

BLOCK 2
POPULATION AND HUMAN
DEVELOPMENT

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BLOCK INTRODUCTION

Block 2: Population and Human Development

Block 2 of this course is on ‘Population and Human Development’. This block has three units. The units are devoted to the themes of demography, education, health and nutrition. It thus deals with the social sector of development.

Unit 5 is on ‘**Demographic Features**’. The unit discusses the growth in population over the decades. Changing trends in fertility and mortality rates are explained. The issue of demographic transition is then discussed in terms of urbanisation, sex ratio, population pyramid and dependency ratio. The concept of ‘population ageing’ with reference to demographic dividend and National Population Policy is also presented in the unit.

Unit 6 is on ‘**Education Sector**’. The unit begins with a distinction on ‘human capital’ and ‘human development’. The status of ‘education sector’ in India is explained by ‘level of education’ and ‘gender and quality’ dimensions. The issue of ‘financing of education’ is discussed with reference to ‘public expenditure on education’ and ‘alternative sources of funding’.

Unit 7 is on ‘**Health and Nutrition**’. The unit begins with an outline on the concepts of ‘measurement of health and nutrition’. Issues of sources of health expenditure, public healthcare system in India and the National Health Policy are discussed in the unit.

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UNIT 5 DEMOGRAPHIC FEATURES*

Structure

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- 5.2 Population of India: Size and Growth
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5.0 OBJECTIVES

After going through this unit, you will be able to:

- define the concepts of ‘Density of Population’ (DoP) and ‘Growth of Population’ (GoP);
- state the basic demographic equation of ‘Vital Statistics’ with a specification of its main constituents;
- explain the different types of ‘fertility’ and ‘mortality’ rates along with their merits and demerits;
- analyse the trends in ‘demographic transition’ in India;
- outline the concepts of ‘population ageing’ and ‘demographic dividend; and
- indicate the objectives and achievements of NPP, 2000.

5.1 INTRODUCTION

Demography means ‘the scientific study of human population, with respect to size, structure and development’. The study of Demography is important

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since human population in terms of its structure, composition and growth, has significant bearing on economic growth and development. Population is the only and ultimate source of labour supply for development activities. It is also the ultimate beneficiary of development. Hence, population is both the means and the end of economic development. In India, the Demographic data is available in the Census Reports which is conducted every once in ten years. The last such census was conducted in the year 2011. The present unit delves into the important demographic features of India.

5.2 POPULATION OF INDIA: SIZE AND GROWTH

India's population, as per the 2011 census, was 1211 million (a million is equal to 10,00,000 i.e. 10 lakhs). Stating the figures in millions, it was 1029 in 2001, 846 in 1991, 683 in 1981, 548 in 1971, 439 in 1961 and 361 in 1951. At present, India is the second most populous country after China. As per the World Bank data (for 2016), China's population is 1359 million and India's population is 1324 million. However, the geographical area of India, in terms of square kilometres, is much smaller than that of China. The demographic measure that accounts for number of people per square km of land area is called the Density of Population (**DoP**). It is measured as:

$$\text{DoP} = \frac{\text{Population of a Geographical Area}}{\text{Land Area in Sq. Km of that Geographical Area}}$$

As per 2011 Census Report, DoP of India is 382. As per World Bank data, for 2016, the DoP of India is 445, of China 147, USA 35 and Australia 3.

The figures show that amongst these countries, India is the most thickly populated country. The figures also point out that the population of the world is not distributed uniformly across the regions. This is true within India also. Some states of India are densely populated whereas others are relatively sparsely populated. The states of Bihar (1106), West Bengal (1028), Uttar Pradesh (829) are densely populated. On the other hand, the states of Himachal Pradesh (123), Sikkim (86), Mizoram (52) and Arunachal Pradesh (17) are sparsely populated. Broadly speaking, territories with Mountains, hills, deserts and large dense forest areas are sparsely populated whereas territories having fertile land, industries, better transport facilities, etc. are densely populated.

5.2.1 Growth of Population

The size of the population of a given area changes over time through: (i) migration and (ii) natural factors like *births and deaths*. The change in the size of population over time, expressed as a percentage to its base year value, is called the growth of population. Thus, the rate of growth of population (or simply the growth rate) is estimated as: Rate of Growth of Population (**RGP**) = $\frac{P_{t+1} - P_t}{P_t} \times 100$ where, P_t is the size of absolute population at time point 't' and P_{t+1} is the size of absolute population at time point 't+1'. The growth rate of the population is expressed in percentage.

The population in India was 1028.5 million in 2001; it increased to 1210.6 million in 2011. The Rate of Growth of Population over the period 2001 to 2011 is 17.7 (or 18) percent. However, when the decadal rate of population growth is divided by 10, we get the average annual growth rate of population which in the present case is 1.8 percent. The rate of decadal growth of India's population increased from 22 percent in 1951-61 to 25 percent in 1961-71. After that, it has been declining steadily at a very slow pace at first but at an accelerated rate since 1991. The growth rate of population, as per 2011 census, is not uniformly the same across the states of India. Some states have exhibited higher average annual growth rate than the national growth rate. For instance, Meghalaya (2.8 percent), Bihar (2.6 percent), Arunachal Pradesh (2.6 percent), Jammu & Kashmir (2.4 percent), Rajasthan (2.2 percent), etc. The lowest growth rate is in Nagaland (- 0.6 percent).

5.3 VITAL STATISTICS

To understand the population dynamics, it is important to study the birth (fertility) rate, death (mortality) rate and migration pattern along with their methods of measurement in a scientific way. The basic demographic equation is:

$$P_{t+1} - P_t = (\text{Births} - \text{Deaths}) + (\text{In} - \text{Out})$$

i.e. Population Change = Natural Growth of Population + Net Migration.

Vital Statistics deals with the two demographic fundamentals i.e. births (fertility) and deaths (mortality). It is also concerned with migration, marriage, longevity, etc. In this section, we shall discuss four types of fertility and four types of mortality rates.

5.3.1 Fertility Rates

The four important types of fertility measures are: (i) crude birth rate (CBR), (ii) general fertility rate (GFR), (iii) age specific fertility rate (ASFR) and (iv) total fertility rate (TFR).

Crude Birth Rate (CBR): The Crude Birth Rate (CBR) in an area, in any year (or time) is defined as the number of live births in that area in that year or time per thousand population. Thus, $CBR = \frac{B}{P} \times 1000$, where B is the total number of live births registered in a defined geographical area (or a social group) within a time frame (usually a complete year) and P is the mid-year population in the defined space and time. Trend in CBR in India shows that the CBR has come down from 40 during 1941-51 to about 26 in 1991-2001 and about 22 in 2011. The main reasons for the decreasing trend in CBR in India are: (i) the promotion of family planning programmes by government, (ii) spread of literacy and increase in education level of people, (iii) increasing awareness among the people of the benefits of adopting a small family norm, (iv) more participation of women in paid work and (v) increasing opportunity cost of child bearing and rearing for women. The CBR in India compares to about 14 in U.S., 12 in China and 9 in Japan. Thus, compared to developed countries, CBR in India is high. The major factors responsible for this are: (i) high infant mortality rate; (ii) strong preference for

a son; (iii) high economic value of children in traditional agrarian society; (iv) lack of knowledge about family planning and contraception; (v) low age at marriage and polygamy; (vi) low education of parents; and (vii) religious norms and practices.

Merits and Demerits of CBR: CBR is easy to understand and estimate. CBR can reasonably compare well the birth rates at two not very distant points of time of the same region since the age and sex distribution of population generally do not change in short term. CBR takes into consideration the total population almost half of which are males who are not directly involved in child birth. Moreover, only a restricted segment of women population (15-49 year) has the ability of child bearing.

General Fertility Rate (GFR): GFR is the number of births per year per thousand women of childbearing age (aged 15-49). It is computed as: $GFR = \frac{B}{\sum_{x=15}^{x=49} f P_x} \times 1000$, where B refers to the total number of live births (as in CBR) and, $\sum_{x=15}^{x=49} f P_x$ refers to the mid-year population of women in the age group 15-49 which are generally considered as the two limits of the 'child bearing age' of women.

Merits and Demerits of GFR: GFR overcomes the crude approach adopted in case of CBR. It is more scientific since it considers total births with reference to women population of child bearing age only. The age of puberty is not the same for girls coming from cold, temperate and hot climatic regions. Therefore, before applying the formula, a judicious decision regarding the two limits of child bearing age of women is required to be decided. Moreover, fertility varies with age i.e. within the two limits of fertility span. Therefore, it is inappropriate to consider all women segment of age group 15-49 together.

Age Specific Fertility Rate (ASFR): The ASFR for any age group is the ratio of number of live births per woman to the mid-year female population of the particular age group. The ASFR is thus given by: $ASFR = \frac{B_x}{f P_x} \times 1000$, where B_x is the number of live births given by women in the age group of x to x+1 and $f P_x$ is the average size of the women population in the age group of x to x+1. ASFR is usually calculated for every single year of 15 to 49 age or for some broad age groups like 15-19, 20-24,The above formula shows ASFR of women of age x. We can compute ASFR between any two age limits by making necessary modifications in numerator and denominator.

Merits and Demerits: Since it is age-specific, the fertility rate of women belonging to different age groups within 15-49 is taken into account. Generally ASFR remains small in early ages of puberty, it rapidly increases till around 30 and then declines until it comes down to almost zero around the age of 49 years. Not all women belonging to child bearing age are exposed to the chance of child bearing but only those who are married in that age group and being able to give birth. ASFR ignores both the marital status as well as the infertility element of some women in the child bearing age-group.

Total Fertility Rate (TFR): TFR provides a general index of fertility in a population under two assumptions: (i) every woman who enters the child

bearing age gives live births as per the ASFR for each age and (ii) no woman will die before she leaves the reproductive period. TFR is calculated by the

formula: $TFR = \sum_{x=15}^{x=49} \frac{B_x}{f_{49}P_{15}}$, which is simply the summation of ASFRs.

The expression tells us that if 1000 women enter the child bearing age together, then TFR is the number of children to be born live to these women before the time of their exit from their reproductive period. If the multiplier 1000 is dropped, TFR will simply mean the average number of babies to be born to mothers at the end of their reproductive phase. When ASFRs are calculated for age groups 15-19, 20-24,.... 45-49, TFR is computed as: $TFR = \frac{5 \times \sum_{15}^{49} ASFR}{1000}$.

Merits and Demerits: TFR is the most frequently used index of birth rate. It takes into account the entire fertility span of women population and at the same time fertility of women belonging to particular age groups. TFR is less precise because of the fact that not every woman shall start her reproductive period at age 15 and some would not bear children.

TFR was estimated to be 5.2 for India in 1971 but is estimated to have come down to 3.6 in 1991 and further to 3.0 in 2002. According to UNDP Human Development Report 2001, TFR for the world population has dropped from 4.5 in 1975 to 2.8 in 1995-2000. In India, TFR has declined from 3.0 in 2002 to 2.4 in 2012. According to latest data available, TFR stands at 2.3 in 2013. Such a high value for TFR means that at the current prevalent age-specific fertility rates, a woman in India would add, on an average, 2.4 children to the population before she completes her reproductive life. Although TFR has been brought down to the level of 2.3 in 2013 over a period of more than 40 years, it is still high enough and 0.2 higher than Replacement Level Fertility (i.e. TFR = 2.1) which is a matter of great concern.

5.3.2 Mortality Rates

We shall discuss four mortality rates viz. CDR, ASDR, IMR and expectation of life at birth. The Crude Death Rate (CDR) or the Crude Mortality Rate (CMR) in any year in an area is defined as the number of deaths in the year per thousand population i.e. $CDR = \frac{D}{P} \times 1000$, where D refers to the total number of deaths from all causes registered in a defined geographical area (or a social group) within a time frame (usually a calendar year) and P is the mid-year population in the defined space and time.

Merits and Demerits: This is the most frequently used and most easily calculated and understood index of mortality. It gives a general picture of mortality situation prevailing in the entire population under consideration. However, it is based on the assumption that the risk of dying for every individual (P) is the same. It is not desirable to compare death rates of two countries, two regions or two communities on the basis of CDR because of this limitation. CDR in India has declined from a high rate of 49 per annum per thousand during 1911-21 to 9 in 2001, 8 in 2006 and further to 7 in 2012.

Age-Specific Death Rate (ASDR): Death occurs at all ages and the risk of mortality varies with age. It is therefore necessary to analyse death rates for populations at different ages (or age groups) by calculating age-specific death rates (ASDR). This is calculated as: $ASDR = \frac{nD_x}{nP_x} \times 1000$ where nD_x is the number of deaths recorded for persons in the ages x to $x+n-1$ and nP_x is the mid-year population size for this age group. When $n=1$, the ASDR becomes annual age specific death rate and is given by: $AASDR = \frac{D_x}{P_x} \times 1000$.

Merits and Demerits: ASDR makes comparison between two population groups more meaningful. It reveals whether persons in some specific age-group have the same probability of dying as in the total population. However, estimation of ASDR is difficult because unless we know accurately the age of the deceased, errors are bound to creep-in.

Infant Mortality Rate: Children face a greater risk of mortality (i.e. deaths) than adults, especially during the first year of their life. The health status of infants (i.e. those who are less than 12 months old) is an important indicator of the level of healthcare and medical facilities available in an area. The Infant Mortality Rate (IMR) is defined as the number of infants dying ‘under one year of age’ in a year in an area per thousand live births.

That is: $IMR = \frac{1D_0}{1B_0} \times 1000$ where $1D_0$ is the number of infant deaths under age 1 year (< 1 year) and $1B_0$ is the number of live births in the same year and area. IMR for India was about 129 in 1971. It declined to 57 in 2006 and further to 42 in 2012. It varies widely across states. In 2012, at the lower end are Kerala (12), Manipur (10) and Goa (10) and at the upper end are Madhya Pradesh (56), Assam (55), Odisha (53) and Uttar Pradesh (53).

Expectation of Life at Birth: It is the average number of years a new-born child is expected to live under current mortality conditions. Expectation of life can be estimated at any age. For instance, expectation of life at age five is the average number of years a child aged 5 today is expected to live. Expectation of life at birth for India has increased from 41 years in the period 1951-61 to 56 years in 1981-85 and further to 61 years in 1992-96 and to 66 years in 2006-10. It varied (in 2006-10) from the highest in Kerala (74) to the lowest (62) in Assam among the major states of India.

Check Your Progress 1 [answer within 50-100 words within the space given]

- 1) How is ‘density of population measured’? What is its current density for India and how does it compare with those of other countries?

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2) How is the DoP distributed across states in India?

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3) How is CBR defined? What has been its trend in India? How does the CBR in India compare with that in countries?

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4) How is GFR superior to CBR? In spite of this, what is GFR's limitation?

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5) How is TFR estimated? How is it superior to all other fertility rates? What is the significance of the term 'replacement level fertility'?

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6) How is IMR defined? What is its significance?

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5.4 DEMOGRAPHIC TRANSITION

Demographic transition is a process by which countries transit from a situation of high birth and death rates to one of low rates in both. Less Developed countries (LDCs) typically have high birth and death rates: as with development slowly picking-up, death rates tend to fall earlier than birth rates, resulting in rapid population increase. Advanced countries tend to have

low birth and death rates, and a low or even negative rate of natural increase. Theory of demographic transition is based on the actual demographic experience of Western Countries. C. P. Blacker (1945) identified five distinct phases of demographic transition as follows.

- 1) High Stationary stage, characterised by high birth rates and high death rates.
- 2) Early Expanding Stage characterised by falling birth rates with a time lag, for decreasing mortality.
- 3) Late Expanding Stage characterised by falling birth rates but rapidly decreasing mortality.
- 4) Low stationary stage of population characterised by low birth rates balanced by equally low mortality.
- 5) Declining stage of population with low mortality and deaths exceeding births.

The figures for CBR and CDR in India for the period 1901-2011 is given in Table 5.1. The data indicates that India has been experiencing a fast decline in death rate since 1931. On the other hand, the birth rate has remained very high during the period from 1901 to 1951. This, therefore, was the 'early expanding stage' of population i.e. the second stage of demographic transition in India. From 1981, both the birth rate and the death rate has been declining fast indicating that India is now in 'late expanding stage' of demographic transition. In 2010-15, at the World level, 83 countries were experiencing below replacement level fertility i.e. negative natural growth rate of population. Thus, in spite of including in-migration, countries like Japan (-0.1), Spain (-0.2), Greece (-0.4), Romania (-0.8), Lithuania (-1.6), etc. have registered negative average annual growth rate of population indicating their present stage of demographic transition to be in the 5th stage. Some of the major demographic features in which economies would experience significant shift during the course of demographic transition are: (i) urbanisation; (ii) changing sex-ratio; (iii) structure of population pyramid; and (iv) dependency ratio.

Table 5.1: CBR and CDR in India – 1901 to 2011

Year	CBR	CDR
1901	46	44
1911	49	43
1921	48	47
1931	46	36
1941	45	31
1951	40	27
1961	41	23
1971	41	19

1981	37	15
1991	33	11
2001	25	9
2011	22	7

Source: Health and Family Welfare Report, 2013.

5.4.1 Urbanisation

Urbanisation is a process by which societies become more urban. It refers to a population shift from rural to urban areas. Thus, it is a case in which the rate of growth of urban population is more than the rate of growth of rural population. Two simple measures to gauge the degree of urbanisation are the following.

i) Percentage of Population in Urban areas (PU):

$$PU = \frac{\text{Size of Urban Population}}{\text{Size of Total Population}} \times 100$$

Higher the value of PU, higher is the degree of urbanisation.

ii) Ratio of Urban-Rural Population (UR):

$$UR = \frac{\text{Size of Urban Population}}{\text{Size of Rural Population}} \times 100$$

Higher the value of the ratio UR, higher is the degree of urbanisation.

The share of urban population in India (PU) has increased from about 11 percent in 1901 to about 17 percent in 1951 and further to 31 percent in 2011. There has been a gradual increase in the trend of urbanisation in India over the period. The Urban-Rural ratio (UR), on the other hand, has increased from 21 percent in 1951 to 45 percent in 2011. The rate of urbanisation has, however, been uneven across the states. For instance, the NCT of Delhi is the most urbanised with as much as 98 percent of its population living in urban areas. Goa is the most urbanised among the states with 62 percent of its population living in urban areas. The least urbanised states are Himachal Pradesh (10 percent) and Bihar (11 percent). Census classification treats areas with population above a certain level as Urban Areas. Thus, every census has a potential for reclassification certain areas into 'urban', though people in those areas continue to live in the same place.

Still urbanisation is considered beneficial because of better opportunity for earning higher incomes, better infrastructure and better awareness and response of people to social issues in general. Urbanisation therefore contributes to modernisation and social change, the latter through lower birth rate, lower death rate, lower IMR and lower fertility rates. These are mainly due to higher levels of education and healthcare facilities which are much better in urban areas than in rural areas.

The pattern of urbanisation in India is characterised by continuous concentration of population in large cities without adequate expansion of resource base and amenities. As a result, it has generated problems in the

areas of housing, transport, water supply and sanitation, water, air and noise pollution, social infrastructure (schools, hospitals etc), urban poverty and unemployment and growth of slum areas.

5.4.2 Sex Ratio

The gender composition of the population is measured by the sex ratio, defined as the number of females per thousand males. It has been observed that females outnumber males in developed countries. India's sex ratio, however, shows that the society is masculine in respect of this demographic feature. The sex ratio in India has declined from 972 in 1901 to 933 in 2001 which slightly increased to 943 in 2011. It varies widely across states: from 1084 in Kerala to 879 in Haryana and among Union Territories, from 1037 in Pondicherry to 618 in Daman & Diu (as per 2011 census). The declining trend in the sex ratio in India has been due to a number of factors like: high Maternal Mortality Rate (MMR), high IMR among the girls, high Child Mortality rate among the girls, strong son preference prevalent among the parents, female illiteracy and low level of education, illegal female infanticide and female foeticide, etc. Efforts to promote gender equality through emphasis on education of girls, empowerment of women, legislation to prevent domestic violence against women and ban on the use of pre-delivery sex determining technology have been scaled up to tackle these issues in the recent years in India. The latest initiative launched viz. 'Beti Bachhao, Beti Padao' is worth noting in this context.

5.4.3 Population Pyramid

Population Pyramid or age-sex pyramids are an elegant and useful way of graphically presenting the age-sex distribution of population. A pyramid comprises of two ordinary histograms placed on their sides. The rules of drawing pyramids are generally the same as those for plotting histograms, but there are certain conventions and special features. These are:

first, pyramids are always drawn showing the male population on the left hand side and the female population on the right hand side. The young are always at the bottom and the old at the top. It is conventional to use single year or 5-year age groups, though other groupings are also possible.

second, the last open ended age-group is normally omitted, but in some cases it is shown.

third, the vertical scale shows the age groups and the horizontal scale shows the percentage of population or absolute number of population of each group. In case of percentages, the percentages are to be calculated using the total population of both sexes combined as the base.

fourth, the horizontal scale must be uniform for both the sides of the pyramid. The vertical scale must also be uniform for both the sides while drawing the histograms.

The population pyramids of India for 2001, 2016 and 2026 (projected) are shown in Fig. 5.1. They reveal that the shape of the population pyramid has been changing gradually. In 2001, it had a much broader base than that in

2016 and 2026 implying larger proportion of young children in the population in 2001 compared to 2016 and 2026. The proportion of elderly has also grown over the period as revealed by the slightly bigger size of histograms at the top of population pyramid-2026 (Projected). The latter is because of population ageing. The pyramids of developed countries are almost rectangular in shape indicating lower proportion of children and a higher proportion of the adults and the elderly in the population. The larger proportion of working age population in India particularly belonging to age groups 20-24 to 55-59 in pyramids 2016 and 2026 point out towards the country's entering the phase of demographic dividend.

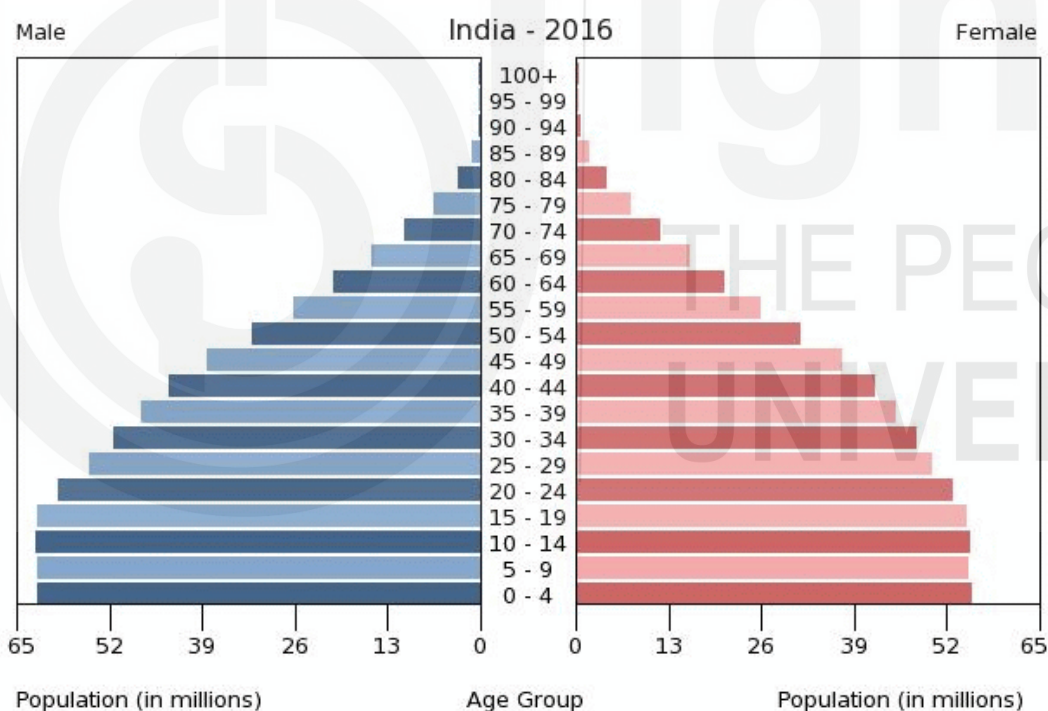
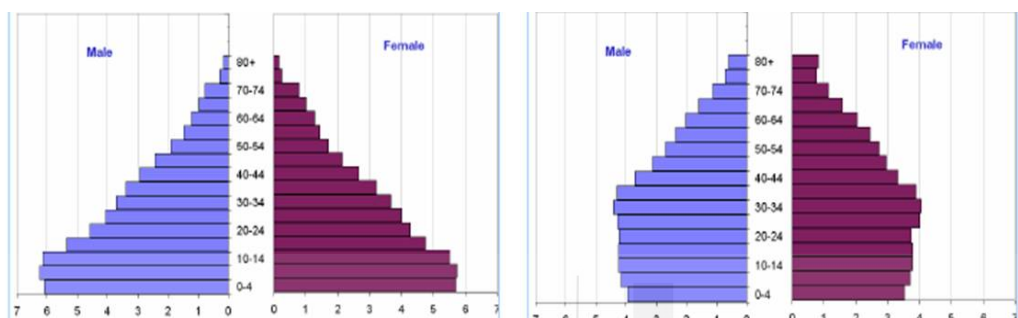


Fig. 5.1: Population Pyramid of India 2001, 2016 & 2026

Source: Internet, <http://www.populationpyramid.net/India/2015>.

5.4.2 Dependency Ratio

It is customary to classify age data in five-year age groups, such as 0-4, 5-9, 10-14, 15-19, 20-24 years and so on. Such presentation of population age-group-wise is useful for a wide variety of analytical purposes. Usually, population data is clubbed for certain age-groups to get an idea on the potential labour force, economically active population, etc. as follows.

Table 5.2: Classification of Population by Age-Group

Age Group	Classification
0-14	Children
15-24	Young
25-59	Economically productive
60-59	Elderly
80+	Aged

The age-group wise distribution of population facilitates estimation of the size of population among children, young, economically productive, elderly and aged segments of the population by country and region. Different indicators of development can then be estimated among which ‘dependency ratio’ is one important indicator of development. The UNDP HDR 2016 has defined the ‘dependency ratio’ separately for young age population and old age population as follows.

$$(A) \text{ Young-age dependency ratio} = \frac{\text{Young Age(0-14)population}}{\text{Population ages (15-64)}} \times 100$$

$$(B) \text{ Old-age dependency ratio} = \frac{\text{Old Age(65 and above)population}}{\text{Population ages (15-64)}} \times 100$$

As per the above, the values of (A) and (B) for India in 2015 were 44 and 9 respectively. The corresponding ratios for a developed country like USA are 29 and 22. In less developed countries, dependency ratio is generally high. In India, the ‘dependency ratio’ is measured by taking both the 0-14 and 60+ population as follows.

$$(C) \text{ Dependency Ratio} = \frac{\text{Population of Children (0-14)+ population of Elderly (60+)}}{\text{Population ages (15-59)}}$$

Children and elders i.e. those in the age groups of 0–14 and 60+ are expected to be taken care of by the working age population 15-59. The Dependency ratio at (C) above indicates the responsibility of dependents per member of the working age group population. A favourable dependency ratio tends to boost savings. This is possible only if the working age population is productively employed. The Dependency Ratio for India has come down from 0.92 to 0.56 between 1951 and 2001.

5.5 POPULATION AGEING

One of the prominent global demographic events of 21st century is population ageing. Population ageing is a course of demographic change in which the share of aged people increases in total population with a simultaneous decrease in the share of younger ages. The main factors behind the incidence of population ageing are decline in mortality rate followed by decrease in fertility rate along with increase in life expectancy rate. In 1950, the global share of 60+ people was 200 million or 8 percent of the total population. This percentage has increased to 11 in 2011 and is projected to double to 22 in 2050. More specifically, in 2045, it is projected that the number of aged persons will exceed the number of children in the world as a whole. In India

also the percentage of 60+ people is increasing steadily. For instance, the percentage of aged population to total population was 5.5 percent in 1951 but has increased to about 7.5 percent in 2001 and further to 8.6 percent in 2011. It is projected that the number of elderly population would be about 17 percent of the total population in India by 2051.

5.5.1 Demographic Dividend

The recent rapid fertility decline in some parts of the world has opened up a new window of opportunity for achieving faster growth rate in economic and human development. With steady decline in fertility, there will be fewer and fewer children in the age group 0-14. The past high fertility ensures the growth of the present workforce and the present low fertility implies smaller size of dependent child population in future. This feature of population trend is called 'demographic window or dividend'. More specifically, the dividends that accrue are: (i) higher labour supply for larger economic activities; (ii) fewer children with better health for women's health, education and opportunity to join work force (iii) larger size of working age adults with larger earnings and larger savings i.e. improved capital supply for economic activities; (iv) less investment will be required on children at both micro and macro level as less number of children will be there to look after in the country; (v) better human development due to larger earnings, more investment in higher education and better health for women and children (China improved its ranking in HDI by resorting to one-child family planning norm); and (vi) because of fertility decline and increase in the population of working age people, the dependency ratio will decline. Low dependency ratio is helpful in economic development.

Typically, this window of opportunity, or the availability of the demographic dividend, lasts for 30 to 40 years, depending upon the country. India reached the point of demographic window in 2011. The proportion of those aged less than 15 years is still above 30 percent and the proportion of those aged 65 and above is below 15 percent. The share of the working age population is rising (almost 60.3 percent in 2011) in India. On the other hand, Work Participation Rate (WPR) is low at 39.8 percent in 2011. Urgent steps are, therefore, required to: (i) generate employment opportunities on a scale sufficient to eradicate unemployment and underemployment; and (ii) prioritise skill development among the youths to utilise new avenues of self employment; and (iii) extend the reach of the modern educational and training system so as to enable larger sections of the population to benefit and thereby participate in the development process. Only then can India reap the benefits of 'demographic dividend'.

5.5.2 National Population Policy

The National Population Policy, 2000 (NPP 2000) reiterates the commitment of the government towards voluntary approach in administering family planning services. It provides a policy framework to meet the reproductive and child health needs of the people to achieve the net replacement levels in terms of TFR. The immediate objective of the NPP 2000 is to address the unmet needs for contraception, healthcare infrastructure and to provide

integrated service delivery for basic reproductive and child health care. The medium term objective is to bring the TFR to replacement level by 2010 through the implementation of inter-sector operational strategies. The long term objective of NPP 2000 is to achieve a stable population by 2045 in conformity with requirements of the country to ensure sustainable economic development. The government has already taken several steps and initiatives under the immediate objectives of NPP 2000. As a result, TFR has declined from 3.0 in 2002 to 2.3 in 2013. As per latest data available, 24 states/UTs have achieved replacement level of fertility of TFR =2.1 by 2013.

Check Your Progress 2 [answer within the space given in 50-100 words]

- 1) What is urbanisation? How is it measured? What has been the trend in India's urbanisation process as per these indicators?

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- 2) What does the population pyramid depict? How does it differ between the developing and the developed countries?

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- 3) When does a country signifies to have entered a phase of 'demographic dividend'? What are its implications for economic planning?

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5.6 LET US SUM UP

Population assessment for its demographic features is important for economic planning. Different sections of population like young age children, women in the reproductive age group, labour force in the economically active section and the old aged persons – require different kinds of support services from the government in general and the various social infrastructure in particular. Assessment of changing demographic profile is important for economic planning from this point of view. In this context, the unit has introduced several concepts like growth rate in population, fertility and mortality rates, demographic transition, population ageing, etc. India has entered its phase of ‘demographic dividend’ but several facilities and services to make use of this window of opportunity is as of now still lacking. These include adequate employment opportunities to support its expanding labour force and skill development programs to increase their marketability.

5.7 SOME USEFUL BOOKS

- 1) Cassen, R.H. (1958). *India : Population, Economy, Society*, Chapter 4, The Macmillan Co. of India Ltd., Delhi.
- 2) Colin Newell (1994). *Methods and Models in Demography*, John Willey and Sons, England.
- 3) Human Development Report, (2016). UNDP, New York, NY 10015.

5.8 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

- 1) It is measured as the ratio of ‘population’ to ‘square km of land’. 445 for 2016. It is 147 for China, 35 for US and 3 for Australia.
- 2) It is high in states like Bihar, W. B. and U. P. (with a DoP ranging from 829 to 1106) and low in states like H. P., Sikkim, Mizoram and Arunachal Pradesh (ranging from 17 to 123).
- 3) It is defined as the ratio of ‘number of live births’ in an area per ‘1000 mid-year population’. It has come down from 40 in 1951 to 22 in 2011. It is: 14 in US, 12 in China and 9 in Japan.
- 4) Unlike CBR, in the denominator it takes into account only the women in the child bearing population. But it does not also discriminate between women coming from different climatic regions with differing fertility potential.
- 5) TFR is estimated by: $TFR = \frac{5 \times \sum_{15}^{49} ASFR}{1000}$. The multiplier 5 is applicable when the age groups considered are at 5-yearly intervals. It takes into account the entire fertility span in each age group. Replacement level fertility means that the ‘number of children in the population are sufficient to replace the parents’ ensuring stability in population. Generally, TFR = 2.1 is considered as replacement level fertility.

- 6) It is defined as: $IMR = \frac{1D_0}{1B_0} \times 1000$. It indicates the level of healthcare and medical facilities available in an area.

Check Your Progress 2

- 1) It refers to the population shift from rural to urban areas. It is measured by PU i.e. percentage of population in urban areas and UR i.e. ratio of urban to rural population. In terms of PU, it has doubled from 15 percent to 31 percent over 1951-2011. As per UR, it has increased from 21 to 45 percent over 1951-2011.
- 2) They depict the distribution of population in percentages by age groups with a broader base indicating more children which is usually the case in developing countries. In developed countries it is rectangular in shape indicating that old age population is higher.
- 3) This is indicated by the portion of the population pyramid for working age group (20-59) to be wider. It calls for economic planning to increase the jobs available and also to match the skill needs of the market to avoid the consequences of mismatch in it.



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UNIT 6 EDUCATION SECTOR*

Structure

- 6.0 Objectives
- 6.1 Introduction
- 6.2 Human Capital and Human Development: Distinction
- 6.3 Education Sector in India
 - 6.3.1 Elementary Education
 - 6.3.2 Secondary Education
 - 6.3.3 Higher Education
- 6.4 Educational Attainment/Outcomes
 - 6.4.1 Gender
 - 6.4.2 Quality
- 6.5 Financing of Education
 - 6.5.1 Role of State Versus Market Funding
 - 6.5.2 Public Expenditure on Education
 - 6.5.3 Alternative Sources of Financing
- 6.6 Let Us Sum Up
- 6.7 Some Useful Books/References for Further Reading
- 6.8 Answers or Hints to Check Your Progress Exercises

6.0 OBJECTIVES

After reading this unit, you will be able to:

- distinguish between the terms ‘human capital’ and ‘human development’;
- describe the growth in the Education Sector (ES) in India;
- analyse the adequacy of expansion in the ES in terms of its quantitative and qualitative dimensions;
- critique the performance of ES with the educational attainment in terms of its gender and quality dimensions;
- discuss the trend in Public Expenditure on ES in India with a comparative profile of the same in other countries; and
- explain the role of ‘state’ versus ‘market’ in financing education with an outline of alternative sources of financing the ES.

6.1 INTRODUCTION

Education contributes to building up what has come to be known as ‘human capital’. Human capital is distinct from ‘physical capital’ but is complementary to the latter. Physical capital facilitates economic growth which, in turn, creates conditions which demand better education facilities.

* Prof. Sebak Jana, Vidyasagar University

This results in human capital formation in the economy. Human capital formation, in turn, spurs economic growth. Thus, these social aspects of development invariably attract the attention of both policy-planners and political leaders albeit with differing motivations for each. In this context, the present unit discusses the issues relating to one of the two specific sub-sectors of social sector development viz. education sector in the Indian economy (the other one being health).

6.2 HUMAN CAPITAL AND HUMAN DEVELOPMENT: DISTINCTION

Human capital can be defined as the body of knowledge possessed by the population and the capacity of the population to use the knowledge effectively. Human capital **therefore** includes all the knowledge, talents, skills, abilities, experience, intelligence, training, judgement, and wisdom possessed individually and collectively, the cumulative total of which represents a form of wealth available to nations and organisations to accomplish their goals. Till the late 1950s, economists and other social scientists did not pay much attention to the role of investment in human capital as an important determinant of economic development. The birth of this idea can be traced to the presidential address of Prof. Theodore W. Schultz to the American Economic Association in December, 1960. The human capital theory propounded by Schultz (1961) laid a strong foundation for treating education as an investment in human beings and for treating it as an important source of economic growth. According to the human capital theory, education transforms raw human beings into productive ‘human capital’ by imparting knowledge and inculcating skills required by both the traditional sector and the modern sector of the economy. It thus makes individuals more productive members of the society, not only in the market place but also in the households and also in the whole society. Available evidence in almost all the countries, including India, establish significant positive association between proportion of people below the poverty line and the proportion of illiterate persons.

Human development, on the other hand, is defined as the process of enlarging people’s freedoms and opportunities thereby improving their overall well-being. Human development is about the real freedom of ordinary people with which they have to decide who they want to be, what they want to do and how they should live. The concept of human development was developed by the economist Mahbub ul Haq and is based on the idea that education and health are integral part of human well-being because only when people have the required ability and a healthy body, they will be able to lead a good and meaningful life. Human development is thus a broader concept which considers human beings as ends in themselves. Human development occurs when majority of people in the economy are educated and healthy.

6.3 EDUCATION SECTOR IN INDIA

The role of education in facilitating social and economic progress is well recognised. It opens up opportunities leading to enhancement of both

individual and group potentials. Education, in its broadest sense, is the most crucial input for empowering people with skills and knowledge, giving them access to productive employment opportunities. Improvements in education are not only expected to enhance efficiency but also augment the overall quality of life. The current growth strategy being pursued in India places the highest priority on education as a central instrument for achieving rapid and inclusive growth. It encompasses programmes designed to strengthen the education sector covering all segments of the education pyramid viz. (i) elementary education, (ii) secondary education, and (iii) higher education.

6.3.1 Elementary Education

Elementary Education i.e. class I-VIII consisting of primary (I-V) and upper primary (VI-VIII) levels, is the foundation of the educational system pyramid and has been emphasised in all our programmes of development. The goal of universalisation of elementary education (UEE) got a big push with the adoption of the *Sarva Shiksha Abhiyan* (SSA) programme in 1999. The scheme has been guided by five principles viz. (i) universal access, (ii) universal enrolment, (iii) universal retention, (iv) universal achievement and (v) equity. Besides these, the SSA recognises it as imperative to ensure good quality elementary education to ‘all children in the age group of 6 to 14 years’. To ensure this, the 86th Constitutional Amendment (2002) included a new Article (21-A) providing for ‘free and compulsory education to all children of 6 to 14 years of age as a Fundamental Right’. The growth of ‘primary and upper primary’ schools in India has been 6 times (from 0.2 million to 1.3 million) over the period 1951-2015. The enrolment in these schools has increased 9 times (from 22 million in 1951 to 198 million in 2015).

6.3.2 Secondary Education

Secondary education serves as a bridge between elementary and higher education. Like the elementary education, secondary education also has two parts viz. secondary (covering classes 9th and 10th) and senior secondary (classes 11th and 12th). Since universalisation of elementary education has become an accepted goal, it has become essential to push this vision forward towards universalisation of secondary education, something which has already been achieved in a large number of developed countries and the newly industrialised East Asian economies. Till now, the thrust of secondary education has been on improving access and reducing disparities by emphasising on the Common School System in which it is mandatory for schools in a particular area to take students from low-income families in the neighbourhood. The thrust has also been on revision of curricula with an emphasis on vocationalisation of education. In essence, vocationalisation means focusing on providing employment-oriented courses. Other areas of thrust are: (i) expansion and diversification of the open learning system, (ii) reorganisation of teacher training, etc. These objectives till now have, however, been achieved only partly. The number of institutions for secondary education has grown from 0.1 million in 2001 to 0.2 million in 2015. The

enrolment in these institutions has grown from 29 million in 2001 to 62 million in 2015. Thus, both the number of institutions and their enrolment have grown by 2 times over the period 2001-15.

6.3.3 Higher Education

The investment made in higher education in the 1950s and 1960s has given India a strong knowledge base in many fields contributing significantly to economic development, social progress, and strengthening political democracy in Independent India. The number of colleges has increased from about 0.1 million in 1951 to 3.8 million in 2015 i.e. a 38 times increase. Likewise, the number of universities has increased from 27 in 1951 to 760 in 2015 i.e. a 28 times increase. The combined enrolment in these 'colleges and universities' has increased from 0.4 million in 1951 to 34.2 million in 2015 i.e. by nearly 86 times. However, despite the expansion that has occurred, the system is under stress to supply the required numbers of skilled human power, equipped with the required knowledge and technical skills helpful in catering to the demands of the economy. The accelerated growth of the economy has already created shortages of high-quality technical manpower. Moreover, unlike the developed countries where the young working age population is fast shrinking with higher dependency ratio, India is in a stage of demographic transition with about 70 percent of the population below the age of 35 years. But this advantage can be realised to economic advantage only if opportunities for youth are expanded on a scale and diversity spread over different fields of basic sciences, engineering and technology, healthcare, architecture, management, etc. This is possible only if rapid expansion is initiated along with long overdue reforms in the higher, technical and professional educational sectors.

Check Your Progress 1 [answer within the space given in about 50-100 words]

1) How is Human Capital defined? To which economist, the credit of getting the importance of human capital recognized attributed?

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2) How is Human Development different from Human Capital?

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3) What are the five principles by which the programme SSA is governed?

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4) What has been the magnitude of expansion in respect of 'elementary education' in India?

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5) What has been an important feature of the Common School System in the 'secondary education' system in the country?

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6) What has been the extent of expansion in respect of 'higher education' in India?

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7) Would you say that the expansion in the education sector has kept pace with the requirements of the economy? Why?

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6.4 EDUCATIONAL ATTAINMENT/OUTCOMES

Education is the basic requirement which has now been made a fundamental right through the enactment of RTE (i.e. right of children to free and compulsory education act or the Right To Education – RTE). While higher education is important, elementary education serves as the base over which the super-structure of further education can be built up. Enrolment in schools

have improved substantially in recent years but the performance of students in basic aspects of reading, writing and arithmetical operations have remained low. Further, substantial gender-bias in both access to and completion of education has remained as a major cause of concern. Owing to these, wide regional variation exists even within the sub-standard performance of the basic education system. Factors like: (i) poverty, (ii) presence of a wide child-labour market, (iii) absence of assured employment after schooling and (iv) infrastructural problems are identified as responsible for the ills plaguing the elementary education system in India. Providing incentives for attending schools, making the schooling process attractive to the children, streamlining the middle and high school curriculum to vocational and job-oriented courses and providing better infrastructure in schools are some of the policies needing to be focused upon to improve the scenario.

Literacy rate is regarded as one of the basic indicators to reveal the disparity in educational attainment. The urban-rural gap in this respect has fallen substantially (from 34 percent in 1961 to 16 percent in 2011). Despite this, the progress in rural India has not been enough to catch up with the urban literacy levels (urban literacy rate is 85 percent as opposed to 69 percent for rural India in 2011). State-wise attainment shows that while Kerala (94 percent) [along with Mizoram, Lakshadweep and Tripura] has ranked at the top in overall literacy, Bihar has remained at the bottom (61.8 percent) in its overall literacy. The rural-urban disparity is the lowest in Lakshadweep and Kerala, both of which are among the high performing states. Disparities in attainment have also remained on many other fronts, most important of which are in terms of gender and quality.

6.4.1 Gender

There are two indicators which reveal gender-based performance in education. These are: (i) the gross enrolment ratio (GER) and (ii) the gender parity index. Used in place of 'net enrolment ratio' when data on enrolment by exact years of age is not available, the GER is used to reveal the general level of participation in education. The GER is defined by level of education. For instance, for primary education, the GER is defined as percentage of actual enrolment to total eligible official primary school age population in a year. A ratio of $GER \geq 1$ (i.e. 100 percent) indicates that in principle a state or country is able to accommodate all its school age population. It, however, does not indicate the actual proportion of eligible population enrolled. In other words, the achievement of GER of ≥ 1 is thus a necessary but not sufficient condition of actual achievement. A typical situation where GER can exceed 1 is when 'over-aged' and 'repeaters' are included. This characteristic of GER makes it require a careful interpretation based on the data used. Computed separately for males and females first, the ratio of 'GER for females to males' is then defined as the 'gender parity index' (GPI). The GPI in India for the recent period of 2007-13 shows that for primary and secondary education it has crossed the level of 1. Besides this, in respect of dropout rate also, there has been a significant improvement in gender parity for three out of four levels of education viz. primary, secondary and senior secondary education (e.g. in 2013-14 it is 4.1 for girls and 4.5 for boys for

primary education, 17.8 for girls and 17.9 for boys for secondary education and 1.6 for girls and 1.5 for boys in senior secondary education). In relative terms, therefore, only in 'upper primary' level of education the dropout rate for girls is higher for girls (4.5) as compared to boys (3.1) [2013-14]. Considering that the dropout rate in 1960-61 was as high as 65 percent, there is a major improvement in this respect. One aspect on which the achievement of improving girls' enrolment could depend is the 'number of female teachers per 100 male teachers'. This figure was as low as around 20 (for each of the three school levels) in 1951. This has gradually risen to the level of 65-80 for different levels of education by 2011-12. Thus, while there is improvement in this respect, there is scope for increasing the number of female teachers at all levels of education both towards achieving greater gender parity as also to minimise dropout rates of female children from schools.

6.4.2 Quality

A nationwide survey of children's reading and arithmetic capabilities in rural India is conducted every year by the NGO Pratham. Given its scale and comprehensive coverage, its Annual Status of Education Report (ASER) is a path-breaking initiative, being the only Indian nationwide survey for assessing the learning achievement of children between classes I and VIII. There are four basic tests of increasing difficulty to gauge the arithmetic competence and the students are asked to perform each only after clearing the lower level. These are: (i) recognition of randomly chosen numbers from one to nine, (ii) recognition of randomly chosen numbers between 11 to 99, (iii) subtraction of two-digit numerical problems with borrowing and (iv) division of three-digit by one-digit numerical problems. The survey results in 2010 reveal that only 37 percent of the children in class III could recognise numbers up to 100. Furthermore, just 27 percent of the students could reach the next level i.e. subtraction. What is even more worrying is that the proportion of children reaching the highest test level has consistently declined since 2005, when the survey was first conducted. In 2005, at least 15 percent of the children in class III could perform all the tests, while in 2010 only 9 percent of the children could do so. Also, in 2010, 67 percent of the children in class VIII could reach the highest level, while the corresponding figure in 2005 was 70 percent. Clearly, pushing enrolment is not automatically translating into improved learning.

Quality of higher education has also been a major concern in India. To rectify this situation, some of the policy measures taken in this direction are: (i) redesigning academic programme to synchronise with the market demands, (ii) laying greater emphasis on interactive modes of learning, (iii) changes in the assessment procedure and examinations, (iv) introduction of the semester system, (v) teachers' assessment, (vi) grading of institutions, (vii) introduction of credit system to afford inter-institutional mobility, (viii) faculty development programmes, (ix) maintenance of national database of academic qualifications, etc. National Policy on Education in India has all thorough laid special emphasis on improving the quality of higher education in India by the establishment of accreditation agencies. Notwithstanding the fact that we have 13 regulatory bodies of higher education, the quality of

education is fairly low and content in the programmes less relevant to the 'needs of the individual and the society'. Out of 3,674 colleges assessed by NAAC, only 24.4 percent of colleges have been awarded the A grade. The educational system suffers from what has been called 'diploma disease' i.e. it does not aim at conveying knowledge and skills but is more concerned with certification and credentialing. As such, its contribution to the growth of human capital is minimal and is unable to meet the emerging demands for skilled professionals.

6.5 FINANCING OF EDUCATION

Financing, and in particular mode of financing higher education, is crucial for addressing all the major objectives envisaged for higher education viz. expansion, inclusion and excellence. Though public financing has remained the dominant source of financing higher education, fiscal constraints faced by both the centre and the states and the widening gap between stagnant revenue and the burgeoning cost have compelled the publicly funded universities to look for additional and alternative sources of funding. As a part of the new economic policy, policies have been framed to usher-in the private sector in the delivery of higher education to contribute in its expansion. Between the two extremes of public and private funding, of late, the government is exploring possibilities of partnerships with the private sector to realise the advantages of both the modes of funding, though we already have several variants of PPP working in the country. We have government schools, government aided schools and private schools. Similarly at higher education level we have government colleges, partially UGC funded colleges, etc..

6.5.1 Role of State Versus Market Funding

The role of market as a source of funding took off post-1990s with the suggesting of structural adjustment programmes by the WB & IMF to curtail the public expenditure in social sectors like education. The supporters of market considered the subsidies provided by the government as regressive as mainly the elite gets access to higher education and hence remain the major beneficiaries of subsidies. The funds are thus transferred from poor to the rich since the amount that could be spent on poor gets reduced. To rectify this, they argued that the public funding should be shifted from higher education to school level education. Another argument put forth by the market supporters is that the state funding of education would make educational institutions dependent and, therefore, deprives them of the much needed institutional autonomy for efficient functioning. To overcome this, it was suggested that the generation of private funding should be promoted. It was also argued that the cost recovery measures would improve the quality of education both by making the students more diligent and instilling a measure of accountability among the teachers. The private returns being higher than the social returns, beneficiaries were believed to be willing to pay for their education.

The argument of market proponents that the social rate of return to investment in education is less than the private rate of return was countered by the 'for state funding advocates' on the following grounds. First, the social

returns are lower only for higher education whereas for school education there is a consensus that it should be regarded as a public good. Further, when positive externalities are taken into account, the resulting social rate of return far exceeds the private rate of return. This makes the role of state crucial in funding education. Second, consumers are often ignorant of the benefits that they would receive by investing in education. Besides, they cannot take into account the positive spill-over effects of their education on the society (like improving family health, productivity, reduction in poverty rates, etc.). Since the government is considered wiser in making such decisions, state funding in the provision of education is required for ensuring equality of opportunity. Further, since not every household/individual has the resources required to invest in education, in the absence of state subsidies, only those who could afford to pay would enrol in schools and colleges. In other words, those who are meritorious but lack resources would be left out.

In order to meet the ends of equity, market proponents argued that the access to education loans could be improved. However, since the capital market suffers from its own imperfections, such measures would not suffice. Moreover, since the human capital is embodied in individuals, it cannot be offered as liquid collateral. What about inclusion? Will a child from poor family take education loans and at the end of college, begin with a debt burden? Will it be progressive? There is also a long gestation period for the repayment of such loans to commence due to the uncertainty of future income opportunities. Such factors would constrain both the availing of such loans by the individuals and also the institutions from advancing the loans. Thus, the presence of imperfect capital market becomes a major reason due to which the role of state to invest in education needs to continue. The other view point is that educational loans to poor people do not serve the objectives of inclusion and equity as these loans are available for selected courses/institutions only and hence the objective of inclusivity is far from net.

6.5.2 Public Expenditure on Education

If we consider the spill-over effects in the form of positive externalities, education at any level, not only at the elementary and secondary levels, merits to be treated as a 'public good'. In its strict sense, education is considered as a 'merit good'. By definition, a good like 'education' which is regarded by society or government as deserving public finance, is treated as a merit good. More generally, merit goods are treated as those goods (or services) which the government does not want people to under-consume merely because their consumption depends upon their 'ability to pay'. To prevent such under-consumption, the government chooses either to subsidise such services or provide it totally free at its point of consumption. In view of the mixed characteristics of education i.e. of both public as well as merit good, education is also sometimes referred to as 'public merit good'. Impinging on investment for providing the educational services, i.e., a huge establishment or fixed cost as well as a recurring operational cost, the characteristics that impinge on investment considerations of the government are: (i) consumer ignorance, (ii) technical economies of scale, (iii) externalities in production and consumption and (iv) inherent imperfections

in the market like absence of credit institutions. On the issue of public investment in education, it is customary to express the total allocation or expenditure as a percentage of GDP (Table 6.1). The trend in this respect for India shows that over the years 1961-81, public expenditure on education doubled from 1.5 percent to 3 percent. Thereafter, it increased marginally by just another 1 percent between 1981 and 2001 (to touch 4.1 percent in 2001). In the post-2000 years, the public expenditure on education has declined (e.g. 2005-06, 3.3%). Since 2005-06, it has ranged from 3.5 percent in 2007 to 4 percent in 2010. The stagnation of public expenditure in education at just around 4.1 percent of GDP (in 2014) is in stark contrast with the comparative profile with other countries (Nepal, 4.7 percent; Germany, 4.9 percent; USA, 5.2 percent; U.K., 5.7 percent and South Africa, 6.1 percent). As stated before, the decline in public expenditure on education in India is for reasons of fiscal constraints whereby for elementary and secondary level more resources are allocated but for higher education, there is a shift towards cost recovery.

Table 6.1: Public expenditure on education as percent of GDP

Year	Percent
1960-61	1.5
1970-71	2.1
1980-81	3.0
1990-91	3.8
2000-01	4.1
2010-11	4.1
2010-11	4.1

Source: MHRD, GoI.

6.5.3 Alternative Sources of Financing

With a view to reducing the burden of educational finance, many alternative methods have been tried. One way of achieving this objective is to reduce the subsidies given to institutions. This would entail the recovery of costs by taking recourse to methods of cost-sharing. Cost sharing is a method by which the burden of financing educational programmes are passed on to the beneficiaries viz. households, industries and the students themselves. Cost sharing is popularly effected mainly in respect of higher/professional education programmes. Some of the methods followed under this include: (i) increasing the fees; (ii) following discriminating fee structure; (iii) graduate tax; and (iv) student loans.

The method of 'increasing the fees' has many variants. Some of these are: (a) a uniform increase across graduate and post-graduate programmes; (ii) increasing the fee based on the cost of provisioning of courses; and (iii) giving autonomy to colleges and universities for deciding on the fees to be charged. In all these cases, students opting for similar courses are levied the same fee. In other words, this does not discriminate between those with

ability to pay and those who cannot afford to pay. The approach is thus violative of equity considerations. To deal with this, the method of discriminatory fee structure i.e. course fee linked to the income level of the family or the ability to pay is suggested. Those from the lower socio-economic strata are levied less burden and those from the upper income groups are made to pay more. The 'graduate tax' method levies a tax on the employers employing educated workforce. The case for the method is made on the ground that while the employers get the benefit of such educated persons, they themselves do not pay for their training. The method is disadvantageous in that it may motivate the employers to go for less educated workers thereby causing the problem of unemployment among the educated. However, since only educated workforce can undertake certain type of works which are knowledge intensive, the substitution effect is expected to be less. The method of 'student loans' targets the beneficiaries directly. While many committees constituted by the government have favoured this approach, it is also said to adversely impact equity considerations. For instance, the method may lead to the promotion of those courses which are having higher employment market neglecting the courses which may be important from a societal angle. Another problem with this method is the issue of insufficiently developed credit markets and the problem of recovery of loans which is dependent on uncertain future employment markets.

For elementary and secondary level of education, a commonly practised method is 'earmarking'. This refers to a levy of a special cess for the particular purpose. The programme of SSA generated a major part of its funds by this method. Many countries, both developed and developing, have successfully adopted this method. Another method which has successfully been implemented for school level is the 'direct benefit transfer' (DBT) method. A major problem of government schools is of accountability impinging on quality of education. The method of DBT is said to deal with this by transferring the power of selecting a school of their choice to the poor household/parent. It is a voucher system in which a parent can admit a child to the school which charges fees up to the amount of the voucher. Parents can choose any type of institution (private, aided or government) where the fee charged, if higher than the voucher amount, can be supplemented by the family. With the value of the voucher being set 'inverse to the family income' (i.e. poorer families getting higher valued vouchers), the method is argued to afford the potential of being an instrument of greater equity. One criticism of this method is that the method may not work in backward/rural areas as private schools may not be popular in such areas. However, data from NSSO for 2014-15 shows that the per month median fee charged by private unaided elementary schools in rural areas was Rs. 292 while in urban areas it was Rs. 542. In the light of this, it is argued that even a relatively low voucher value of Rs. 500 per month would represent significant share of total expense even in remote rural areas. Another concern about DBT is how to do away with the present 'grants-in-aid' system which is kept equivalent to meet the requirement of teachers' salary. The grants method, thus, gives priority to schools and not to pupils/students. Such a grant does not even take into account the number of students. It is far from trying to address the attitude of the teachers towards their accountability. With DBT, it is pointed out that

teachers would have to focus more on attracting, retaining and then giving quality education. Towards implementing DBT, the government is contemplating 'school consolidation' where tiny schools are merged with bigger schools nearby and redeploing teachers from over-enrolled schools to under-enrolled schools. Many countries (e.g. Colombia, Chile, Netherlands, New Zealand, US) have used the DBT method to good effect.

Check Your Progress 2 [answer within the space given in about 50-100 words]

1) What specific policies are needed to improve the sub-standard performance in education?

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2) How is GPI defined?

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3) In what way, the ratio of female enrolment in schools can be improved? To what extent, there is improvement in this regard over time?

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4) What is an indicator available to establish that the school level education system has declined in quality in recent years?

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5) On what grounds, the public funding of education was defended in the face of market proponents arguing against it?

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- 6) Is education rightly a public good or a merit good? Give reasons for your answer.

6.6 LET US SUM UP

There has been a good deal of progress in the quantitative expansion of the education sector in India. However, the demand for education has also expanded outpacing the available supply. Owing to this, disparity in educational attainments has remained both in quantitative and qualitative fronts. How to use the available resources more efficiently, without compromising on considerations of equity, has remained a major concern of our policy planners. Towards rationalising on the resource front, public funding for school level education and cost sharing for higher level of education is being considered. To address the ticklish problem of teachers' accountability at school level, methods like direct benefit transfer, school consolidation, etc. are being tried.

6.7 SOME USEFUL BOOKS/REFERENCES FOR FURTHER READING

- 1) Varghese N.V. and G. Mallik, Eds. (2017). India Higher Education Report 2015, Routledge, 2017.
- 2) Romer, Paul M. (1990). "Human Capital and Growth: Theory and Evidence", *Carneige- Rochester Series on Public Policy* 32: 251-86.

6.8 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

- 1) It is defined as the body of knowledge possessed by the population and encompasses knowledge, talents, skills, abilities, experience, intelligence, training, judgment, etc. Prof. Theodore W. Schultz.
- 2) By including people's freedoms and opportunities and relating it to overall human well-being. It is thus a broader concept which considers human beings as ends in themselves.
- 3) Universal access, universal enrolment, universal retention, universal achievement and equity.
- 4) By 6 times in terms of institutions and 9 times in terms of enrolment

(from 0.2 million 1.3 million and 22 million to 198 million respectively).

- 5) Under the CSS, it is mandatory for schools in a particular area to take students from low-income families in the neighbourhood.
- 6) Colleges by 38 times, universities by 28 times and enrolment in colleges/universities by 86 times.
- 7) No. Because, rapid expansion has not been accompanied by the long overdue reforms in the higher, technical and professional educational sectors.

Check Your Progress 2

- 1) Incentives for attending schools, streamlining middle/high school curriculum to job-oriented vocational courses, etc.
- 2) It is defined as the 'ratio of GER for males to females'.
- 3) By focusing on increasing the proportion of female teachers (per 100 male teachers) in schools (sub-section 6.4.2).
- 4) The ASER report which has reported a decline in the proportion of children who could qualify from one level of test to another over the period 2005-2010 (sub-section 6.4.3).
- 5) The social benefits were considered higher even in higher education when positive externalities were taken into account. Lower levels of education, are in any case, considered like public good which would benefit the entire society.
- 6) Since the benefits of education reach the entire society, and not only the ones getting educated, it has the characteristic of a public good. However, precisely due to this reason, since its non-public funding might make some to under-consume it, it is more rightly regarded as a 'merit good'.

UNIT 7 HEALTH AND NUTRITION*

Structure

- 7.0 Objectives
- 7.1 Introduction
- 7.2 Measurement of Health and Nutrition: Concepts
 - 7.2.1 Malnutrition
 - 7.2.2 QALY/DALY
- 7.3 Health Expenditure
 - 7.3.1 Sources of Health Expenditure
- 7.4 Public Healthcare System in India
 - 7.4.1 Preventive and Curative Healthcare
 - 7.4.2 Health Financing
- 7.5 Health Policy in India
 - 7.5.1 National Health Policy
- 7.6 Let Us Sum Up
- 7.7 Some Useful Books
- 7.8 Answers or Hints to Check Your Progress Exercises

7.0 OBJECTIVES

After reading this unit, you will be able to:

- define the concepts of health and nutrition;
- explain the status of health and nutrition in terms of major indicators;
- identify the factors contributing to increasing health expenditure;
- describe the structure of Indian Public Health System;
- distinguish between preventive and curative healthcare needs;
- discuss the trends in healthcare financing in India; and
- outline the features of different health policies introduced by the government in India.

7.1 INTRODUCTION

There is a common saying that 'Health is Wealth'. From a human development perspective, good health and nutrition are invaluable in their contribution to an individual's physical and cognitive development. Malnutrition increases the susceptibility to infection and delayed recovery, making the burden of disease and morbidity very large for the country. Malnutrition increases the incidence of non-communicable diseases adding to

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a huge cost of healthcare. However, most of the developing and underdeveloped countries unfortunately have a chronic problem of ill health with India being at a very low position in respect of its health and nutritional ranking. Specifically, in case of children, the situation is more vulnerable as according to World Bank, 22 percent disease burden of the Indian children is because of malnutrition.

Conceptually, **health** refers to ‘freedom from illnesses’. Empirically, it is measured in terms of illness prevalence rates and functional disability measures. A person is called healthy when he/she has very low illness prevalence rate and no functional disability. **Nutrition**, on the other hand, is a measure of nourishment. It refers to a process through which the body absorbs the required amount of nutrients contained in the food that one consumes. Health status is thus invariably linked to the nutritional status of a person or community.

7.2 MEASUREMENT OF HEALTH AND NUTRITION: CONCEPTS

Given the current level of India’s development, its health scenario is also improving. In terms of infant mortality rate (IMR) and under-five mortality rates, India has achieved significant improvement. Over the last roughly two decade period (from 1992-93 to 2015-16), IMR has come down from 86 to 41 and the under-five mortality rate from 119 to 50 (Table 7.1). It is important for us to know how these major indicators are measured and calculated.

Infant Mortality is the probability of a newly born child’s death before its first birthday. Numerically, it is the number of infant deaths per 1000 live births in a year. Abbreviated as IMR, it is measured as: $IMR = (\text{Number of resident infant deaths} / \text{Number of resident live births}) * 1000$. For example, say in 2016, among the State residents, number of infant death is 1300 and number of live births in the State is 150000. Then $IMR = (1300 / 150000) * 1000 = 8.7$. According to World Health Organisation (WHO), 75 percent of world’s under-five deaths is within first year of infant’s life.

Table 7.1: Health Status of India: 1993-2016

Health Status	NFHS I (1992-93)	NFHS II (1998-99)	NFHS III (2005-06)	NFHS IV (2015-16)
Infant Mortality	86.3	73	57	41
Under-five Mortality	118.8	101.4	74	50
Neonatal Mortality	52.7	47.7	NA	NA
Post-neonatal Mortality	33.7	25.3	NA	NA
Maternal Mortality rate	437	530	NA	NA
Crude Death rate	9.7	9.7	NA	NA

Source: NFHS I, NFHS II, NFHS III and NFHS IV. NA: Not Available.

Under-Five Mortality: This is also known as child mortality. It is the probability of dying between first and fifth birthday and is measured as ‘the number of deaths per 1000 per year’. Empirically, it is measured as: Child Mortality Rate (CMR) = $(D/N) \times 1000$ where D = deaths between 0-4 years during the year of calculation and N = number of live births among the new born during the year of calculation. For computational purposes, the data is to be drawn from the registration of newborns. According to WHO, world-over nearly 9 million children die before their 5th birthday. Main causes of this type of death are pneumonia, diarrhoea and malnutrition.

Neonatal Mortality: This is the probability of dying in the first month or within the first 28 days of the life of an infant after birth. Thus, Neonatal Mortality = $(\text{number of neonatal deaths}/\text{total number of live birth}) \times 1000$. As per UNICEF, the worldwide neonatal mortality has fallen from 36 deaths per 1000 live birth in 1990 to 19 deaths per 1000 live birth in 2015.

Post-neonatal Mortality: This is the difference between infant and neonatal mortality i.e. it is the number of newborns dying between 28 days and 364 days (in a specific geographical area) divided by the number of resident live birth in the same area. This value is multiplied by 1000 to indicate the mortality rate per 1000 live births. Thus, post-neonatal mortality = $(\text{Number of resident post-neonatal deaths}/\text{total number of resident live births}) \times 1000$.

Maternal Mortality Rate: This refers to the number of women who die as a result of childbirth and pregnancy related complication per 100,000 live births. It thus indicates the risk associated with pregnancy. Thus, Maternal Mortality Rate (MMR) = $(\text{maternal deaths during a reference period}/\text{total number of live birth during the reference period}) \times 100,000$. According to UNICEF, between 1990 and 2015, maternal mortality rate has reduced by about half or 50 percent.

The Indian health scenario with respect to the above indicators is indicated in Table 7.1. It shows that except maternal mortality rate and crude death rate, all other rates are falling. Crude death rate (defined as number of deaths per year per 1000 people) is constant for first two National Family Health Survey (NFHS) rounds and maternal mortality rate has increased for the same time period.

7.2.1 Malnutrition

Malnutrition may be over-nutrition or under-nutrition. Under-nutrition is measured by indicators like under-weight, stunting and wasting. **Wasting** represents the failure to receive adequate nutrition in the period immediately preceding the survey and is a sign of the extent of malnourishment. It may be the result of inadequate food intake or a recent episode of illness causing loss of weight and the onset of malnutrition. Persons whose ratio Z-score of weight-for-height is below -3 SD (i.e. minus three standard deviation from the median of the reference population) are considered ‘severely malnourished’ and those below -2 SD as ‘malnourished’. Thus, if there are 10 individuals whose Z-scores as: -4.1 SD, -3.9 SD, -3.1 SD, -2.8 SD, -2.1 SD, -2.0 SD, -1.1 SD, 1.5 SD, 1.9 SD and 2.5 SD respectively then, the first

three individuals are severely malnourished, the next three individuals are malnourished and the last four are nourished. Note that on the negative side, up to -1 SD, a margin is given for not regarding a person in the malnourished category. Similarly, the height-for-age is the ratio of 'height in cms and age in months'. The Z-score of this ratio is taken as an indicator of 'linear growth retardation' and 'cumulative growth deficits'. Linked to the extent of malnourishment, persons whose Z-score of height-for-age is below -2 SD from the median of the reference population are considered 'stunted' for their age and are labelled '*malnourished*'. Likewise, when this Z-score is less than -3 SD, the person is called 'severely stunted' or 'chronically malnourished'. Stunting reflects failure to receive adequate nutrition over a long period. Such failures are also affected by recurrent and chronic illness. *Weight-for-age* is a composite index of height-for-age and weight-for-height which takes into account both the acute and chronic malnutrition. Persons whose weight-for-age is below -2 SD from the median of the reference population are classified as *underweight*. Sometimes, anaemia level is also taken as an indicator of under-nutrition. In nutrition literature, adult malnutrition and child malnutrition are separately distinguished as follows.

Adult malnutrition is measured by 'body mass index' (BMI), Anaemia level and overweight. BMI is measured as 'weight divided by height-square' (i.e. kg/m^2 where weight is taken in kgs and height is expressed in meters). The standard value of BMI is 18.5. Thus, when a person's BMI is below this standard value, he/she is called '*malnourished*'. On the other hand, when the BMI value is more than 25, the individual is called '*obese*'. In case of anaemic persons, the BMI level is taken as 12 for female and 13 for male. In India, there is a decreasing trend of underweight women and men over time (Table 7.2). However, the percentage of overweight women and men has increased significantly over the last 15 to 20 years. This is very alarming. Within the same time span, percentage of women and men with anaemia has not fallen significantly. This is also a major concern. The trend for *underweight* children in India is continuously falling (it has declined

Table 7.2: Adult and Child Malnutrition: 1993-2016

Adult Malnutrition (BMI)	NFHS I (1992-93)	NFHS II (1998-99)	NFHS III (2005-06)	NFHS IV (2015-16)
Women's BMI less than normal (18.5)	NA	35.8	35.5	22.9
Men's BMI less than normal (18.5)	NA	NA	34.2	20.2
Anaemia level of Female (age 15-49) (12)	NA	51.8	55.3	53
Anaemia level of Male (age 15-49) (13)	NA	NA	24.2	22.7
Overweight Women (>25)	NA	10.6	12.6	20.7
Overweight Men (>25)	NA	NA	9.3	18.6

Underweight Children (%)	53.4	47	42.5	35.7
Wasted Children (%)	7.5	5.5	9.8	21
Stunting Children (%)	52	45.5	48	38.4

Source: NFHS I, NFHS II, NFHS III and NFHS IV. NA – Not Available.

from 52 percent in 1992-93 to 38 percent in 2015-16). However, the percentage of *wasted* children, which was declining up to NFHS II, has been increasing touching an all time high of 21 percent in 2015-16. Percentage of *stunting* children was also falling up to NFHS II, but it has increased to 48 percent in NFHS III falling again to 38.4 percent in NFHS IV.

7.2.2 QALY/DALY

Other than the above measures, there are two more popular measures to assess the health standard of people. These are: Quality Adjusted Life Year (QALY) and Disability Adjusted Life Year (DALY). QALY is a measure of disease burden which includes both quality and quantity of life lived. One QALY means one year of perfect health. DALY measures how many years are lost due to ill health, disability or early death. Thus, DALY shows health loss and QALY shows health gain (i.e. QALY is the inverse of DALY). Thus, in practice, the difference between a DALY and a QALY depends on whether the quality of life is expressed as a loss (DALY) or a gain (QALY). Additional differences are taken into account by the way in which disease weights are assigned.

Check Your Progress 1 [answer within the space given in about 50-100 words]

1) How are Health and Nutrition defined?

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2) State the five major health indicators? Which of these has fallen internationally by about 50 percent over the period 1990 and 2015?

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3) What are the three sub-components of under-nutrition? How are they measured?

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4) How is 'adult malnutrition' measured? What is a notable trend in this respect for India?

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5) What has been the trend in respect of underweight children in India?

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6) Distinguish between the concepts of QALY and DALY.

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7.3 HEALTH EXPENDITURE

Over past century, worldwide, expenditure on healthcare has risen consistently. The share of GDP devoted to medical spending in the OECD countries has increased from 5.1 percent in 1979 to 8.9 percent in 2006. The corresponding figures on public healthcare expenditure in India has increased marginally from 1.1 percent of GDP in 1995 to 1.4 percent of GDP in 2014. The percentage of GDP, particularly public health expenditure, devoted to healthcare poses public financing challenges for all the countries. The factors responsible for this may be broadly clubbed under the following two heads viz. demand factors and supply factors.

Demand factors:

- a) **Population Ageing:** With increase in average age of the population, demand for medical care is also increasing.
- b) **Income:** It is generally agreed that there is a strong positive relationship between per capita GDP growth and health spending. However, the income elasticity of demand for healthcare spending may vary depending on factors like geographical location, time frame etc.
- c) **Spread of Insurance Market:** The growing health insurance market is also increasing the demand for healthcare expenditure as insurance is an important instrument for covering the risk of rising healthcare cost.

Supply factors:

- a) **Supplier-Induced Demand:** Sometimes health service suppliers create demand for healthcare facilities to increase their market share. This is called supplier induced demand. This is done by adoption of new medical technology, providing medicines and treatments not absolutely related to patient's condition, etc.
- b) **General Economic Growth:** Economic growth of the country is improving the living standard of the population which has also increased the availability of improved medical technology. This induces demand for healthcare expenditure.

7.3.1 Sources of Health Expenditure

Two broad channels for expenditures on healthcare are: (i) the State through public expenditure (i.e. public health expenditure: PHE); and (ii) the individuals/families through their personal expenditure [called out-of-pocket expenditure (OPE)]. Public expenditure consists of all government expenditure on health and family welfare. It includes expenses on medical education, research, hospitals, public health centres and different types of subsidies given by the government [e.g. huge network of primary health centers (PHCs) across the length and breadth of the country, government schemes like ESI/CGHS, medical reimbursements, etc.]. Health expenditure, in general, is increasing because of: (i) increased life expectancy; (ii) demographic change with the share of aged population on the rise; and (iii) increase in chronic diseases. While the per-capita public health expenditure in

India has increased nearly five times over the period 1995-2014, as noted above, as a percentage of GDP it has only marginally increased from 1.1 to 1.4 percent over the period 1995-2014 (Table 7.3). Out-of-pocket expenditure (OPE), on the other hand (which by definition refers to cost sharing and other expenditures incurred by the patients and their families themselves), is very high. As per WHO estimates, the total OPE on healthcare in India has increased from 76 percent in 2005 to close to 90 percent in 2012. In fact, a similar trend in OPE is witnessed in many countries over this period (Table 7.4).

Table 7.3: Profiles of Health Expenditure in India – 1995-2014

India	Per Capita Health Expenditure (US \$)	Public Health Expenditure (as % of GDP)	Public Health Expenditure as a % of Total Govt. Expenditure	Public Health Expenditure as a % of Total Health Expenditure
1995	16	1.1	4.3	26.2
2014	75	1.4	4.4	30

Source: WHO

Table 7.4: Share of Out of Pocket Expenditure (OPE) to Total Health Expenditure (THE)

Country	Share of OPE to THE (2005)	Share of OPE to THE (2012)
India	76.1	89.2
Pakistan	80.9	86.8
Bangladesh	62.6	92.9
Nepal	62.6	79.9

Source: WHO

7.4 PUBLIC HEALTHCARE SYSTEM IN INDIA

Public Health is a process of preventing disease, prolonging life and promoting human health through organised efforts and informed choices of society. Healthcare covers not only medical care but also many aspects of preventive care. Indian healthcare system is regressive as private out-of-pocket expenditure dominates the cost of financing healthcare. An ideal healthcare system should be accessible to all with a fair distribution of financial cost and competent service providers.

Healthcare spending can be divided into public and private spending. Despite several growth-orientated policies adopted by the government, economic/regional/and-gender disparities have remained posing challenges for health sector in India. For instance, nearly 75 percent of health infrastructure, medical manpower, and other health resources are

concentrated in urban areas where only 27 percent of the population live. To reduce this disparity, public health has to focus on health promotion and disease prevention and control by taking into account the social determinants of health. The focus of public health should be on bringing about changes not only for preventing disease but also for promotion of health through organised action at societal level.

India is the second most populous country of the world with a widely varied socio-political-demographic and morbidity pattern. Most of the States in India face severe healthy workforce shortage. A large number of health service providers, managers and support workers are needed to fill this gap. Many States are unable to provide even basic, minimum lifesaving services in a consistent manner. The challenges of public healthcare system in India may, therefore, be summarised as: (i) inadequate resource availability for public healthcare; (ii) severe geographical and social disparity; (iii) inadequate integration between health programmes; (iv) lack of community focus; (v) fragmented functional responsibility; (vi) inadequate attention to primary healthcare; (vii) inadequate public health orientation; etc.

7.4.1 Preventive and Curative Healthcare

Preventive healthcare refers to measures taken for disease prevention as opposed to disease treatment. It encompasses a variety of interventions undertaken to prevent or delay the occurrence of disease or reduce further transmission or exposure to disease. Several measures instituted for this include: (i) alcohol misuse counselling; (ii) blood pressure screening; (iii) cholesterol screening; (iv) depression screening; (v) diabetes and diet counselling; (vi) hepatitis B and C screening; (vii) syphilis screening; (viii) anaemia screening; (ix) campaigning on importance of breast feeding; (x) folic acid supplements; (xi) urinary tract infection screening; (xii) autism screening (18-24 months); (xiii) immunisation/ vaccination; (xiv) iron supplements; (xv) vision screening; etc.

Curative Healthcare refers to hospitalisation for helping the patients treated for a disease. Currently in India, there are over 5 lakh trained doctors, 7 lakh 'auxiliary nurse midwives' (ANMs), 22,975 PHCs and 2,935 child healthcare centres (CHCs). There are also 22,000 dispensaries and 2,800 hospitals. In spite of this, gaps in facilities, supply and staff exist. Budget is the main problem of different state-run units. Under-funding of the recurring cost is another problem. Private hospitals are provided concessional land with liberal tax structure with conditions for meeting some social obligation. However, there is no proper monitoring to ascertain whether they are fulfilling these obligations. There is also no proper quality control on the large number of small nursing homes run by private doctors and doctors-agencies.

7.4.2 Health Financing

There is a view that healthcare expenditures are largely imposed on individuals, rather than freely chosen. A more demanding requirement is that the financing should be according to 'ability to pay'. A financing structure is called progressive if healthcare expenditure takes a larger proportion of

income from the rich than from the poor. If the absolute level of healthcare expenditure is about the same for the poor and rich, then by design this expenditure will take up a larger fraction of income from poorer households. Different studies show that user charges have a strong regressive component in the healthcare financing structure of developing countries.

Health financing is divided in two parts – public financing and private or individual financing. The main challenges faced by the government in deciding on: (i) how much to invest and where; and (ii) how to healthily balance its health investment paying due regard to concerns of equity and efficiency are: (a) increasing public health expenditure [due to which the government, in addition to making increased budgetary allocations, sometimes partners with private sector (e.g. pulse polio immunisation) for delivery of services]; (b) more efficient and effective use of the available scarce resources; and (c) provide financial protection from the rising healthcare cost to the poor.

Of the above, the first i.e. objective of public healthcare expenditure was discussed briefly in Section 7.3. Regarding the second objective on efficient use of the budget, government has recently rearranged its infrastructure totally under the National Rural Health Mission (NRHM). Next comes the objective related to providing financial assistance in meeting the rising healthcare cost to the poor and the needy. This objective is at least, in part, related to the institutional mechanisms of establishing a healthy health insurance market in which the regulatory role of the government plays an important part.

In the last two decades, Central and State governments have been providing insurance premium for meeting the health costs of the underprivileged sections of the society. Even with all these efforts, the current distribution of main sources of health insurance premium is as follows: households (49.5 percent), government (27 percent) and others (employers) (23.5 percent). Such health insurance coverage is mostly for in-patient care i.e. patients who are admitted in the hospital. Comprehensive health insurance (i.e. covering the out/in-patient, preventive, primary and post-hospitalisation care) is offered by only select social health insurance schemes of the government like ESI, CGHS, etc. which caters only to a small section of total population. Few private insurance companies are providing the pre and post hospitalisation follow-up service which only some of the more affluent section of the society are able to avail. The goal of universal health coverage, therefore, continues to remain a distant challenge for India's policy makers and government.

Check Your Progress 2 [answer within the space given in about 50-100 words]

- 1) As a percentage of GDP, how does Indian public healthcare expenditure compares with those of OECD countries over the recent time period?

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- 2) Which three factors from the 'Demand Side' influences the government's decision to spend more on healthcare? Why?

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- 3) What factors contribute to influencing higher healthcare expenditure for the public from the 'supply side'?

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- 4) What are the two major sources of 'health expenditure'? Which of these dominates in Asian Countries? What is its current level in India?

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- 5) Do you consider the Indian healthcare system regressive? Why?

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- 6) What are the major challenges faced by the public healthcare system in India?

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7.5 HEALTH POLICY IN INDIA

When one considers the health and related policies in India, we find that we have well-formulated policy guidelines in terms of National Policies for Health, Nutrition, Education, Children, etc. These policies provide an overall framework for health and development reflecting political commitment. The Constitution of the country, [the directive principles] and the national policies provide the broad guidelines for mobilisation and distribution of resources in such a way as to meet the health needs of the masses. The constitutional amendments from time to time and their ratification by the State assemblies also provide the guidelines to planners and administrators to direct the resources to the priority areas. Over the years, the country has expanded its healthcare delivery system and has, by and large, adequate availability of health manpower, except for a few categories and specialised training facilities.

A National Health Mission was launched with specific goals to be attained during the period 2012-17. Main objectives of this mission are to: (i) safeguard the health of the poor; (ii) strengthen the public health system; (iii) empower the community for achieving the maximum health standards; and (iv) improve the efficiency to optimise the use of available resources. Under this mission, many schemes have been launched. Some of these are:

- a) **Rashtriya Bal Swasthya Karyakram:** This is an initiative to cover early detection and intervention among children (i.e. from birth to 18 years age) with respect to four D's i.e. defects at birth, diseases, deficiency and developmental delays.
- b) **Janani Shishu Suraksha Karyakram:** This is for pregnant women and newborn sick. Through this scheme, diagnosis, treatment, diet, and most of the drugs are provided free of cost. Transport from home to the treatment centre is also provided free of cost. The C-section is also performed free of cost for pregnant women.
- c) **Reproductive, Maternal, Newborn, Child and Adolescent Health:** This scheme, introduced in 2013, has the main objectives of reducing the: (i) infant mortality rate to 25 per 1000 live birth; (ii) maternal mortality rate to 100 per 100000 live births; and (iii) total fertility rate (TFR) to 2.1 by the year 2017.

- d) **Rashtriya Kishor Swasthya Karyakram:** Established in 2014, the scheme aims to reach 253 million adolescents in the country by intervening through the routes of nutrition, mental health and other health promotional approaches.
- e) **India Newborn Action Plan:** This was also established in 2014 with the main objectives of developing the health of newborn and reduces cases of stillbirth.

7.5.1 National Health Policy

The National Health Policy (2002) recognised that morbidity and mortality levels of the country are exceptionally high and hence stronger preventive and curative measures are needed. It took special note of the fact that macro and micro nutrient deficiency among women and children are high. Major diseases like Malaria, TB and HIV have also received special attention here. Given this scenario, the main features of the policy thrust are:

- 1) More flexibility to state public health administrations to implement policies in their areas;
- 2) Vertical implementation structure for disease control programmes;
- 3) More training to paramedical staff to cater to backward regions of the country;
- 4) Rectifying the uneven distribution of medical colleges across country;
- 5) Certain medical disciplines like molecular biology etc. to get developed infrastructure;
- 6) Increasing the number of persons specialised in family medicine and public health;
- 7) Encourage the usage of generic drugs and vaccine;
- 8) Include mental health in the public health domain;
- 9) Since college and school children are the most impressionable target for inculcating the basic principles of preventive healthcare, the policy suggests targeting these youth for increasing the awareness of health promoting behaviour; and
- 10) Encourage health related research among non-government service providers.

The National Mental Health Policy (2014) aims at: (i) providing universal access to mental healthcare; (ii) increasing access to mental health service to the vulnerable section of the country; (iii) reducing the risk and stigma of mental disease; (iv) ensuring the supply of skilled resources to treat the cases of mental sickness; and (v) identifying the social, biological and psychological determinants of mental health disorder. The more recent National Health Policy, 2017 also reiterates the goal of attaining the highest possible level of health and well-being by ensuring universal access to good quality healthcare services (without financial hardship) linked to the

Sustainable Developmental Goals. To achieve universal health coverage, specific steps identified under this are: (i) establishment of a comprehensive and free primary healthcare service for maternal, child and adolescent health through public hospitals and not-for profit private care providers; and (ii) provide a good quality secondary and tertiary healthcare service. The policy particularly emphasises the need for reducing the out-of-pocket expenditure on healthcare needs. The other major objectives of this policy are to: (i) increase the life expectancy at birth from 67.5 to 70 by 2025; (ii) reduce the under-five mortality to 23 by 2025 and maternal mortality to 100 by 2020; (iii) reduce the infant mortality rate to 28 by 2019; (iv) reduce neo-natal mortality to 16 and still birth rate to single digit by 2025; (v) eliminate leprosy by 2018; (vi) fully immunise 90 percent newborn by 2025; (vii) ensure adequate availability of paramedics and health workers for primary and secondary healthcare in high priority Districts by 2025; (viii) ensure District level electronic database of information on health system by 2020; etc.

The 2017 policy thus aims to project an incremental assurance based approach. However, the policy gives cause for two types of criticisms viz. (i) agency stakeholder critique; and (ii) feasibility critique. On the first, while the policy identifies what needs to be done, it does not identify the ‘who, what and the how’ sides of its implementation. This is perhaps due to the reason that healthcare is a State subject but it is important to improve the monitoring of the delivery systems. On the second, i.e. the feasibility critique, the policy calls for a reform in financing the public healthcare facilities where the operational costs would be in the form of reimbursements for care provision on a per capita basis for primary care. But the policy is silent on how these financing reforms will happen and who will manage them. Thus, while the policy more lucidly identifies the need to address problems with respect to three As (Access, Affordability, Accountability) of healthcare system of India, it fails to provide a cohesive, tangible action plan to address the problems pertaining to any of the As – especially when the public healthcare system is sinking under micro and macro managerial inefficiencies and is low on training and capacity building efforts.

Check Your Progress 3 [answer within the space given in about 50-100 words]

- 1) State the four specific goals of the National Health Mission: 2012-17.

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- 2) What are the two specific steps identified to achieve ‘universal health coverage’ under the National Health Policy, 2017?

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- 3) State the five major aims of the National Mental Health Policy, 2014.

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- 4) On what fronts, is the National Health Policy, 2017, is critiqued?

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7.6 LET US SUM UP

For a developing country like India, improving the nutrition and the general health status of its population is a critical concern of the government. Even though there is a gradual improvement over time in many of the major health indicators for India, the improvement is at a very slow rate. In particular, under-five mortality rate is still 50 percent. In case of nutrition status, cases of stunting and wasting are increasing which is alarming. To improve the situation, the Indian Government has initiated several policies and programmes. However, its overall public expenditure on health, which is less than 1.5 percent of GDP is very low. Consequently, the average share of out-of-pocket expenditure to total expenditure is not only very high (90 percent in 2012) but has continuously maintained an increasing trend. Further, most of the public healthcare infrastructure is concentrated in urban areas. Lack of adequate supply of health workforce is also an area of concern. Health insurance is getting importance in the society as well as in the government circles. Government is improving the situation through different policies and by providing improved preventive and curative healthcare services. Among different policies some of the important ones are: National Health Mission, National Mental Health Policy of India (2014), National Health Policy (2002, 2017), etc.

7.7 SOME USEFUL BOOKS

- 1) Neun and Santerre: *Health Economics: Theories, Insights and Industry Study*.
- 2) Ministry of health and family welfare, Government of India: National Family Health Survey (I,II,III and IV).
- 3) Government of India: RBI Bulletin.
- 4) Ministry of health and family welfare, Government of India: National Health Policy.

7.8 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

- 1) Health refers to 'freedom from illnesses'. Nutrition refers to a process through which the body absorbs the required amount of nutrients contained in the food that one consumes. It is thus a measure of nourishment.
- 2) IMR, Under-5 mortality, neo-natal mortality, post-neonatal mortality and MMR. MMR has fallen by about 50 percent between 1990 and 2015.
- 3) Under-weight, stunting and wasting are the 3 sub-components of under-nutrition. They are measured in terms of deviation from Z scores (Sub-section 7.2.1).
- 4) By BMI, anaemia level and overweight. There is a decreasing trend of underweight women and men over time.
- 5) The trend for *underweight* children in India is continuously falling (it has declined from 52 percent in 1992-93 to 38 percent in 2015-16).
- 6) QALY is a measure of disease burden whereas DALY shows health loss. Taken as an inverse of each other, QALY measures health gain.

Check Your Progress 2

- 1) For OECD countries, over 1979-2006, it has increased from 5.1 percent of GDP to 8.9 percent. In India, over 1995-2014, it has increased from 1.1 percent to 1.4 percent of GDP.
- 2) Population ageing, income and spread of insurance market.
- 3) Supplier Induced Demand and general economic growth.
- 4) PHE and OPE. For Asian countries, OPE is more than 80 percent. For India, it is estimated as 89.2 percent in 2012.

- 5) Yes because of high private out-of-pocket expenditure. An ideal healthcare system should be accessible to all with a fair distribution of financial cost between the public and the private healthcare spending.
- 6) Inadequate resource availability for public healthcare, severe geographical and social disparity, inadequate integration between health programmes, lack of community focus, etc.

Check Your Progress 3

- 1) Safeguard the health of the poor, strengthen the public health system, empower the community for achieving the maximum health standards and improve the efficiency to optimise the use of available resources.
- 2) Establishment of a comprehensive and free primary healthcare service for maternal, child and adolescent health through public hospitals and good quality secondary and tertiary healthcare service.
- 3) Providing universal access to mental healthcare, increasing access to mental health service to the vulnerable section of the country, etc. (Sub-section 7.5.1).
- 4) On two ground viz. agency stakeholder critique and feasibility critique (Sub-section 7.5.1).

