Chapter-I

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Ageing is a continuous process in the structure and functions of the body, the physical abilities of the former tend to slow down with the passage of years. As far as the psychological structures and functions are concerned, there need not necessarily be deterioration. Cicero, the Roman statesman and philosopher of first century BC, writing in his treatise On Old Age said that old people could retain their intellectual abilities by engaging their minds fully and actively and that old age was respectable as long as the elderly asserted themselves and were not dominated by anyone else. He supports his statements by referring to the death of Plato, the fifth century BC Greek Philosopher. When death occurred, Plato was writing at his desk, at the age of 81 (Lawrence D. Freedman, 1963).

"Social-Gerontology has become the latest field of interest to sociologists, where in the socio-cultural and psycho-physical aspects of the aged in a society are studied. Of late concepts such as ‘aging’, ‘aged’, ‘old’, ‘problems of the old’, ‘old age homes,’ ‘old age pension and benefits’, and ‘legislations for the benefit of old’, etc., are frequently used. Getting old means many changes occurring in the physical, psychological, socio-cultural and economic aspects of a person” (Gurumurthy K. G. 1998).

Old age is the last phase of the human life cycle. According to Hurlock (1986) "Old age is the closing period in the life span". Traditional society looked positively at old age and maintained that ‘old is gold’, in terms of maturity, experience and wisdom. But today old age is regarded negatively and the common expressions ‘old
and sick', 'old and frail', 'old and poor', 'old and crabby', 'old and crotchety', 'old and useless', reflect the dependency and inactiveness of the aged. Several terms are being used in recent years to describe them in a more positive manner such as 'senior citizens', 'the elderly', 'third age individuals' and 'individuals in the twilight of life' (Pappathi K. 2007).

The study of the aged or aging and their problems are studied by a new discipline called Gerontology. According to Tilak (1989:3) is the study of "a set of systematically argued beliefs and values concerning the aging and the human response to it". The discipline has developed a few theories such as theories of engagement, disengagement and differential disengagement to explain aging. According to Young Kue T. (1998) the traditional Indian approach to study old age is close to the differential disengagement. No doubt aging is biological. But it has its socio-cultural and psychological sides too (Gurumurthy K. G. 1998).

Cowgill and Holmes (1972) have listed a few "age related characteristics of any social organization" which tend to be universal in scope. According to them they are;

✓ Aging tends to precipitate the promotion of a class of 'old people' in the society who are so identified by appropriate labels and nomenclature.

✓ Most societies develop some system of age grading which classifies individuals by age and sex, ascribing differential status and roles in terms of this classification.

✓ At a certain phase in life, the aging individual is shifted to more sedentary and advisory or supervisory activities often involving psychological or spiritual pursuits rather than physical exertion.
Cultures and communities value life and seek to prolong it even in the face of aging. Accordingly, they have sanctioned a wide-spread search for elixirs, talismans and charms to protect health and prolong life until the advance of death seems to outweigh the burdens of life.

Most societies have designed set patterns of behaviour to meet death with honour and dignity (Tilak, 1989:4).

In Indian society the life span of an individual is divided into four stages; young, youth, grown-up and aged/elderly. This division is based on the Hindu view of life where in the individual is expected to pass through these four stages of life known as Ashrama. The Ashrama which are four in number are; Brahmacharya, Grihastha, Vanaprashta and Sanyasa (Prabhu, P.H. 1979). When an individual reaches each of these stages he not only gets certain status but also roles, duties and obligations, towards his group, family, community and society at large and they are known as Ashrama Dharam. When young, a Brahmachari as a bachelor, is supposed to acquire knowledge and skills which are needed to him in future life and also he stays away from domestic comforts, at the Gurukula i.e., the seat of learning, usually the hermitage of a sage, in a forest. After acquiring the required knowledge and on becoming old enough to shoulder the worldly responsibilities, he returns home to marry and becomes a householder. As a family man Grihastha he performs obligations towards his old parents, society and Gods. Also begets children, especially a son, to continue the progeny and a daughter, to be given as a gift to earn merit in life, bring them up, give proper care and education. Once all these obligations are fulfilled and his sons start taking over his roles and duties, he gradually transfers these and withdraws from active life and thus makes arrangements to go to forest to lead the life of a hermit Vanaprashta. But he will continue to live with his family for some
time guiding and helping his sons. On becoming old and transferring all his roles and duties to his trained sons he renounces his worldly ties and withdraws to the forest to lead life as a Sanyasa. Here he devotes his entire time and energy towards religious and ritual activities. Like this he concentrates all his time and energy on the other world (Gurumurthy K. G. 1998).

**Concept of Ageing:**

Ageing is a universal phenomenon and a natural biological process of life cycle. It begins from the very birth of an individual and continues till death. An individual after his birth gradually crosses the above mentioned stages of life and finally dies. Each and every stage of human development comes with certain hopes, aspirations and achievements and attaining to the old age man tries to find out the last question of his life.

Ageing can be sociologically defined as the combination of biological, psychological and social processes that affect people as they grow older (Atchley et al. 1977). These processes suggest the metaphor of three different, although interrelated, development clocks:

1) a biological one, which refers to the physical body;
2) a psychological one, which refers to the mind and mental capabilities;
3) a social one, which refers to cultural norms, values and role expectations having to do with age.

**Biological ageing:**

There are well-established biological effects of ageing, although the exact chronological age at which they occur varies greatly from individual to individual,
depending on genetics and lifestyle. In general, for men and women alike, biological ageing typically means;

- Declining vision, as the eye lens loses its elasticity (small type is the bane of most people over fifty);
- Hearing loss, first of higher-pitched tones, then of lower-pitched ones;
- Wrinkles, as the skin’s underlying structure becomes more and more brittle;
- A decline of muscle mass and an accompanying accumulation of fat, especially around the middle (eating habits that were offset by exercise when you were twenty-five come back to haunt you when you are fifty);
- A drop in cardiovascular efficiency, as less oxygen can be inhaled and utilized during exercise (lifelong runners who ran six-minute miles at the age of thirty are happy to break an eight-minute mile once they turn sixty).

The normal processes of ageing cannot be avoided, but they can be partly compensated for and offset by good health, proper diet and nutrition, and a reasonable amount of exercise (John 1982).

Psychological ageing:

The psychological effects of ageing are much less well established than the physical effects, although research into the psychology of ageing is continuing at an expanding pace. Even though such things as memory, learning, intelligence, skills and motivation to learn are widely assumed to decline with age (Birren and Scjair 2001).

Social ageing:

Social age consists of the norms, values and roles that are culturally associated with a particular chronological age. Ideas about social age differ from one society to another and, at least in modern industrial society, change over time as well.
Definitions of Ageing:

Ageing has been defined in various ways by different scholars and it is measured in many ways according to the academic background of the person who study them. Some have regarded ageing as period of physiological deterioration, others regard it as simply the advancement of years and still others have emphasized that ageing involves a restriction on cultural roles. The concept of the old age is not the same throughout the world. There are three different cut off age for aged-55 years, 60 years and 65 years. In the Indian context, people who have attained 60 years and above are considered old, though in developed countries it begins only at 65. Taking the physiological changes into the consideration, the age of about 55 year is considered as the beginning of old age period (Chaturbhuj Sahu 1998).

According to Bhatia (1983) the term 'ageing' is a broad one and one can be studied under the three types; Biological, Psychological and Socio-cultural. But most of the definitions deal with either these three aspects, generally the biological aspect. Biological ageing refers to bodily changes that occur in the later part of the life of an individual. That included grying of hair, loss of teeth and the diminishing of sight and audibility. Psychological is ageing is studied in terms of changes in the nervous system and it consists of general decline in the mental abilities that accompany old age. It also includes the attitude and behaviours of others towards them Socio-cultural ageing refers to the changes in the individual’s changing circumstances as a member of family, community and society.

According to Cowdry E.V. (1942) “The conflicting views are held by students of aging in man. One considers aging as an involuntary process which operates cumulatively with the passage of time and is revealed in the different organ
systems as inevitable modification of cells, tissues, and fluids. The other view 
interprets the changes found in aged organs as structural alterations due to infections, 
toxins, traumas, and nutritional disturbances or inadequacies giving rise to what are 
called degenerative changes and impairments". Later biologists made the definition of 
aging narrower. Comfort A. (1956) for example, said; “Senescence is a change in 
behavior of the organism with age, which leads to a decreased power of survival and 
adjustment”. Handler P. (1960) opined “Aging is the deterioration of a mature 
organism resulting from time-dependent essentially irreversible changes intrinsic to 
all members of a species, such that, with the passage of time, they become 
increasingly unable to cope with the stresses of environment, thereby increasing the 
probability of death”.

According to Burgess E.W. (1960) aging as the term implies, is a process. It 
begin even before birth and continues until death. According to these definitions, 
aging can be brought under three categories:

- Aging as a natural process of change.
- As a pathological system.
- As a process of condition evoked by responses to one’s social environment.

In other words aging may be classified into four categories-Biological, 
Psychological, Sociological and Behavioural aging. Biological aging according to 
Tibbitts (1960a) refers to the changes in the cellular composition and capacity for 
growth in the organism psychological aging is studied in terms of the changes in the 
nervous system. The sociological or situational aging refers to the changes in the 
individual’s changing circumstances as a member of family, community and society. 
The situational changes include completion of parental roles retirement from work, 
reduced income, disease and disability and need for support. The fourth aspect of
aging i.e., the behavioural aging is concerned with what the situational changes mean to the individual and the way he makes internal and external adjustments to them.

**Hess B. B. (1976)** defines aging as “an inevitable and irreversible biological process of life”. Ageing as defined by **Jarry and Jarry (1995)** “the chronological process of growing physically older. However, there is also a social dimension in which chronology is less important than the meaning attached to the process. Different cultural values and social expectations apply according to gender and age group, and therefore there are socially structured variations in the personal experience of aging”.

**Muttagi P. K. (1997)** has described aging as a multidimensional process and specifies that aging in its demographic sense is not the same as the biological process of aging which is dynamic and continuous. Chronological age does not measure physiological and psychological age. He further views that aging is generally associated with fatigue, decline in functional capacity of organs of the body, decrease of ability to cope with the stress of disease of trauma.

**Becker C. S. (1959)** defines ageing in the broadest sense and he points out that it is brings many change over in an individual’s body and mind. These may be, according to him, anatomical, psychological, physiological and even social and economic. The old age is often perceived as a state of withdrawal or disengagements from active life resulting a decreased interaction.

Biologists and Medical Scientist have defined the ageing on the basis of deterioration in physiological capabilities. According to **Timiraj (1972)** “ageing may be defined as a decline in physiologic competency that inevitably increases the incidence and intensifies the effects of accidents, disease and other forms of environmental stress”.

8
Strehler (1959) regards "biological ageing as the gradual decrease in the adaptation of an organism to its normal environment". According to Lansing (1956) has defined ageing as "a product of reduced growth potential".

Birren and Renner (1977) stated "Ageing refers to the regular changes that occur in mature genetically representative organisms living under representative environmental conditions as they advance in chronological age". This definition has the following characteristics;

i. Ageing is a process of regular changes.
ii. It occurs in mature genetically representative organism.
iii. It is a result of advancement in chronological age.

In this definition social aspect of ageing has not been clearly indicated even then this is quite comprehensive.

Kattakayam J. J. and Vadackumchery J. (2000) Opined that unlike in the developed countries, in the developing countries, the concept of aged, elderly or senior citizens got prominence only much later because aging for them was not a crucial social problem because the society had a number of other problems to be solved. In the developed countries, people have very little time to take care of the elderly population as the societies are moving very fast and life is quick due to the competition in all spheres people have little time to spend with the old as they feel that even that time can be used meaningfully for the development of themselves.

Four Aspects of Ageing:

Birren J. E. (1964) has pointed out four aspects of ageing. "Biological; the "Psychological", the "Sociological" or "Situational", and the "Socio-psychological" or "Behavioural"."
a) Biological Ageing:

The biological regard the normal aging process as a complex of progressive changes in cellular composition and capacity for growth, in tissue structure and function, in the speed, strength and endurance of the neuromuscular system; and in the reduction in the capacity to integrate organ systems (Shock 1957).

b) Psychological Ageing:

The Psychological aging is being studied in terms of changes in the central nervous system, in sensory and perceptual capacities, and in ability to organize and utilize information (Anderson 1956). Psychologists are concerned also with change in personality and with the external behavior of the aging individual which are discussed in the fourth category below.

c) Situational changes with Age:

The third categories of age changes in the individual are those which have to do with his changing circumstances or situation as a member of the family, community, and society. These may be called the “sociological”, “socio-economic”, or “situational” changes. They include completion of parental role’ social attitudes and behaviour toward the aging or aging individual; retirement from work and reduced income; restricted mobility induced by disease, disability, or loss of energy; need for special living arrangements and loss of spouse.

d) Behavioural aspects of Ageing:

A fourth aspect of aging is concerned with the meaning to the individual of the changes previously discussed and with the internal and external adjustments he makes to them. Interest lies, on the one hand, in his inner reactions with regard to such matters as changing self-image, feelings, efforts to maintain ego balance, maintenance or loss of mental well-being, and tolerance of stress (Tibbitts C. 1961).
Jean Bourgeois Pichat (1979) has called attention to two processes in aging:

1) Aging at the base
2) Aging at the apex

Aging at the base occurs when fertility falls, thus decreasing the proportion of children and ageing at the apex occurs when the proportion of aged persons increases presumably due to declining mortality at older ages. According to Khan (1990) for purposes of policy and planning the aged in India can be divided into four categories;

- Those who are destitute and are also homeless and poor.
- These who are poor but are living in their own families.
- Those who are healthy and active.
- Those who are economically well off aged who requires emotional support.

Whole homes for the aged may be best programme for the welfare of the aged of the first category; the programmes for other groups have to be different and non-conventional. Being a developing country, India cannot afford to provide institutional services to the aged would help the second category of the aged. The healthy and active aged constitute and economic resource whose services could be utilized in the development process. This approach will also help in keeping them well integrated in the families. The day care centers and other community based programmes which keep the aged well integrated in the family and community will alleviate the sufferings of the aged of second and fourth categories.

The Meaning and Definitions of Health:

Health is a common theme in most cultures. In fact, all communities have their concepts of health, as part of their culture. Among definitions still used, probably the oldest is that health is the “absence of disease”. In some cultures, health and harmony
are considered equivalent, harmony being defined as “being at peace with the self, the community, god and cosmos”. The ancient Indians and Greeks shared this concept and attributed disease to disturbances in bodily equilibrium of what they called “humors”. Health is a state of well-being with physical, cultural, psychosocial, economic and spiritual attributes, not simply the absence of illness.

“Health” is one of those terms which most people find it difficult to define although they are confident of its meaning. Therefore, many definitions of health have been offered from time to time, including the following is illustrated in Figure No. 1 below.

**Figure No. 1**

**Definition of Health**

- **Physical Health:** Absence of disease and disability, energy to accomplish daily tasks and active leisure without undue fatigue.
- **Mental Health:** Absence of mental disorders, ability to meet daily challenges and social interactions without undue mental, emotional or behavioral problems.
- **Social Health:** Ability to interact effectively with other people and the social environment, enjoying satisfying personal relationships.

Source: Neiman, 2002, P. No.4

Health has been defined in many different ways throughout history. Health is the level of functional or metabolic efficiency of a living organism. In humans, it is the general condition of a person’s mind and body, usually meaning to be free from illness, injury or pain (as in ‘good health’ or ‘healthy’) (Merriam-Webster Dictionary, 2011).
A proper definition of health should declare what health is, not what it isn’t or what it lacks, as in “free from disease”. The World Health Organization (1948) in the preamble to its constitution, which is as follows; “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. This definition which was very forward looking for its time is at the core of health psychologists’ conception of health, rather than defining health as the absence of illness.

Several dictionaries make a good try: Random House (1967) “The general condition of the body or mind with reference to soundness and vigor is good health”. According to Oxford English Dictionary (OED, 1998) “Soundness of body or mind; that condition in which its functions are duly and efficiently discharged”.

A different definition, given from a sociological perspective, comes from Parsons T. (1951) who describes health as a state of optimum capacity for the effective performance of valued tasks. Parson focuses attention on the social importance of health; healthy individual’s are able to function well in order to perform social roles; ill-health reduces their ability to do so. First, since “health” is not a simple property but rather a composite state, it is clear that our present quantitative descriptions of the health of groups of people represent only some aspects of health as reflected in certain arbitrarily chosen indexes (Confrey, E.A. & Goldstein, M. S. 1960).

**Dimensions of Health:**

Health is multidimensional. The World Health Organization definition envisages three specific dimensions; the physical, the mental and the social (Eberst R. M. 1984).
Physical dimension:

The physical dimension of health is probably the easiest to understand. The state of physical health implies the notion of “perfect functioning” of the body. It conceptualizes health biologically as a state in which every cell and every organ is functioning at optimum capacity and in perfect harmony with the rest of the body.

Mental dimension:

Mental health is not mere absence of mental illness. Good mental health is the ability to respond to the many varied experiences of life with flexibility and a sense of purpose. More recently, mental health has been defined as “a state of balance between the individual and the surrounding world, a state of harmony between oneself and others, coexistence between the realities of the self and that of other people and that of the environment”.

Social dimension:

Social well-being implies harmony and integration within the individual, between each individual and other members of society and between individuals and
the world in which they live. It has been defined as the “quantity and quality of an individual’s interpersonal ties and the extent of involvement with the community”.

**Determinants of Health:**

Health is multi-factorial. The factors which influence health lie both within the individual and externally in the society in which he or she lives. It is a truism to say that what man is and to what diseases he may fall victim depends on a combination of two sets of factors his genetic factors and the environmental factors to which he is exposed. These factors interact and these interactions may be health-promoting or deleterious. Thus, conceptually, the health of individuals and whole communities may be considered to be the result of many interactions. Only brief indications of the more important determinants or variables are shown in Figure No. 3

![Determinants of Health](image)

**Figure No. 3**

**Determinants of Health**

**Biological determinants:**

The physical and mental traits of every human being are to some extent determined by the nature of his genes at the moment of conception. The genetic make-up is unique in that it cannot be altered after conception. A number of diseases are now known to be of genetic origin, e.g., chromosomal anomalies, errors of metabolism, mental retardation and some types of diabetes etc.,

**Behavioural and Socio-cultural conditions:**

The term ‘lifestyle’ is rather a diffuse concept often used to denote ‘the way people life’, reflecting a whole range of social values, attitudes and activities (Wingard, D. L. 1982). It is composed of cultural and behavioural patterns and lifelong personal habits (e.g., smoking and alcoholism) that have developed through processes of socialization.

**Environment:**

It was Hippocrates who first related disease to environment, e.g., climate, water and air etc., centuries later, Pettenkofer in Germany revived the concept of disease environment association. Environment is classified as ‘internal’ and ‘external’. The internal environment of man pertains to “each and every component part, every tissue, organ and organ-system and their harmonious functioning within the system”. Internal environment is the domain of internal medicine. The external or macro-environment consists of those things to which man is exposed after conception. It is defined as “all that which is external to the individual human host” (Last, J. M. 1983). It can be divided into physical, biological and psychosocial components, any or all of which can affect the health of man and his susceptibility to illness.
Socio-economic conditions:

Socio-economic conditions have long been known to influence human health. For the majority of the world’s people, health status is determined primarily by their level of socio-economic development, e.g., per capita gross national product, education, nutrition, employment, housing, the political system of the country, etc., those of major importance are:

a) Economic status:

The per capita GNP is the most widely accepted measure of general economic performance. There can be no doubt that in many developing countries, it is the economic progress that has been the major factor in reducing morbidity, increasing life expectancy and improving the quality of life.

b) Education:

A second major factor influencing health status is education (especially female education). The world map of illiteracy closely coincides with the maps of poverty, malnutrition, ill health, high infant and child mortality rates.

c) Occupation:

The very state of being employed in productive work promotes health, because the unemployed usually show a higher incidence of ill health and death. For many, loss of work may mean loss of income and status. It can cause psychological and social damage.

d) Political system:

Health is also related to the country’s political system. Often the main obstacles to the implementation of health technologies are not technical, but rather
political. Decisions concerning resource allocation, manpower policy, choice of technology and the degree to which health services are made available and accessible to different segments of the society are examples of the manner in which the political system can shape community health services (Banerji, 1985).

**Health services:**

The term health and family welfare services cover a wide spectrum of personal and community services for treatment of disease, prevention of illness and promotion of health. The purpose of health services is to improve the health status of population. Health services can also be seen as essential for social and economic development.

**Aging of the population:**

By the year 2020, the world will have more than one billion people aged 60 and over, and more than two-thirds of them living in developing countries. Although the elderly in many countries enjoy better health than hitherto, a major concern of rapid population aging is the increased prevalence of chronic diseases and disabilities both being conditions that tend to accompany the aging process and deserve special attention.

**Gender:**

The 1990s have witnessed an increased concentration on women’s issues. In 1993, the Global Commission on Women’s Health was established. The commission drew up an agenda for action on women’s health covering nutrition, reproductive health, the health consequences of violence, aging, lifestyle related conditions and the occupational environment. It has brought about an increased awareness among policymakers of women’s health issues and encourages their inclusion in all development plans as a priority.
Other factors:

We are witnessing the transition from post industrial age to an information age and experiencing the early days of two interconnected revolutions, in information and in communication. The development of these technologies offers tremendous opportunities in providing an easy and instant access to medical information once difficult to retrieve. It contributes to dissemination of information worldwide, serving the needs of many physicians, health professionals, biomedical scientists and researchers, the mass media and the public.

Conceptual Framework among health status of the elderly:

The health status of the elderly, which is measured by the consideration whether they elderly population suffered from any physical problems, is the dependent variable. Health status of the aged population as the dependent variable is influenced by a number of factors. Generally we can say that education is the determinant of occupation. It is obvious that every educated person would like to hold service as a major occupation. On the other hand illiterate persons cannot hold a job. Hence, most of them are farmers. In this way, education influences occupation. In Bangladesh, better occupation means better economic status and better sanitation facility (Rahman, 2009). Sanitation facility mostly affects diseases. Diseases also influence health condition. Those who have sound health have also better mental and social status. That is, there is a close relation between them. Education, diseases and health condition significantly affect the older persons. Mental status, social status and decision making influence aged persons. In lieu of these factors the status of health of the elderly can be analyzed by using a simple framework.
A Conceptual framework of the Interrelationship between Social-economic variables and health status of the elderly persons


Health and disability among elderly:

‘Health’ is an important concept. Today safe and healthy person would mean sound physical body. It is more a condition of the body that helps a person to perform his day to day activities to the expectations of others (Mathad U.K. 2002). Ageing is a time of multiple illness and general disability. Along with the changes in the biological compositions, life style factors are also important for disorders and diseases in old age. Old age diseases are not always curable, implying a strain on financial as
well as physical health infrastructure resources, both at the macro and micro levels. However, the feeling of well-being can still override actual physical discomforts if the surrounding environment is nurturing (Gupta I. and Sankar D. 2001). When assessing health status in later years, one is evaluating not only a situation as of age 60 or age 70 but the product of heredity and early environment as well. All the elements of health such as nutrition, exercise, sanitation, dental care, mental stimulation have come into play before the appearance of health changes in old age (Confrey E.A., and Goldstein M.S. 1960).

**Health Challenges of Elderly:**

“Health is Wealth”, health related to a wide variety of factors, including standards of living, life style of living, environment, heredity, educational standards, occupations, diet and nutrition, health services, physical and mental health. There are various problems faced by the elderly. Old age in general is associated with multi-dimensional problems. The problems which are associated with age and the care of elderly are not exclusively the problems of social, cultural and economic ramifications, rather they include health and medical problems also that affect the life of a community as well. Paradoxically, it is the advanced technology of medicine, which in turn facilitating contraception and reducing morbidity during the second half of life, has eventually increased the prominence to the needs of the elderly (Vijaya Kumar S. 1998).

The World Health Organization reported that the number one priority of the future should be care of the aging. Health is not only a biological or medical concern, but also a significant personal and social concern. In general, with declining health individuals can lose their independence, lose social roles, become isolated, experience
economic hardship, be labeled or stigmatized, change their perception and some of them may be institutionalized (Vijaya Kumar 1998).

Aging is a time of multiple illnesses, and poor health is repeatedly cited by the aged as one of their most serious problems. Though the fact the many of the aged are more susceptible to sickness is not denied nor disputed, the society generally considers old age as synonymous with illness. As Shanias (1997) pointed out that "there are no such diseases as old age". Some old people are severely restricted in their mobility. Others are able to maintain themselves in ordinary activity of daily living. The variation among the elderly in their physical health and degree of impairment is enormous.

Health status of the elderly people varies individually. While examining the health status of the elderly De’ Souza (1982) describes the four old classifications;

i) The nature and condition of their work hard work combined with poor nutrition leads to the state of general disability and most of the aged suffer from what may be called deficiency and most the aged suffer from what may be called ‘deficiency illness’;

ii) Environmental conditions such as poor sanitation, lack of basic amenities like protected drinking water, housing and proper drainage system tend to make the environment itself a health hazard;

iii) Inadequate and unbalanced malnutrition diet;

iv) The availability and quality of health services.

The health status of the aged in low income groups of rural areas is a part of the vicious cycle of hard work, poor nutrition and health. Specifically the illness, as reported by elderly people is symptomatic in nature. In terms of health status,
difference between the gender are clearly explicit in that females have higher rates of morbidity though, infact it has long been observed the 'women are sicker, but men die sooner'.

**Concept and Definitions of Morbidity:**

Morbidity is the study of the frequency of disease, illness, sickness or ill-health in a population. The state of illness and disability in a population (from 'Latin' Morbidus, meaning “sick, unhealthy”) is a diseased state, disability, or poor, health due to any cause, the term may be used to refer to the existence of any form of disease, or to the degree that the health condition affects the patient.

Morbidity is another term for illness. A person can have several co-morbidities simultaneously. So, morbidities can range from Alzheimer’s disease to cancer to traumatic brain injury. Morbidities are not death. Prevalence is a measure often used to determine the level of morbidity in a population. Morbidity is an incidence of ill health. It is measured in various ways, often by the probability that a randomly selected individual in population at some date and location would become seriously ill in some period of time contrast to mortality.

Morbidity among elderly people has an important influence on their physical functioning and psychological well being. Morbidity profile and its determinants have a lot of implications on elderly people’s life. (For example, several infectious diseases, cancer and mental illness) has to be reported to the health authorities (Christopher Wilson 1985).

Morbidity is a state of illness or lack of health that includes physical, mental or emotional disability. Some of the definitions of morbidity are given below.
Morbidity an abnormally gloomy or unhealthy state of mind; "his fear of being alone verges on morbidity". Another definition Morbidity refers to the disease state of an individual, or the incidence of illness in a population.

Morbidity has been defined as "any departure, subjective or objective, from a state of physiological well being". The term is used equivalent to such terms as sickness, illness disability World Health Organization (1984) experts committee on health statistics noted on its 6th report that morbidity could be measured in terms of three units;

1) Number of persons who were ill.
2) The illnesses (provides of spells of illness) that these persons experienced.
3) The duration (days, weeks etc.,) of these illnesses.

In the context of epidemiologic statistics, we will see the frequent use of two important terms, "morbidity" and "mortality". Morbidity refers to the number of cases of a disease that exist at some given point in time. Morbidity may be expressed as the number of new cases (incidence) or as the total number of existing cases (prevalence). Morbidity is the quality of being unhealthful and generally bad for you. Mortality is the quality or state being mortal. Morbidity statistics, then tell us how many people are suffering from what kinds of illnesses at any given time. Mortality refers to numbers of deaths due to particular causes (Taylor, S. E. 2006).

Petersen W. (1969) notes that an international classification of morbidity in relation to mortality has been extremely important. There are a number of non-fatal diseases that can be of great consequences to a given population. Illness can have a dramatic effect on the economic and social section of the group.

Morbidity is the extent of illness (disease) injury, or disability in a defined population. Particularly in circumstances of low mortality, such as exist now in the
Industrialized nations, morbidity data give a fuller description of the physical well-being of a population than do mortality data. Mortality data do not reflect the level of nonfatal illness or impairments, or of mental illness. They are also insufficient measures of some ultimately fatal diseases of long duration, such as many cancers, which place a high burden of restricted activity, anxiety, and medical costs on their victims and on society (John A. Ross 1982).

Morbidity statistics have also their own drawback; they tend to overlook a large number of conditions which are sub-clinical or in apparent, that is, the hidden part of the iceberg of disease. The following morbidity rates are used for assessing ill health in the community (WHO 1976).

a. incidence and prevalence
b. notification rates
c. attendance rates at out-patient departments, health centers, etc.,
d. admission, readmission and discharge rates
e. duration of stay in hospital and
f. spells of sickness or absence from work or school.

The aged population has special health problems that are basically different from those of adult or young. Most diseases in aged are chronic in nature-cardiovascular, arthritis, stroke, cataract, deafness, cancer and chronic infections etc., Disease process are usually multiple (Vinod Kumar 1996). Morbidity pattern among the elderly varied from country to country. Chronic conditions which produced infirmity and disability became more common in old age. Morbidity due to Cancer, CHD, Diabetes, Hypertension and Arteriosclerosis had increased while there was a decline in morbidity among the elderly from conditions like skin diseases, visual and hearing handicaps and multiple orthopaedic problems (WHO, 1989).
Health and Morbidity:

The relationship between health and morbidity of the elderly thus reveals their dependency on others for fulfilling their basic needs. Yet another facet of the elderly that would further add to their dependency is their failing physical health as a result of ageing. Degenerative changes are reflected by the fact that the problem of the joints is one of the most severe health conditions mentioned while visual, auditory, locomotor and speech disabilities were the other health problems reported with visual disability heading the list of ailments. Similarly, the prevalence of tuberculosis was also found to be high among the elderly, which again may be attributed to their overall lowered resistance to diseases coupled with their poor nutritional intake.

In addition to the vulnerability of the elderly as a result of the biological process of ageing, certain individual habits further compromise their health. The consumption of tobacco and paan masala as well as alcohol by both elderly men and women. Smoking was another habit reported by both men and women. Such practices were found more common among those who had no education, had a low standard of living and resided in the rural areas.

The process of biological ageing brings with it several accompanying health problems or diseases. The decline in the efficient functioning of the various organ systems of the body including the immune system renders the elderly particularly vulnerable to several diseases. The sight of the elderly fail as a result of the development of cataract or glaucoma, their sense of hearing is also not as sharp and poor salivation and loss of taste buds causes a decrease in the taste of food and dryness of the mouth. They are also prone to suffer from diseases of the cardiovascular system (hypertension, atherosclerosis, and heart trouble), respiratory system (decreased breathing capacity), central nervous system (dizziness, slow movements,
loss of memory, altered sleep pattern) and the musculo-skeletal system (decreased strength, susceptibility to loss of teeth and fracture of bones). There are many physical, mental, social and environmental changes that take place with ageing, physiological problems are related to low food intake, digestive problems, reduced perceptions of taste and smell and impaired mental function. In view of the various chronic diseases and impairments such as arthritis, cough, piles, problem of joints, blood pressure (high/low), stroke, heart conditions, respiratory problems, urinary problem, diabetes, cancers and osteoporosis. Physical disabilities; visual, hearing, speech, locomotor and amnesia/senility, can all affect the quality of life in an ageing population (Das N.P. and Urvi Shah, 2001).

**How to Find Morbidity?**

A question now arises as to how morbidity should be found. Of course simple method is to contact either such person himself or his doctors or persons attending on him, who can speak on his behalf, but there are other methods as well. These include both Survey and Record Methods. Survey method can be both large survey as well small surveys. In survey an area is picked up and in that efforts are made to find out the type of sickness, system of treatment, number of sick persons and other related information. In some cases only head of the family is contacted and from him all information about family is collected. When the surveyor only once visits the locality and tries to get all information that is called single visit survey. But when the same families are visited at periodical intervals and information is again collected and compared that is called periodic visit survey. Surveys can be conducted both by the government, governmental financed bodies and private bodies. Morbidity Statistics of a sufficiently general scope are rather rare. The phenomenon of physical or mental morbidity is poorly understood on the demographic level (Hans Raj 1996).
Problems of Elderly:

There are host of problems faced by the elderly in India. Advancing age always accompanied by deteriorative changes Sati P. N. (1988) has listed mainly three ways or types of changes occurring due to age these are physiological, social and psychological. Under socio-psychological losses are; loss of loved and significant figures (such of friends, children and spouse), isolation, loneliness and uprooting status loss-prestige loss, economic loss-income drop, inflation, retirement, from active to inactive and problems of leisure time, cultural devaluation sense of uselessness, alienation and segregation. The physiological losses are; physical disease, perceptual decrement, sexual losses, loss of integrative systems, hormonal, vascular and central nervous system, brain damage, small dementia, physical limitation, arthritis, losses of speed of processes and responses, decreased thyroid function, decreased albumens; altered elasticity of skin, blood vessels, body size and appearances (slipping and shrinkage). These problems may be grouped into four categories; the main problems of the aged face are economic, psychological, physical and social problems as given in Figure 5.

Figure No. 5

Problems of Elderly

Economic
- Loss of Income & Employment
- Poverty
- Expenditure on Health and Housing

Psychological
- Loneliness
- Feeling of Neglect by the Family
- Adjustment to Changing Roles

Physical
- Falling Health and Nutritional Deficiency
- Housing
- Problem of Security

Social
- Feeling of Unwantedness in the Society
- Complete Isolation from Development Works

Economic Problems:

Economic problems of the elderly who are working in organized sector are different from the elderly who were working in the unorganized sectors. Former category of elderly gets pension benefit to meet their expenses. Latter category consist of mostly illiterate, semi literate people usually there inflation and shortage of funds, depletion of the purchasing power of the individual affects their food intake and make them still more vulnerable and susceptible to many diseases. India is best with diverse health problems and has to cope with traditional diseases like tuberculosis, malaria, malnutrition and poverty related diseases, on the one hand, and more recent challenges like chronic degenerative diseases, substance abuse, AIDS/HIV, mental stress, and environmental pollution on the other (Vinod Kumar, 2005).

Psychological Problems:

The elderly who had different psychological problems by age the anxiety, feeling of guilty, unnecessary worry, angry, isolation, easily upset, tension, loneliness, irritation, depression, stress, fear of dependence, feeling of lack of affection, fear of uselessness, feeling of neglect by family members, dementia, difficulty in coping with loss of job, loss of social relationship, loss of social security, loss of self confidence, feeling of lack of care, inabilities to adjust the changed health condition, and behavioural adjustment.

Physical Problems:

Old age is the last stage of man’s life, naturally deterioration of physical health bound to happen. Pathological ageing hastens the process of ageing. Health problems of elderly are many. Some age related disorders make the physical health work. For examples; diabetes mellitus, hypertension, arthritis, arteriosclerosis, dementia,
depression, muscular and joint pains, teeth problems, eye problems and problems related to sensory organs etc., Severity of these diseases hampers their daily activities. Some diseases like paralysis, fractures, spinal cord problems, severe dementia and arthritis need long term care. Elderly who are bed-ridden due to diseases are vulnerable segment. Thus we can see three types of health problems;

i) The segment of elderly suffers from various common age related ailments.

ii) Segment of elderly suffer from various diseases which hamper their ability to carry out the Activities of Daily Living.

iii) Totally bed ridden and need prolonged care malnutrition is also affects the elderly health. Lack of exercise, sedentary life styles in the younger ages, vitamins deficiency, gaining weight, obesity pre some of the health related ailments of the elderly.

Social Problems:

Population related problems, psychological and physical problems are all social problems, yet the main social issues and their related problems are yet to be examined and they form the social problems. The social problems of the old are many in number among which a few important problems are discussed here. They are family negligence, decreasing power, post-retirement problems, lack of freedom, social stress and strain, negligence of society and government apathy etc., (Kattakayam J. J. and Vadackumchery, J. 2000).

Health Problems:

Elderly people usually suffer from chronic conditions. The duration of both acute and chronic conditions is longer for the elderly and their chronic conditions are more likely to be lethal. Arthritis was the commonest disease in elderly followed by
hypertension, visual problems, heart disease, diabetes mellitus, protozoal and worm infestations, chronic bronchitis, asthma, emphysema, tuberculosis, peptic ulcer syndrome, varicose vein and urinary problems, cardiovascular diseases, cancer, arteriosclerosis, kidney diseases and Parkinson’s disease etc., Most often elderly may suffer from multiple chronic conditions, visual defects, hearing impairment and deterioration of speech, which can cause social isolation. These will be more severe among elderly women as they suffer specific health problems than the usual. Due to the predominating rural character of the India’s population, it would be natural to expect that most of the elderly people would also be living in rural areas. In rural areas, health of the older persons may be particularly influenced by poverty, lack of education, poor nutrition and increased risks of accidents. In the first half of the 21st Century, the major socio-economic problems will be the maintenance of the health and nutrition of the elderly through social security, social assistance and other social support mechanisms. A comprehensive social security system is not functioning in our country as in western countries. The purpose of the study was to identify diseases frequently found in elderly populations in rural areas;

**Physical health problems:**

By physical health problems was meant the real and imaginary complaints related to the functioning of the body, pain at joints, failing vision, back ache, rheumatic complaints, difficulty in walking, chronic fatigue, a sense of worthlessness, sleeplessness, difficulty in travelling, lack of courage, loss of appetite, failing memory, failing efficiency, laziness, lack of hunger, indigestion, constipation, headache, dizziness and burning sensation in the heart etc.,

**Mental health problems:**

By mental health problems meant any severe mental disturbance like sense of worthlessness, lack of courage, loss of memory, inefficiency, laziness, aimlessness,
diffidence, difficulty in taking decisions, wasting of time and lack of concentration etc.,

**Economic health problems:**

By economic health problems was meant the difficulties a person’s could experience in regard to the raising of material resources for day to day existence. Main important five economic problems; lack of savings, lack of primary necessities of life, lack of steady income, difficulty in settling children and fear about future etc.,

**Global Ageing: World Population:**

The global population of persons aged 60 years and above was estimated as 600 million in the year 2000. In the year 2002, there were estimated 605 million old persons in the world, of which 400 million were living in low income countries. By the year 2025, the number of elderly people is expected to rise more than 1.2 billion with 840 million of them living in low income countries. Improvements in health care facilities have brought about longevity, which is considered to be one of the greatest achievements of the 20th Century. The ratio of older persons has changed dramatically from approximately one in fourteen in the fifties to about one in four at present (Kasthuri A. 2007).

From 1990 to 2025 the elderly population in Asia will rise from 50 percent of the world’s elderly to 58 percent in Africa and Latin America from 5 to 7 percent. But in Europe the figure will drop from 19 to 12 percent of the world’s elderly. In India, the number of person aged 60 years and above was 12 million at the turn of the century in 1901. This has increased six fold about 71 million in 2001, and is expected to be currently in the region of 80 million. It was 5.63 percent in 1961, 71 percent in 2001, and is expected to be 9.8 percent in 2021. This makes India “Graying Nation”,

32
for the year 2003 the SRS estimated 7.2 percent of the total population above the age of 60 years. The life span has increased in India from 32 years in 1947 to more than 62 years at present. From the morbidity point of view, almost 50 percent of the Indian elderly have chronic diseases and 5 percent suffer from immobility. There are several vulnerable groups and a large disadvantaged group are elderly female’s who are one of the fastest growing segments and which will increase to become four times the current figure, by 2025. The challenge in the 21st Century is to delay the onset of disability and ensure optimal quality of life for older people. A major component of the burden of illness for the elderly derives from prevalent chronic diseases (Jacob A. et al. 2006).

The process of ageing is extremely complex, involving all facets of life including biological, non-biological, genetic, epigenetic, psychological and even social factors. It’s a very complex process, which is universal in all living beings. Multiple biological factors contribute to the social, physical and psychological changes seen in the ageing process (Vina et al. 2007). Population aging is a global phenomenon that all countries face, but global averages can mask considerable heterogeneity both across and within regions (Bloom 2011). Countries are at various stages of the process: The share of the 60+ population ranges from under 5% in a number of African and Gulf countries to more than 20% in several European and East Asian countries. However, there is much less heterogeneity with respect to time and trends.

The increase in the elderly population will be marked in Asia, primarily as a result of the rapid growth expected in the number of the aged in China and India. Between 1980 and 2020, the total population of the developing world is expected to increase by 95 percent where as the elderly population will probably rise by almost
240 percent. China and India are the two most populous countries in the world. Combined, they were home to more than 34% of the world’s 784 million people aged 60 and older in 2011. China’s proportion of older people will grow from over 12% of its total population currently to 34% in 2050. Meanwhile, India’s older population will grow from close to 8% to almost 20% over the same time period. The proportion of people aged 60 and older will exceed that of people aged 0-14 years by 2019 in China and by 2050 in India (United Nations, 2011a). In 2050 more than three quarters of 1 billion people aged 60 and older will live in China and India, Constituting 38% of the World’s 60 plus population (Table No. 1.1).

**Table No. 1.1**

Population Aged 60 and Older, Life Expectancy at Birth and Age 60, China and India, 2010 and 2030.

<table>
<thead>
<tr>
<th>Country</th>
<th>2010</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total (in millions)</td>
<td>Median Age</td>
</tr>
<tr>
<td>World</td>
<td>6895</td>
<td>29.2</td>
</tr>
<tr>
<td>China</td>
<td>1341</td>
<td>34.5</td>
</tr>
<tr>
<td>India</td>
<td>1224</td>
<td>25.1</td>
</tr>
</tbody>
</table>

Source: Data from United Nations (2011a).

One of the major features of demographic transition in the world has been the considerable increase in the absolute and relative numbers of elderly people. In India, eighty percent of the elderly population lives in rural areas and 7.8% of the women are elderly (Census 2001). This has been especially true in the case of developing countries like India, where ageing is occurring more rapidly due to the decline in
fertility rates combined by increase in life expectancy of people achieved through medical interventions. About 60 percent of the elderly live in the developing world, and this will rise to 70 percent by 2010. Further, the older population itself is ageing, with the oldest old being more than 10 percent of the world’s elderly (Gupta I. and Sankar D. 2001).

According to United Nations estimates, 21 percent of the population in the developed countries was aged 60+ years or over in 2005. This proportion is projected to rise to 28 percent in 2025, and 32 percent in 2050, the average proportion of the population aged 60 years or over is projected to increase from 16 percent in 2005 to 22 percent in 2025 and 29 percent in 2050. In the developing countries, the proportion of the population aged 60 years or over was estimated at only 8 percent in 2005 but is expected to reach 13 percent by 2025 and nearly 20 percent by 2050. Thus, the number of older persons in the developing countries will likely more than double between 2005 and 2025. (Rob Vos, et al. 2008) (Table No. 1.2).

### Table No. 1.2


<table>
<thead>
<tr>
<th>Age group</th>
<th>Population (millions)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-14</td>
<td>864</td>
<td>1498</td>
</tr>
<tr>
<td>15-24</td>
<td>459</td>
<td>757</td>
</tr>
<tr>
<td>25-29</td>
<td>991</td>
<td>1469</td>
</tr>
<tr>
<td>60+</td>
<td>205</td>
<td>350</td>
</tr>
<tr>
<td>Total</td>
<td>2519</td>
<td>4074</td>
</tr>
<tr>
<td>Age Group</td>
<td>Developed Countries</td>
<td>Economies in Transition</td>
</tr>
<tr>
<td>----------</td>
<td>---------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>0-14</td>
<td>647</td>
<td>191</td>
</tr>
<tr>
<td>15-24</td>
<td>105</td>
<td>39</td>
</tr>
<tr>
<td>25-29</td>
<td>289</td>
<td>78</td>
</tr>
<tr>
<td>60+</td>
<td>79</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>647</td>
<td>191</td>
</tr>
<tr>
<td>65+</td>
<td>53</td>
<td>13</td>
</tr>
<tr>
<td>80+</td>
<td>7</td>
<td>2</td>
</tr>
</tbody>
</table>
Developed and Developing Countries:

The total number of 42 Countries (16 developed and 26 developing) in the population of the old (60+) and oldest old (80+) in the year 2006 and 2050. The list contains only countries which will have 10 million or more 80+ persons by 2050. Though, Sweden and Switzerland during this period will have slightly less than 10 million oldest-old, the proportion of this segment in their elderly population will be 31 percent and 37 percent respectively. The developing countries accounted for more than 64 percent of the World’s oldest-old in 2006 and the figure is estimated to rise to 71 percent in 2050. In this, the share of Asia will be 63 percent in 2050 (it was around 55 percent in 2006). India’s share in this scenario will be 16.75 percent in 2050 against 13.4 percent in 2006. (Table No. 1.3).

Table No. 1.3

Population Aged 60 and over and 80 and over Developed and Developing Countries (Numbers in Thousands)

<table>
<thead>
<tr>
<th>Country</th>
<th>No. 60+ in 2006 &amp; 2050</th>
<th>60+ as % of Population 2006 &amp; 2050</th>
<th>No. of 80+ in 2006 &amp; 2050</th>
<th>80+ as % of 60+ Population 2006 &amp; 2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>687923</td>
<td>1968753</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>Developed</td>
<td>247753</td>
<td>40029</td>
<td>20</td>
<td>32</td>
</tr>
<tr>
<td>Developing</td>
<td>479763</td>
<td>1739315</td>
<td>07</td>
<td>18</td>
</tr>
</tbody>
</table>

Source: Calculated from “Population Ageing-2006” (Data Sheet Published by UN Department of Economic and Social Affairs, Population Division, New York, 2006).

The compression of morbidity hypothesis is most apt for the oldest-old as it fully explains their plight vis-à-vis morbidity. While morbidity is a life-long phenomenon, there is a global tendency for morbidity to concentrate at the last stage.
of one's life, especially when the length of life gets increased. Expectation of life at 80 in 2050 is calculated to be 8.8 years; but studies have shown that healthy life expectancy (life in good health) is much less at this age compared to younger age and it tends to decline steeply after this age. Studies have also shown that in many developed countries, while life expectancy increased, health expectancy also increased; but at much lower rate than the former (Andrews, G.R. 2000).

In most developing countries health insurance exists only for a privileged few and the rest are left high and dry. In these countries, the plight of the oldest-old in the matter of health and health care is gloomy and would continue to be so because globalization has resulted in the increasing withdrawal of the government from the scene of poor people's health care have kept the poor old off the limits of even basic health-care needs. Absence of geriatric care and geriatric countries also affects the oldest-old more than the younger-old as the former need it more.

**Global Trends of Population Ageing:**

Ageing of population is a group behavior which brings about a change in the age structure of the population such that the relative proportion of the elderly in the population will be on the increase. This could be due to a decline in the proportion of the young population or due to an accelerated growth of the young population of due to an accelerated growth of the proportion of older population. The former is called ageing from the base and the latter is called ageing from the apex (United Nations, 1956). According to United Nations (1954) and the World Assembly on Ageing has demarcated the boundary defining the old age to be 60 years. The present paper will follow this demarcation and all the people's age 60 years and above are treated as elderly.
Ageing-World Perspective:

Since the last century, human civilization has witnessed a silent revolution—an ageing population. This population ageing reflects both significant increases in longevity and significant decreases in fertility. The United Nation reports on population and population projections indicate that today the median age for the world is 28 years. Over the next four decades, the world’s median age will likely increase by ten years, to reach 38 years in 2050. In 2000, the population aged 60 years and above, numbered 600 million, triple the number present in 1950. In 2009, the number of older persons had surpassed 700 million. By 2050, 2 billion older persons are projected to be alive, implying that their number will once again triple over a span of 50 years. Globally the population of older persons is growing at a rate of 2.6% per year, considerably faster than the population as a whole, which is increasing at 1.2% annually. At least until 2050, the older population is expected to continue growing more rapidly than the population in other age groups. Such rapid growth will require far-reaching economic and social adjustments in most countries (Hemamalini Ramakrishnan, 2012). According to the World Population Ageing report prepared by the United Nations Department of Social and Economic affairs, Population ageing is enduring. Since, 1950, the proportion of older persons has been rising steadily, passing from 8% in 1950 to 11% in 2009, and is expected to reach 22 percent in 2050.

One of the major features of demographic transition in the world has been the considerable increase in the absolute and relative numbers of elderly people. This has been especially true in the case of developing countries like India, where ageing is occurring more rapidly due to the decline in fertility rates combined by increase in life expectancy of people achieved through medical interventions. About 60% of the elderly live in the developing world and this will rise to 70% by 2010. Further, the
older population itself is ageing, with the oldest old being more than 10% of the world’s elderly (Gupta I. et al. 2003).

In 1950 there were 205 million people who were over 60, in 2000 there were 606 million and by 2050 there will be two billion. The number of elderly trebled over the last 50 years and an encore is expected in the next 50 years. As a proportion of the total world population, the number of elderly will double in the next 50 years. This demographic change is fast turning, the hair of policymakers prematurely grey throughout the world, especially in developing countries, where the growth of the aged population is happening at a more rapid pace (Asha Krishnakumar, 2004).

While world population is growing at a rate of 1.7 percent per year, the proportion of those aged 55 years and above is increasing at 2.2 percent per annum and the number of aged 65 and above at 2.8 percent per year. Every month, the world’s older population increases by 1.2 million persons. More than 80 percent of the increases occur only in developing countries whose growth rate of the aged (3.1%) is 3 times as high as in developed countries (Lakshmi Pathi Raju et al., 2002).

It is estimated that by the year 2020 there will be over 1000 million elderly people in the world and 710 million in developing countries. Europe will be the oldest region in the world with 19 percent of elderly out of total population and 24 percent in 2020. By 2020, Japan will have the most elderly with 31 percent, followed by Greece, Italy and Germany with above 28 percent and Switzerland with 27.4 percent. Regional distribution of elderly in 2020 will be 23 percent in North America, 17 percent in East Asia, 12 percent in Latin America and 10 percent in South Asia. By 2020, five developing countries will have the largest elderly populations: China (231 million), India (145 million), Indonesia (29 million), Pakistan (18 million), and
Population ageing in developing countries is associated with persistent poverty and misery (United Nations, 1999).

**Table No. 1.4**

**Elderly population in five largest developing countries of the world by 2020**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Country</th>
<th>Elderly Populations (in million) by 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>China</td>
<td>231</td>
</tr>
<tr>
<td>02</td>
<td>India</td>
<td>145</td>
</tr>
<tr>
<td>03</td>
<td>Indonesia</td>
<td>29</td>
</tr>
<tr>
<td>04</td>
<td>Pakistan</td>
<td>18</td>
</tr>
<tr>
<td>05</td>
<td>Bangladesh</td>
<td>14</td>
</tr>
</tbody>
</table>

*Source: (United Nations, 1999).*

Based on the studies of United Nations in Asia, the elderly population is growing in both absolute number and as a proportion of total population. The speed of population ageing and the absolute size of the elderly population among countries with low levels of economic development pose challenges. Rapid urbanization and industrialization, which increase the flow of young and female population to urban areas, has the undesirable consequence of the separation of the elderly in rural areas without sufficient support. Fertility decline results in a reduced number of caregivers in a family. Modernization brings changes in values, perceptions, attitudes and expectations that impact on the elderly. Life expectancy and health improvements increase the potential for self-reliance and for contributions to social and economic development among the elderly. This “young old” group (aged 60-69 years) in 1990 constituted 62.65 million persons in China, 38.39 million in India and 7.37 million in Indonesia. These “young old” continue to work in self-employment or non-organized sectors without pensions or social security until they cannot. The “older old”, aged
over 70 years, are likely to suffer from physical or mental disabilities of old age and require care. According to the studies of Higuchi (1996), in Japan, female elderly are double the number of male elderly for the age group 85 years and above. The female-male ratio at 60 years is almost equal. One out of 10 elderly live alone and 80 percent of those living alone are women. Single-only and couple-only elderly households increased over time. More women are admitted to nursing homes. The greatest problems of the elderly and dementia and being bedridden. Japanese women’s health differs from Western models, due mainly to dietary habits. The ageing process of women after menopause differs from that of men in all countries. In Japan, there are differences in the elderly born before and after the World War II. Before the war women were trained to become a “good wife and a wise mother” and to sacrifice. It is difficult to train these women now to exercise their rights to self-determination, or to accept being cared for by a husband. A major issue for elderly women is poverty. Wives may not be protected by any pension plan. Legal changes in Japan allow transfer of house ownership to a spouse with taxation under certain circumstances. Employment opportunities narrow for older women.

On a global perspective, the proportions of the elderly differ from region to region. 1 out of every 5 Europeans and 1 out of every 20 Africans are aged 60 years or older. In the Asian and Pacific region, more than 300 million elderly persons are aged 60 years or older. In China, there are more than 114 million elderly people, while in Japan it is 25.1 million, the largest proportion of elderly people among all of the countries in this region. The steady increase of older age groups both in absolute numbers and in relation to the working-age population holds significant implications for many countries. The economic and social impact of ageing populations presents both an opportunity and challenge to all societies (Bisht, 2000). A study conducted by
Gutierrez Robledo L. M (1989). Showed that the proportion of the population in above 60 age group in Latin America as a whole is projected to rise from 6.4 percent in 1980 to 7.2 percent in the year 2000 to 10.8 percent by 2025. Majority of the aged live in urban areas in industrialization and modernization have led to the fragmentation of the extended nuclear families that traditionally provided for the care of the aged. With the move toward nuclear family households and female employment outside the home, many elderly have been forced to live alone or just with a spouse. Despite these changes, the family system is still considered by Latin American governments to have the major responsibility for the care of the elderly.

Social spending and investment, already severely curtailed by the economic crisis in Latin America, is focused on the needs of the young population and the healthy. However, in Asia, research studies revealed that about 60 percent of the world population and population ageing is occurring more rapidly in Asia than in western countries. The group aged 65 years and above will increase from 207 million in 2000 to 857 million in 2050, a staggering increase of 314 percent. The diversity in economic, demographic, religious, cultural and geo-political factors in Asia is unparalleled by any other continent and is, in part, contributory to the rapid rise in population ageing. By 2050, those under 15 years old will have shrunk from 30 percent in 2000 to 19 percent, while those aged 65 years and above will increase from 6 percent to 18 percent. In addition, the gender divide still persists with 100 elderly women to 70 elderly men. These projected demographic changes pose three major challenges viz., how best to address the rising population of the group aged 65 years and above, how to address the shrinking population of the young as well as the working adults and how to address the problems arising from the disproportionate increase in older women than men (Goh, 2005); According to Verhasselt (1998).
Population Ageing in India:

Population ageing is one of the most discussed global phenomena in the present century. Countries with a large population like India have a large number of people now aged 60 years or more. The population over the age of 60 years has tripled in last 50 years in India and will relentlessly increase in the near future. According to Census 2001, older people were 7.7% of the total population, which increased to 8.14% in Census 2011. The projections for population over 60 years in next four censuses are: 133.32 million (2021), 178.59 (2031), 236.01 million (2041), and 300.96 million (2051) (Government of India, 2011).

The world’s elderly population has been growing for centuries. What is new is the rapid pace of ageing. The Indian situation can be better understood in the context of worldwide trends in population ageing. The trend is built up on the basis of UN Population Projections (UN, 1998) (Table No.1.5). The size of the elderly population of age 60 years and above will cross one billion marks in 2020. Share of the less developed countries will be more than 0.7 billion, which is 69.5 percent. Out of the total share of the developing region, Asia (excluding Japan) will contribute 77 percent of the aged population; whereas about 72 percent of the sub population of elderly in Asia will be contributed by China and India. A new kind of population problem, hitherto known only in developing countries, is thus imminent in these two most populous countries of the world (Guha Roy, 1985).

In India, since 1961 sharp decline in the overall death rate and also in mortality levels in the older age groups initiated a process of ageing. This has accelerated after 1971 when the fertility level also started declining. The elderly population from 12.6 million in 1901 to 19.61 million in 1951, an increase of about 63
percent. Between 1951 and 1971 the number of elderly increased by about 67 percent, reaching 32.70 million by 1971. During 1971-1981, the increase in the aged population was about 32 percent as against the increase of 24.7 percent recorded for the total population during this period. During the decade 1981-1991 the old age population increased by 13.5 million with a decadal growth rate of 31 percent. According to estimates made by the Technical Group of Population Projections, the likely number of the elderly by the year 2016 will be around 113 millions (Census of India, 1999). The data clearly reveal that the absolute number of elderly population (60 years and above) is increasing rapidly, and the population is beginning to age (Table No. 1.6).

Table No. 1.5

Trends of Population of 60 + in India and China 1980-2020

| Region/Country          | A) Population Aged 60 and over (in millions) |      |      |      |      |
|-------------------------|---------------------------------------------|--|--|--|--|--
| Asia (excluding Japan)  | 160.0 | 218.2 | 290.0 | 377.7 | 539.9 |
| China                   | 73.6  | 101.2 | 131.7 | 167.9 | 238.9 |
| India                   | 44.6  | 60.2  | 81.4  | 107.0 | 149.7 |

<table>
<thead>
<tr>
<th>Region/Country</th>
<th>B) Proportion of Aged 60 and Over Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(in percent)</td>
</tr>
<tr>
<td>Asia (excluding Japan)</td>
<td>6.5</td>
</tr>
<tr>
<td>China</td>
<td>7.4</td>
</tr>
<tr>
<td>India</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Table No. 1.6

Increasing Trend in the Proportion of Aged (60+ and Above) in India, 1961-2021

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>5.63</td>
<td>5.97</td>
<td>6.28</td>
<td>6.58</td>
<td>7.08</td>
<td>8.18</td>
<td>9.87</td>
</tr>
</tbody>
</table>


The 2001 Census has shown that the elderly population of India accounted for 77 million, while the elderly constituted only 24 million in 1961 it increased to 43 million in 1981 and to 57 million in 1991. The proportion of elderly persons in the population of India rose from 5.63 percent in 1961 to 6.58 percent in 1991 and to 7.08 percent in 2001 to 8.18 percent in 2011 and 9.87 percent in 2021 (Irudaya Rajan, Mishra and Sharma 1999).

**Age Structure of the Population:**

Table No. 1.7 give details of changes that have taken place in the last few decades in the age structure of the population. Projections for the immediate future include further improvement in life expectancy, accelerated pace of growth of old population, gradual tracking of gender ratio in favour of females (especially among the older old), and altered patterns of morbidity, disability and mortality (Kumar, 1997). In the year 1951 the aged were 5.43 percent but in the year 2001 they are expected to be 7.70 percent. The table also shows that throughout the period 1901 to 2011, the aged females. India had 60 million elderly (60 years plus old). This is about 6.7 percent of the total population, which is up from the 5.97 percent in 1971 and 6.42 percent in 1981 respectively.
Table No. 1.7

Percentage of Population aged 60 and above to general population by Sex, India, 1901-2011

<table>
<thead>
<tr>
<th>Year</th>
<th>Persons</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>1901</td>
<td>5.06</td>
<td>4.55</td>
<td>5.59</td>
</tr>
<tr>
<td>1911</td>
<td>5.22</td>
<td>4.81</td>
<td>5.65</td>
</tr>
<tr>
<td>1921</td>
<td>5.37</td>
<td>5.04</td>
<td>5.70</td>
</tr>
<tr>
<td>1931</td>
<td>5.09</td>
<td>4.86</td>
<td>5.35</td>
</tr>
<tr>
<td>1941</td>
<td>5.66</td>
<td>5.43</td>
<td>5.91</td>
</tr>
<tr>
<td>1951</td>
<td>5.43</td>
<td>5.21</td>
<td>5.66</td>
</tr>
<tr>
<td>1961</td>
<td>5.63</td>
<td>5.46</td>
<td>5.80</td>
</tr>
<tr>
<td>1971</td>
<td>5.97</td>
<td>5.94</td>
<td>5.99</td>
</tr>
<tr>
<td>1981</td>
<td>6.42</td>
<td>6.35</td>
<td>6.50</td>
</tr>
<tr>
<td>1991</td>
<td>6.55</td>
<td>6.45</td>
<td>6.66</td>
</tr>
<tr>
<td>2001</td>
<td>7.70</td>
<td>7.55</td>
<td>7.86</td>
</tr>
<tr>
<td>2011</td>
<td>8.14</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>


Indices of Ageing in India

Indian population is ageing very slowly from the base. The explosion of medical and other health improvement facilities together with the economic development let to an increase in the life expectancy of the people. Table No. 1.8 gives the related information to understand the ageing situation in India.
### Table No. 1.8

#### Indices of Ageing in India

<table>
<thead>
<tr>
<th>Selected Year</th>
<th>Prop. Elderly (% to total population)</th>
<th>Index of ageing (%)</th>
<th>Median age (years)</th>
<th>Exp. Of life at birth * (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>5.6</td>
<td>14.4</td>
<td>20.4</td>
<td>38.7</td>
</tr>
<tr>
<td>1960</td>
<td>5.7</td>
<td>14.3</td>
<td>20.4</td>
<td>45.4</td>
</tr>
<tr>
<td>1970</td>
<td>6.0</td>
<td>14.8</td>
<td>19.9</td>
<td>50.3</td>
</tr>
<tr>
<td>1980</td>
<td>6.5</td>
<td>16.9</td>
<td>20.6</td>
<td>55.4</td>
</tr>
<tr>
<td>1990</td>
<td>6.9</td>
<td>18.9</td>
<td>21.9</td>
<td>60.4</td>
</tr>
<tr>
<td>2000</td>
<td>7.6</td>
<td>22.7</td>
<td>23.7</td>
<td>66.1</td>
</tr>
<tr>
<td>2010</td>
<td>8.6</td>
<td>29.2</td>
<td>26.2</td>
<td>66.1</td>
</tr>
<tr>
<td>2020</td>
<td>10.9</td>
<td>44.0</td>
<td>29.6</td>
<td>72.4</td>
</tr>
</tbody>
</table>


The indices given in show that they are almost in tune with those for the less developed countries as a whole, as one would expect, currently, India is having an “young” age structure. But all the indices of ageing are showing a consistent increase indicating that in India the process of ageing is on and that after 2010 the ageing process in India is heading for a non-reversible trend. It is very clear that after 2010, in India, the increase in the elderly population takes a runaway nature, indicating that India’s population ageing is not a distant vision to be waited and watched upon but is to be tackled here and now.
A decline in the overall death rate and also a decline in mortality among the older age groups since 1961 have initiated a process of population ageing in India. The analysis of historical patterns of mortality and fertility decline in India indicates that although the mortality figures had started improving in the 1920s the process of population ageing intensified only in the 1990s with the impact of fertility decline on successive birth cohorts (Goyal, 1997). The elderly population in India ranks the fourth highest among the countries of the world and by the end of the present century; it will be second only to China (Chanana and Talwar, 1987).

**Sex Ratio of Elderly Population:**

The progressive increase in the proportion of females to males in the elderly population is also evident in the trend in the sex ratio of elderly population aged 60 years or over. Table No. 1.9 shows the sex ratios (females per 1000 males) of elderly population and of general population from 1901 to 2011. It is evident from this table that the proportion of females in the elderly population is increasing, particularly since 1991. The sex ratio among elderly people was about 928 in 1991 which increased to about 949 in 2001 and is expected to increase further to 963 by the year 2011. The projected age-sex structure of the population indicates that gender differentials among those aged over 60 are expected to decline with time and like the pattern in the developed countries, women may outnumber men especially at the older ages. The excess of females over males is not a new phenomenon. Table 1.9, it is revealed that in 1901 there were 1193 women aged 60 or over for every 1000 men of the same age.
### Table No. 1.9

Sex ratio (females per 1000 males) of elderly population and general population, India, 1901-2011

<table>
<thead>
<tr>
<th>Year</th>
<th>Elderly population (Age 60+)</th>
<th>General population (All ages)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1901</td>
<td>1193</td>
<td>972</td>
</tr>
<tr>
<td>1911</td>
<td>1131</td>
<td>964</td>
</tr>
<tr>
<td>1921</td>
<td>1080</td>
<td>955</td>
</tr>
<tr>
<td>1931</td>
<td>1048</td>
<td>950</td>
</tr>
<tr>
<td>1941</td>
<td>1029</td>
<td>945</td>
</tr>
<tr>
<td>1951</td>
<td>1028</td>
<td>946</td>
</tr>
<tr>
<td>1961</td>
<td>999</td>
<td>941</td>
</tr>
<tr>
<td>1971</td>
<td>938</td>
<td>930</td>
</tr>
<tr>
<td>1981</td>
<td>956</td>
<td>934</td>
</tr>
<tr>
<td>1991</td>
<td>928</td>
<td>927</td>
</tr>
<tr>
<td>2001*</td>
<td>949</td>
<td>933</td>
</tr>
<tr>
<td>2011*</td>
<td>963</td>
<td>942</td>
</tr>
</tbody>
</table>

**Source:**

India is one of the few countries in the world where males outnumber females. This phenomenon among elderly is of prime importance because female life expectancy at ages 60 and 70 is slightly higher than that of males. However, at any given age there are more widows than widowers. Reasons for this unusual phenomenon need to be identified in the wider context. Since the beginning of the 20th century life expectancy at birth among Indian males was higher than that for females until the first half of the 1990s. Besides this unusual demographic pattern of excess
female mortality at infant and childhood ages, the analysis is further hampered by the phenomenon of age exaggeration among the aged. Thus, the finding of more males in old age does not reveal a true picture of the situation among elderly persons (Mari Bhat, 1992). In India the sex ratios of the aged as well as the old-old favors males. Only nine states and union territories reported a sex ratio above 100, indicating an excess of females over males in old age. Reasons for more males in old age may consist of under reporting of females, especially widows, age exaggeration; low female life expectancy at birth, and excess female mortality among infants, children, and adults (Sudha, S. and Irudaya Rajan, S. 1999 Mari Bhat Navaneetham and S. Irudaya Rajan 1995).

Moreover, the aging process is intensified owing to increased survival of elderly persons beyond ages 60 and 70, as shown in Table No.1.10. As the table shows, males are expected to live 17 years beyond age 60 and 10 years beyond age 70; the corresponding years for females are 18 and 11, respectively, by the year 2021 (Irudaya Rajan and Mishra, 1995). Over decades health achievements have been made in the country to achieve health for all. Today India has 70 million of elderly population over 60 years of age current health policies do not address significantly to improve the health status of geriatrics population to significant level. It is currently estimated that adults over 60 years make up 8 per cent of India’s population and by 2021 that number will be 137 million. India now has the second largest aged population in the world. “As we begin the 21st Century, population ageing is poised to emerge as a pre-eminent worldwide phenomenon. The confluence of lowered fertility and improved health and longevity has generated growing numbers and proportions of older population throughout most of the world” (An Ageing World, 2001). The
United Nations estimates put the number of those aged 60 plus at 600 million, i.e., 10% of the world population and this number is expected to go up by 2 billion by 2050. The Indian Scenario of ageing population brings to light that India’s population of just over one billion in the year 2000 continues to grow at about 1.5% per annum and is expected to exceed one and a half billion by mid century.

**Life expectancy of the elderly:**

The age pyramid of India is typical of a population just entering demographic transition from high to low fertility, with a large number of children and relatively small numbers of the elderly. Expectation of life at birth for India has increased from 48.9 for males and 49.3 for females in 1971, to 61.6 for males and 62.2 for females, respectively in 1996. For those above the age of 60, it has increased from 13.80 for males and 14.75 for females in 1971, to 15.01 for males and 16.23 for females in 1991 (Irudaya Rajan; Mishra and Sankara Sharma, 1999). As for gender, the Census indicated that the 60+ categories favored the males, but in the 70+ age group, the ratio of females was higher than males, which is explained by the higher life expectancy at age 60+ for females in comparison to males. Over a period of 25 years, the expectancy of life at 60 and 70 years has also shown a significant increase from 13.8 and 8.9 years respectively to 16.2 and 10.6 years. This trend is likely to persist in the coming years, and in next 50 years the expectancy of life at birth may well surpass 80 years in most countries of the world, including India.

The projections of expectations of life in the years 2011 and 2021 for older Indians at 60 and 70 are shown in table. The implications of these projections are that there will be a large elderly population with substantial length of life in old age.
Table No. 1.10

Expectation of Life at Ages 60 and 70 for India

<table>
<thead>
<tr>
<th>Year</th>
<th>Male</th>
<th></th>
<th></th>
<th>Female</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60+</td>
<td>70+</td>
<td>60+</td>
<td>70+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1971</td>
<td>13.80</td>
<td>8.57</td>
<td>14.75</td>
<td>9.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1981</td>
<td>14.25</td>
<td>8.83</td>
<td>15.31</td>
<td>9.42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td>15.01</td>
<td>9.27</td>
<td>16.23</td>
<td>9.97</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>15.74</td>
<td>9.70</td>
<td>17.05</td>
<td>10.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>16.29</td>
<td>10.03</td>
<td>17.75</td>
<td>10.87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2021</td>
<td>16.75</td>
<td>10.32</td>
<td>18.18</td>
<td>11.14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Phoebe S. Liebig, S. Irudaya Rajan; P. No. 20.

The assessment of India’s demographic future, the age structure of the population was projected using the 2001 census age data published by the Registrar General of India as the base population; assumptions on future fertility and mortality trends are based on past trends as revealed by the Sample Registration System and other sources such as the first and second round of National Family Health Surveys (Visaria and Irudaya Rajan, 1999; Guilmoto and Irudaya Rajan, 2001) and our own understanding of the India’s demographic regimes over the past 50 years (Irudaya Rajan and Aliyar, 2006). The projection period ranges from 2001 to 2051. It is also important to note that the number of projected elderly persons above 60 years of age in 2051 were already 10 years old in 2001. Given our assumptions regarding mortality, the projections are likely to be valid.

According to the population projections, the size of India’s elderly population aged 60 and above is expected to increase from 77 million in 2001 to 179 million in 2031 and further to 301 million in 2051 (Table No. 1.11).
Table No. 1.11

Number, Proportion and Sex Ratio of the Elderly, 2001-2051

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2011</th>
<th>2021</th>
<th>2031</th>
<th>2041</th>
<th>2051</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>60 and Above</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Numbers (in Millions)</td>
<td>77</td>
<td>96</td>
<td>133</td>
<td>179</td>
<td>236</td>
<td>301</td>
</tr>
<tr>
<td>Percentage to the total population</td>
<td>7.5</td>
<td>8.2</td>
<td>9.9</td>
<td>11.9</td>
<td>14.5</td>
<td>17.3</td>
</tr>
<tr>
<td>Sex Ratio (males per 1000 females)</td>
<td>1028</td>
<td>1034</td>
<td>1004</td>
<td>964</td>
<td>1008</td>
<td>1007</td>
</tr>
<tr>
<td><strong>70 and Above</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Numbers (in millions)</td>
<td>29</td>
<td>36</td>
<td>51</td>
<td>73</td>
<td>98</td>
<td>132</td>
</tr>
<tr>
<td>Percentage to the total population</td>
<td>2.9</td>
<td>3.1</td>
<td>3.8</td>
<td>4.8</td>
<td>6.0</td>
<td>7.6</td>
</tr>
<tr>
<td>Sex Ratio (males per 1000 females)</td>
<td>991</td>
<td>966</td>
<td>970</td>
<td>930</td>
<td>891</td>
<td>954</td>
</tr>
<tr>
<td><strong>80 and Above</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Numbers (in millions)</td>
<td>8</td>
<td>9</td>
<td>77</td>
<td>16</td>
<td>23</td>
<td>32</td>
</tr>
<tr>
<td>Percentage to the total population</td>
<td>0.5</td>
<td>0.7</td>
<td>0.8</td>
<td>1.0</td>
<td>1.4</td>
<td>1.8</td>
</tr>
<tr>
<td>Sex Ratio (males per 1000 females)</td>
<td>1051</td>
<td>884</td>
<td>866</td>
<td>843</td>
<td>774</td>
<td>732</td>
</tr>
</tbody>
</table>

Note: According to the 2001 census, India was administratively divided into 28 states and 7 Union Territories.

The proportion is likely to reach 12 percent in 2031 and 17 percent in 2051. The number of elderly persons above 70 years of age (old-old) is likely to increase more sharply than those of 60 years and above. The old-old are projected to increase five-fold during 2001-2051; form 29 million to 132 million. Their proportion is expected to rise from 2.9 to 7.6 percent. The oldest old (80+) among the elderly in India is expected to grow faster than any other age groups in the population. In absolute terms, it is likely to increase four-fold from 8 million in 2001 to 32 million in 2051 (S. Irudaya Rajan and Sabu Aliyar, 2006).
Trends:

According to the population projections for the next 20 years period till 2016, worked out by the expert committee headed by Registrar General and Census Commission of India, the 60+ population of India will grow from 56 million in 1991 to 71 million in 2001, 96 million in 2011 and 113 million in 2016. The total population of Kerala is projected to increase from 27.6 million in 1986, 45 million in 2026. During the first quarter of the 21st century, the population of Kerala will experience a dramatic aging. Old age dependency in Kerala will be 18.13 in 2011 when compared to 13.77 in 1991.

Advancing age seems to bring meaningless misery mainly because the elderly have been neglected and by passed by modern society. Aging may be viewed as a biological process, psychological and social development process of individuals including transition in social position, roles, status and attitude. This makes it necessary to look into the various aspects of their problems, social, economic, psychological health and other allied aspects.

In the traditional joint families infirmities were taken care of by the individuals, immediate circle of relations and family members. Older people enjoyed a sense of honour and authority and had the responsibility in decision making. More over at aggregate level, number of old people were also less. However, in recent times as a result of changing circumstances due to demographic transition, rapid pace of industrialization and urbanization, disintegration of joint family structures into unitary ones, increasing participation of families in non agricultural labour force, and the older people become more vulnerable to physical disabilities as a result of social economic and emotional alienation and isolation.
In most developed and developing countries women’s biological, psychological and social development across life span is compromised by cultural, political and economic factors. The remarkable thing about older women in our culture is that they still survive against all odds against them. Long experience of discrimination, deprivation and neglect reflects in their later years. There is no retirement for an elderly woman till either death or dementia or disability occurs. The poverty, malnutrition, poor health care and depression are also the major problems faced by the elderly women. In Indian culture women are not allowed freedom or are equal to men. (‘Manusmrithi – Pitharakshathi Kaumare, Bhartharakshathi Yauvane; Rekhshanthi Sthavireputhra, Na Sthree Swathanthriyamarhathe’). Female security is considered to depend on the willingness of fathers, husbands or sons to support female family members; whereas male security depends on the ownership and control of family property.

Various factors such as food sharing practices, eating the left over’s poor medical facilities, poor sanitation as well as low levels of education may be responsible for poorer nutritional and health status of the elderly women from lower income group. Added to this, incidence of widowhood is much higher among the female aged than among the males. This is the trend all over the world and so is in India. In 1991 only 15% of the meals were widowed, as many as 54% of females were widowed. The absolute number of elderly widowed women in India was very large 14.8 million in 1991. In our country, the economic security, social fulfillment and personal dignity are not well assured as in western countries due to economic imbalance. The position of the elderly woman in the family is depended upon her economic position, support systems available, marital and health status.
The physical context of ageing is changing. The death rate is declining, especially in the 0-4 age group. It came down to 29.1 per 1000 in 1991. The rate of expectancy of life at birth is increasing. It has increased to 59.4 in 1991. The birth rate is declining. It declined to 29.5 per 1000 in 1991. As a result of these demographic changes, the population in the age group of 60+ is increasing. According to the Census figures, the proportion of elderly persons in India has risen from (5.63 percent) in 1961, (6.58 percent) in 1971, (5.97 percent) in 1981 (6.28 percent) in 1991. It is growing at a rate faster than the population. The older population is expected to grow to over 7.08 percent in 2001, 8.18 percent in 2011 and 9.87 percent in 2021 respectively. As of 1991, the highest proportion of elderly among the States and Union Territories was found in Kerala with 8.77 percent whereas the lowest proportion was observed in Andaman and Nicobar Island 3.55 percent respectively.

(See Table No. 1.12).

Table No. 1.12

Trends in the Proportion of the Aged (60 and above) (1961-91 to 2001-2021)

(In percent)

<table>
<thead>
<tr>
<th>States and Union Territories</th>
<th>Present Increase</th>
<th>Expected Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arunachal Pradesh</td>
<td>-</td>
<td>4.65</td>
</tr>
<tr>
<td>Assam</td>
<td>4.29</td>
<td>4.72</td>
</tr>
<tr>
<td>Bihar</td>
<td>5.62</td>
<td>5.90</td>
</tr>
<tr>
<td>Goa</td>
<td>8.07</td>
<td>6.62</td>
</tr>
<tr>
<td>Gujarat</td>
<td>4.94</td>
<td>5.26</td>
</tr>
<tr>
<td>Haryana</td>
<td>-</td>
<td>5.80</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------</td>
<td>------</td>
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<tr>
<td>Himachal Pradesh</td>
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<tr>
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<td>5.55</td>
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<tr>
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<td>5.72</td>
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<td>Manipur</td>
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<td>6.09</td>
</tr>
<tr>
<td>Meghalaya</td>
<td>-</td>
<td>4.63</td>
</tr>
<tr>
<td>Mizoram</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Nagaland</td>
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<td>6.68</td>
</tr>
<tr>
<td>Orissa</td>
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<tr>
<td>Punjab</td>
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<td>7.49</td>
</tr>
<tr>
<td>Rajasthan</td>
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<td>5.52</td>
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<tr>
<td>Sikkim</td>
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<td>3.32</td>
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<tr>
<td>Tamil Nadu</td>
<td>5.60</td>
<td>5.73</td>
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<td>Tripura</td>
<td>5.42</td>
<td>6.58</td>
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<td>Uttar Pradesh</td>
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<td>West Bengal</td>
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<td>5.31</td>
</tr>
<tr>
<td>Andaman and Nicobar Islands</td>
<td>2.76</td>
<td>2.63</td>
</tr>
<tr>
<td>Chandigarh</td>
<td>-</td>
<td>3.66</td>
</tr>
<tr>
<td>Dadar and Nagar Haveli</td>
<td>4.02</td>
<td>4.06</td>
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<tr>
<td>Dama and Diu</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Delhi</td>
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<td>4.29</td>
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<tr>
<td>Lakshdweep</td>
<td>-</td>
<td>5.08</td>
</tr>
<tr>
<td>Pondichery</td>
<td>6.86</td>
<td>6.34</td>
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<tr>
<td>All India</td>
<td>5.63</td>
<td>5.97</td>
</tr>
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</table>

Source: The data presented in all tables were compiled and calculated by the authors based on the data available from the 1961 to 1991 Censuses. For the period 2001 to 2021, the figures have been projected by the authors.
All States and Union Territories in India are in different stages of demographic transition in terms of fertility and mortality rates. States, like Kerala and Tamil Nadu are far ahead in the process compared with the BIMARU states (Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh) which are at lower levels of demographic development. Thus, the proportion of elderly persons is expected to differ among the states.

The trend of age-group distribution of the population in India is given in Table No. 1.13. It is observed from the table that the proportion of those in 0-14 (years) age group has been on the decline since 1981 (slow decline from 40 percent in 1971 to 38.7 in 1981 and then sharp decline to 29 percent in 2011 and projected to further decline to 25 percent in 2021). The proportion of those in the working age-group 15-59 years marginally increased from 56.1 percent in 1951 to 56.9 in 2001, then increased to 62.7 percent in 2011 (increase by 5 percent over 2001) and is projected to increase slightly to reach 64 percent in 2021 (increase by mere 1.3 percent over 2011, and by only 8 percent over 1951). The proportion of those in age-groups 60 years and above (i.e., the older people) shows an ever increasing trend since 1951. Their proportion increased very slowly from 5.5 percent 1951 to 6.7 percent in 1991 (increase by below 0.4 percent in a decade), then slightly faster reaching 8.2 percent in 2011 (increase by 0.8 percent over 2001) and is projected to be 10.7 percent in 2021 (increase by 2.5 percent over 2011). The broad trend of the total population in the country currently is that the proportion of those below 14 years is declining fast, of those in 15-59 age group is marginally rising but of those in age group 60 and above is rising faster.
### Table No. 1.13

Percent of Age-Distribution of Population by Broad Age-Groups, India since 1951

<table>
<thead>
<tr>
<th>Census</th>
<th>0-14 years</th>
<th>15-59 years</th>
<th>60 + and above</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951</td>
<td>38.4%</td>
<td>56.1%</td>
<td>5.5%</td>
<td>100.00</td>
</tr>
<tr>
<td>1961</td>
<td>41.1%</td>
<td>53.3%</td>
<td>5.6%</td>
<td>100.00</td>
</tr>
<tr>
<td>1971</td>
<td>42.0%</td>
<td>52.0%</td>
<td>6.0%</td>
<td>100.00</td>
</tr>
<tr>
<td>1981</td>
<td>39.7%</td>
<td>53.9%</td>
<td>6.4%</td>
<td>100.00</td>
</tr>
<tr>
<td>1991</td>
<td>37.6%</td>
<td>55.7%</td>
<td>6.7%</td>
<td>100.00</td>
</tr>
<tr>
<td>2001</td>
<td>35.3%</td>
<td>56.9%</td>
<td>7.4%</td>
<td>100.00</td>
</tr>
<tr>
<td>2011*</td>
<td>29.0%</td>
<td>62.7%</td>
<td>8.2%</td>
<td>100.00</td>
</tr>
<tr>
<td>2021*</td>
<td>25.1%</td>
<td>64.0%</td>
<td>10.7%</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Government of India (2011), Situation Analysis of the Elderly in India, 2001, Figure 1, p.4

* Projected figures.

### Theories of Ageing:

Ageing has multiple dimensions. Usually the chronological and the physiological aspects are referred to. The other dimensions that need to be considered are psychological, social, cultural and economic. It has been suggested that the emotional and spiritual aspects should not be neglected. Ageing is a natural and irreversible process of human life. It is not a disease, nor a disintegrative force. It is this assumption that enables us to consider the idea of active ageing. It would also mean that the theory of disengagement - Vanaprastha and Sanyasa are also related to this theory - need to be overlooked. The theory of changing role and status needs to be reinterpreted to provide a basis for active ageing.

The Biological theories themselves, a distinction is often drawn between the genetic and non-genetic theories of aging (Shock, 1977). For the genetic theories the
basic premise is that the life span of an organism is determined by the information in
the D.N.A. molecules of the genes. This information it is believed is transferred from
the D.N.A. molecules through different steps, to form proteins, which are necessary
for the continued functioning of specific cells in the organism. The D.N.A. Damage
Theory’ of Watson (1969), the Somatic Mutation Theory of Curtis (1966), and the
‘Error Theory of Aging’ of Medvedev (1964) are some of the well-known genetic
theories.

The non genetic theories emphasize the changes with time in the cellular
proteins after their formation. According to these theories, with time, changes occur in
the molecules and in the structural elements of cells, and these adversely affect their
effectiveness. The ‘Wear and Tear Theory’ of Sacher (1966), the ‘Accumulation
Theory’ of Carrel and Ebeling (1923), and the ‘Cross Linking Theory’ of Bjorksten
(1968) are examples of widely known non genetic cellular theories.

**Disengagement Theory:**

This theory is inspired by the functional perspective. The theory of
disengagement was developed by Elaine Cumming and William Henry (1961). The
scholars developed this theory while conducting a study in Kansas city (U.S.A) The
study is based on two samples of men and women aged between 50 and 70 years, and
another of those aged over 70 years. The study was directed to find out the
disengagement between individual and society. The significant propositions outlined
in the disengagement theory are.

1. There is a process of mutual withdrawal between aging individuals and the
   society from each other.
2. This process of withdrawal is inevitable
3. It is a process which is necessary for “successful” ageing.
The disengagement theory surmises that all people die eventually, but it is necessary for society's institutions to survive in order to maintain social stability and cohesive social functioning. It follows then, that it is necessary to have an orderly method of transferring power from the older members of the society to the younger.

The disengagement theory supports the idea that society benefits from phasing out individuals whose deaths would have otherwise disrupted the smooth functioning of the social order if they are allowed to work until their death. The process of phasing out older persons from the mainstream of work becomes institutionalized, as stable and routine norms are developed to indicate what category of individuals should be disengaged. Accordingly, societies develop norms requiring individuals to retire from work at a certain age, followed by a rite of passage. For example, retirement ceremony often marks the occasion to bid goodbye to personnel who have reached the age of superannuation. The individual and society thus become ready to loosen their ties. The required individual and the society develop a new equilibrium. This process mutually benefits both.

Disengagement may be initiated either by the individual or by society through such mechanisms as age grading and industrial retirement policies. The probability of disengagement considerably increases if both the society and the individual are prepared. Cumming and Henry maintain that individuals themselves select the stage when to withdraw from certain social roles when they become old. The more roles an older person withdraws from the less the person is bound by society's norms. The disengaged person is thus able to play a specific social role as a retiree, which then allows him to become increasingly more interested and more preoccupied with personal interests due to the tree time at his disposal. After disengagement, an elderly person has more freedom and free time to pursue his interests. There are some
significant weaknesses in this theory. Atchley (1977) points out that social disengagement do not seem to occur in all social institutions, such as, for example political institutions.

**Activity Theory:**

The Activity Theory developed by Robert Havighurst (1963) is primarily an action theory for successful ageing. It consists of three basic ideas:

- Those, the majority of normally ageing persons maintain a fairly constant level of activities.
- That the amount of engagement or disengagement is influenced by pre-retirement style and socio-economic status rather than by intrinsic and inevitable processes.
- It is necessary to maintain and develop substantial levels of social, physical and mental activity if the ageing experience is to be successful.

The activity theory is an approach to understand the social behaviors of the elderly in terms of how successfully they are able to integrate themselves into society. Successful ageing consists of being or behaving as much as possible like a middle aged person. This theory has been supported by many eminent scholars. For example, in a longitudinal study of Duke University carried out over a period of ten years, Erdaman Palmore (1968, 1969) found that generally older men tended to show almost no overall reduction in their activities or in the levels of life satisfaction. Further, Palmore noted that retired persons who were relatively healthy were better integrated and active than those who were less healthy. His argument was that disengagement among the elderly was not an inevitable product of ageing. It was also found that social and physical activity was significantly related to high morale and high levels of
life satisfaction. The more active a person was, the more likely he was to be happy. Palmore has concluded that continued engagement rather than disengagement was typical of a normal healthy older person. If disengagement occurred among these elderly persons, it was usually only just prior to death.

Thus the activity theory essentially stresses that a majority of the retired persons do not disengage themselves from the society when they become old. When they retire from their occupational role, they compensate its loss by engaging in some other type of fruitful activity which provides satisfaction. Bernice Neugarten’s (1971) study also proves this fact. However, the activity theory suffers from two basic inadequacies.

- Though it rests on the assumption that older persons judge themselves according to the norms common to middle aged activity and behaviors.
- It does not explain what happens to those older persons who cannot, for physical, mental or socio-economic reasons maintain a middle aged standard of living regardless of how they judge themselves.

**Continuity Theory**

The view that in ageing people are inclined to maintain, as much as they can, the same habits, personalities, and styles of life that they have developed in earlier years. Continuity theory is Atchley’s theory that individuals, in later life, make adaptations to enable them to gain a sense of continuity between the past and the present, and the theory implies that this sense of continuity helps to contribute to well-being in later life. Disengagement theory, activity theory and continuity theory are social theories about ageing, though all may be products of their era rather than a valid, universal theory.
In the preceding chapter, the preliminary part of the introduction deals with the concept of ageing, definitions of ageing, four aspects of ageing, meaning and definitions of health, dimensions of health, determinants of health, health challenges of elderly, concept and definitions of morbidity, health and morbidity, how to find morbidity, problems of elderly used in the present study. Global ageing: world population, ageing-world perspective, developed and developing countries, global trends of population ageing, population ageing in India, age structure of the population, and theories pertaining to the morbidity profile of the elderly.