

Indicators of health and nutrition

⇒ Introduction.

→ Health is defined as "a state of complete physical, mental and social wellbeing and not merely an absence of disease or infirmity (WHO)"

→ This statement has been amplified to include the ability to lead a "socially and economically productive life"

→ Health measurement have been framed in terms of illness (or lack of health), consequences of ill-health (morbidity, mortality) and economic, occupation and domestic factors that promote ill-health - all the antithesis of health.

→ Indicator also termed as index or variable is only an indication of a given situation or a reflection of that situation.

→ Health indicator is a variable, susceptible to direct measurement, that reflects at state of health of persons in community.

→ Numerical indication of the health of given population derived from a specified composite formula.

→ Health status indicators measure different aspects of the health of a population.

→ Examples include life expectancy, infant mortality, disability or chronic disease rates.

→ Health determinant indicators measure things that influence health. Examples include diet, smoking, water quality, income and access to health services.

⇒ Characteristics

→ valid - They should actually measure what they are supposed to measure.

→ Reliable - The results should be the same when measured by different people in similar circumstances

→ Sensitive - They should be sensitive to changes in the situation concerned.

→ Feasible - They should have the ability to obtain data when needed.

→ Relevant - They should contribute to the understanding of the phenomenon of interest.

⇒ Uses.

- Measurement of health of the community
- Description of the health of the community
- Comparison of the health of different communities
- Identification of health needs and prioritizing them
- Evaluation of health services
- Planning and allocation of health resources.
- Measurement of health successes.

⇒ Health indicators.

→ Crude death rate.

→ It indicates the rate at which people are dying. It is defined as the number of deaths in a year per 1,000 population, and is calculated using the formula.

$$= \frac{\text{No. of deaths in a year}}{\text{Mid-year population}} \times 1000$$

→ Infant mortality rate (IMR)

→ It refers to the number of deaths of infants (below one year of age) in a year per 1,000 live births.

$$= \frac{\text{No. of deaths of children less than 1 year of age in year}}{\text{No. of live births in the same year}} \times 1000$$

→ Child mortality rate.

→ It tells us about the number of children dying after the first birthday but before their fifth birthday.

$$= \frac{\text{No. of deaths of children aged 1-4 years during a year}}{\text{Total no. of children aged 1-4 years at the middle of the year}} \times 1000$$

→ Under-5 mortality rate.

→ Here we club all the deaths taking place before 5 yrs of age.

$$= \frac{\text{No. of deaths of children before 5 years of age}}{\text{No. of live births}} \times 1000$$

→ Maternal mortality rate

→ Death of women due to pregnancy, child birth etc.

$$= \frac{\text{No. of death of females due to (pregnancy) child birth or within 42 days of delivery from related causes in an area during a given year}}{\text{Total no. of live births in the same area \& year}} \times 1000$$

→ Disease-specific mortality

→ It is the simplest method of calculating the disease burden in society

→ Mortality rate can be computed for particular diseases

→ The no. of deaths due to a specific disease is expressed in terms of 1,000 or 1,00,000 population depending upon the number of deaths due to that disease.

→ Expectation of life.

→ life expectancy at birth is the average number of years that will be lived by those born into a population if the current age-specific mortality rates of the population persist.

→ Morbidity indicators.

→ Morbidity refers to ill health.

→ incidence: It refers to the occurrence of new cases in a specified population within a specified time frame

→ incidence rate -

$$= \frac{\text{No. of new cases of specific disease during a given period}}{\text{Population at risk}} \times 1000$$

→ Prevalence - Prevalence refers to the number of existing cases of particular disease at one point of time in a defined population.

→ Attendance rates at out patient departments, health centres etc.

→ Disability rates.

→ Bed disability rates

→ work loss days

→ Sullivan's index - This index is calculated by subtracting from the life expectancy the probable duration of bed disability and inability to perform major activities.

⇒ Nutritional status indicators

→ PEM [Protein Energy Malnutrition]

→ It is defined as an unintentional loss of 10% or more of body weight in a period of 6 months and less and or serum albumin levels of less than 3.5 g/dl

→ It is caused by starvation.

→ It is the disease that develops when protein intake or energy intake or both, chronically fail to meet the body's requirements for these nutrients.

→ Symptoms.

→ Poor weight gain, slowing of linear growth, behavioural changes - Irritability, apathy, decreased social responsiveness, anxiety, and attention deficits

→ It is diagnosed by identifying the dietary history of patient, the BMI is also calculated to measure severity of PEM.

→ Vitamin - A deficiency.

→ Vitamin - A deficiency can result from inadequate intake, fat malabsorption, or liver disorders and lack of vitamin - A in our diet.

→ Symptoms.

→ Eye disorders or xerophthalmia, Bitot's spots, night blindness, corneal xerosis, keratomalacia, corneal scar, abnormal bone growth, increased risk of morbidity and mortality

→ Although the indicator is used to assess the vitamin - A status is serum retinol

⇒ Prevalence of low birth weight (LBW)

→ The cut-off point for calling a baby a low birth weight baby is 2500 gms.

→ It is a term used to describe babies who are born weighing less than 2500 gms.

Causes - Preterm birth and fetal growth restriction.

- Poor Prenatal nutrition.

- Pregnancy - induced high blood pressure.

- weight of the mother

- Chronic health conditions like diabetes, heart

Problems, lung or kidney problems & high blood pressure

⇒ Prevalence of PEM in the under fives.

→ PEM is measured in terms of underweight (low weight for age), stunting (low height for age) and wasting (low weight for height). The prevalence of Stunting among under-five is 48% and wasting is 19.8% and with an under-weight prevalence of 42.5%, It is the highest in the world.

⇒ Prevalence of vitamin - A deficiency.

→ In its more severe forms, vitamin - A deficiency contributes to blindness by making the cornea very dry, thus damaging the retina and cornea. An estimated 2,50,000 - 5 lakh children who are vitamin - A deficient become blind every year and half of them die within 12 months of losing their sight.

⇒ Health care delivery indicators.

→ Health man power - People who are trained to promote health, to prevent and to cure diseases, and to rehabilitate the sick.

→ health infrastructure - It includes advanced machines, specialist doctors, nurses, and other paramedical professionals and developed pharmaceutical industries.

→ Population

→ Doctor - Population ratio - 1 per 1000

→ Docto - nurse ratio - 1 doctor 2 nurses

→ Population per health centre

→ Population per hospital bed.

- Population per trained birth attendant etc.
- Utilization rates.
- Proportion of fully immunized children
- Proportion of pregnant women who receive antenatal care
- Bed occupancy rate.

⇒ Indicators of social and mental health

- The events indicating social and mental pathology are suicide, homicide, juvenile delinquency, alcohol and drug abuse road traffic accidents, smoking, family violence, battered - baby and battered - wife syndromes etc.

⇒ Environmental indicators.

- These refer to the physical and biological environment in which people live and in which diseases occur.
- Of these the most useful indicators are measuring the percentage of households with safe drinking water facility, percentage of households with appropriate sanitary facility etc.

⇒ Indicators of quality of life

- Physical quality of life index [PQLI] -
- It takes three factors into consideration i.e., infant mortality rate, life expectancy at the age of one year and literacy rate
- It is measured against a scale of 0 to 100.

⇒ Health policy indicators.

- Resource allocation
- Community involvement
- Degree of equity of distribution of health services.
- Political commitment.

⇒ Socio-Economic indicators.

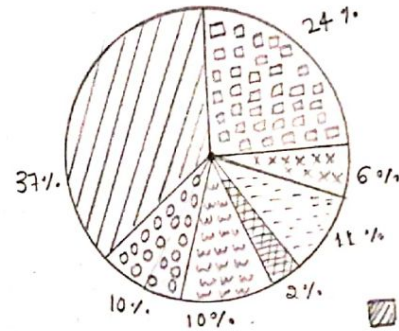
- Food availability, housing
- Socio-economic status of the family, per capita income
- Adult literacy, family literacy
- Rate of population increase.

⇒ Health Situation in India.

→ Demographic profile

- Total Population, Crude birth rate, Crude death rate, Annual growth rate, rural population, literacy rate, population density 1sq. km Population below 15 years, population above 60 years average family size, female age at marriage, Sex ratio, Annual per capita GNP (Gross national product)

→ Mortality rate (% of total deaths, all ages)



- ☐ - Cardiovascular Disease
- ☐ - Concers
- ☐ - Respiratory Disease
- ☐ - Diabetes
- ☐ - Other NCD's
- ☐ - Injuries
- ☐ - Communicable, maternal, Perinatal & nutritional Conditions.

⇒ Health care services - Basic concepts

- Levels of health care
- Primary health care - It is the first level of contact between the individual and the health system where essential services are provided. In India it is represented by the sub-centre and primary health centre
- Secondary health care - Community health centres (CHC) & district hospitals are included in this category
- Tertiary health care - This level offers super-specialised health services, provided by regional/central level institutions. These centres also provide planning & managerial skills and teaching to the specialised staff medical colleges and institutions fall in this category
- ⇒ Health team concept.
- The practice of modern medicine has become a joint effort of many groups of workers, both medical and non-medical, i.e., physicians, nurses, social workers, health

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