UNIT 4 SOCIAL DEMOGRAPHY

Structure

4.0 OBJECTIVES

In this Unit, we have discussed various aspects of social demography in India as a social problem. After going through this Unit, you should be able to:

- describe various aspects of the demographic situation in India, like the size and growth of the population, the fertility, mortality, age and sex structure of the population;

- explain the determinants and implications of these aspects of the demographic situation in India;

- examine the concept of family planning and family welfare and the barriers to the acceptance of family planning;

- state and describe the current status of the population policy of India; and

- describe the future prospects of family welfare programme in the light of the current achievements.

4.1 INTRODUCTION

The term 'demography' is derived from the Latin word 'demos' meaning people. Hence, demography is the science of population. On the one hand, demography is concerned with a quantitative study of the size, structure, characteristics and territorial distribution of human populations and the changes occurring in them. On the other hand, demography is also concerned with the study of the underlying causes or determinants of the population phenomena. It attempts to explain population phenomena and situations as well as the changes in them in the context of the biological, social, economic and political settings. Social demography looks at the population phenomena mainly at the social level.

Keeping these perspectives in mind, Section 4.2 of this unit describes the size and growth of the population of India and their implications. Section 4.3 is devoted to fertility in India, its determinants and implications of high fertility. A detailed discussion of mortality in India, its determinants and implications of declining mortality and high infant and child mortality is undertaken in Section 4.4. The age and sex structure of the Indian population is described in Section 4.5, which also examines the determinants and implications of the age structure and the determinants of the sex structure. Section 4.6 is on family planning and family welfare and the barriers to family planning. Finally, section 4.7 is focused on the Population Policy of India, its evolution and components, achievements, achievements of the family welfare programme and its future prospects.

4.2 SIZE AND GROWTH OF POPULATION IN INDIA

The size and growth of population are two important components of the demographic phenomena in a developing country like India. These have severe implications on the social and economic spheres of our life. Hence, let us begin with a discussion on the size and growth of the population and its socio-economic implications.

4.2.1 Size and Growth of Population

India is the second most populous country in the world, ranking only after China. In the last Census, taken in 2001, the population of India is found to be 103 crores; 18 crores of people were added to the population since the last Census taken in 1991. This means that more than around 1.8 crores of persons are added to India every year. This is more than the population of Australia.

India's population has more than doubled since Independence. In the first post-Independence Census, taken in 1951, the population stood at 36 crores, with an average annual growth rate of 1.25 per cent for the decade 1941-51. However, the average annual growth rate for 1991-2001 was 2.1 per cent and the decadal growth rate was 21.32 per cent.

4.2.2 Determinants of Population Change

Three factors determine the change in the size of the population of any country: how many persons are born, how many persons die, and how many persons are added to the population after considering the number of persons leaving the country and the number of persons coming into the country. The last of these factors, that is, migration does not play a large role in determining population growth in the Indian context. It, therefore, becomes necessary to consider in greater detail the other two factors, that is, fertility and mortality.

4.2.3 Implications of the Size and Growth of Population

The size of the population of India is itself staggering, and it is growing at a high rate. Despite intensive efforts through development programmes, the achievements have not been able to keep pace with the needs of the growing population.

The per capita production of food grains has increased over the years, but the per capita increase has been only marginal because of the high growth rate of the populations. The housing shortage has also been increasing over the years. The norms for the health and medical services have not been met. The upward trend in the gross and net national products is not reflected in the per capita income to the same extent. The situation related to unemployment and underemployment reflects the inability of the employment market to absorb the pressures of increasingly large labour force.

The growth rate of the population may not appear to be too high. Yet when applied to a large base population, the addition to the population is quite staggering.

Check Your Progress 1

1) Mark the correct answer.

   According to the 2001 Census, India's population was:

   a)   65 crores
   b)   85 crores
   c)   103 crores
   d)   113 crores

2) What are the implications of the large size and high growth rate of India's population? Answer in about seven lines.

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4.3 FERTILITY

As you know, fertility is an important determinant of population growth. In this section, we shall discuss the measurement, levels and trends and implications of high fertility.

4.3.1 Measurement of Fertility

At the outset, it is necessary to differentiate between fecundity and fertility. Fecundity refers to the physiological capacity to reproduce. Fertility, on the other hand, refers to the actual reproductive performance of an individual or a group.

While there is no direct measurement of fecundity, fertility can be studied from the statistics of births. The crude birth rate is an important measure of fertility for which only live births, that is, children born alive are taken into account. The crude birth rate is calculated by dividing the number of live births occuring during a calender year in a specified areas by the midyear population of that year. The crude birth rate is generally expressed per thousand of population. It is computed in the following manner:

$$\frac{\text{Total number of live births during a year}}{\text{Total population in the middle of that year}} \times 1000$$

The crude birth rate directly points to the contribution of fertility to the growth rate of the population. It suffers from certain limitations mainly because it has in the denominator the total population which includes males as well as very young and very old women who are biologically not capable of having babies. There are other more refined fertility measures like the general fertility rate, the age-specific fertility rates, etc., that overcome these limitations, but these do not concern us here.

4.3.2 Levels and Trends of Fertility in India

As in other developing countries, the crude birth rate has been quite high in India. In the first decade of the twentieth century, the estimated birth rate for India was as high as 49.2 per thousand population. In the decade 1951-61, that is, the decade immediately following Independence, the birth rate declined by only four points, and was around 45 per thousand population. Since 1961, however, the birth rate has been progressively declining, though not at a very fast pace. According to the estimates of the sample registration system, the birth rate in India, in 1988, stood at 31.3 per thousand population. For the same year, while it was 32.8 per thousand population for the rural areas, it was 26.0 per thousand population for the urban areas. According to the Sample Registration System, the birth rate in India in 2002 was 25.8 per thousand population. Significantly there have been much regional variations among the states.

4.3.3 Determinants of High Fertility

Several factors contribute to the high fertility of Indian women. Let us examine some of these factors:

i)   All the religions of the world, except Buddhism, contain injunctions to their followers to breed and multiply. It is, therefore, not surprising that belief in high fertility has been strongly supported by religions and social institutions in India, leading to appropriate norms about family size.

ii)   Another factor contributing to high fertility is the universality of the institution of marriage. Amongst the Hindus, a man is expected to go through the various stages of his life (Ashramas), performing the duties attached to each stage. Marriage is considered one such duty. For the

Hindu woman, marriage is considered essential, because it is the only sacrament she is entitled to, though the Hindu man goes through several sacraments throughout his life.

iii) Till recently, the custom in India required the Hindu girls to be married off before they entered puberty. Even today, despite legislation forbidding the marriage of girls before they are 18 years of age, many girls are married off before they attain that age. In India, traditionally women start childbearing at an early age, and continue to do so till they cross the age at which they are no longer biologically capable of bearing children.

iv) As in all traditional societies, in India too, great emphasis is laid on bearing children. A woman, who does not bear children, is looked down upon in society. In fact, the new daughter-in-law attains her rightful status in the family only after she produces a child, preferably a son.

v) The preference for sons is deeply ingrained in the Indian culture. Sons are required for extending the family line and for looking after the parents in their old age. Among the Hindus, a son is desired not only for the continuation of the family line and for providing security in old age, but also for ceremoniously kindling the funeral pyre and, thus, effecting the salvation of his father's soul. The preference for sons is so high in the Indian society that a couple may continue to have several daughters and still not stop childbearing in the hope of having at least one son.

vi) In Indian society, a fatalistic attitude is ingrained and fostered from childhood. Such an attitude acts as a strong influence against any action that calls for the exercise of the right of self-determination with reference to reproduction. Children are considered to be gifts of God, and people believe that it is not upto them to decide on the number of children. High infant and child mortality rates also contribute to a large family size. A couple may have a large number of children in the hope that at least a few of them will survive upto adulthood. The low status of women is also a contributing factor to high fertility. Women, unquestioningly, accept excessive childbearing without any alternative avenues for self-expression.

vii) Children in the Indian society have a great economic, social, cultural as well as religious value. Fertility of Indian women is, therefore, high. Often, there is no economic motivation for restricting the number of children, because the biological parents may not necessarily be called upon to provide for the basic needs of their own children since the extended family is jointly responsible for all the children born into it.

viii) Again in the absence of widespread adoption of methods of conception control, the fertility of Indian women continues to remain high.

It is important that none of these factors is to be seen in isolation. Indeed, it is the combination of several factors, that contribute towards the high fertility rate in India. While considering the factors contributing to high fertility, it is necessary also to consider traditional Indian norms which regulate the reproductive behaviour of couples. Breast-feeding is universally practiced in Indian sub-continent and this has an inhibiting influence on conception. Certain taboos are also practiced during the postpartum period when the couple is expected to abstain from sexual activity. The practice of going to the parental home for delivery, specially the first one, common in some parts of the country

also ensures abstinence after childbirth leading to postponement of the next pregnancy. Cohabitation is also prohibited on certain specified days in the month. It is also common knowledge that a woman would be ridiculed if she continued to bear children after she had become a grandmother.

4.3.4 Implications of High Fertility

Apart from contributing in a big way to the population problem of the country, high fertility affects the family and, in turn, society in many ways.

Women are tied down to child-bearing and child-rearing for the best years of their productive lives. They are, therefore, denied the opportunity to explore other avenues for self-expression and self-development. This could lead to frustration. Excessive child-bearing affects their own health and that of their children. Looking after a large number of children puts a further strain on the slender physical and emotional resources of such women.

The burden of providing for a large family sits heavily on the bread-winner of the family. The constant struggle to maintain a subsistence level is exhausting. To escape from the problems of everyday life, he may take to drinking. This would lead to further deterioration of the economic and emotional well-being of the family.

The children, often unwanted, unloved and neglected, are left to their own devices to make life bearable. Indulgence in delinquency is sometimes the result. The children in large families often have to start working at a very early age to supplement the slender financial resources of the family. They are, therefore,

Social Impacts of High Fertility

denied the opportunity to go to school and get educated. The girl child is the worst sufferer. She is often not sent to school at all, or is withdrawn from school at an early age to help her mother in carrying out domestic chores and to look after her younger siblings when the mother is at work. Early marriage pushes her into child-bearing, and the vicious cycle continues. The children, both boys and girls, in a large family are thus often denied the joys of childhood, and are pushed into adult roles at a very early age.

Happy and healthy families are the very foundation on which a healthy society is built. Excessive fertility, as one of the factors leading to family unhappiness and ill health, needs to be curbed in order to build up a healthy society.

Check Your Progress 2

1) Write down the formula for computing the crude birth rate. Use about two lines.

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2) List the determinants of high fertility in India. Use about five lines to answer.

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3) What are the implications of high fertility for the family and society? Use about ten lines to answer.

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4.4   MORTALITY

Mortality is an important determinant of population. Let us examine a few important aspects of mortality.

4.4.1 Measurement of Mortality

Various measures of mortality are employed in the analysis of mortality. For a general understanding of the process of mortality, it is sufficient to describe three basic measures of mortality: the crude death rate, the expectation of life at birth, and the infant mortality rate.

i) Crude Death Rate

The Crude death rate is the ratio of the total registered deaths occurring in a specified calendar year to the total mid-year population of that year, multiplied by 1000. It is computed in the following manner:

$$\frac{\text{No. of registered deaths during a year}}{\text{Total population in the middle of that year}} \quad 1000$$

As in the case of the crude birth rate, the crude death rate also suffers from several limitations, mainly because it considers the mortality experience of different groups in the population together. The age and sex structure is not taken into account. For instance, a country having a very large proportion of elderly people may have the same crude death rate as that in another country where this proportion is very low. The mortality conditions of these countries cannot be considered to be similar. It is, therefore, customary to calculate age specific death rates, and report them separately for the males and the females.

ii) Expectation of Life at Birth

The average expectation of life at birth is a good measure of the level of mortality because it is not affected by the age structure of the population. The term "average expectation of life" or life expectancy represents the average number of years of life which a cohort of new-born babies (that is, those born in the same year) may be expected to live if they are subjected to the risks of death at each year, according to the age-specific mortality rates prevailing in the country at the time to which the measure refers. This measure is complicated to calculate but easy to understand.

iii) Infant Mortality Rate

Infants are defined in demography as all those children in the first year of life who have not yet reached age one, that is, those who have not celebrated their first birthday. Infants are studied separately, as mortality during the first year of life is invariably high. In countries like India, where health conditions are poor, infant deaths account for a substantial number of all deaths. The infant mortality rate is, therefore, often used as an indicator for determining the socio-economic status of a country and the quality of life in it.

Box 1   Measurement of Infant Mortality

The infant mortality rate is generally computed as a ratio of infant deaths (that is, deaths of children under one year of age) registered in a calendar year to the total number of live births (children born alive) registered in the same year. It is computed in the following manner:

$$\frac{\text{Number of deaths below one year registered during the calendar year}}{\text{Number of live births registered during the same year}} \quad 1000$$

It needs to be noted that this rate is only an approximate measure of infant mortality, for no adjustment is made for the fact that some of the infants dying in the year considered were born in the preceding year.

4.4.2 Levels and Trends of Mortality in India

Up to 1921, the crude death rate in India was quite high (between 40 and 50 per thousand population), the highest being for the decade 1911-21, mainly because of the influenza epidemic in 1918, when more than 15 million persons died. Since 1921, the death rate has been declining. From 1911-21 to 1971-81, that is, in a period of 60 years, the average annual death rate declined from 48.6 per thousand population to 14.9 per thousand population – a reduction of more than 69 per cent. The estimates of the Sample Registration System indicate that for the year 1988, the crude death rate was 11.0 per thousand population. In 2000 the crude death rate has declined to 8.5 per thousand population.

The average expectation of life at birth has also increased over the years. During 1911-21, it was 19.4 years for the males, 20.9 years for the females, and 20.1 years when both sexes were considered together. These figures may be considered to be the lowest for the country, and one of the lowest anywhere in the world. For the 1941-51 decade, these figures were 32.5 years for the males, 31.7 years for the females, and 32.1 years when both sexes were considered together. During the period 1981-86, life expectancy was 55.6 years for the males, 56.4 years for the females, and 56.0 years when both sexes were considered together. The latest statistics indicates that the average life expectancy in India is 63.3 years. While the female life expectancy is 63.8 years, for male it is 62.8 years.

4.4.3 Determinants of Declining Mortality

The decline in mortality in India has been mainly due to public health and disease-control measures, which were mostly imported from the developed countries. These include DDT spraying, the use of antibiotics like penicillin and vaccines against many communicable diseases like tuberculosis, polio, typhoid, cholera and several childhood diseases. Dreaded "killer diseases" like plague and smallpox have been completely eradicated. The extension of health and medical services to different parts of the country and the application of advances in the medical sciences have contributed in a big way to the decline in mortality in India. The effect of severe famines have also been considerably reduced by preventive and relief measures. Much still remains to be achieved for bringing about further decline in mortality.

4.4.4 Implications of Declining Mortality

The decline in the death rate and high birth rate have been the main factor responsible for the rapid growth of population, as the declining death rates have not been accompanied by corresponding declines in the birth rates.

The increased average expectation of life at birth has resulted in a higher proportion of persons in the older age group, that is, those above the age of 60. At present, the percentage of the aged in India (6.49 in 1981) is not as high as that in the developed countries (for example, 16.47 in the United States, in 1984). The absolute numbers are, however, quite high.

In our country aged persons, do not necessarily contribute to the national income or the family income. They have to be looked after, and the expenditure on their health and medical needs has to be met. When strong supports are not

provided by the joint family, the burden falls on society. Old-age homes or foster care homes for the aged have to be provided through the State funds, when the aged are not in a position to incur the expenditure involved. Many of the state governments have introduced the scheme of pensions for the aged in a limited scale. However, for a poor country like India, all such success of such measures needs a political commitment.

4.4.5 Levels and Trends of Infant Mortality in India

In India, the infant mortality rate was as high as 140 per thousand live births in 1969. In 1989, the infant mortality rate was less than 100 per thousand live births.

India has still a long way to go for achieving the goal of an infant mortality rate of below 60 per thousand live births by the year 2000 A.D.–one of the goals to be reached for securing 'Health for All' by 2000 A.D. However in 2002 the infant mortality rate of India was 68 per thousand life births.

Box 2. Variation in the Estimated Death Rates of the Children Aged 0-4 years by Sex and residence in India and in its Major States, 1998.			
	Total	**M**	**F**
India	22.5	21.0	24.1
Andhara	18.1	17.8	18.4
Assam	27.5	29.2	25.6
Bihar	22.9	21.2	24.8
Gujarat	19.6	18.5	20.9
Haryana	22.4	19.4	26.2
Himachal	16.7	14.1	19.7
Karnataka	16.7	16.5	16.8
Kerala	3.6	4.2	3.0
Madhya Pradesh	32.6	31.6	33.7
Maharashtra	12.7	11.2	14.3
Orissa	29.0	28.7	29.4
Punjab	16.8	15.9	17.9
Rajasthan	27.7	27.3	28.1
Tamil Nadu	13.0	12.3	13.8
Uttar Pradesh	29.6	25.3	34.5
West Bengal	15.0	16.2	13.8

Source : *Registrar General of India*, Sample Registration System

All India : Rural

Total	M	F
24.8	23.2	26.6

All India : Urban

Total	M	F
12.8	12.0	13.6

4.4.6 Determinants of Infant and Child Mortality

The determinants of mortality during the neonatal period (that is, the first four weeks of the baby's life) on the one hand, and the post–neonatal period (that is, the period between one and 11 months) together with the childhood period (that is, the period between one and four years) on the other, are quite different.

i) Neonatal Mortality

Biological factors play a dominant role in determining the level of neonatal mortality. These factors are also known as endogenous factors.

a) It is known that neonatal mortality rates are higher when the mother is below the age of 18 or above 35, when the parity is above 4, and when the interval between two births is less than one year. These conditions are fairly common in our country, leading to high infant mortality.

b) While the standards laid down by the World Health Organisation specify that babies with a birth weight of less than 2,500 grams should be considered as "high risk" babies, needing special care, 24 to 37 per cent of Indian babies have a birth weight below 2,500 grams without the possibility of receiving any special care.

c) Ante-natal care, which is generally concerned with the pregnant woman's well-being is lacking in our country. It is, therefore, not possible to identify high risk cases requiring special care, to administer tetanus toxoid injections for immunising the unborn child against tetanus, and to provide iron and folic acid tablets to prevent anaemia among pregnant women. An anemic mother gives birth to a low-weight baby with slender chances of survival.

d) Proper hygienic conditions and medical care during delivery are not ensured, specially in the rural areas. The delivery is generally conducted by an untrained traditional birth attendant (*dai*) or an elderly relative. The scheme of providing dais with training has not yet reached all parts of the country.

e) Fortunately, the practice of breast-feeding is widespread in our country. This protects the baby from exposure to several infections. Breast-feeding is, however, initiated only after 48 to 72 hours of birth, and is absolutely prohibited during the first 24 hours. If the baby is put to the breast soon after birth, it acquires several immunities which are passed on by the mother through colostrum (the first flow of breast milk).

This opportunity to acquire immunity against several diseases is denied to the baby, exposing it to the risk of neonatal mortality.

ii) **Post-neonatal and Child Mortality**

The factors contributing to the post-neonatal and child mortality are generally not biological, but arise out of the environment and the behavioural response to it. These factors are also known as exogenous factors.

a) Common childhood diseases, such as, diptheria, pertusis (whooping cough), measles and polio as well as tuberculosis contribute substantially to the post-neonatal and child mortality. Deaths due to these diseases can be prevented, but immunisation services are either not available or easily accessible in the rural areas, or may not be accepted by the rural population either because of ignorance and superstition or sheer apathy.

b) Diarrhoea and its consequence, and dehydration, is another factor contributing heavily to post-natal and child mortality. It has been estimated that every year about 1.5 million children under the age of five years die due to diarrhoea, of which 60 to 70 per cent die of dehydration.

The oral rehydration therapy introduced in recent years does not involve heavy expenditure or undue efforts on the part of those who look after the affected child. The oral rehydration solution can be prepared at home with a tablespoon of sugar, a pinch of salt and a glass of boiled water. The material for preparing the solution can also be obtained from the government health workers or the local Health Guide. The obstacle, however, is in the form of the age-old traditional belief that a child should not be given milk or any kind of food during an attack of diarrhoea. The dehydration that sets in due to diarrhoea can be so severe that the slightest delay in treatment can cost the child its life. On the other hand, the oral rehydration solution, which can be considered a household remedy, not only prevents dehydration, but also controls diarrhoea.

c) Nutritional deficiency is another factor contributing to child mortality. The National Institute of Nutrition found in a study conducted in 1981 that around 85 per cent of the children under four years were malnourished, of whom almost 6 per cent were severely malnourished.

These malnourished children are also more prone to contact diarrhoea and other debilitating diseases, exposing them to the risk of dying during childhood. Malnourishment itself could also be a result of attacks of childhood diseases. This vicious circle, unless broken effectively through an educational and service programme, will continue to result in high infant and child mortality rates.

4.4.7 Implications of High Infant and Child Mortality

It has been observed that wherever infant and child mortality is high, fertility is also high and vice-versa. A couple is interested in the number of surviving children and not in the number of children born. Because of the high levels of infant and child mortality, a couple may go in for a large number of children in the hope that at least a few would survive to adulthood. Also, when a child dies, the parents are keen to replace it as soon as possible by another. It is also known that when a child dies in infancy, the mother is denied the natural protection from pregnancy provided through breast-feeding. She is then likely to conceive early, leading to high fertility.

Thus, apart from the emotional trauma caused to parents, high infant and child mortality rates result in high fertility rates leading to a population problem. Looking after these children, who die before they can start contributing to the country's well being, also places a heavy burden on the country's meager resources. It needs to be reiterated that the level of the infant mortality rate of a country is considered as an important indicator of the socio-economic status of that country and the quality of life in it.

Check Your Progress 3

1) Define "average expectation of life" or "life expectancy". Use five lines to answer.

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2) What is meant by neo mortality? Use three lines to answer.

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3) What are the factors contributing to high neo natal mortality in India? Mention at least seven factors. Use three lines to answer.

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4) List three factors contributing to high infant and child mortality in India. Use two lines to answer.

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4.5   AGE AND SEX STRUCTURE

Age and sex are the basic characteristics or the biological attributes of any population. These characteristics or attributes affect not only the demographic structure, but also the social, economic and political structure of the population.

Age and sex are also important factors, because they are indicators of social status. Each individual is ascribed a certain status in society on the basis of sex and age. Status and roles are culturally determined, and vary from one culture to another. Even within the same culture, status and roles may undergo changes over a period of time. While in traditional societies, age demands respect, modern societies may be more youth-oriented. While the age structure of a

population may have implications for the status and roles of older persons, the sex structure may be a reflection of the social reality.

The age-sex structure of a population is both the determinant and consequence of birth and death rates, internal and international migration, marital status composition, manpower, and the gross national product. Planning regarding educational and health services, housing, etc., is done on the basis of the age structure of the population.

4.5.1 Age Structure

i) Measurement of the Age Structure

It is customary to classify age data in five year age groups, such as 0-4, 5-9, 10-14, 15-19, and so on.

The simplest measure to study the age structure of any population is the percentage distribution of the population based on the absolute numbers in various five-year age groups. This percentage distribution indicates the number of persons in an age group, if the total number of persons considered is 100. This measure is useful for understanding and describing the age structure of any population. It can also be used to compare the age structure of two or more populations at a point of time, or to compare the age structure of the same population at different points of time. Age-sex pyramids can also be constructed with the help of age-sex histograms.

Box 3. Dependency Ratio

An important measure to study the structure of the population is the dependency ratio. This measure indicates the number of dependents per 100 workers. Three age groups are considered for this purpose. The population in the age group 15-50 or 15-64 is considered to be the working population, the population below 15 is considered as young dependents and the population above either 60 or 65 is considered to be old dependents. The dependency ratio is computed by using the following formula.

Dependency Ratio =   Population in the age group 0-14 + Population in the age group 60 + or 65 + Population in the age group 15-59 or 15-64

The dependency ratio gives us only a broad idea of economic dependency in any population, and it is not a full measure for assessing the dependency burden. It needs to be noted that not all persons in the working age group (15-59 or 15-64) are employed and not all those in the dependent age groups (0-14 and 60+ or 65 +) are economic dependents. In a country like India, children start working at a very early age as helping hands to the parents among craftsmen, poor agriculturalists or newspaper hawkers or as hotel boys. In rural areas, old people continue to engage themselves in some kind of economic activity, as there is no retirement age in an agricultural economy. Then there are activities like those of doctors, lawyers, traders and other self-employed persons for whom the age factor does not lead to retirement from economic activity.

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ii) Age Structure in India

Determinants and Implications

India is an old country with a large young population belonging to the age group of 0-14 years and a growing number of aged population in the age group of above 50 years.

According to the 1991 Census, the young dependency ratio in India was 67.2, meaning that 100 persons in the working age group (15-59) had to support 67.2 children in the age group of 0-14 years. Simiarly old dependences in India is to the extent of 12.2.

The age structure of any population is determined by the levels of fertility, mortality and migration. Of these three factors, migration can affect the age structure of any population only when the migrants are concentrated in any one age group and the volume of migration is large.

India has a large "young" population because the birth rates are high and the number of children born is large. The sustained high level of birth rates has resulted in a large proportion of children and a small proportion of old population. On the other hand, in economically developed countries, the birth rates are low and less children are born. The low birth rats result in a higher proportion of old people. Compared to the role of fertility, the role of mortality in determining the age structure of a population is limited, specially when mortality is high. Rapid reductions in mortality and lengthening of the life-span result in a "younger" population. This is mainly because the improvement is first experienced by the infants and children. More infants and children survive, leading to an increase in the proportion of the young persons in the population as in the case of India. On the other hand, when the mortality level is very low, there is no further scope for any large increases in survivorship during infancy and early childhood, and any improvement in mortality conditions would affect the older age group and lead to a further aging of the population, that is, increase in the proportion of older persons in the population. Such a situation prevails in developed countries like Sweden, the United States, the United Kingdom, Canada, Japan, France and Australia.

A young population implies a heavy burden on the economy of the country as they have to be educated, clothed and provided shelter, while they themselves are not expected to contribute immediately to the family or national economy.

One other implication of the young age structure of the Indian population is that it also has the potential of the high growth rates of the population in further years. Within a few years, these children will grow up, get married and start reproducing. When the number of couples in the reproductive age group (wife in the age group 15-44) is high, the birth rate can also be expected to be high, even with moderate fertility. This, in turn, leads to a high population growth rate.

4.5.2   Sex Structure

In this section we shall discuss the measurement of sex structure, sex ratio and its determinants in India.

i)   **Measurement of Sex Structure**

Two measures are generally used for studying the age structure of any population–(1) the percentage of males in the population or the masculinity proportion, and (2) the sex ratio. Of these two measures, the sex ratio is more frequently used in the study of the population.

The sex ratio of a population may be expressed either as the number of males per 100 females or the number of females per 100 males. The Indian Census

has preferred to define the sex ratio as the number of females per 1000 males, though the definition of the sex ratio followed the world over is the number of the males per 100 females.

ii) Sex Ratio in India and its Determinants

Generally, in most countries, the overall sex ratio of the population is favourable to the females, that is, there are more females than males in the population. When the situation is different, that is, when there are more males than females in the population, this is considered unusual. The population statistics available through the Census indicate that the sex ratio in India has always been adverse to the females, that is, the number of the females per 1,000 males has always been less than 1,000. In fact, the sex ratio has been declining from 972 in 1901 to 930 in 1971. A slight improvement was registered in the 1951 Census, and again during the 1981 Census, but the 1991 Census registered a fall by five points-from 934 in 1981 to 929 in 1991. In 2001, female sex ratio was 933, which was an improvement over the 1991 figure.

The following three factors are responsible for determining the sex ratio of any population: (1) the sex ratio at birth, (2) the sex ratio of the deceased persons and (3) the sex ratio of the net migrants. In a developing country like India, another factor could be added to this list. There is always a possibility that women are under-enumerated because they are not reported as members of the household by the head of the household, when the Census enumerator collects the information.

Of all these factors, high mortality of the females appears to be the most plausible explanation for the sex ratio in India, which is adverse to the females. Though biologically stronger than the male, the female in India is in a socially and culturally disadvantaged position, and has been accorded an inferior status over the centuries. The death rates for the females in most age groups are higher than those for the males. Of the other factors, the sex ratio of new born babies is not much different from that in other countries. Hence, a sex ratio that is adverse to the females, a peculiarity of the Indian demographic picture, need not be attributed to this factor. As for international migration of men, it is quite insignificant and is, therefore, not found to affect the sex ratio in India. Under-enumeration of the females cannot explain more than a very small part of the numerical imbalance between the males and the females in India.

Check Your Progress 4

1) Why is India known as an old country with a large young population? Use four lines to answer.

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2) Why is the sex ratio not favourable to women in India? Use three lines to answer.

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4.6 FAMILY PLANNING AND FAMILY WELFARE

In India, the concepts of family planning and family welfare are very important. Let us know the meanings of the concepts.

4.6.1 Concept of Family Planning and Family Welfare

At the level of the family, family planning implies having only the desired number of children. Thus family planning implies both limitation of the family to a number considered appropriate to the resources of the family as well as proper spacing between the children. The adoption of family planning, obviously, requires conscious efforts made by the couple to control conception.

As a social movement, family planning implies an organised effort by a group of people to initiate change in the child-bearing practices of the people by creating a favourable atmosphere. The birth control movement, as it was initially called, aimed at relieving women of excessive child-bearing, and was seen as a way of achieving the emancipation of women through the right of self-determination.

A family planning programme involves a co-ordinated group of activities, maintained over a period of time, and aimed at fostering a change in the child-bearing behaviour of the females. The aim of the family planning programme may either be to improve the health status of women and their children and/or of reducing the birth rate, and thus reducing the population growth rate of the country. Most countries with a population control policy also emphasise the health aspects of family planning. The various components of the family planning programme are : (1) Information, Education and Communication Activities, (2) Contraceptives: Supplies and Services, (3) Training of Personnel, (4) Research, and (5) Administrative Infrastructure.

When the government concerns itself with promoting the total welfare of the family and the community, through family planning, the programme consists of a wide range of activities, covering education, health, maternity and child care, family planning and nutrition. Since 1977, the Indian family planning programme is known as the family welfare programme with greater emphasis on the welfare approach to the problem.

4.6.2 Barriers to Family Planning

Most of the reasons mentioned in Sub-section 4.3.3, under Determinants of High Fertility, act as barriers to the acceptance of family planning, which implies controlling fertility. These barriers include fatalism, and emphasis placed on having children in the Indian culture and religious beliefs.

In addition, the use of various methods of family planning also pose certain difficulties. The methods are not always acceptable because of the possible side-effects, perceived unaesthetic attributes or the discipline their use demands. All methods are not equally effective. While sterilisation, male and female, can be considered one hundred per cent effective, a method like the IUD is considered to be 95 per cent effective, and the conventional contraceptive like the condom is considered to be only 50 per cent effective. Oral pills are almost

one hundred per cent effective, but their effectiveness depends on taking them regularly and on following a certain regime. The easy availability of supplies and services is a necessary condition for the practice or adoption of family planning. When supplies and services are not easily available, it becomes difficult for people to practise or adopt family planning, even when they are inclined to do so.

Activity 1

Read Sub-section 4.3.3 (Determinants of High Fertility) and Sub-Section 4.6.2. (Barriers to Family Planning) very carefully. Then write an essay comparing the factors mentioned in these sections with the situation prevailing in your society. Exchange your note, if possible, with your co-learners at the Study Centre.

4.7 POPULATION POLICY OF INDIA

India has the distinction of being the first country in the world to have a fully government-supported family planning programme. This is not an overnight development. The foundations were laid in the early part of the twentieth century.

Even during the pre-independence period, the intellectual elite among the Indians showed some concern about the population issue, and supported the cause of birth control. Their British rulers, however, kept aloof from this controversial issue.

Support for birth control was evident when the Health Survey and Development Committee set up by the Government of India, in 1945, under chairmanship of Sir Joseph Bhore, recommended that birth control services should be provided for the promotion of the health of mothers and children. The pressure from the intellectuals that the government formulate a policy for disseminating information on birth control and for encouraging its practice was mounting during the pre-independence period.

4.7.1 Components of the Current Population Policy

With the advent of Independence, family planning as a measure of population control has been given top priority in the development plans of the country, starting with the First Five Year Plan (1951-56). The increasing financial allocations for the family planning programme in each sucessive plan are also indicative of the growing emphasis accorded to the family planning programme.

a) **National Population Policy 1976 and 1977**

Though implied in the family planning programme undertaken by the government, the population policy of the country was not explicitly stated, and it remained unarticulated in the formal sense. It was on April 16, 1976 that the National Population Policy was declared. It underwent some modifications in June, 1977.

Till the National Population Policy was first declared in April, 1976, the Population Policy of India was generally equated with the family planning policy. One of the grounds on which India was criticised in international circles was that other solutions to the population policy were ignored. The statement of the population policy took into account some of the complex relationships

between the social, economic and political aspects of the population problem. It included appropriate measures to tackle the population problem, many of which went "beyond family planning". The policy statement also contained several approaches to the improvement of the family planning programme.

The statement of policy regarding the Family Welfare Programme issued on June 29, 1977, eliminates all measures which have the slightest element of compulsion or coersion, and emphasis on the welfare approach to the problem. The name of the family planning programme, has also been changed to the family welfare programme to reflect the government's anxiety to promote through the programme the total welfare of the family and the community.

Many of the measures outlined in the National Population Policy, declared in 1976, have been retained. These include the following: (1) raising the minimum legal age at marriage for girls to 18 and for boys to 21, (2) taking the population figure of 1971 till the year 2001, in all cases where population is a factor in the sharing of the Central resources with the States, as in allocation of the Central assistance to the State Plans, devolution of taxes and duties and grants-in-aid, (3) accepting the principle of linking 8 per cent of the central assistance to the State Plans with their performance and success in the family welfare programme, (4) including population education in the formal school education system, (5) plans to popularise the family welfare programme and use of all media for this purpose, (6) participation of voluntary organisations in the implementation of the programme, (7) improvement of women's educational level, both through formal and non-formal channels. The Policy Statement also declared that the government would give special attention to the necessary research inputs in the field of reproductive biology and contraception.

b)   **National Population Policy 2000**

India has framed a new National Population Policy in 2000. It enumerates certain socio-demographic goods to be achieved by 2010 which will lead to achieving population stabilisation by 2045. The policy has identified the immediate objectives as meeting the unmet needs for contraception, health care infrastructure and trained health personnel and to provide integrated service delivery with the following interventions:

i)   Strengthen community health centres, primary health centres and sub-centres,

ii)   Augment skills of health personnel and health care providers

iii)   Bring about convergence in the implementation of related social sector programme to make Family Welfare Programme people centered.

iv)   Integrate package of essential services at village and household levels by extending basic reproductive and child health care through mobile health clinics and counselling services; and explore the possibility of accrediting private medical practitioners and assigning them to defined beneficiary groups to provide these services (Govt. of India 2003)

4.7.2   Achievements of the Family Welfare Programme

As of March, 1989, the number of couples protected through some method of family planning was estimated to be 64.79 million, forming 46.7 per cent of the estimated 138.9 million eligible couples (with wife in the reproductive age

group 15-44) in the country. Taking into account the use-effectiveness of various methods, which is assumed to be 100 per cent for sterilisation and oral pills, 95 per cent for IUD and 50 per cent for conventional contraceptives like the condom, the number of couples effectively protected as of March, 1989, was 58.14 million, forming 41.9 per cent of the total eligible couples.

Sterilisation is the most widely accepted method, effectively protecting 29.8 per cent of the eligible couples. Of the total eligible couples, 5.9 per cent are effectively protected by IUD, 4.5 per cent by conventional contraceptives, 1.7 per cent by oral pills.

While terminal methods, like the male and female sterilisation, continue to be the major share, it is worth noting that the female sterilisation is more highly favoured than the male sterilisation; 86.8 per cent of the total sterilisations done in 1988-89 were female sterilisations.

The statistics for 1987-88 indicate that, on an average, the age of the wife for vasectomy acceptors is 32.4 years, for tubectomy acceptors it is 30.2 years and for IUD it is 27.4 years. These couples have, on an average, 3.6, 3.3. and 2.3 living children at the time of the acceptance of vasectomy, tubectomy and IUD respectively.

During 2001-2002, 47.27 lakh sterilisations were performed in the country. The number of Intra-Ulterine Device (IUD) insertions during the same period was 62.02 lakhs. Besides, there were 145.69 lakhs of candom users and 74.75 lakhs of Oral Pill (OP) users. The use of contraceptives has been increased from 40.06% in 1992-93 to 48.2% in 1998-1999. (Govt. of India 2003)

It can be observed that family planning is accepted generally after the most fertile period in a woman's life (up to 29 years) is over, and when the couple has exceeded the norm of two children advocated by the government.

Inter-State variations in family planning performance are also observed. States like Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Punjab, Tamil Nadu and Union Territories like Dadra and Nagar Haveli, Delhi and Pondicherry have a higher percentage of effectively protected couples than the all-India average. All the other States have recorded a lower percentage of effectively protected couples than the all-India average, except for Andhra Pradesh, where this percentage is identical to the all-India average.

4.7.3 The Changing Trends

It is obvious that the family welfare programme slowly recovering from the setback it received after the Emergency, during which some coercive methods were used for achieving spectacular results.

The long-term goal to be achieved for the country is to reach a replacement level of unity (net reproduction rate of one, when each woman will be replaced by only one daughter). The demographic goals laid down as part of the National Health Policy are to achieve by 2000 A.D., a birth rate of 21 per thousand population and an effective protection rate of 60 per cent. The corresponding mid-term goals to be reached by the end of the Seventh Plan (1990) are: crude birth rate of 29.1 and effective couple protection rate of 42 per cent.

The Changing Trend in the population in India is shown in the table below.

	Growth of Population in India	
Census Year	**Decadal Growth (per cent)**	**Average Exponential Growth (per cent)**
1971	24.80	2.20
1981	24.66	2.22
1991	23.86	2.14
2001	21.34	1.93

Parameter	1951	1981	1991	Current Level
Crude Birth Rate (per 1,000 population	40.8	33.9 (SRS)	29.5* (SRS)	25.8 (SRS 2000)
Crude Death Rate (per 10,000 population)	25.1	12.5 (SRS)	9.8* (SRS)	8.5 (SRS 2000)
Total Fertility Rate (per woman on average)	6.0 (SRS)	4.5 (SRS)	3.6* (NFHS-II)	2.8
Maternal Mortality Rate (per 1,00,000 live birth)	437 (1992-93)	N.A.	N.A. (1998)	407
Infant Mortality Rate (per 1,000 live births)	146 (1951-61)	110 (SRS)	80* (SRS)	68 (SRS 2000)
Couple Protection Rate (per cent)	10.4 (1971)	22.8	44.1	48.2 (NFHS-II)
Life Expectancy at birth years (M)	37.2	54.1	60.6	63.87# (2001-02)
Life Expectancy at birth years (F)	36.2	54.7	61.7 (1991-96)	66.9# (2001-02)

*Excludes Jammu and Kashmir # Projected

SRS = Sample Registration System of Office of Registrar General India.

Check Your Progress 5

1) What are the major "Beyond Family Planning" measures included in the National Population Policy of India? Use seven lines to answer.

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2) On what factors does the future of India's family welfare programme depend? Use six lines to answer.

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4.8   LET US SUM UP

This unit begins with defining demography and examines its scope: mortality, fertility, composition of population and migration. Techniques of measurement are mentioned and the need for highlighting their social and cultural aspects stressed. Then we described the size and growth of the population of India and examined their implications. The determinants and consequences of fertility and mortality in India are explained. The age and sex structure of the Indian population, their determinants and implications are classified. The concept of family planning and family welfare and the barriers to family planning are discussed. The Population Policy of India, its evolution and components, achievements of the family welfare programme and its future prospects enable us to see how social problems at the demographic level could be solved.

4.9   KEY WORDS

Fertility	: Fertility refers to the actual reproductive performance, whether applied to an individual or to a group, measured in terms of the number of children born alive.
Life Expectancy/Average Expectation of Life at Birth	: The average number of years of life which a cohort of new born babies (that is, those born in the same year) may be expected to live if they are subjected to the risks of death at each year according to the age specific mortality rates prevailing in the country at the time to which the measures refer.
Neonatal and Post-neo natal Mortality	: When a baby dies within the first four weeks of life, it is known as neo natal mortality. When a baby dies after it has survived beyond four weeks, but before the first year is completed, it is known as post-neonatal mortality.
Population Growth Rate	: One way of measuring population growth is to calculate the rate at which population grows. This is done by first finding out the difference in the population size of a

specified area at two points of time, and then by dividing the absolute change by the population at the earlier point of the time.

Sex Ratio : The sex ratio of a population may either be expressed as the number of males per 100 females or the number of females per 100 males. The Indian Census has preferred to define the sex ratio as the number of females per 1000 males.

4.10 FURTHER READINGS

Bhende, Asha A. and Kanitkar, Tara, 1992. *Principles of Population Studies.* Himalaya Publishing House: Bombay (Fifth Edition), (Chapters 7,8, 9 and 15).

Misra, Bhaskar D., 1981. *An Introduction to the Study of Population.* South Asian Publishers Pvt. Ltd. New Delhi: (Chapters 3 and 11).

4.11 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress 1

1) b) 844 million

2) The development programmes are not able to keep pace with the needs of the growing population. The country is facing shortages in housing, health and medical services and employment opportunities. The increase in the per capita production of food grain is only marginal, and the per capita income is low. These problems have arisen because of the large size of the population and the high rate of the population growth.

Check Your Progress 2

1) $\dfrac{\text{Total No. of live births during a year}}{\text{Total population in the middle of the year}} \times 1000$

2) i) Most religions encourage high fertility, ii) Universality of marriage, iii) Low age at marriage, iv) Emphasis on bearing children, v) Preference for sons, vi) Fatalistic attitude, vii) High infant and child mortality, viii) Low status of women, ix) Joint family.

3) Women are tied down to childbearing and childbearing for the best years of their productive lives. Excessive childbearing affects their health. The bread-winner is unable to provide for a large family and becomes frustrated. The children are often neglected. They may indulge in delinquent behaviour. They are often required to drop out of school, and to start working at an early age. The girl child is denied education and pushed into early marriage and early child-bearing.

Check Your Progress 3

i) The term "average expectation of life" or "life expectancy" represents the average number of years of life which babies born in the same year (cohort) may be expected to live according to the mortality conditions prevailing at that time.

ii) Neonatal mortality refers to deaths occurring in the first four weeks of the babies life.

iii) a) Mother below 18. b) Parity above 4. c) Interval between births less than one year. d) Low birth weight. e) Lack of ante-natal care. f) Home deliveries conducted in unhygienic conditions g) Colostrum (first flow of breast milk) not given to the baby.

iv) a) Common childhood diseases not prevented through immunisation.

b) Diarrhoea and dehydration c) Nutritional deficiency.

Check Your Progress 4

i) India is an old country because its history goes back to several centuries. It has a young population in the sense that about 40 per cent of the population is below the age of 15. In a developed country like the United States of America this percentage is only about 22.

ii) The sex ratio in India is not favourable to women mainly because of the low status of women leading to their neglect. The death rates are higher for women than for men in most age groups.

Check Your Progress 5

i) a) Raising the minimum age at marriage. b) Population education in schools. c) Improving the status of women, specially through education. d) Freezing the population figure of 1971 till 2001 in all cases where population is a factor in the sharing of the Central resources with the States. e) Linking Central assistance to the State Plans with the performance of the family welfare programme.

ii) a) Widespread acceptance of family planning. b) Improved performance of the family welfare programme in low performing States, such as, Bihar, Madhya Pradesh, Rajasthan, Orissa, Uttar Pradesh etc.

iii) Acceptance of family planning at a lower age and limitation of the family size to two children, whatever the sex composition.