International Journal of Basic and Applied Biology
p-ISSN: 2394-5820, e-ISSN: 2349-2539, Volume 5, Issue 2; April-June, 2018, pp. 91-96

http://www.krishisanskriti.org/Publication.html

A Study on Morbidity in Indian Elderly

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Abstract—*This paper describes the morbidity of elderly in India. The aim of this paper is to identify such geriatric health problems and explore the urban-rural and gender difference in morbidity. In a country where 8.6% of the individuals in a 1.3 billion population comprise of the elderly, there are a number of socio-economic problems that India faces. The demographic transition is attributed to the decreasing fertility and mortality rates due to the availability of better health care services.[1] Due to the rise of such issues, it is essential that these problems be discussed and timely initiative be taken to curb them.*

Keywords*: Geriatrics, Morbidity in Elderly, Elderly Widows in India, Socio-economic problems of Ageing.*

MATERIALS AND METHODS

The initial process of this study was carried out by interacting with many people who are working in this field as specialized doctors, social workers as well as many elderly people. We have also got valuable suggestion and inputs from various stakes holders working in this field like Dr. O. P. Sharma, General Secretary, Geriatric Society of India. Dr. Prasun Chatterjee, Geriatrician at AIIMS Delhi, President of Healthy Ageing.

For the purpose of this study, several old age homes were visited. Data was collected through questionnaires having details about daily life, problems faced in today's day and age and preventive measures, they undertake if any.

There were meetings with other reputed doctors in the field including All the primary and secondary data collected was analyzed statistically and conclusion was drawn which is discussed in the paper.

1. INTRODUCTION

A. GLOBAL AGEING

In the census conducted in 2017, there was an estimated 962 million people aged 60 or above in the world today. These individuals comprise the group known as the 'elderly' and form 13 percent of the global population. The projected rise of this number is rapid - 1.4 billion in 2030 and 3.1 billion in 2100.

B. INDIAN AGEING

The Indian population has increased to 1.21 billion in 2011 with proportion of persons aged 60 and above making 9% of the total population which is likely to increase to 19% in 2050. Furthermore, the percentage of Indian population aged 80 plus is projected to reach 3% of total population in 2050. As per the Welfare of Parents and Senior Citizens Act, 'senior citizen' or 'elderly' are defined as a citizen of India who has attained the age of 60. The percentage of elderly is expected to increase by threefold by the year 2050. The question that faces the nation today is why it is essential to look at these statistics and analyze this issue.

First of all, it is imperative to understand that India has faced a major demographic transition since the 1950's from a high birth rate and low death rate to both a low death rate and low birth rate. This transition occurred simultaneously with the industrialization and development of the nation and has caused significant socio-economic problems that must be addressed.

The Indian demographic trends exhibit that the dependency ratio of the aged population over the productive population (ages 15 to 60) has increased. Furthermore, there is an increased concentration of illiterate women above the age of 70 in rural as well as urban areas. Through the course of this paper, these issues will be duly elaborated upon. The social implications of this ageing population arose due to a surge in migration from rural to urban areas and a decrease in family sizes. In the earlier prevalent joint family system in India, the elderly lived with their children and grandchildren and were taken care of. However, as migration occurred, the ubiquity of this social construct underwent drastic decrease that in turn led to social disintegration. Furthermore, since a majority of the elderly people are poor and are employed in the informal sector, they have to continue to work beyond the age of 60 in order to earn a living and are not provided security by the government.

India's health programs and policies have focussed on stabilization of population, decreasing infant as well as maternal mortality, and decreasing the spread of communicable diseases. However, current statistics indicate that there is a pressing need to curb the issues faced by the

elderly due to the impending socio-economic and medical problems that may arise if timely action is not taken.

Growth of elderly population vis-a-vis general population can be seen by the census data of Indian Government (Census in India is done every 10 years and it is a massive exercise)

Period	General Population (% change)	Elderly population (% change)
1951-1961	21.6	23.9
1961-1971	24.8	33.7
1971-1981	24.7	33.0
1981-1991	23.9	29.7
1991-2001	21.5	25.2
2001-2011	17.7	35.5

The decadal growth rate of elderly population is almost double over the past decade.

This statistic exhibits the dire need to help the elderly and why the issue of subpar care could potentially hinder the development of India.

2. SOCIO-ECONOMIC PROBLEMS OF AGEING

The care of the elderly necessitates addressing several social issues. As the percentage of the elderly population grows, the need for holistic care tends to grow.

The needs of the elderly vary significantly depending on their age, social status as well as economic background and health.

C. INADEQUACY OF INFRASTRUCTURE

Coupled with increasing longevity is the increase in chronic diseases. The rapid increase in the elderly population of India is putting pressure on the resources and hence raising concern for the Indian Government. There are limited geriatric care services in the country and unawareness of the required care. There is a lack of emphasis on geriatric care and few services are dedicated to it. This issue is exacerbated in rural areas since there is no attempt to reach out and hence the chronic diseases and illnesses are left unattended leading to tremendous suffering and eventually death.

D. LACK OF AFFORDABLE AND ACCESSIBLE MEDICAL CARE

A multitude of practicing physicians in India is unaware of the intricacies of geriatric medicine. Most hospitals do not have a specialised geriatric care unit and geriatrics courses are not offered at a majority of the universities in the countries. Furthermore, most of the established day care centres or old age homes are urban based, which neglects the rural areas. The lack of mobility, social services and proper affordable healthcare cause the elderly in rural areas to turn to 'quacks' that prescribe steroids to alleviate pain but fail to treat the illness or injury. Coupled with these health issues, the elderly also experience depression and dementia due to social isolation and lack of engagement.

E. DYNAMIC FAMILY STRUCTURE

In traditional India, the culture and norms dictated to give utmost care and respect to the elderly residing in the house. There existed joint families and this propagated strong values and connect between the family members. However, with the advent of industrialization and modernization, most Indian migrated from rural areas to the cities in order to find new job opportunities. Due to social and financial restrictions as well as the influence of the west, nuclear family set-ups became prevalent. This led to the elderly being left behind in the villages or being stranded by the families and in turn causing less emotional, social and physical security for the elderly.

F. ECONOMIC DEPENDENCY

The elderly are financially dependent and hence become a liability for their family and the population. The culprit for this dependence is that they are vulnerable to several health issues and hence their productivity levels decrease; they can no longer work. This puts monetary pressure on the family and hence there has been an increasing number of cases in which the elderly are thrown out of the house or abused. Furthermore, the elderly do not receive the pension or receive insufficient pension to cover their medical expenses and living cost. Insurance also does not cover pre-existing illnesses causing the elderly to be in dire need of money and care which they, in most cases, fail to achieve. Insufficient housing, breakdown of joint families and need for daily assistance has caused a rise in economic dependency among the elderly.

G. SKEWED SEX RATIO IN ELDERLY

Another interesting feature is the data of the sex ratio. The difference in sex ratio in general and elderly population which had first narrowed, but are now on the rise, causing a large gap between the number of males and females.

Sex Ratio (Number of females per 1000 males) in comparison with general population and elderly population indicates that females outlive their male counterparts in India.

Census year	General population	Elderly population
1951	946	1028
1961	941	1000
1971	930	938
1981	934	960
1991	927	930
2001	933	972
2011	943	1033

Age Specific Death Rate of Elderly Population by Sex and Residence in India, 2013
(Sample Registration System- Office of Registrar General)

(per 1000 persons)

Age group	Total	Male	Female	Rural	Urban
Young (upto 70 years)	48.1	53.4	42.9	50.9	40.6
Middle (70-80 yrs)	119.5	136.6	104.4	125.7	102.4
Old (80+)	327.8	356	204.4	341	291.4

In India, the problem with female longevity is the poor social treatment of widows due to certain religious misinterpretation in Hindus. The number of widows in India was 35 million in the 2001 Census out of which nearly 50% are elderly. One of the Hindu texts, Skanda Purana, mentions that 'widows as more inauspicious than all other inauspicious things'. Though there is modernization in the society, the socio-cultural status of widows remains the same.

In Vrindavan- a religious town near Mathura- a large number of widows that are abandoned by their families are living in very poor pitiable and pathetic condition as their age progresses, survival becomes harder. Despite efforts and schemes of the government, there is a lack of awareness among such women causing them to stay in the same destitute condition throughout their lives.

More generically, the skewed ratio that is biased towards women is also an economic problem. India has been a highly patriarchal society and most women are financially dependent on their husbands. Due to financial dependence, there is no one to support the woman once she becomes a widow; furthermore, she is also more prone to mental illnesses such as dementia and depression due to isolation and lack of proper care.

3. MEDICAL PROBLEMS DUE TO AGEING

The following statistics accurately represents the proportion of elderly that are affected by various chronic diseases and disabilities.

Number of Elderly Persons Reporting a Chronic Disease
(National Sample Survey 2004)

(per 1000 persons)

Type of disease	Rural	Urban		
	Males	Females	Males	Females
Whooping Cough	8	6	4	2
Ulcer	37	54	30	24
Joint problem	30	40	26	45
Hypertension	23	53	50	59
Heart	95	59	165	162
Urinary	78	28	89	33
Diabetes	30	52	68	36
Cancer	18	36	25	25

Population Census 2011 data reveals that Locomotors disability and Visual Disability are the most prevalent disabilities among elderly people. Almost half of the elderly disabled population was reported to be suffering from these two types of disabilities.

Number of disabled per 100,000 - Different disabilities

Place	Type of disability							
	Visual	Speech	Hearing	Locomotors	Mental Retardation	Mental Illness	Any other	Multiple Disability
Rural	1467	182	1043	1425	86	86	595	708
Urban	931	230	844	1029	89	93	580	386

For the purpose of analysis of morbidity in elderly, it has been proposed to classify the elderly population in following 3 categories:

The elderly population (more than 60 year's age) can be classified in following groups:

a) Young - up to 70 years
b) Middle - 70-80 years
c) Old - more than 80 years

Young elderly are mostly physically fit and gainfully employed. Even though retirement age is 60 years, individuals in this category are fit due to improved health systems and hence can continue to work.

Middle elderly are generally no longer employed and require assistance in day to day activities (Activities of Daily Living). They are more vulnerable to diseases and illnesses.

Age Wise Distribution of Elderly Population (2011 Census)
(In percentage of total population)

Age (in years)	Total			Rural	Urban
	Person	Female	Male		
60-70	5.3	5.5	5.1	5.5	5.0
70-80	2.4	2.4	2.2	2.5	2.4
80+	0.9	1.0	0.8	0.9	0.9
Total Elderly	8.6	8.9	8.1	8.9	8.3

Old elderly are mostly confined to bed as multiple disabilities set in. They require medical care at home or in a care facility.

The basic functions of immunity such as defense, maintenance of homeostasis tend to wear out as age advances. This decline causes the elderly to be more prone to diseases and illnesses.

The top diseases in causing morbidity in the elderly include stroke, ischemic heart disease and pulmonary diseases like asthma and pneumonia.

The ageing process is not the same for all individuals as myths suggest. It is also false that all elderly people are incompetent and incapable of making their own decisions. In fact, individuals become more and more dissimilar as they age.

The physical changes that occur in the body are generally gradual; however, the rate of these changes may differ in different people. The changes are divided in many categories. Some of which are as follows:

A. CARDIAC

Cardiac changes are those pertaining to the heart. The heart has a tremendous ability to adapt however, due to the presence of significant risk factors such as obesity, hypercholesterolemia (excessive cholesterol) and smoking. Due to these risk factors, cardiac diseases become prevalent. In fact, ischemic heart disease is one of the top killers of the elderly in India today. The elderly are more prone to clots and problems of high blood pressure as well.

B. RESPIRATORY

The respiratory muscles become weaker and the lung capacity of the individual reduces significantly. The rib cage hardens and the alveolar lining of the lungs becomes thinner making individuals more susceptible to diseases and causing difficulty in breathing. Furthermore, due to deterioration in air quality and pollution, the risk increases exponentially and pulmonary diseases have now become the prime cause of death in the elderly. Such diseases include bronchitis, pneumonia and asthma.

The following statistic shows the increased prevalence and susceptibility toward asthma in the elderly population.

Prevalence of Asthma

Characteristics Age Group	Self reported	Number	Symptom based	Number
18-29	1.2	1,604	1.7	1,604
30-39	1.9	1,655	3.7	1,655
40-49	3.9	1,406	7.0	1,406
50-59	5.3	2,939	8.6	2,938
60-69	8.5	2,234	12.6	2,234
70-79	10.5	1,057	14.4	1,056
80	7.8	328	12.7	328
Sex-Aged50 plus				
Male	9.0	3,303	13.1	3,301
Female	5.4	3,255	8.7	3,255

C. RENAL AND URINARY

The kidney and bladder become less efficient. The capacity of the bladder to hold urine also significantly decreases due to weaker muscles leading to incontinence in the elderly. Along with this, the renal blood flow decreases as age progresses.

D. HORMONAL

Conditions such as hypothyroidism, diabetes mellitus and osteoporosis are common in the ageing population in India. These diseases are caused due to the decreased production of certain hormones namely thyroid stimulating hormone, insulin, and estrogen. The secretion of other hormones such as the growth hormone also decreases. Due to these changes, the metabolic rate and the glucose tolerance of the individual decrease considerably. Hormonal changes also make the elderly prone to insomnia and fatigue.

E. GASTRO-INTESTINAL

With the increase in age, the metabolism of the individual decreases. Fewer digestive juices are produced and the muscle action (peristalsis) decreases. Gastrointestinal problems such as indigestion, acidity, constipation and decreased sense of taste are exceptionally common and are generally indicators of other illnesses.

F. NEUROLOGICAL

As individuals age, their brain and cord lose nerve cells and hence are unable to relay messages or conduct impulses as quickly as they did when the individual was younger. Furthermore, there is a buildup of waste materials such as lipofuscin, a fatty brown pigment that is known to be lead to Alzheimer ’s disease; this disease presents with symptoms of dementia and severe memory loss. However, the most common killer due to neurological changes with age is stroke. Stroke is caused primarily due to lack of sufficient blood supply to the brain and it is extremely common in elderly.

Prevalence of Stroke

Characteristics	Self reported	Number	Currently treated	Number
Age Group				
18-29	0.7	1,604	0.8	4
30-39	0.8	1,655	9.3	9
40-49	0.7	1406	27.3	11
50-59	1.5	2,939	45.6	44
60-69	2.3	2,233	26.2	59
70-79	2.5	1,057	51.5	35
80	3.5	328	12.8	9
Sex -Aged 50 plus				
Male	2.2	3,302	44.1	90
Female	1.7	3,255	28.0	57

To summarize the aforementioned problems, the following statistic represents the percentage of individuals affected by various diseases.

Distribution of Age pattern of Morbidity in Urban Elderly population

Morbidity	Age group of elderly people in India		
	60-69	70-79	80+
Lung disease	15.6	55.2	1.6
Diabetes	25.5	24.1	2.1
Depression	42.2	10.3	1.8
Hypertension	25.4	26.7	3.2
Cataracts	31.9	33.2	6.6
Arthritis	28	20.4	3.2
Stroke	41.5	30.4	0.2
Angina	30.1	30.8	2.5
Asthma	41.1	22.8	3.1
Oral	30.2	23.3	6

4. AGEING RELATED PROGRAMMES AND POLICIES IN INDIA

The United Nations Principles for the elderly, adopted in the 74th plenary meeting in 1991, are independence, proclamation, self-fulfillment and dignity. In further meetings, the Madrid International Plan of Active Action on Ageing was adopted. This plan called for a change of attitudes and policies in order to fulfill the requirements and potential of those ageing in the 21st century. The recommendations of this plan were a leap forward as it suggested development and advancement of health and well being by prioritizing the older individuals of our society.

In 2011, the Ministry of Health and Family Welfare initiated geriatric care policies and programmes in selected hospitals and rural health facilities. The National Programme for the Health Care for the Elderly (NPHCE) has been formulated based on UN Convention on the rights of Persons with Disabilities (UNCRPD) and National Policy on Older Persons (NPOP). The objective of the programme is healthy ageing with a focus on accessible affordable and high-quality long-term care and comprehensive and dedicated care services for an ageing population through preventive, curative and rehabilitation services for older adults. The policy focuses on widening the network of geriatric wards and training for supplying old age care.

Major policy initiative in India is Maintenance and Welfare of Parents and Senior Citizens Act 2007. This permits older people in India to make an application against not only their children but also any relative currently in possession of or slated to inherit their property, for support sufficient to permit them to live “a normal life”. Awareness is very low about this legislation with the current aged population.

The social problems of older adults are emerging issues in all regions of the world. Older adults struggle with social insecurity, vulnerability, and isolation. A major challenge is a support for older women. Because of higher survivorship and lower propensity to remarry, older women are more likely to live alone and in social isolation. They are the most vulnerable group in most societies.

5. CONCLUSION

The aforementioned statistics and data show that the overall morbidity among the Indian elderly is high, with non-communicable and degenerative diseases comprising the major burden of disease.

Contrary to stereotypes and myths, the elderly population are essential human resources. Even though they are financially dependent, they are exceptionally knowledgeable and should be given ample opportunity for healthy and respectful living.

Education and advocacy in preventive health strategies in the elderly has a large scope and would lead to decreased morbidity and an overall healthier population, which will have an ‘economically productive’ effect on the family as well as society. In order to accomplish this, there needs to be greater involvement from the youth and strong government backing for preventive health initiatives.

Another important factor that the population needs to be aware of is the presence of geriatric health centres around them and legal provisions for them.

Global recognition for geriatrics exists, however, this recognition came over a larger time span and slowly in India. Now, with the establishment of such centres, the people must

be aware of their presence; the best care is provided in these units because they are specialized to deal with cases concerning the elderly. Madras Medical College was the pioneer of starting the Department for Geriatrics in India.

In terms of legal aid, there are regulations in place to protect the elderly such as that Maintenance and Welfare of Parents and Senior Citizens Act 2007. Furthermore, there are also employment opportunities with lesser working hours. Such opportunities would enable them to feel a greater sense of purpose and belongingness to society as well as keep them occupied and active.

Since a majority of these help centres and old age homes are present in urban India, it is essential to connect to the rural sectors and bridge the gap. Such connectivity can be achieved with the improvement of infrastructure as well as through technology. Connectivity with Apps on smartphones can give help in medical emergencies despite the restraint of physical mobility.

An interesting Endeavour is the initiative to make the elderly teach the underprivileged children of society. This is a win-win situation because it provides the children with knowledge and actively engages the elderly as well while paying them for their services.

To conclude, there is great scope of improvement in India in the field of geriatric care as well as in infrastructural development that would enable the government to provide such care. Timely addressal of these issues and strict monitoring of implementation is needed to prevent any negative social or economic implications. The government and the youth need to make a collective effort in order for these endeavors (regarding geriatric care and preventive medicine) to succeed.

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