

Module – 1 Demography and Ageing Changes

Learning objectives:

By the end of the chapter, non-specialist medical officers should be able to:

- Recall the demographic trends of ageing in India.
- Recognize the importance of these trends in clinical practice with reference to the elderly population

Introduction:

The rapid rise of India's older population, coupled with changing family structures and limited medical, social, and financial provisions, present policymakers with multiple challenges. This chapter highlights the magnitude and complexity of the problem for effective delivery of health care to the geriatric population viz. age group greater than 65 years.

In the developed countries all people at or above the age of 65 are termed as elderly, according to WHO, in the developing countries all at or above the age of 60 years are designated as the elderly.

They can be further classified into:

Young Old – 60-79 years

Old Old – 80 and above

Population and Ageing:

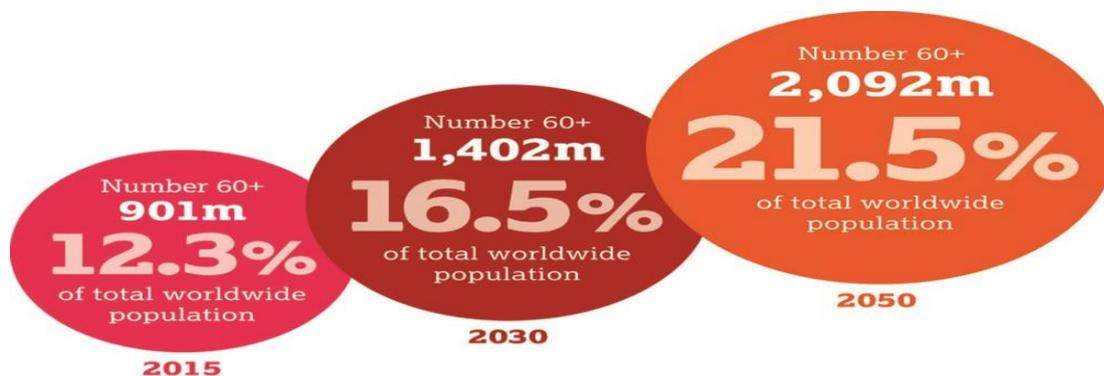
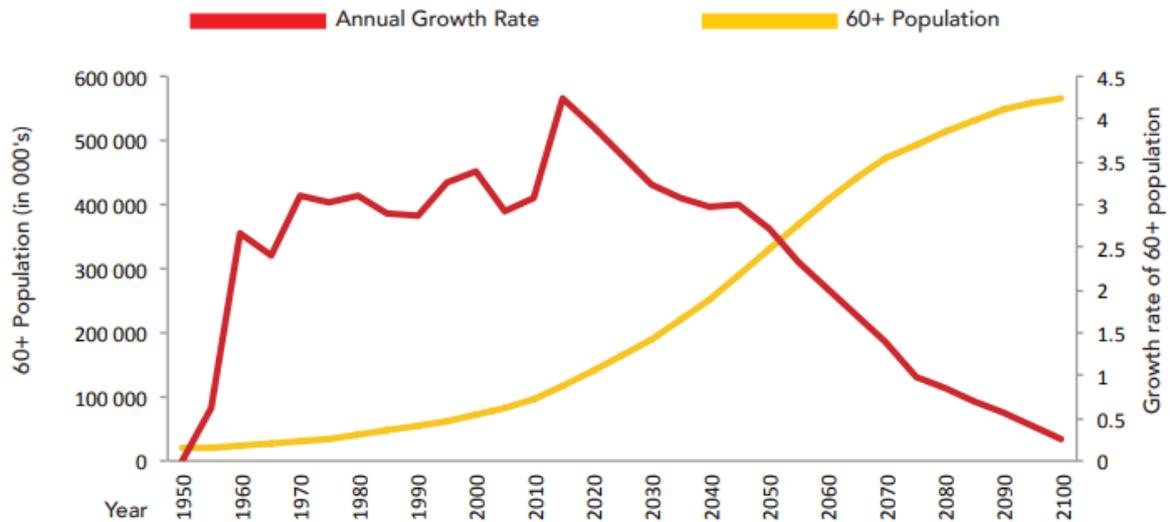


Figure 1: Population and ageing

Size and growth rate of the elderly population in India:

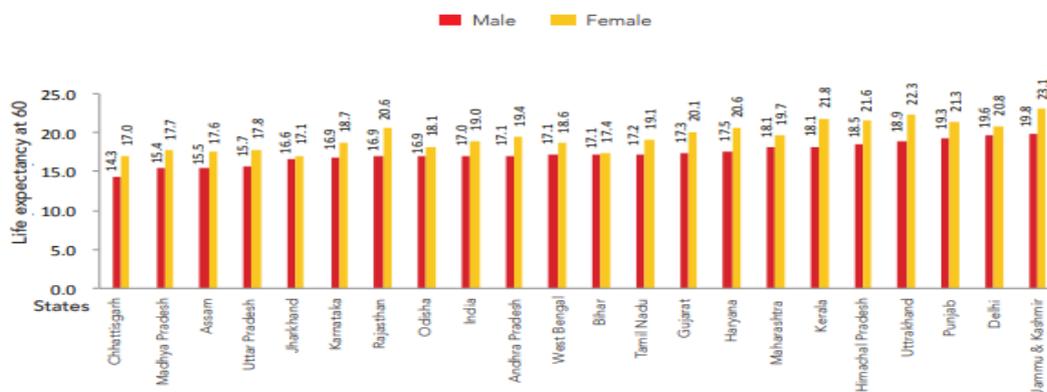


Source: United Nations (2015), World Population Prospects, 2015 Revision, Department of Economic and Social Affairs, United Nations.

Figure 2: Size and growth rate of the elderly population in India

Life expectancy:

Definition: Number of years a person is expected to live based on the statistic average.



Source: ORGI (2016), SRS Based Life Table 2010-14, Office of the Registrar General and the Census Commissioner of India, Ministry of Home Affairs, Government of India. www.censusindia.gov.in.

Figure 3: State wise Life Expectancy among 60+ population by Gender

Factors contributing to increase in life expectancy

- Low birth rate
- Access to medical facilities
- Improved medical facilities
- Health awareness
- Immunisation coverage
- Improved standard of living and nutrition
- Better sanitation

Ageing Index:

Ageing index is the number of persons 60 years or older per 100 persons under the age of 15 years. This indicates that the clinician who is graduating in the present times will be seeing a larger number of older persons than younger children.

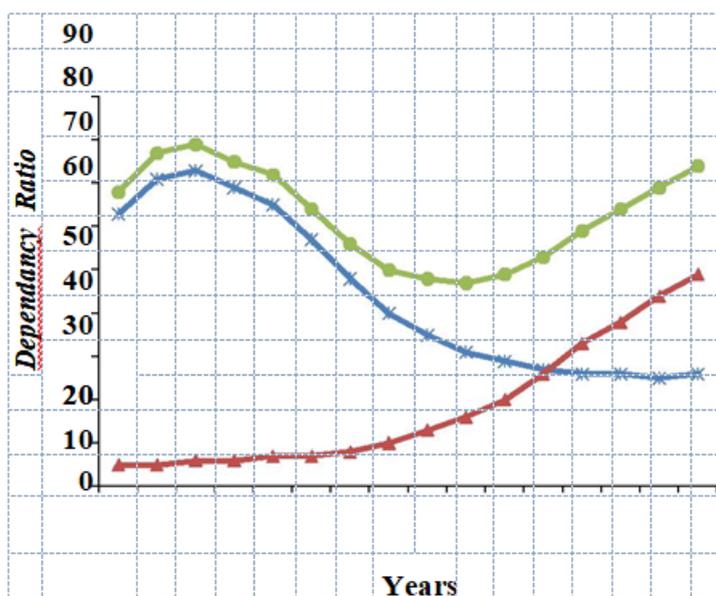
Between 1950 and 2000, the ageing index for India increased from 14 to 22.7 older persons per 100 children (United Nations, 2010). Over the next 50 years, the ratio is projected to increase by four times and by the year 2050, there will be 105 people 60 years or older for every one hundred children 0-14 years in India (United Nations, 2002).

Dependency Ratio:

The total dependency ratio is a measure of potential social support needs. It is based on the simple notion that all persons under 15 years and those 65 or older are likely to be in some sense dependent on the population in the working ages of 15-64 years.

Total dependency ratio =

$$\frac{\text{No. of persons} < 15 \text{ years} + \text{No of persons} > 65 \text{ years}}{\text{No. of persons aged 15 to 64}} \times 100$$



—●— Total dependency ratio
—*— Child dependency ratio —▲— Elderly dependency ratio

Source: World Population Prospects, The 2015 Revision, Volume I: Comprehensive Tables. UN Population Division, Department of Economic and Social Affairs.

Figure 4: Dependency ratio (per 100) in India, 1950-2100

Demography of Population Ageing in India

Ageing trends in India:

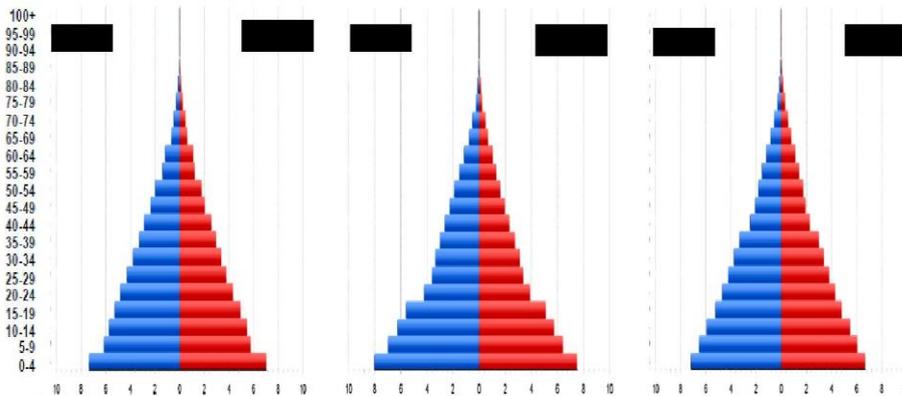
Population and ageing indicators in India

Age group (% of population)	1950	1975	2000	2025	2050
0-14 years	38.9	39.8	33.5	23.2	19.7
15-59 years	55.5	54.0	58.9	64.3	59.7
60+	5.6	6.2	7.6	12.5	20.6
Ageing index	14.4	15.6	22.7	53.6	105.0
Median age (Years)	20.4	20.0	23.7	31.3	38.0
Sex ratio 60+ (Females per 1000 males)	1112	956	1089	1081	1100

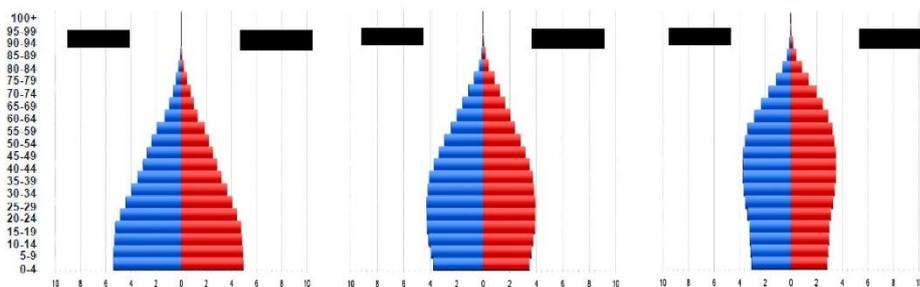
Source: World Population Ageing 1950-2050, Population Division, DESA, United Nations. Magnitude and speed of population ageing in India

Population pyramids for India, 1950, 1970, 1990, 2010, 2030, and 2050

Population (%)		Population (%)		Population (%)	
1950		1970		1990	
Male	Female	Male	Female	Male	Female



Population (%)		Population (%)		Population (%)	
2010		2030		2050	
Male	Female	Male	Female	Male	Female



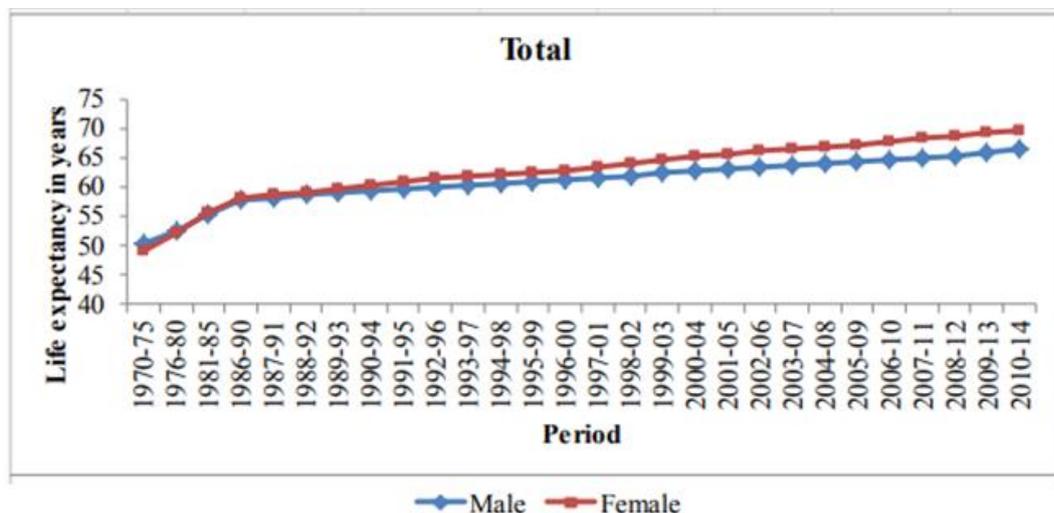
Source: World Population Prospects: The 2008 Revision. UN Population Division, Department of Economic and Social Affairs.

The population pyramids of the above figure show the share of population in each age group, separately for males and females. It is seen from figure that proportionately higher population in the younger ages in India during the year 1950 indicating the country was in the early stages of demographic transition. Moving forward in time, the base of the population pyramid shrinks as the number of working-age individual increases relative to children and the elderly. However, the proportion of child population has been declining along with this proportionately high growth of the adult and old age population towards the recent years indicating India's progress in demographic transition. The country will have proportionately high old age population in the year 2030 which will further become more pronounced in the year 2050. Notably, the share of population in oldest ages (age 80 +) will become exceptionally higher in the country in the near future.

While India has been experiencing the process of ageing, the intensity of such transition

varies across the states in accordance with the stage of demographic transition.

Reduction in fertility and increase in life expectancy



Source : http://www.censusindia.gov.in/Vital_Statistics/SRS_Life_Table/2.Analysis_2010-14.pdf

Figure 5: Expectation of life at birth by sex and residence, India, 1970-75 to 2010-14

Consequences of population ageing in India

1. Demographic changes present complex health, social, and economic challenges to which this heterogeneous country must rapidly adapt, both at present and continuing into the future.
2. This growing longevity gap between the sexes implies that India's older adult population is becoming increasingly female. It thus becomes imperative for the policy makers to keep this distinction in mind while developing policies for the elderly.
3. Non Communicable Disease burden occurs in old age, their peak occurrence in India is a decade earlier (age 45+) than western countries (age 55+). Hence, the issue is not only the burden, but also its premature onset of chronic diseases and mortality (in the Middle Ages of 45 and over) and the resulting socio-economic consequences.

4. India has witnessed remarkable economic growth but how much of that growth will benefit the older generation is a complex and unanswered question. For example, pension schemes coverage among the Indian elderly has been a major challenge for people in rural areas, and those employed in the informal sector populations which are already more vulnerable.
5. *Ruralization of the elderly-* According to the 2011 census, 71% of the elderly live in rural India.
6. Migration of the younger generation to urban areas leaves the vulnerable elderly population to isolation without adequate social support.
7. *Resource Allocation:* An increasing proportion of the older age group creates social, administrative and political pressures on a society to change its pattern of resource distribution, generating conditions that may give rise to intergenerational conflict.
8. *Social Security in Old Age:* As more people live longer, retirement, pensions and other social benefits tend to extend over longer periods of time and add to financial burden.
9. *Rising Medical Costs:* Elderly people with multiple co-morbidities need medical assistance leading to rising medical costs.

Suggestions to meet these challenges:

- Awareness of facilities and government schemes available to the elderly.
- At the grass root level, health promotion and prevention should be encouraged.
- The best way to fulfill the needs of health expenditure in older ages is health insurance which is initiated at middle age itself.
- Availability of medications at an affordable costs

Key points:

- **Geriatric population is increasing with female preponderance**
- **This places an enormous burden on the health care system.**
- **Understanding the demographic changes helps to plan for effective health care delivery to the elderly.**

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