- 3. Forecasts changes in size and their directions.
- 4. Allows **Comparisons** between populations

Composition of the population

Studying population may cover any relevant data: age, sex, religion, marital state, education, occupation, economic status...etc.

□Age and sex composition are the important biological population characteristics.

Age and sex are graphically presented as a Population Pyramid.

This is basically <u>Back To Back</u>
<u>Histogram.</u>

One showing the number of males and the other showing the number of females.

The base represents age bands of 5 years intervals.

AGE MALE UNITED STAT	ES FEMALE AGE	MALE MEX	CO FEMALE	AURE	Contraction of the local distance of the loc	CHINA	LEMATE
75 +	75 +			75 +			
70-74	70-7-	4		70-74			
65-69	65-65)		65-69			
60- 64	60-6-	4		60-64			
55-59	55-56)		55-59			
50-54	50-5	4		50-54			
45-49	4546)		45-49			
40-44	40-4	4		40-44			
35-39	35-3	1		35-39			
30-34	30-34	4		30-34			
25-29	25-25)		25-29			
20-24	20-24			20-24			
15-19	15-1)		15-19			
10-14	10-14			10-14			
5-9	5-9			5-9			
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Percentage of Population

Percentage of Population

Percentage of Population

Importance of population pyramid:

1)Indicates births and mortality experiences of the country as well as migration and wars.

2) Indicates the **Stage Of Development** that a certain country has reached.

3) Shows the percentage of population which is described as being <u>Dependent</u>

- 1) Indicates births and mortality experiences of the country as well as migration and wars.
- Base denotes birth rate (if wide = high birth rate if narrow = low birth rate)
- Slope of the sides can denotes:
- Mortality and migration (the sharper the slope, as it goes upwards, the higher are these events)
- The effect of wars (large imbalance in the population with far more women than men of certain ages.

The height of the pyramid denotes life span

The shape of apex (narrow or wide) indicates the percentage of individuals who survive till old age.

The median age: the point on the vertical axis of age through which passes the horizontal line that divides the surface area of the pyramid into two equal parts (50 % younger and 50 % older than median age);

The position of this defined point is inversely related to the width of the base (median age is low when the width is wide and the reverse is true)

- 2) Indicates the <u>Stage Of Development</u> that a certain country has reached.
- Different shaped population pyramids between <u>Developed And Developing</u> countries can indicate the stage of development that a country has reached.

Features of pyramids for developed and developing countries

Developed	Developing
communities	communities
<u>Narrow base</u> of the pyramid due to low birth rate	Wide base due to high birth rate (high dependant young population)
<u>Sides are not sloping,</u>	Sides are sloping,
constant numbers of	numbers decrease as
people through all	you go up the pyramid
bands of working age	(triangular shape
indicating low	indicating high
mortality experienced.	mortality experienced)

Features of pyramids for developed and developing countries

Developed communities	Developing communities
The <u>height</u> of the pyramid	The <u>height</u> of the pyramid
is high indicating high life	is short indicating a low
expectancy	life expectancy

<u>Apex</u> is wide which means that a large number of peoples over 60 years

<u>Apex</u> is narrow indicating that few people survive to old age

Jordan Population Pyramid for 2010

Age and sex distribution for the year 2010



Jordan Population Pyramid for 2020

Predicted age and sex distribution for the year 2020:



Jordan Population Pyramid for 2050

Predicted age and sex distribution for the year 2050:



3) Shows the percentage of population which is described as being "dependant"

These are the groups of people who are dependent upon the economically active members of society.

They are classified as:

- Those under working age (0-15 years old)
- Those who retires (60 years and over)
- These two groups relay on the working age group of people (15-less than 60)

• Young dependency: presented by the surface area below the horizontal line passing through 15 years of age.

Young dependency ratio:

Pop. < 15 years in a year in a locality

x 100

Population 15 - < 60 years

(same year and locality)

□<u>Old dependency</u>: presented by the surface area above the horizontal line passing though 60 years of age.

Old dependency ratio =

Population aged 60 + years

x 100

Population 15 -60 years

(same year and locality)

Age of retirement is different in some countries

Total dependency: presented by the surface area below the horizontal line passing though 15 years of age and that above the horizontal line passing though 60 years of age.

Total dependency ratio =

Population below 15 years + above 60 years

x 100

Pop. age 15 - <60 years (same year and locality) Jordan dependancy ratio is 68.2 %