Innovation and Exclusions in Health Sector: A Study of Old Age Persons in Uttar Pradesh

THESIS

SUBMITTED TO

BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY
(A CENTRAL UNIVERSITY)
LUCKNOW

BABASAHEB
BHIMRAO
AMBEDKAR
UNIVERSITY

LUCKNOW

प्रज्ञा शील करुणा

ESTABLISHED 1996

FOR THE AWARD OF DEGREE OF

Doctor of Philosophy

IN

ECONOMICS

Under the Supervision of

PROF. NMP VERMA
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Dedicated To My Loving Dadi
Late Maya Devi
&
All Old Persons Who Deserve
for Healthy Life

DECLARATION

I declare that the thesis entitled "**Innovation and Exclusions in Health Sector: A Study of Old Age Persons in Uttar Pradesh**" submitted to Babasaheb Bhimrao Ambedkar University, (A Central University), Lucknow for the award of Doctor of Philosophy in Economics. It is my original work and it has not previously been produced for the award of any degree, diploma, fellowship or similar other titles anywhere.

This research study is carried out under the supervision of Prof. NMP Verma, Department of Economics, School for Ambedkar Studies (SAS), Babasaheb Bhimrao Ambedkar University (A Central University), Lucknow, Uttar Pradesh, India. This is also declare that the thesis is essentially free from all kinds of plagiarism.

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CERTIFICATE

This is to certify that the thesis titled "**Innovation and Exclusions in Health Sector: A Study of Old Age Persons in Uttar Pradesh**" submitted by Ms. Kanti Devi is an original research work and has not been previously submitted in part or full for the award of any other degree or diploma to this or any other university.

This thesis submitted to Babasaheb Bhimrao Ambedkar University, Lucknow satisfies all the requirements as stipulated in the Doctor of Philosophy (Ph.D.) regulations- 1999 as mentioned in 2013 and it is fit for submission and evaluation for the award of the degree of Doctor of Philosophy of the University.

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ACKNOWLEDGEMENT

In gratitude to one and only ultimate power "GOD"

I would like to express sincere thanks to my supervisor **Prof. NMP Verma**, Department of Economics, BBA University, Lucknow who has the attitude and substance of a genius. Without his guidance and persistent help this dissertation would have not been possible. His patient nature, timely advice, meticulous scrutiny and scientific approach have helped me to accomplish the task.

My heartfelt gratitude to Head of our Department, **Prof. Sanatan Nayak** for taking keen interest in my research work. His valuable suggestions and constant encouragement have enabled me to complete the thesis within the specified time frame. I express thanks to other faculty members **Dr. Surendra Meher**, **Dr. Devendra Kumar Yadav, Dr. L.C Mallaiah and Dr. Pranav Anand** for advising, motivating and supporting in myriad of ways.

A sincere thankyou note to **UGC**, New Delhi for giving financial support in the form of NET Fellowship. My research work wouldn't have been this much smooth without their support.

I would like to thank **Prof. Alpana Srivastava** who continuously supported me.

Special thanks to **Prof. Rajesh Kumar Chauhan** for his unconditional and continuous support.

Special thanks to **Nimisha Pande Ma'am** for her positive suggestions.

I would like to thank my **parents**, without their presence, I wouldn't have the instilled belief in me to take up such a big project specially my younger Brother **Gautam,** without

his support I never would be able to complete this work. I am beholden towards them for recognizing my sincere and ingrained attitude towards research work. Thank You.

Last but not the least are those people who been my lifeline throughout my work, "Friends". **Mr. Ravindra Sah, Ms. Parul, Ms. Pratinidhi, Ms. Deepanjali Das, Mr. Pawan Kumar Gupta Mr, Altaf Ahmed, Mr. Naveen, Mrs. Vandana Ahirwar, Ms. Soma Samantha, Ms. Pragya Sharma, , Ms. Priti Jha, Ms. Ruchi Bhalla, Ms. Alka Singh, Mr. Firdaus Malik, Mr. Suhail.** A genuine apology if any of the well-wishers are missed out. I am very grateful to each and every one who has been a motivating spirit in the course of my study.

I thank profusely all the staff of the University **Mr. Atul Sahu, Mr. Sachin Srivastava, Mr. Deepak** and **Ram Sagar** for their kind help and co-operation throughout my study period. Finally, a heartfelt thankyou to all the scholars, teachers, professors and non-academic personnel whose ideas have influenced me but have remained unintentionally unacknowledged.

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Date: 05/07/2021

Place: Lucknow

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LIST OF ABBREVIATION USED

AAY	Antyodaya Anna Yojana
AC IP	Annual Health Cost of In patients
AC OP	Annual Health Cost of Out Patients
APL	Above Poverty Line
AYUSH	Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy
BPL	Below Poverty Line
CD	Communicable Disease
CHC	Community Health Centers
Dis.	Disease
Dist.	District
GDMO	General Daily Medical Officers
GDP	Gross Domestic Products
GOI	Government of India
Govt. Hosp.	Government Hospital
HH	Households
Hosp.	Hospital
HWC-PSCs	Health and Wellness Centers-Primary Health Centers
HWC-SCCs	Health and Wellness Centers-Sub Centers
IGNOAPS	Indira Gandhi National Old Age Pension Scheme
IP	In Patients
JAS	Jan Aausadhi Stores
KGMO	King George Medical University
Km.	Kilo Meter
LEB	Life Expectancy at Birth
Lko. C B	Lucknow Cantonment Board
Lko. M Corp	Lucknow Municipal Corporation
Max	Maximum
MBBS	Bachelor of Medicine and Bachelor of Surgery
Min	Minimum
NCD	Non communicable Disease
NGOs	Non- Governmental Organizations
NP	Nagar Palika

NPHCE	National Program for Health Care of Elderly
NPOP	The National Policy on Old People
OBC	Other Backward Class
OP	Out Patients
PCA	Primary Census Abstract
PDS	Public Distribution System
PHC	Primary Health Centers
PMBJP	Pradhan Mantri Bhartiya Jan Aausadhi Pariyojna
Pvt. Hosp	Private hospital
R&D	Research and Development
RHS	Rural Health Survey
SC	Schedule Castes
SCs	Sub Centers
SD	Standard Deviation
SGPGI	Sanjaya Gandhi Post Graduate Institute of Medical Sciences
SRS	Sample Registration System
WHO	World Health Organization

Chapter 1
Introduction

CHAPTER 1

INTRODUCTION

1.0 Introduction

Health is not only the basic requisite for everyone. It is also the key factor in determining an elevated and evolved form of quality living. Moreover, healthy individuals only can be an enriched human capital that a nation relies upon for its wealth creation. Should the present generation be healthy, it will leave behind a legacy of physically strong and mentally agile individuals in future. Hence, the integral role of health in one's life and one's growth cannot be overstated. India has entire health care system run by the integral states and territories of India. The Constitution proclaims that every state must deem public health as its primary duty and that all states must partake of the responsibility to ensure that the state governments invest in apt resources to raise the levels of nutrition and the standard of living of the people residing in their states (MHRD, 2016). The National Health Policy was implemented by the Parliament of India in 1983 and updated in 2002. After independence, population kept increasing for 60 years and the population of the old age people became 3 times higher than that of the younger population. This implied that India registered an increase in the population of the elderly. The phase of elderly years, particularly, the period of septuagenarian, octogenarian and nonagenarian is often marred with health debilities. It is during these years that the elderly need constant health monitoring. Availability, accessibility and affordability of prompt health facilities to cater to the special needs of the old aged people are posing to be a huge challenge in the present era. Ironically, despite the revolutionary growth in medical science in the country, the accessibility to basic health amenities still continues to be a major debacle, particularly for the old.

Old people suffer from several kinds of diseases. There is an immense need of innovations in health sector to improve life style of elderly people. Even more imperative is to ensure that the elderly who are not financially empowered can benefit from those innovations. The large numbers elderly people have to rely on general government hospitals, primary health centres and on some charitable hospitals for medical treatment. The elderly have a special medical needs, yet in most of the hospitals a geriatric unit (a branch for old people) does not exist. Elderly people also find it difficult to afford expensive medical treatment.

The health scenario for the elderly in the country is beset with several problems and issues. However, other than the few studies underlining this cause, the grey population has not been given serious consideration. Their pangs and turmoil remain mute in the discussions and public debates on health which often negate the elderly. To obtain the benefits of demographic dividend, the focus is mainly on the children and the youth and fulfilment of their basic needs for proper development. The outdated Indian culture and the age-old combined family structure have been instrumental in safeguarding the social and economic security of the elderly people in the country (Joseph L. P., 2017; p.14). However, with the speedy changes in the social scenario and the emerging occurrence of nuclear family set-ups in India in recent years the elderly people are likely to be uncovered to emotional, physical and financial insecurity in the years to come. This has drawn the attention of the policy makers and administrators at central and state governments, voluntary organizations and civil society. A fast rise in the number of the elderly as well as their proportion in our population, has led us to being more conscious of the many social, economic, mental and health issues of the elderly in our country. Among the numerous tribulations that one faces in the advanced years of life, the health and medical

problems are usually measured to be significant as they affect a large number of the elderly. This is very vital to realize the health needs of the elderly and solicit their opinion in cultivating the present health care system in the country (Nigam K.K. and Sharma A., 2019; p. 425).

Health problems are supposed to be the major distress of a society as older people are more likely to suffer from ill health than younger age groups. It is often claimed that ageing is accompanied by multiple illnesses and physical ailments. The idea that old age is an age of ailments and physical weaknesses is deeply rooted in the Indian consciousness. People become increasingly prone to chronic diseases, physical disabilities and mental inabilities, as they grow older. There is not any surprise that health problems and medical care become major worries among a most of the elderly. Yet many of them hesitate in seeking medical aid due to various weaknesses. Some people refuse medical attention merely because they have never received such treatment as a rule. The basic purpose of this study is to show the gap between innovation and exclusions. That means when any innovation or technology is adopted by society, it reduces their problems because the main purpose of any innovation is reduce the problems of human being. Many people are not aware about these innovations because of lack of knowledge, education and money, and sometimes these innovations are costly so people cannot afford this. This study is based on health of old persons

National Programme of Health Care for the Elderly (NPHCE) was implemented by the Ministry of Health and Family Welfare in 2010. Although, this programme was implemented especially for the elderly people to improve their health but old people are excluded from these medical innovations and health programmes due to many problems.

1.1 International Scenario of Elderly Population

Alarm for wellbeing of the aged was first spoken in the developed countries which practiced the phenomenon of population ageing. This refers to the increase in the proportion of the elderly to total population due to declining birth and death rates, in the beginning of the twentieth century. More than 12 % of the population in developed countries, on an average, is above 60 years of age. The UNO characterizes populations whose coefficient of the aged is more than 7% as demographically aged, and the developed countries have already reached this phase.[1]

During the past few years world has witnessed a noticeable increase in the ageing population both in the developed countries as well as in the developing countries. The consequences of population ageing have led to declining mortality and most significantly, decreasing fertility. (Rajeev, M. M. and Ajikumar V.J. 2015; p. 2845). This procedure leads to a comparative decrease in the number of youngsters and a rise in the portion of people in the core employed ages and of older persons in the population (Enum Y. et al. 2019; p.5). The worldwide portion of elder people (aged 60 years or over) increased from 9.2 per cent in 1990 to 11.7 per cent in 2013 and will continue to grow as a share of the world population, attainment 21.1 per cent by 2050. Worldwide, the figure of elder persons (aged 60 years or over) is projected to be more than double, from 841 million people in 2013 to more than 2 billion in 2050. Older persons are expected to surpass the number of youngsters for the first time in 2047. Currently, about two thirds ageing population live in developing countries. Due to the older persons in less developed counties are increasing faster than in the more developed areas, the forecasts display that older persons will be

[1] UNO (1995): *Implications of Asia's Population Future for Older People in the Family,* Oxford

progressively focussed in the less developed regions of the world. (DESA, 2013; p. XII). It is expected that by 2050, about 8 in 10 of the world's ageing population will live in the less developed regions. Recently, China scrapped the *one child policy* to reverse the trend of ageing population and build a youthful demography.

1.2 Elderly People in India

Old Age is usually linked with declining abilities, both mental and physical, and a decrease in social obligations including participation in sports or any such rigorous activity. The precise onset of old age differs socially and traditionally. It is a social concept, rather than a biological stage. In India, the persons who have completed the age of sixty years and above, are defined as old persons for the purpose of getting benefits for their old age (Bhattacharjee R. 2017). According to many studies we have divided old age into three parts:

- Old age or elderly population – 60 to 69 years.
- Mature old age or mature elderly population -70 to 79 years.
- Very old age or very elderly population- 80 to 89 years.
- Oldest- Old- 90 years and above.

Twentieth century mapped the trend of increasing population of old age. As per the Census 2011, out of a total population of 1210 million, 103 million (8.6%) are above the age of 60 and 11 million are over 80 years of age. About 70 per cent, of the elderly live in rural areas. By 2050, while the population below 60 would increase by 20 per cent, that above 60 would increase by 300 per cent, and that above 80 by 500 per cent. In India, women at older ages have higher life expectancy than men. India is second most populous country after China in elderly population. Not only India but developed counties are also facing this situation. Ageing population is existing in all

the countries of the world. The Nutritional Deficiency data released in the Report of Global Development on Health shows that ageing starts from young age due to malnutrition in childhood. Due to malnutrition in their childhood, most people suffer from the problems of lower work productivity, higher diabetes, greater risk of heart diseases and high blood pressure in their old ages.

1.2.1 Health Status of Elderly People in India

The health status of elderly persons is in worse condition in India. As people grow old, their involvement in the physical activities is far less and their immune systems become weak. They get afflicted with several ailments. The most common ones that affect the aged include heart diseases, respiratory and digestive troubles, dental problems, diabetes, arthritis and dementia. Diseases are categorised into two parts, first is communicable diseases and second is non-communicable diseases.

Communicable disease are those diseases which are transmissible or infectious such as HIV/ AIDS, T.B., Malaria, Dengue, Viral fever, Diarrhoea and Flu etc. Non-communicable diseases are those diseases which are non transmissible chronic diseases such as heart disease, diabetes, cancer etc. In the case of the senior citizens, as the immune system weakens, they are often subjected to communicable diseases like flu or the viral infections. Recurrence of these infections further depletes their immunity and they start suffering from chronic disorders. Hence, the elderly need a health regimen to monitor their dietary needs as well as assess their fitness levels.

1.2.2 Common Diseases in Elderly People

There are several classes of health diseases that confront today's seniors, many of them are in chronic conditions that while at least ideally accomplished of viewing up

at an earlier age, are classically seen with the top occurrence in older patients. A majority of the elderly suffering from diseases like cough (cough includes tuberculosis of lungs, bronchitis, asthma, and whooping cough as per the International Classification of diseases), weak eyesight, anaemia and dental problems (Khatri N. and Kadian 1987). The share of the ill and the bedbound among the aged is found to be growing with progressing age (Sahoo H. and Mishra N R, 2011; p. 342). The major physical disabilities affecting at this age are often blindness and deafness (Sharma D. and Singh, 1987). Nearly two-thirds of the urban elderly in Gujarat were detected with the problem of low vision, hearing problem, arthritis and weak memory (Shah, 1993). As cited by the health experts, the diseases of the elderly are usually classified into the Physical and the Psychological health problems.

A. Physical Health Problems: these health problems take place due to unhealthy eating habits, growing age and pollution. These diseases affect body organs, these are:

1. **Cardiovascular Diseases**: it is related to heart diseases.
2. **Arthritis**: it is related to pain in the joints.
3. **Diabetes 2**: related to blood sugar and quantity of insulin in body.
4. **Cancer**: usually pancreatic, uterus, breast, lung and oral cancers are major maladies.
5. **Dental Problems:** it is very common in old age.

B. Psychological Health Problems: Depression and hypertension**,** these diseases arise in the elderly due to loneliness and insecurity.

The National Sample Survey of 1995-96 and 2004 have shown that the burden of diseases in old age is massive. Every old person is suffering from one, and sometimes more than one, chronic disease and disabilities are very frequent. Diseases add to the

fatigue of ageing muscles thus reducing one's ability to take on routine work for long and sustained hours.

1.2.3 Health Innovations for Elderly People:

Innovation means doing or finding something new. In the Health lexical, an innovation is the reference to providing people with new and affordable medical facilities that would make their life healthy and long. Department of International Development has enlisted a '*Directory of Innovations implemented in Health Sector'*. These innovations have also been implemented by the Ministry of Health and Family Welfare. A large number of innovations are being adopted by the States in India to enhance the reach of the programme. The inclusion of these innovations has had major benefits. The innovations introduced in this context include:

- **Medical Innovations:** These innovations are those which are invented by the medical science exclusively for the elderly such as inventing new drugs, medicines therapies and new technologies of treatment.

- **Innovations for Elderly by the Public or Private Sector -** These innovations are implemented by public or private heath institutions to improve the health of elderly, such as implementation of new health policies or programme for elderly people.

- **Government Programmes for Health of the Elderly People:** The National Programme for Health Care for the Elderly (NPHCE) and National Programme of Prevention of Cancer, Diabetes, Cardiovascular Diseases and Stroke Programme (NPCDCS) was executed by Ministry of Health and Family Welfare in 2010. The

objective of these programmes is to provide affordable health facilities to the elderly.

The basic objective of the NPHCE programme is to provide separate, specialized and comprehensive health care to the senior citizens at various levels of State health care delivery system including outreach services and to provide preventive curative and rehabilitative service in an integrated manner for the elderly in various government health facilities. This programme includes state level government hospitals, district hospitals, primary health centres, community health centres and sub centres.

The basic purposes of including these levels of health centres are:

- To provide education of healthy ageing,
- To provide geriatric-specific expert medical officers to check up,
- To provide outpatient department service to the elderly,
- To provide 10 bedded geriatric ward at district level,
- To provide 30 bedded geriatric ward at regional level hospital for elderly.

- **Private Sector's Innovation**-Private sectors innovations are implemented by private hospitals, private companies, etc. For example opening geriatric hospitals, Telemedicine, health care portals, etc.

- **Geriatric Hospitals**- Hospitals and medical institutions for the elderly are provided by private institutions. Example- the Astha Centre for Geriatric Medicine Lucknow, Uttar Pradesh, I. I. M. T. Medical College and Hospital.

- **Health Care Portals:**

Health care portals are online medical websites on which people get immediate medical facilities such as expert doctors, nurses, appointment with doctors, list of

thousands of doctors, etc. People get these facilities together on one single platform. Several companies provide this type of facilities. Examples are- *practo.com, lazoi.com, epsyclinic .com*.

Keeping in mind the references detailed above, three kinds of innovation can make health care better and cheaper:

- Change the ways *consumers* buy and use health care.
- Use technology *to* develop new products and treatments or otherwise improve care.
- Generate new *business models,* particularly those that involve the horizontal or vertical integration of separate health care organizations or activities.
- **Pradhan Mantri Bhartiya Jan Aushadhi Pariyojana Kendra (PMBJP):** Pradhan Mantri Bhartiya Jan Aushadhi Pariyojana Kendra was launched by the present Prime Minister of India, Shri Narendra Modi, in the year 2014 with the intent to ensure that quality medicines could be accessed at affordable prices by all in our country. The operation was started over the sale of generic medicines by exclusive openings namely Jan Aushadhi Medical Store in several districts of the country. In September 2015, the Jan Aushadhi Scheme was restored as *Pradhan Mantri Jan Aushadhi Yojna* (PMJAY). In November 2016, to give further motivation to the scheme, it was again renamed as "*Pradhan Mantri Bhartiya Jan Aushadhi Pariyojana*" (PMBJP). It was launched by the Department of Pharmaceuticals, Government of India. Pradhan Mantri Bhartiya Jan Aushadhi Pariyojana Kendra (PMBJPK) is committed to provide generic medicines at lesser prices but equal in value and

effectiveness as that of the expensive branded drugs. The Bureau of Pharma Public Sector Undertakings of India (BPPI) has been recognized under the Department of Pharmaceuticals, Govt. of India, with the funding of all the CPSUs for co-coordinating obtaining, source and promotion of generic drugs through Pradhan Mantri Bhartiya Jan Aushadhi Kendra.

1.2.4 Expenditure on Health of Elderly:

India is the second largest country of having older people aged over 65 years (70 million) after China. Though, the gross domestic product (GDP) spent on the health sector in India is only 3.7% associated to 11.9% of GDP spent in high-income countries. India also has a high portion of private health expenditure, at 72% of total health expenditure, of which 86% is covered of out-of-pocket health expenditure (Brinda E. M. 2014; p. 1). Public health expenditure on elderly in India is less than other developed countries. If we focus on the health expenditure on elderly in India, there are a scheme NPHCE for which it has approved that the Central government will bear 75% of the total budget and the share of State Government's contribution will be 25 % of the budget. A total amount of Rs. 1710.13 crore has been approved for 12th Five Year Plan for National Programme for Health Care of Elderly (NPHCE). Out of this, an amount of Rs. 1147.56 crore is reserved for actions planned to be commenced up to district level. An amount of Rs. 562.57 crore has been kept for tertiary level deeds. A distribution of Rs.150.00 crore has been made for the year 2013-14 out of which Rs. 50.00 crore tells to National Health Mission Non Communicable Diseases Flexi Pool for events up to district level and Rs.100.00 crore relates to Health Sector i.e. tertiary level activities (Operational Guidelines, NPHCE, 2011; p. 9).

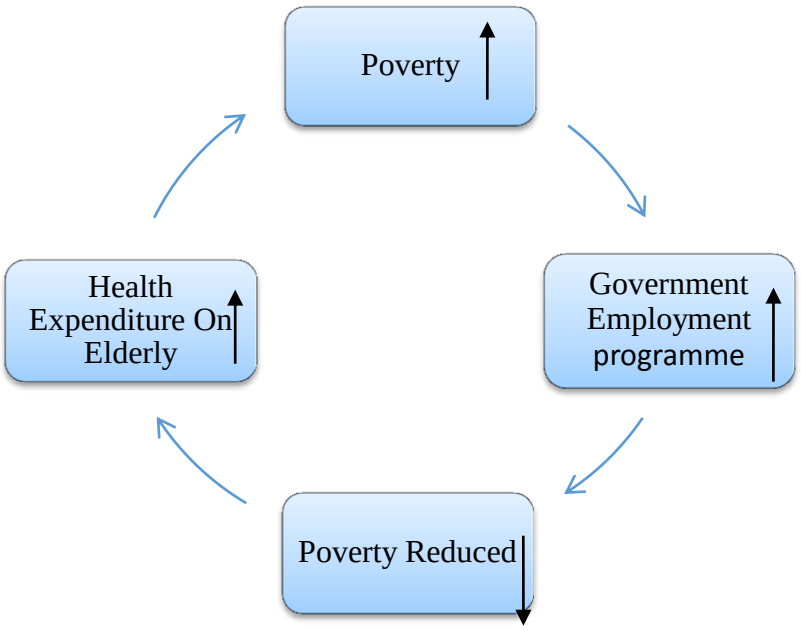
In the world public spending on health is lowest, according to World Health Organization's (WHO), World Health Statistics India ranked 184 among 191 countries in terms of public expenditure on health as a percent of GDP. In per capita expenditure on health India ranked 164 among 191 countries. This scenario calls for policy interventions to improve upon the status quo and ensure that all segments of our demography, particularly the elderly, are brought within the affordable means of health scaffolds.

1.2.5 Out of Pocket Health Expenditure

Out of pocket health expenditure is the expenditure on health which is directly paid by households without any insurance or government subsidy. It represents the reimbursable fees which a patient or family is responsible for paying directly on the health practitioners or suppliers, without interference of a third party. It often occurs when the publicly funded facilities are unable to provide their required health services and supplies for free or through insurance. India was ranked as having the 42nd highest average Out of Pocket Expenditure (OoPE), with 74.4% of private expenditure being paid as out of pocket (World Health Survey 2011).There is poverty among people in India due to unemployment and low income. More than 60 percent people work in the informal sector.

In India, due to the per capita income being low, most people cannot afford very costly medical treatments. The economically disadvantaged are left out of these facilities as they cannot bear the expenses. Experts believe that the elderly people are compelled to pay for costly treatment because they are not provided affordable primary health services by the government hospitals. In government hospitals, the outpatient service is often over-burgeoned and overburdened. It is a common norm to

see one doctor attending to as many as 100 patients in a day. Long queues and erratic schedules compound the misery of ailing elderly who visit these overcrowded hospitals for treatment. Due to insufficient primary health facilities, an ordinary ulcer can morph into cancer which would later entail costly treatment. The retiring years with limited financial means become a major deterrent for the elderly in seeking treatment at the right hour and their health deteriorates even more.



To reduce the poverty among households, the government has implemented employment programs so that the people get employment and their economic condition is improved. They can become economically empowered. But, should an old member of a family of an average income means falls sick and the family invests its resources in the treatment, there is a danger of family being pushed into poverty. This is the key reason for several elderly shying away from availing treatments because they start perceiving themselves as a liability for their family. Those who do undertake treatments often lose their financial reserves and are pushed into poverty. Thus the vicious trap of poverty gains a stronghold yet again.

1.3 Problem of Exclusion in Health Sector

To help the senior citizens with an environment that would assure them good health as well as secure means for recuperation and reprieve, it is important to examine the flaws that exist in both the public health sector and private health institutions which are unable to address the needs of the elderly despite several schemes. The major drawback of our society and economy is that the programmes and policies are implemented but people are not benefitted by these innovations as much as they should be. There are several reasons for exclusions in the society, these are:

- Poverty among the elderly.
- Lack of awareness about health programmes and facilities.
- Expensive and often unaffordable medical treatment and services.
- Low medical supplies.
- Dependency on others.
- Few avenues providing geriatric care training.

1.4 Review of Literature

The review of literature plays vital role in establishing the back – drop for any research work in social sciences. It is felt that the justification of the present study can be clarified by reviewing the available literature on the subject. Therefore an attempt has been made to review the available literature on the subjects to find out the gaps in research before finally selecting the present study's topic.

1.4.1. Increasing Aging Scenario in India and the World

Many authors have discussed the ageing scenario in India and these include: **Prakash, Chanana** and **Talwar, Irudaya Rajan, Shiva Raju,Moneer Alam** and **Suvalaxmi**

Chakrabati and **Asis Sarkar.** These authors have discussed different nuances in context of the health constraints, trials and tribulations that the old have to contend with. Their discussion on these aspects is given below:

Prakash (1999) in his paper has discussed about ageing in India. He described that India is geographically vast country and he said that reduction in fertility is the reason for live longer life span for any persons. For defining old age, he divided the life of persons into four stages. He also defined several implications for health, economic security, family life and well-being of peoples. He mentioned cardiovascular disease as a main reason of death of old age peoples. In 1996 the number of hypertensive among the elderly population was nearly 9 million. He discussed about immune system, mental health and cause of mental health changes in body and brain. Development and health in old age, Livelihood issues, Care of older persons, Family relations and social networks, Quality of life , Preparedness for death and Policies and services.

Chanana and Talwar (2000) in their paper have discussed about increasing elderly population in India and authors consider declining mortality and declining fertility as the major cause of increasing aging population in India. The main objective of this study is to focus on socio – economic and health implication of ageing. The authors focus on the growth rate of elderly population that is 38.5 percent in 1991-2001. They cite that this is more than double the rate of increase in general population. They found that the dependency ratio among elderly people is higher than non-productive population. He focused on sex ratio of elderly people that is comparatively higher than general sex ratio. He also focused on the issues like marital status among elderly and about literacy among elderly. He discussed about working and non-working elderly and he found that the majority of elderly workers were engaged in agriculture

sector because in this sector age of retirement is not decided. To discuss the health status of elderly, the study referred to the data on morbidity of NSSO 28th Round in 1973 and found that in the rural area more elderly were ill than urban area in that time. The study dwells on the various disabilities of the old age such as visual disability, hearing disability, locomotors disability and speech disability. Citing that the visual disability was more than others disabilities among the elderly. Authors conclude with this statement that elderly should consider as human resources and their experience should be used for national development.

Rajan (2006), in his paper population ageing and health in India. He told about ageing scenario in India. In India 2001 to 2050 he told that high fertility and low mortality are main reason of ageing. He found that female aged are more than male aged because several reasons, life expectancy rate of female is more than male he told about age pyramid which shows that number of old age population are increased over the years about marital status his views are living longer life than man because general tendency in our society that women marry with elder men than them .he mentioned in his paper living arrangement living elderly that means type of family in which elderly live. Authors claim that elderly males in age group 60 to 64 were heads of households as against women in both rural and urban households. Through dependency among the elderly he shows the level of poverty among the Indian elderly according to sex, place of residence and marital status by measure states he mentioned the health status of elderly .He mentioned 70 %elderly reported good health and also SC/ST health not much differences.

Raju S. (2006) discussed about the health and various issues of old aged people that is there are a large number of seniors in India lead strong, gracious, and satisfying lives. They work through the day or part-time. Many live off well-planned savings. They travel, increase acquaintance with computers and other empowering gadgets, and are secure as owners of their homes. But there are many more who retire without a pension, provident fund or modest savings. They lack access to even the most basic healthcare, and suffer abuse and neglect from the younger generation — and in many cases, the state. The situation is undesirable, and simply cannot be allowed to continue. The Agreement Creativity was born of a dream to touch the lives of each aged person in India, regardless of gender, class or region. The author suggests that the aim should be national movement to improve the quality of life of these senior citizens to ensure that society and government cannot ignore them any longer, and equally, spur them into greater self-reliance. The studies on ageing conducted so far may be broadly categorized as: Demography of ageing Attitudes and stereotyped perceptions, ageing differentials, ageing in specific locations, cross cultural comparisons of ageing.

Alam M. (2006), discussed in his paper the demographic scenario of selected South Asian countries like Pakistan, Bangladesh, India and Srilanka. He shows that the total fertility rate is declining in all the countries over the years 1950-60 to 2040-50. Population growth rate is also declining by 2.5 percent rate of growth but the life expectancy at birth is increasing all the countries, this leads to the ageing population in India.

Chakrabarti S. and Sarkar A. (2011), this study is based on the shifting outline of ageing population. These changes create unique opportunities along with significant challenges both for the economy and society. They shows that high fertility and high

mortality results low fertility and low mortality which results reduction in younger population and reduction in working population which leads to increasing ageing population and the demographic share is of a shorter duration for any country and ultimately the nation will move into an ageing of population. They focused in his paper on the economic, social and cultural problems faced by elderly people.They suggest in their paper that state should provide suitable, institutional and other economic support to address the socio -economic needs of elderly.

1.4.2. Health Status and Health Care of Elderly in India

In India old people suffering from many diseases like communicable and non communicable diseases. These authors Nishreen Alwan, Ingle K. And Nath A, Alam M., Karla S. And Balamurugan and Ramathirtham talking on this issue, their views are given below:

Alwan N. et al (2007) focused in their paper on the health status of elderly people. The main purpose of the study is to study the relationship between different deprivation indicators and both self-rated health and emergency admission rates of older people to define which indicators finest forecast the health of persons in this particular age group. This an ecological study using 100 neighbourhoods in Sheffield in 2004 and analysing relationships in three age groups 50-64, 65-74 and over 75 years. To analysis his data he use Pearson correlation coefficient. The result of the study showed that deprivation indicator that correlates best with the subjective health rating of people aged 75+ is educational qualification. He suggests that the educational attainment should be considered for use as a deprivation indicator when targeting health interventions at people aged 75 years and over.

Ingle K. And Nath A. (2008), in this paper main focus of author is defining medical problems of elderly people and strategies for improving health care facilities. He discussed that in India elderly people suffer from both communicable diseases and non communicable diseases, further he includes that decline in immunity is the main reason of communicable diseases. To conduct this study he used 60^{th} round data of NSSO. He suggests that geriatric centres should be established in primary and districts level hospitals.

Alam M. (2011), in this paper author provides a review of old-age health in India and its important extents including size, aetiology and the socioeconomic distribution of the sick and disabled that is the epidemiology of ageing to support in developing health-care programs for the ageing population in the country. He took the data from previous population censuses and the multiple rounds of surveys on health and disabilities conducted by the National Sample Survey Organisation (NSSO), this study analyses the severe illness issues with social backwardness, consumption and poverty as the core factors in the health outcomes of the older population. Author focussed on the anomalies in health data, particularly those relating to disabilities. The study claims that these differences may not only affect research on elderly health, it may challenge efforts to plan for old age healthcare services in the country as well as its funding mechanism.

Karla S. et al. (2011), in this paper author focused on the issue of increasing burden of diseases in old persons. He discussed that in India population of elderly people are increasing rapidly, this leads to the burden of diseases among elderly people because of this people suffering from various physical and mental ailments. He conducted his study in the Medical Out- Patient Department of Guru Teg Bahadur Hospital, Delhi. 200 people aged 60+ are included in this study. The study found in that there are high

occurrence of chronic obstructive pulmonic disease, hypertension, coronary artery disease, and depressive ailment in elderly person presence a large tertiary care hospital in East Delhi.

Balamurugan and Ramathirtham, (2012), focused in study about the health problem of aged peoples. The study explains to understand the health status of elderly people and to gather some evidence about their apparent health needs using the information and over of Puducherry district. His present study is descriptive in nature. Author made an attempt to define the condition and major health difficulties faced by the elderly from 213 aged populations of 60 years and above in three rural communities of Puducherry. The study found that the majority of the elderly, both male and female, are unhealthy and the major health problems faced by aged people include weak eye sight, hearing problem , joint pains, nervous disorders, weakness, heart complaints, asthma, tuberculosis, skin diseases, urinary problems and others. The women reported more health problems compared to men.

1.4.3. Innovations in Health Care System

Innovation in health care system plays an important role to improve quality of life of elderly. Innovation can affect to elderly positively or negatively. On this aspect authors discuss their views. **Dana P. Goldman, Regina E. Herzlinger,** and **Vincent K. Omachonu** these people discussed on same aspect:

Goldman D.P., (2005), in this paper author consider that how health innovation will affect the health status of elderly**.** He shows that the diseases and disability increasing among younger population then innovation in biomedicine positively affected health of younger persons, that is why person live longer which leads to ageing. Author developed a demographic model to predict costs and health status for elderly. To

analyse this issue author used future elderly model (FEM).author found that the improvement in health facilities motivate elderly to live longer.

Herzlinger R.E., (2006) the author discussed in this paper why innovation in health care is so hard, focused on the main problems to accept innovation in healthcare system. He focused in his study that all types of health problems need an innovative solution involving every aspect of health care such as delivery to consumers, technology and its business models. Three types of innovations he focused in his paper consumer focus innovation, technology focus innovation and business model innovation. He told six forces which can negatively affected to innovation in health care these are players, funding, policy, technology, customers, and accountability. He suggests that only legislation avoid the obstacles from health care innovation.

Omachonu V. K. (2010), in his article author focused on innovation in health care delivery system, he told that information technology is played an important role to enhance the innovation in healthcare system. He discussed in his paper that how innovation occurs in health care. The author define in his paper, that innovation is a new concept, knowledge, facility, procedure, or product aimed at improving treatment, diagnosis, education, outreach, avoidance and research, and through the extended period goals of cultivating excellence, security, results, productivity and charges. He discussed four types of innovations in his paper namely product innovation, process innovation, marketing innovation and organisational innovation. This study is based on empirical research inquiries. Result of this study is healthcare innovation can become a formal discipline that appeals to a multidisciplinary research audience.

1.4.4. Health Expenditure on Elderly (including Out of Pocket Expenditure) and Poverty

In India public health expenditure is less than out pocket health expenditure on elderly. On these aspect views of many authors like **Moneer Alam**, **Mohanty, FICCI**, and **Vikram Patel** are given below:

Alam M. et al (2009), in their paper author focused on the issue out of pocket health expenditure and increasing burden of diseases. To analyse this issue author used the data of National Commission on Macroeconomics and Health report and Health Surveys of India. Author found that out of pocket expenditure on health increases poverty among low income-households, elderly people and women.

Mohanty K. et al (2013), in this paper author discussed about per capita households health expending. Author focused on three types of households, households with only elderly members, households with elderly and non elderly members and households without elderly members .The objective of this study is to know the per capita health spending among elderly and non elderly households. In their paper author used 66th round data of NSSO during 2009-2010. Author used descriptive statistics and a two part model to understand the differentials in health expenditures across households. As a result author found that the monthly per capita health spending of households with only elderly members was 3.8 times higher than non elderly households.

FICCI (2014), the major focus of this paper is to discuss about global context of health care for elderly and public and private (including out of pocket) health expenditure of developed and developing countries. He discussed about the financial burden on families due to elderly heath expenditure. In this paper he discussed about health insurance and public expenditure on elderly health care. Author show the

health care system of financing elderly people of various developed and developing countries. Developed nations are US, UK, Germany, Japan and Singapore and developing nations are Brazil, China and India. In developing countries elderly care is self-funded while in developed countries elderly care is a part of government fund. Author found in their study that the expenditure of those households which have elderly members was more than households without elderly. This paper also finds that the proportion of public expenditure on health of elderly is less in India comparison to developed countries.

Patel V. et al (2015), in this article author focused on public health expenditure. Author says that a large proportion of population is suffering from poor quality of health facilities. People spend a large amount of their total spending on health because of this poverty increases among them. Author found that in India out of pocket expenditure is more than public expenditure on health. The author summing up that India needs to adopt a combined national health-care scheme made around a strong public primary care system with a clearly expressed helpful role for the private and native sectors.

1.5 Statement of the Problem

Due to low mortality and increasing life expectancy, the aging population in India is increasing day by day. As the aging population is increasing, health care challenges are also increasing due to age-specific diseases. Elderly people are not able to get health and other services according to their needs, as they are weaker sections of the society. Furthermore, due to health expenditure on the elderly, families face greater burden. Sometimes people have to sell their properties or borrow from other people due to health expenditure on elderly. They are not able to take full advantage of the

facilities provided by the government for their betterment, or they are not aware of the facilities so that they are excluded to take advantage. The study therefore focuses on health issues that are major crises for older individuals. The main objectives of the study are to focus health expenditure on elderly individuals and to identify the problem of inclusion and subsequent exclusion in implementing health innovations. Why are elderly people not able to adopt these innovations? This means that when any innovation or technology is adopted by the society, it reduces their problems because the main purpose of any innovation is to reduce the problems of human being. Many people are not aware of these innovations due to lack of knowledge, education and money, and sometimes these innovations are expensive, so people cannot afford it.

1.6 Research Gaps and Findings

After reviewing above literature we found following gap in these studies:

- There are little study in Uttar Pradesh on health of elderly based on innovations adoption.
- There are no studies on Lucknow District which specially focus on details of health expenditure on elderly and comparing with household income.
- There are no studies based on awareness about generic medicines.

1.7 Objectives of the Study

The proposed research study has following objectives to fulfil.

- To examine the ageing scenario of Uttar Pradesh.
- To examine the health status of elderly population.

- To examine the problem of exclusion in health sector which affect health of elderly
- To examine the health expenditure on elderly

1.8 Major Hypothesis

The study may test the following hypothesis:

- There is increasing scenario in ageing population and inadequate health facilities for elderly persons in Uttar Pradesh.
- There is problem of exclusions in health sector which negatively affected the health of elderly.
- There is problem of out of pocket expenditure among households due to health expenditure on elderly.

1.9 Methodology and Data Source

Research methodology is a way to systematically solve the research problem. With the help of this we can able to know that which analytical tools and methods should be used in the particular study.

This study shall be based on primary and secondary data.

1.9.1 The Secondary Data

Secondary has been collected from various sources. Secondary data would mainly comprise of articles from leading journals related to elderly people such as Indian Journal of Gerontology, magazines and newspaper articles, government sites of the countries, report books, monographs, data of various round of National Sample Survey, data from United Nation Population Fund (UNFPA), Sample Registration System (SRS) Data, Annual Health Survey (AHS), Census data of 2001 and 2011,

Union and State budget, Ministry of Statistics. The data has been analysed by using various tables and charts etc. Variables has been identified and properly explained.

1.9.2 Primary Data

Primary data has been collected through structured questionnaire. A sum of 240 households has been collected from Lucknow district of Uttar Pradesh.

Demographic Profile of Lucknow

District Lucknow ranks 5th in terms of population in the state and 6 rank in highest number of aging population. Lucknow has 359386 number of total ageing population which is 7.8 percent of its total population. In the district 128194 old persons lives in rural areas while 231192 old person live in urban area. The urban population has a percentage share of in the district is 66.2 as against 22.3 of the population in urban areas of the state (Series 10, PCA, 2011) Lucknow district ranks 6th in literacy with 77.3 percent which is higher than state average 67.7 percent.

Lucknow has 4 sub-districts (Tehsils) namely Malihabad, Lucknow, Bakshi ka Talab and Mohan Lal Ganj. Each sub districts has certain number of towns, Lucknow sub-district has 5 towns which highest in number. Bakshi ka Talab and Mohanlal Ganj each has 3 towns and Malihabad has only one town.

1.9.3 Reason and Selection Criteria of the Study Area

We select Lucknow purposefully. We are taking only urban area of Lucknow because of requirement of data. Lucknow district is the capital city of Uttar Pradesh, so this is assumed that all health facilities and programmes implemented from here. So, to check the health status of old persons of capital city Lucknow is selected purposefully. We select two tehsils on the basis of availability of allopathic hospitals

on per population. Thus we found that Lucknow and Bakshi ka Talab tehsils have highest burden of population according to hospital availability. Further we follow same method to select towns, we select total four towns which have highest burden namely Kakori Lucknow M.Corp and Lucknow from Lucknow Sub districts and Bakshi ka Talab NP from Bakshi ka Talab sub-districts. Further we select the two wards from each town on the basis of highest number of population. See the table 1.2 for the detail.

The below table 1.1 is showing the dependency of ageing population on the hospitals, so we can see that the ageing population of Bakshi ka Talab NP (49166) has highest dependency on hospitals followed by Lucknow Municipal Corporation (45437.18), Lucknow Cantonment Board (31501.5) and Kakori Nagar Palika (19403). So on this basis we chose four above mention Towns as study area.

Table 1.1 Town wise Population Burden on Hospitals and Beds

No	Town Name	Total Population	Total Allopathic hospitals (in numbers)	Total bed in allopathic Hosp. in numbers	Total doctors in Allopathic Hosp. in numbers	Hosp. per Population	Beds per Population	Doctors per Population
1	Malihabad NP	17818	1	30	8	17818	593.9333	2227.25
2	**Lucknow M.Corp**	**2817105**	**62**	**1500**	**113**	**45437.18**	**1878.07**	**24930.13**
3	**Lucknow CB**	**63003**	**2**	**800**	**17**	**31501.5**	**78.75**	**3706.059**
4	**Kakori NP**	**19403**	**1**	**20**	**3**	**19403**	**970.15**	**6467.667**
5	Kalli Pashchim CT	12157	0	0	0	0	0	0
6	Sarsawan CT	10655	0	0	0	0	0	0
7	**Bakshi ka Talab NP**	**49166**	**1**	**28**	**11**	**49166**	**1755.92**	**4469.636**
8	Mahona NP	8857	1	5	0	8857	1771.4	0
9	Itounja NP	7305	1	30	8	7305	243.5	913.125
10	Goasiganj NP	9649	0	0	0	0	0	0
11	Amethi NP	13530	0	0	0	0	0	0
12	NagramNP	10644	1	5	2	10644	2128.8	5322

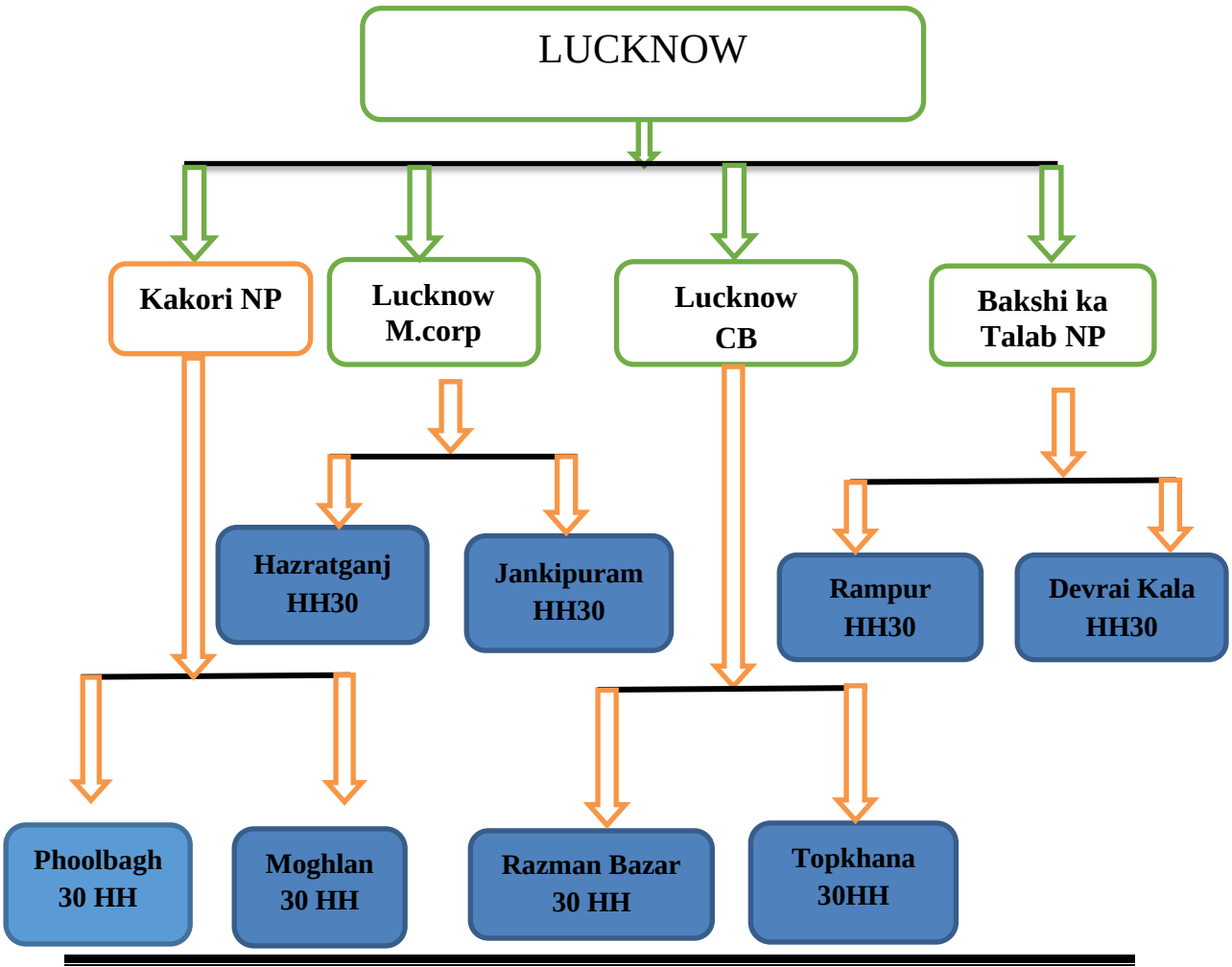
Source: PCA data of census 2011

1.9.4 Sample Design

Town (First Stage): first stage is Town, we have selected total 4 towns, Kakori NP, Lucknow Municipal Corporation, Lucknow Cantonment Board and Bakshi ka Talab NP, by using stratified sampling.

Wards (Second Stage): After selection of town further we select sampling unit wards, two wards from each town by using simple random sampling. Thus we select total 8 sampling units (wards).

Households (Third stage): After selection of sampling unit (wards,) from each sampling unit we select only those households which has at least one or more than one elderly person by using quota sampling. Total 30 households are to be taken from each wards.



1.9.5 Research Techniques and Tools

To analysis of data MS Excel, CS Pro, SPSS, and Stata, software are used in this study. Descriptive statistics like mean, standard deviation, minimum, maximum and skewness etc. has been used in this study. For graphical presentation of data Bar Diagram, Pie Chart and various tables has been used in this study.

1.10 Significance of the Study

This study is focus on the health problem of old person, after knowing the health problems of elderly we can solve them accordingly. This way we can provide them a better, active and healthy life. We can provide them affordable and better health facilities which can sustain their work efficiency. These active elderly have good education, knowledge and experience in their field of work, this experience can contribute to the community and country. This study can help to government and policy makers to make good and effective health policies for betterment of elderly which could increasing their life expectancy.

1.11 Schemes of Chapterization

- **Chapter 1- Introduction:** The chapter highlights the overview of ageing scenario in world and India. It focuses on the health problem of elderly persons and health programmes for elderly persons implemented by Government. It includes the objectives, hypothesis and research methodology.
- **Chapter 2- Conceptual issues: Theories and Economic Relevance: T**his chapter highlights the theoretical part of health and ageing, it focuses on question how health and ageing are linked with economic development. It also highlights the theories of ageing.

- **Chapter 3- Ageing Scenario of Uttar Pradesh**: This chapter highlights the ageing profile and health infrastructure of Uttar Pradesh. It focuses on the growth rate of aged population and state wise life expectancy.

- **Chapter 4- Socio Economic Profile of Study Area of Lucknow District:** This chapter highlights the socio economic status of total elderly person of study area which includes demographic profile, gender profile, religion, caste, income and working status and living arrangement etc.

- **Chapter 5- Health Status of Elderly and Innovation Adoption:** the chapter attempt to cover the health status of elderly person of Lucknow districts and focuses on the health problems faced by elderly persons, type of diseases and type of hospitals. It also highlights the of innovations adoption in by elderly like insurance and awareness about generic medicine.

- **Chapter 6- Health Expenditure Details of Elderly Persons in Study Area:** this chapter analyses the health expenditure details of elderly persons of study area and covers the doctor's fees, test cost, medicine cost and total health cost spend by old persons on their health.

- **Chapter 7- Conclusion and Findings:** this chapter in includes the major findings and policy recommendations. It also covers the limitation of the study and further scope of the study.

Chapter 2

Conceptual Issues: Theories and Economic Relevance

CHAPTER 2

CONCEPTUAL ISSUES: THEORIES AND ECONOMIC RELEVANCE

2.1 Introduction

Ageing population is a main worldwide tendency that upsets all countries, although at a changed speed and stages (Dugarova and Gülasan 2017; World Bank Group 2016), and reflects significant achievements of social change such as better health, greater longevity and lower mortality (UN 2017; UNDESA 2007). There were 901 million people aged 60 or over in 2015 including 12.3 percent of the worldwide population (UNDESA 2015). While the Asia-Pacific region has the world's largest number of people aged 60 or over (508 million), Europe has the largest percentage of population of this age (24 percent, or 177 million). While Africa is household to a comparatively small number of older persons, it is expected to increase from 64 million to 105 million by 2030. The reality is that public health advantages loan in most countries, worldwide life expectancy will continue to increase, contributing to a rise in the number and proportion of older persons in all parts of the world. The number of ageing population is projected to raise by 56 percent, reaching 1.4 billion in 2030 between 2015 and 2030, which will be closely 16.5 percent of the total world population. By 2030, older persons are expected to account for over 25 percent of the population in Europe and Northern America, 17 percent in Asia and in Latin America and the Caribbean, and 6 percent in Africa (Help age International, 2017; p. 8). At the same time, what matters here is not only the growing number of older persons but also the heterogeneous and complex nature of ageing in view of older persons' health,

family and socio-economic status, among others. This chapter is based on economic theories of health and ageing.

Main content of this chapter is given below:

There are two major theoretical and conceptual aspects are included in this chapter that is;

1. Health, 2. Ageing

2.2 Theories Related to Health

Health is not only the absence of illnesses, it is also the capability of persons to improve their potential during their entire lives. In that sense, health is an asset for individuals, which has essential significance that being healthy is a very important source of well-being as well as contributory worth. World Health Organisation is defined that state of complete physical, mental and social well-being and not merely the absence of diseases or infirmity. Health is an active state resulting from a human's body continuous modification and edition in response to pressures and variations in the environment for maintaining an inner equilibrium called homeostasis. The specious fullness of this definition carries a prevailing natural appeal, a complete definition of health should include all aspects of life, it would seem. Nevertheless, the definition of WHO has been the target of blame in the medical literature since its first presence in that organization's constitution in 1948 (Winterhalter B., 2017).

2.2.1 Linkage between Health and Economic Growth

The relationship between health and economic growth is dynamic, multifaceted, and underappreciated. As one of the components of human capital (along with education),

health may be viewed as an integral input to productivity, similar to other conventional inputs such as labor and physical capital (Weil, 2007). Yet health is different in that it is multi-dimensional and thus may be represented by varied indicators including life expectancy and the infant mortality rate. Its multi-dimensionality also suggests that there are several pathways by which health may be augmented, making it a versatile tool in the basket of commodities to improve per capita income and well-being. For these reasons research on the relationship between health and economic growth has been growing in recent times.

Existing studies across different countries demonstrate that health affects growth through several channels. First, improvements in health drive increases in worker productivity. Hence for example, reductions in general levels of anaemia across countries improve overall worker output levels, and where the adult survival rate is used as a proxy for general health, increases in this measure contribute to rising economic growth (Weil 2003, Weil 2007). Moving beyond measures of disease and survival, the main source of improvements in worker productivity has 3 come from increasing nutrition. For instance, overall caloric intake was found to have a highly significant beneficial impact on worker productivity in Brazil (Strauss, 1986). Additional evidence from Brazil shows that height, a long term measure of health, significantly impacts wages, and body mass index increases wages particularly for men (Thomas and Strauss 1997). Other studies on Indonesia and Vietnam have also documented the causal impact of health on wages and productivity especially in low income settings (Strauss and Thomas 1998, Strauss and Thomas 2007). On the basis of evidence from China, Sri Lanka and Indonesia, Frankenberg and Thomas (2002) notes that incrementing nutrition involves more than just increasing calorie and

protein intake. In particular, their research also emphasizes the importance of micronutrients including iron, iodine, zinc, calcium and other key vitamins.

The second channel by which health affects economic growth is by increasing longevity and subsequent human capital accumulation. The insight underlying this pathway is that reductions in mortality can potentially increase returns to human capital investments which, in turn, boosts schooling (Weil 2013). Moreover people have the incentive to save more for retirement as mortality declines, thus spurring investment and augmenting physical capital per worker. Using cross-country data that spans developed countries like the United Kingdom, United States and European countries, and developing countries in Sub-Saharan Africa and Latin America, Weil (2007) demonstrates that variations in the adult survival rate for men are an important medium to explain cross-country differences in gross domestic product (GDP).

The third channel by which health is hypothesized to affect economic growth is by reducing the burden of disease. The intuition here is that sick individuals are not able to function at their peak physical or mental capacities thus limiting the extent to which they can contribute effectively. Although evidence for this pathway is somewhat less compelling, using data from Africa Weil (2010) finds that diseases such as HIV, malaria, diarrheal and childhood diseases, and tuberculosis have had an impact on growth by affecting productivity and levels of educational attainment. But these impacts are not overwhelmingly large because a consequence of improving health is population growth which can erode income in per capita terms (Weil 2007, Ashraf et al. 2013).

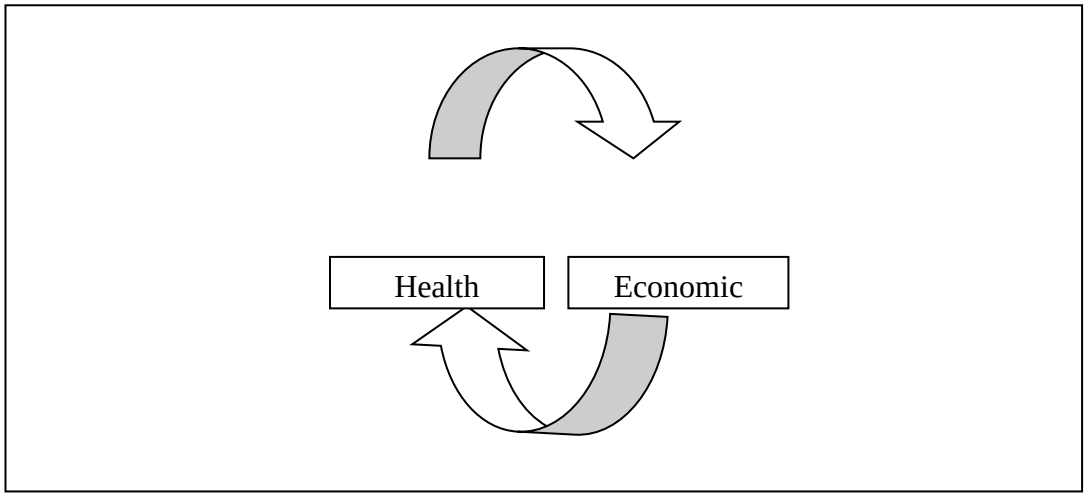
Evidence on the second channel in India – the link between longevity and economic growth – is less clear-cut. For example, Dreze and Sen (2002) makes the point that

improvements in the rate of GDP growth that followed the liberalization of the early 1990s in India was accompanied by a slow-down in the rate at which infant mortality was declining. Life 5 expectancy in India has improved over time; this measure has risen by close to 30 years since 1950 (Cutler et al. 2006). But the extent to which this has contributed to boosting standards of living is unclear. On the contrary, there is some evidence that child malnutrition and child mortality in particular have remained high despite improvements in nutrition that accompanied overall levels of prosperity (Deaton and Dreze 2009, Gupta D, 2010). Reasons include behavioural and socio-cultural aspects that importantly influence health, child survival and women's autonomy. The link between longevity and economic growth in the Indian context may also be less evident because of the mediating impact of population growth. As noted before, improvements in health may raise fertility in the initial stages of the demographic and development transition, thus contributing to lower levels of per capita income particularly if output levels do not keep pace.

It has been seen that health status is crucial for economic growth and good health is a necessary element for the human to provide labour services. Improvements in health may be as important as improvements in the economy in thinking about development and human welfare. Good health can be thought of as a goal in its own right independently of its relationship with growth. When people are healthy and educated, they are more active and enthusiastic in their work and they can become more productive in their field. This is quite obvious and widely accepted. The essence of human capital is now widely considered as being very vital in this regard. We know that the total output of an economy depends on the levels of human capital and the stocks increase as a result of higher levels of health status, better health education, and new learning and training procedures with a good healthy, mental and physical

condition. Without a labour force with some minimum levels of health, health education and health status, a country undermines its capacity of maintaining a state of continuous growth (Halder et al, 2010). This concept of human capital gives emphasis on health, health education, job training, migration and other investments on human capital which enhance the productivity of an economy. Most of the growth economists have previously ignored this relationship of health human capital on economic growth. But at present there are a number of interests towards the research to examine the relationship between health indicators and economic growth. This link between health and economic growth is important for policy purposes. It is our aim in this current analysis to examine this relationship. The general trend is that better health will lead to better growth outcomes. We will check if it is the case in the Indian scenario as well. Thus, the greatest challenge of the ongoing twenty-first century is to provide every human being on the planet with a long, healthy and fulfilling life, free of poverty and full of opportunities to participate in the activities of their community.

In Theoretical terms, health impacts economic growth in a number of ways. For example, it reduces production losses due to worker illness, it increases the productivity of adult as a result of better nutrition, and it lowers absenteeism rates and improves learning among school children. Health also allows for the use of natural resources that used to be totally or partially inaccessible due to illnesses. Finally, it permits the different use of financial resources that might normally be destined for the treatment of ill health.



Health is a direct source of human welfare and also an instrument for raising income levels. We discuss a number of mechanisms through which health can affect income, focusing on worker productivity, children's education, savings and investment, and demographic structure. As well as the impact of current illness, health may have large effects on prospective life spans and life cycle behaviour. Studies suggest there may be a large effect of health and nutrition in utero, and in the first few years of life, on physical and cognitive development and economic success as an adult. Macroeconomic evidence for an effect on growth is mixed, with evidence of a large effect in some studies. However, there is a possibility that gains from health may be outweighed by the effect of increased survival on population growth, until a fertility transition occurs. The low cost of some health interventions that have large-scale effects on population health makes health investments a promising policy tool for growth in developing countries. In addition, higher priority could be given to tackling widespread "neglected" diseases—that is, diseases with low mortality burdens that are not priorities from a pure health perspective, but that do have substantial effects on productivity.

People living in poor countries are much less healthy than people living in rich countries. This analysis contributes to the growing body of literature on health and

economic growth, health and economic development and the relationship between health and income inequality. This is important for evaluating policies aimed at improving health in developing countries like India. Health in different countries of the world at different time periods is positively related with socio-economic status (Berkman, 1988; Marmot et. al, 1991; Deaton and Paxon, 2001). The status of health of a country affects its economic growth through various channels. When there is an improvement in health, the country is able to produce more output with any given combination of skills, physical capital and technological knowledge. This has been investigated incorporating the endogenous growth model (Barro, 1991; Mankiw et al., 1992; Halder, 2010). It has found that there is a strong relationship between per capita GDP health expenditure and per capita income (Selvaraju 1994). Mayer (2001) has used the probability of adult survival by gender and age group as a measure of health status. By using Granger Causality test he has stated that health status causes economic growth in Latin America, Brazil and Mexico. He has explained that improvements in adult health are associated with 0.8-1.5% increase in annual income. Good health is a necessary element for the human to provide labour services as shown by Zon (2001). He finds that old age people demand for health services negatively affect the economic growth. Weil (2005) uses microeconomic estimates of the effect of health on individual outcomes to construct macroeconomic estimates of the proximate effect of health on GDP per capita or economic growth. It has been studied with the help of various household indicators of adult nutrition and health, that there is a positive impact of health on total factor productivity (Schultz, 2001). In this study, it has been inferred that, third world countries have shortage of resources for investment in health while poor health status slows down the acceleration of economic growth. In India, the longitudinal study on the relationship between health,

income, and health expenditure is very few and far between. Using time series data set from 1974-75 to 1990-91 across the 15 major states in India, Reddy and Selvaraju (1994) have found that there is a strong relationship between per capita health expenditure (public) and per capita income and that health care expenditure is elastic to changes in income. Bhargav (2001) has shown a positive relationship between adult survival rate and economic growth. His result shows similar when adult survival rate is replaced by life expectancy. He has mentioned that when fertility rate is replaced by life expectancy, the fertility rates have a negative relationship with economic growth. Because he has mentioned that life expectancy is extremely influenced by the child mortality, the growth in work force is mostly lower than population growth. Resultantly high fertility growth reduces the economic growth by putting extra burden in scarce resources. It can be shown that percentage health expenditure causes infant mortality rate while life expectancy at birth has a unidirectional relationship with percentage health expenditure. The percentage health expenditure also has a unidirectional relationship with per-capita income according to Malick (2015). His results also showed that life expectancy at birth has a unidirectional relationship with infant mortality rate and while life expectancy at birth reveals a unidirectional relationship with percentage health expenditure, the result also puts that there exists a unidirectional relationship of infant mortality rate to percentage health expenditure. He concludes that an owner of the household will be more enthusiastic in his work if the children in his family are healthier into some extent. According to him the govt. expenditure on health is an impetus input to increase child health also in terms of infant mortality rate and the increase in percentage of health expenditure causes high life expectancy rate, which influences people to become more efficient for any kind of skill work.

The relationship between population growth and economic development has been the subject of debate among policy makers. Mercantilists and Physiocrats dealt with the issue of population increase as one which is beneficial to the society and optimizes national wealth. Classical economists embedded the theory of population in general theory of development and growth. Adam Smith viewed consistently increasing population as a dependable sign of country‟ s prosperity.

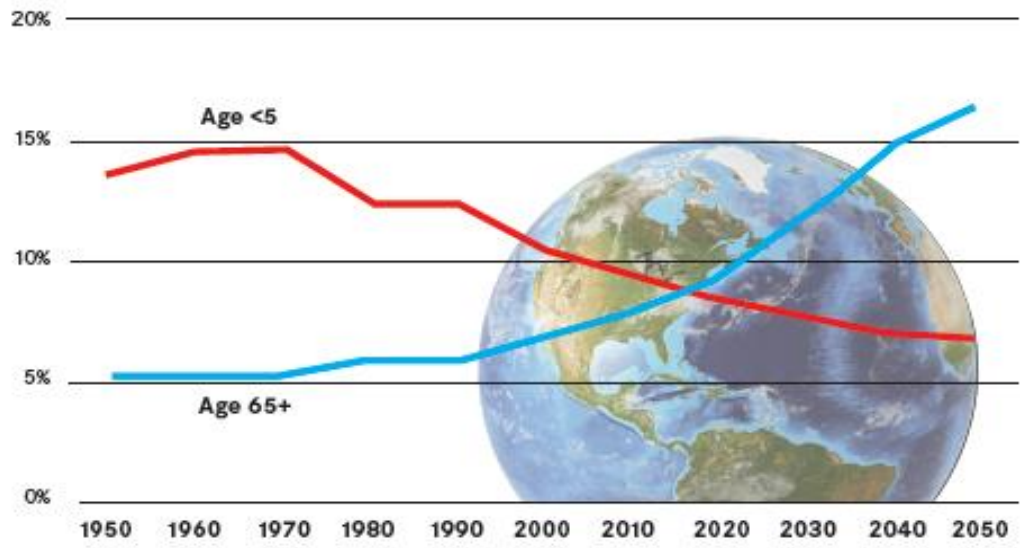
Malthus (1798) looked it from a different perspective and presented a systematic theory about population and economic development. In his „An essay on principles of population‟ , Malthus tried to establish a relationship between food production and population growth in the long run. He asserted that the power of population is indefinitely greater than the power in the earth to produce subsistence for man. Population, when unchecked, goes on doubling itself in every 25 years or increases in a geometrical ratio, while the means of subsistence increases only in an arithmetic ratio. Malthus has strongly opposed the monetary transfers from rich to poor individuals (Bowen, 1976). Empirical analysis of the Malthusian hypothesis by Boyer (1989) pointed out that widespread allowance after 1795 appears to have a positive effect on the birth rates in the early 19th century in England. Malthus explained the relationship between population and standard of living on the eve of industrial revolution which is displayed by most of the societies in the world. He assumes an increase in spending on children as family income increases. Later Beckar (1960) pointed out that this increase can take the form of larger allocation of resources and parental time to children. But nineteenth century witnessed a substantial decline in fertility rate in industrialized countries, contrary to his predictions on population growth.

On the basis of the experiences of French population, Arsene Dumount in1890 explains an inverse relation between socio-economic class and fertility for the first time. He argued that Malthusian theory is applicable to primitive or uncivilized societies where population grows at a geometric rate. He asserted that population in its effort to raise standard of living tend to reduce fertility rate. In the twentieth century, mortality and fertility differentials in many countries have received attention of the researchers. Evidences of relationship that correlate population growth and socio-economic development from Western European countries like England have been synthesized in the form of a group of theories called demographic transition. The theory of demographic transition illustrates how a demographically backward society transforms into a demographically advanced society. It states that countries experiencing modernization, progress from a pre-modern regime of high fertility and mortality rate to a postmodern period in which both are relatively low. Though demographers agree that population growth in each country whether industrialized or non-industrialized, has to pass through different stages before it reaches a stable position, they differ in their views regarding the stages of population growth.

2.2.2 Impact of ageing on health care demand

With an aging population that continues to grow, our health care system will be changed forever. Are we ready for it? According to the Global Health and Aging report presented by the World Health Organization (WHO), "The number of people aged 65 or older is projected to grow from an estimated 524 million in 2010 to nearly 1.5 billion in 2050, with most of the increase in developing countries."

FIGURE 1: YOUNG CHILDREN AND OLDER PEOPLE AS A PERCENTAGE OF THE GLOBAL POPULATION: 1950-2050[1]



Source: *World Population Prospects: The 2010 Revision*, United Nations.
Adapted from *Global Health & Aging*, World Health Organization, 2011.

In addition, by 2050, the number of people 65 years or older is expected to significantly outnumber children younger than 5 years of age. WHO attributes the elderly population's rapid size increase to a change in the leading cause of death—from infections to chronic non communicable diseases—which increased life expectancy? On the other hand, this generation is witnessing rising cases of chronic diseases. These chronic conditions may include hypertension, high cholesterol, arthritis, diabetes, heart disease, cancer, dementia, and congestive heart failure. Heart disease, stroke, and cancer have been the leading chronic conditions that have had the greatest impact on the aging population, especially in high-income countries. In addition, the incidences of obesity and falls are increasing. This leads to the question: what are the implications of the aging population on health care? We have all heard the term "baby boomer." According to the Office of Disease Prevention and Health Promotion, the first Baby Boomers (those born between 1946 and 1964) turned 65 in 2011.[2] By 2030, it is projected that more than 60% of this generation will be

managing more than 1 chronic condition. Managing these chronic conditions, along with a patient's level of disability, will increase the financial demands on our health care system. The cost increases with the number of chronic conditions being treated, taking into account the expected twice as many hospital admissions and physician visits for Baby Boomers by 2030. According to the WHO report, some believe that as life expectancy increases, the prevalence of disability will decrease because the progress we make in medicine will slow disease progression from chronic disease to disability. As a result, there will be a decrease in severe disability, but there will be increases in milder chronic diseases. Other researchers, however, believe that as life expectancy increases, the prevalence of disability will increase. There are certain health conditions that are expected to be a challenge to our health care system with the increasing aging population. These conditions include cancer, dementia, and increase in the number of falls, obesity, and diabetes.

Expected challenges to the health care system include the following[2]

- The incidence of obesity will continue to increase
- A shortage of health care professionals is expected
- The diversity of caregivers lags behind the growing diversity of patients
- Care has been focused on a single disease versus addressing comorbidity
- The sustainability and structure of federal programs in relation to the increasing aging population are a concern
- Changes in family structure may lead to fewer family caregivers
- Adapting and adjusting to the Affordable Care Act pose challenges

[2] Anyssa Garza, PharmD, 2016

To address the increasing aging population, the health care system must take on the challenges listed above. Our health care system also needs to prepare for new technology (especially because of the higher cost) by increasing training of health care workers and examining how technology will impact hospital infrastructure. The health care system will need to prepare for the increasing incidences of chronic conditions within the aging population, as well as develop strategies to prevent falls. An important challenge is implementation of new approaches in health care delivery to address the changing health status of this aging population. With chronic conditions on the rise in this population, their health care becomes more complex. Focusing on a single disease rather than comorbidity can result in insufficient focus on other present medical conditions.

Instead, the health care system must prepare for implementing a multidisciplinary approach to ensure patients are receiving better case management. There also needs to be a focus on providing preventive care versus reactive care. Strategies may include a more comprehensive care plan before discharge, a system to help identify patients who require follow-up, and implementation of a program to help monitor patients.

Every year health care expenditures rise appreciably due to the growth and aging of the population. Although policymakers can do practically nothing to affect these factors, it is important that they understand and anticipate the fiscal impact of such demographic changes (Mendelson, D. N., & Schwartz, W. B. 1993).

2.2.3 Health and Growth: Theoretical Model

Solow (1966) was the first economist who gave the first model in the area of growth. Various studies use total factor productivity as the dependent variable in order to examine the impact of poor health on total factor productivity (Basumalik S. 2017;

pp. 1251-1252). There are other studies which use data on three of the most common causes of ill health in developing countries, one of which is the undernourishment or malnutrition. Models such as Bloom and Sevilla (2001) use growth in inputs (physical capital, labour and human capital) and growth in total factor productivity. However, in this study, we have examined the Gross National Income per capita in the model instead of total factor productivity. The health indicators used are Life Expectancy rate, Infant Mortality rate and other health status indicators like Under-five Mortality rate, Total Fertility rate, instead of using undernourishment directly.

According to Barro and Sala-i -Martin (1995), a nation's economic growth is dependent on the current GDP and the GDP in steady state:

$Dy = f(y, y^*)$ (Equation 1)

Where Dy is the rate of growth of GDP;

y is the current GDP; y* is the steady state GDP.

Dy is declining in y and increasing in y

This follows from the diminishing returns to capital. An implication of this model is that as y increases, the rate of growth will be lower in the long run in the absence of new innovations and ideas and technology not being constant. According to this model, the countries which start at low levels of initial gross national income will be on higher growth paths as compared to the countries which are at higher levels of initial income. Thus, countries which have less capital per worker tend to have higher rates of return and higher growth rates. The Concept of Neoclassical model includes the concept of capital is expanded to include human capital in the form of education and health for a broader definition of capital. These models also predict that growth must eventually cease unless there are improvements in technology. The endogenous growth theories presented by Aghion and Howitt (1992) do however forecast that

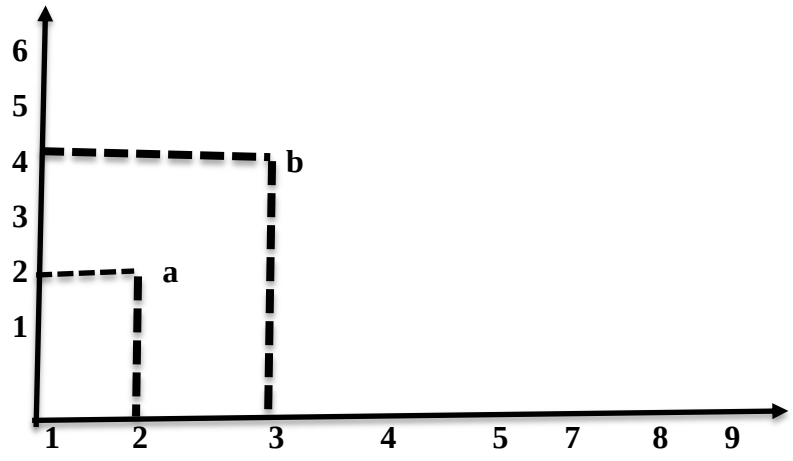
growth rates can be sustained in the long run due to technological advances resulting from R&D activity. As long as new ideas and new innovations are generated, the economy will continue to have positive growth rates. For given values of the steady state y* for a developing country, a higher starting level of per capita output y implies a lower per capita growth rate. We can also see that the correlations between the level of gross national income and growth rates are not high.

2.2.4 Demand for Health

The economics approach emphasises the role of economic factors in shaping health-related behaviour. It is discussed to as the *demand for health* method since it views the separate as 'demanding' a commodity which is health (Waghstaf A. 1987: p. 2). It is built up around three concepts. The indifference map Health (or good health) is assumed to be desirable; it is assumed not to be the only desirable thing in life, nor valued above all else. There are various reasons why good health might be thought to be desirable: for one, it is in itself pleasant (or, equivalently, ill-health may be viewed as being in itself unpleasant). Being in good health also permits one to engage in one's normal activities, social activities work and so on. It is clear too, however, from our behaviour both as individuals and collectively that good health is not valued above all else. Every year patients in hospitals are denied life-saving treatments because the resources society has made available to the hospital sector are insufficient to save every life that could, from a purely technological point of view, be saved. The resources are devoted instead to other things that society values, such as good roads, sports facilities, education, and defence. At an individual level, if people valued their health above all else, they would not over-eat, smoke or drive too fast. That people do engage in such activities, and that society does spend money on sports facilities and

roads when people are left to die before they need to, makes it clear that although people do value their health, they do not place an over-riding value on it. This idea can be stated more precisely.

Suppose health can be measured in terms of *"units of health*". For brevity, the "*other things in life*" from which pleasure is derived can be labelled *"consumption*". In what follows, "consumption" means a bundle of consumption activities. Units of health plotted along the horizontal axis and units of consumption plotted along the vertical axis. Any point on the graph represents a combination of health and consumption. Thus *point a* represents the combination 1 unit of health and 2 units of consumption. Above, it was assumed that people derive pleasure from being in good health and from undertaking consumption activities. Thus a person would experience a higher level of well-being at *point b,* for example, than at a, since at b he enjoys better health and consumes more than at point a. In general, the further the individual is away from the *origin 0,* the higher will be his well-being.



Source: Waghstaf A. (1987)

2.3. Theories Related to Ageing

Because of the individualistic foundations of mainstream economics, its treatment of population ageing is constructed from its treatment of individual ageing. For ageing to

be possible, a model must be *intertemporal*, with two or more time periods. A timeless, single-date modelling cannot accommodate ageing. The standard intertemporal technique in mainstream economics is to set up a life-cycle model, whereby instrumental rationality governs an individual's full lifespan. Preferences are defined intertemporally, assuming comparability of utility between periods and discounting of future utility. The income constraint must also be intertemporal, a summation of the individual's income in each time period discounted by the interest rate. Behaviour over time depends on the maximisation of intertemporal utility subject to the income constraint, an expansion of timeless decision-making to an intertemporal framework. Chronological ageing is not part of the decision. Individuals cannot choose their age, nor can they change the rate at which time passes; choices of this kind are at present unfeasible. Time and ageing enter mainstream modelling exogenously through the preferences and the constraints faced by an individual. Preferences mention age only if an individual's valuation of activities changes over time: otherwise dated activities could be aggregated, yielding undated preferences. Exactly what is meant by valuations changing with age is unclear. If preferences and utility are entirely psychic concepts, then any changes in valuations are also psychic. On this view the physical effects of ageing are external to preferences, constraining the individual's true valuations. If, on the other hand, there is no mind-body dualism, then the physical changes with age are internal to preferences, which must reflect the physical capacity to undertake activities. Mainstream economics is silent on the nature of preferences; as the irreducible starting point of economic theory, their origin and the place of aging within them are largely unspecified. Time also enters the modelling of behaviour through the constraints on the individual. Earning opportunities at different ages are constrained by a mixture of the physical consequences of age and

the social and economic conditions guiding life-cycle work patterns. Physical ageing eventually reduces marginal productivity and earning power, even if the individual has some control over health. Social and economic constraints, such as statutory retirement ages ensure that most individuals conform to a particular pattern of behaviour. An individual chooses consumption, saving and working time to maximise intertemporal utility subject to the appropriate set of constraints. The resulting life-cycle plan describes the individual's behaviour as ageing occurs.

2.3.1 Definition of Ageing

World Health Organization defines "health" as a state of complete physical, mental, social and spiritual well-being and not merely the absence of disease or infirmity. The Geriatrics, is the branch of medicine dealing with the physiologic features of aging and the diagnosis and treatment of diseases affecting the aged. In most of the countries in the world including India, the cut off point for geriatric age is 60 years. Geriatrics grows increasingly important as modern medicine and rising standard of living have lengthened the life expectancy, resulting in increased proportion of aged persons in society. Elderly persons show lots of variation in age-related physiological decline and medical disorders. The age-related decline in muscle strength, vision, memory, locomotion, nutrition, immunity and homeostasis progress slowly. However, the onset of disease may be abrupt, the course of illness varying, complications severe and dreadful. Many chronic diseases increase in prevalence with age and some elderly seem more susceptible to co-occurring problems compared to others. Chronic diseases and disabilities lead to increased use of health care resources and health care expenditure

According to Geriatric Medicine Survival Handbook (2008), *Aging is a multidimensional process and refers to the process of "...accruing maturity with the passage of time.*" It begins with conception and continues throughout life until death occurs. Aging is progressive, ubiquitous and inevitable for all living things. The term 'Healthy Ageing' is often used to emphasize that ageing is not a disease. It should be as healthy as possible According to WHO, it is not sufficient to add years to life, but the most important objective is to *add life to years.*

Old Age, is usually related with deteriorating abilities, both mental and physical, and a reduction in social commitments (including sport participation) of any person. The precise onset of old age varies culturally and historically. It is a social construct, rather than a biological stage. The persons in India, who have attained the age of sixty years and above, are defined as elderly for the purpose of availing old age benefits.

2.3.2 Disengagement Theory

Disengagement theory was introduced by Cumming and Henry in 1961. These two theorists viewed aging' as a developmental task in and of itself, with its own norms and appropriate patterns of behaviour. The identified appropriate patterns of behaviour were conceptualized as a mutual agreement between older adults and society on a reciprocal withdrawal. Individuals would change from being centred on society and interacting in the community to being self-centred persons withdrawing from society, by virtue of becoming "old." Therefore social equilibrium would be achieved as the end result (Cumming E. and Henry W. E. 1961). The idea that older adults preferred to withdraw from society and to voluntarily decrease their interactions with others was not readily accepted by the general public, much less the older population. Although the theory oversimplified the aging process, the lasting

benefit of the theory relates to the controversy it created. The theory itself is no longer supported, but the discussion and the research stemming from its premise continue today.

2.3.3 Activity Theory or Developmental Task Theory

With one group of theorists proposing the concept that older adults need to disengage from society, other sociologists proposed that people needed to stay active if they are to age successfully. In 1953, Havig Hurst and Albrecht first proposed the idea that aging successfully meant staying active. It was not until 10 years later that the phrase "activity theory" was actually coined by Havighurst and his associates (Havighurst, et al, 1963).

Activity is viewed by this theory as necessary to maintain a person's life satisfaction and a positive self-concept. By remaining active, the older person stays young and alive and does not withdraw from society because of an age parameter. Essentially, the person actively participates in a continuous struggle to remain "middle-aged." This theory is based on three assumptions: (1) it is better to be active than inactive, (2) it is better to be happy than unhappy, and (3) an older individual is the best judge of his or her own success in achieving the first two assumptions (Havighurst, 1972). Within the context of this theory, activity can be viewed very broadly as physical or intellectual. Therefore, even with illness or advancing age, the older person can remain "active" and achieve a sense of life satisfaction (ibid).

2.3.4 Continuity Theory

The continuity theory dispels the premises of both the disengagement and activity theories. According to this theory, being active, trying to maintain a sense of being

middle aged, or willingly withdrawing from society does not necessarily bring happiness. Instead, the continuity theory proposes that how a person has been throughout life is how that person will continue through the remainder of life (Havighurst, Neugarten, Tobin, 1963). Old age is not viewed as a terminal or final part of life separated from the rest of life. According to this theory, the latter part of life is a continuation of the earlier part and therefore an integral component of the entire life cycle. When viewed from this perspective, the theory can be seen as a developmental theory. Simply stated, the theory proposes that as people age, they try to maintain or continue previous habits, preferences, commitments, values, beliefs, and all the factors that have contributed to their personalities (ibid).

2.3.5 Age Stratification Theory

Beginning in the 1970s, theorists on aging began to focus more broadly on societal and structural factors that influenced how the older population was being viewed. The age stratification theory is only one example of a theory addressing societal values. The key societal issue being addressed in this theory is the concept of interdependence between the aging person and society at large (Riley, et al, 1972). This theory views the aging person as an individual element of society and also as a member, with peers, interacting in a social process. The theory attempts to explain the interdependence between older adults and society and how they are constantly influencing each other in a variety of ways. Riley (1985) identifies the five major concepts of this theory: (1) each individual progresses through society in groups of cohorts that are collectively aging socially, biologically, and psychologically; (2) new cohorts are continually being born, and each of them experiences their own unique sense of history; (3) society itself can be divided into various strata according to the parameters of age and roles; (4) not only are people and roles within every stratum

continuously changing, but so is society at large; and (5) the interaction between individual aging people and the entire society is not stagnant but remains dynamic.

2.4 Conclusion

This study's core focus is the health problems that the elderly have to contend with. It is only in our ability to understand these problems, will we be able to enlist solutions to resolve them. This way we can provide to the elderly a better, active and healthy life. To provide them affordable and better health facilities, we have to create scaffolds to sustain their work efficiency. These active elderly have good education, knowledge and experience in their field of work. This experience can contribute to the community and country. These points emphasise that as the life expectancy increases, the support systems to enable a financially empowered life with good health for the elderly should take priority in the healthcare system. The scenario calls for increased focus on providing specialised health care avenues/ institutions to treat the elderly seeking medical aid. Due attention also must be given to the problem of exclusion in health sector. Macroeconomic research from cross-country studies suggests that health can impact growth by increasing physical capital (Weil, 2007). The intuition is that an increase in labour provided by a healthy productive workforce augments the marginal product of capital, thus spurring further investments in capital inputs. Hence labour and capital are complementary in the growth process, and initiatives that increase the health of the labour force would reap additional returns through their supplementary effects on physical capital. Although this link has been noted, there is as yet little evidence for it in a more microeconomic within-country context. Ageing is a subject that straddles academic disciplines, and one that cannot be neatly compartmentalised. It is impossible to hive off a separate 'economics of ageing',

which can be handled by mainstream economics in isolation from other disciplines. Far from having a unique value in this regard, mainstream economics is too narrow to model ageing adequately.

Chapter 3
Ageing Status of Uttar Pradesh

CHAPTER 3

Ageing Status of Uttar Pradesh

3.1 Introduction

Healthcare has become one of India's largest sectors - both in terms of revenue and employment. Healthcare comprises hospitals, medical devices, clinical trials, outsourcing, telemedicine, medical tourism, health insurance and medical equipment. The Indian healthcare sector is growing at a brisk pace due to its strengthening coverage, services and increasing expenditure by public as well private players.

Indian healthcare delivery system is categorized into two major components - public and private. The Government, i.e. public healthcare system comprises limited secondary and tertiary care institutions in key cities and focuses on providing basic healthcare facilities in the form of primary healthcare centres (PHCs) in rural areas. The private sector provides majority of secondary, tertiary and quaternary care institutions with a major concentration in metros, tier I and tier II cities. India's competitive advantage lies in its large pool of well-trained medical professionals. India is also cost competitive compared to its peers in Asia and Western countries. The cost of surgery in India is about one-tenth of that in the US or Western Europe.

The Constitution of India makes health in India the responsibility of state governments, rather than the central federal government. It makes every state responsible for raising the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties. The National Health Policy was endorsed by the Parliament of India in 1983 and updated in 2002. The National Health Policy is being worked upon further in 2017 and a draft for public

consultation has been released. Health is a state subject as per The Constitution of India within the federal set up of the Nation, consisting of a central government and individual state governments. It makes every state responsible for "raising the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties". India's political and public health leadership has led innovative schemes and translated the best of those into policy, and made substantial contributions for advancing population health. The National Rural Health Mission (NRHM) was launched in April 2005 by the Government of India with the goal of providing effective healthcare to rural people with a focus on 18 states which have poor public health indicators and/or weak infrastructure. Since the launch of the NRHM, over 157 thousand personnel have been employed in health sector. The Infant mortality rate has declined from 68 to 42 per 1000 live births between 2000 and 2012. Polio has been eliminated from the face of the country. Each year, more than 40 million people, mostly in rural areas, are impoverished and run into massive debts to access healthcare. Healthcare must be made a core priority for the next decade, to enable transformation of the healthcare system, while promoting pro-health policies in other sectors. Kerala (with its strong action on social determinants) and Tamil Nadu (with its efficient public health system) are role models within India. A healthy India is crucial for the country to sustain economic prosperity.

This chapter is based on our first objective that is to examine the ageing scenario in Uttar Pradesh. In this chapter, we will focus on the health status of elderly persons in India India's Public Health System has been developed over the years as a 3-tier system, namely primary, secondary and tertiary level of health care.

3.2 Uttar Pradesh: A Brief Note

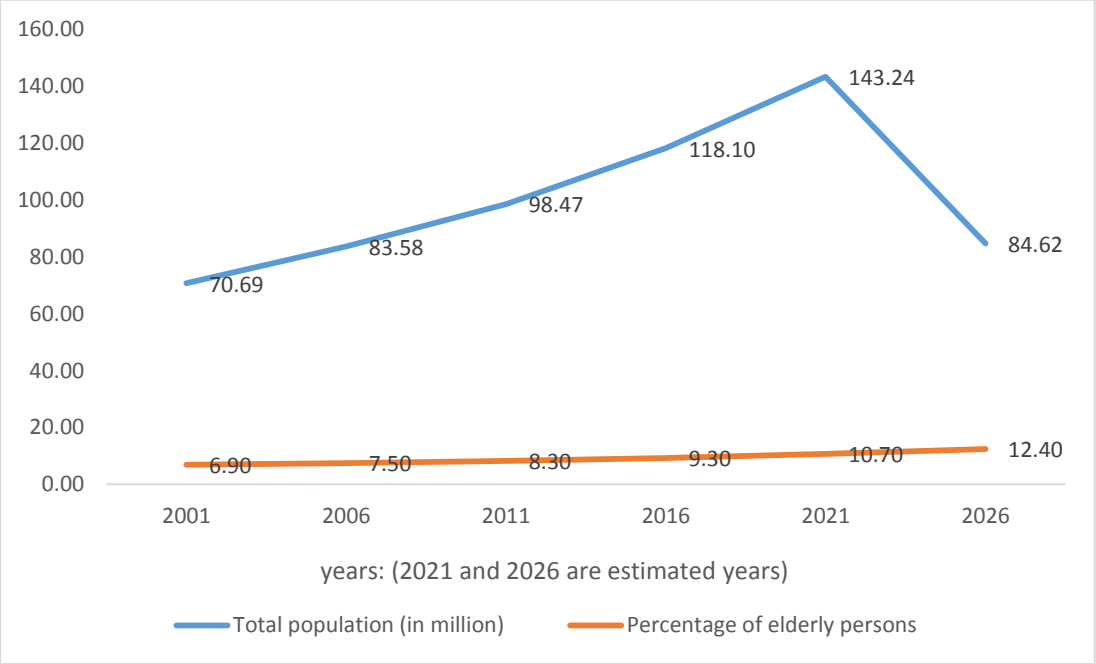
Uttar Pradesh is India`s most populous state. It has a population of about 199,812,341 as per the 2011 census. If it were a separate country, Uttar Pradesh would be the world's fifth most populous nation, next only to China, India, the United States of America and Indonesia. Uttar Pradesh has a population more than that of Pakistan. There is an average population density of 828 persons per km² i.e. 2,146 per sq. mi. The capital of Uttar Pradesh is Lucknow. Hindus and Muslims consider the state as a holy place.

Uttar Pradesh is the most populous state in India with a population of over 199.5 million people on 1 March 2011. It is more populated than the world's 242 countries. If independent it would be the 6th largest country in the world as per Population. In the 2001 census of India, about 80% of Uttar Pradesh population are Hindu, while Muslims make up around 18% of the population. The remaining population consists of Sikhs, Buddhists, Christians and Jains.

3.2.1 Population of Uttar Pradesh

The figure 3.1 shows the time series data of total population and percent of ageing population of Uttar Pradesh**.** In the table we can see that there are continuous increase in percent of elderly population while in total population there is a continuous increase in a certain time after 2021 the total population is decreasing while elderly population is increasing. Graph shows that total population of India is increasing within the years and percentage of elderly population also increasing within years.2021 and 2026 is projected years.

Figure 3.1 Percentage Share of Elderly Population in Total Population



Source: Census of India,
*2021 and 2026 is projected

The reason behind increasing elderly population in India and states is decreasing trend in infant mortality rate (IMR) and total fertility rate (TFR).According to SRS 2014, IMR is decreased by 64 in 2003 to 42 in 2013 and TFR is decreased by 2.5 in 2010 to 2.3 in 2013. According to SRS data population of age group 0-14 is decreased during years from 1971 to 2011 in India. This is also the reason of increasing elderly population.

3.2.2 Elderly Population of Uttar Pradesh according to 2001 Census

The below table 3.1 shows the number of total population of Uttar Pradesh and ageing (60 and above) population of Uttar Pradesh according to 2001 census and table 3.2 shows the percentage of same.

Table 3.1: Elderly population of Uttar Pradesh according to 2001 census (in Millions)

Population	**Total**			**Rural**			**Urban**		
Total population of U.P.	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
	35148377	18502838	16645539	30816596	16184840	14631756	4331781	2317998	2013783
Population of 60 years and above	2357866	1227498	1130368	2137278	1116460	1020818	220588	111038	109550
Remaining population	32790511	17275340	15515171	28679318	15068380	13610938	4111193	2206960	1904233

Source: Census 2001

Both table are showing that rural population is more than urban population in the case of total population as well ageing population. Focusing on the gender wise ageing population we find that the percent female population is more that percent of male population.

Table 3.2 Percentage of Elderly Population Age Group and Sex as per 2001 Census

Population	**Total**			**Rural**			**Urban**		
	Persons	**Males**	**Females**	**Persons**	**Males**	**Females**	**Persons**	**Males**	**Females**
% of 60+ in total population of U.P.	6.71	6.63	6.79	6.94	6.90	6.98	5.09	4.79	5.44
Remaining population (0-59)	93.29	93.37	93.21	93.06	93.10	93.02	94.91	95.21	94.56
Total	100	100	100	100	100	100	100	100	100

Source: Census 2001

3.2.3 Elderly Population of Uttar Pradesh according to 2011 Census

The below table 3.3 and 3.4 show the total population, ageing population (60 and above) and remaining (0-59) population of Uttar Pradesh. We can see that in comparison to 2001 census the population of aged persons is increased in 2011 census by 6.71 percent in 2001 to 7.73 in 2011. The rural population is more than urban population. As similar to 2001 census the female aged are more than male aged in both rural and urban areas. The overall scenario of ageing population is reflecting in both 2001 and 2011 that the rural aged are more than urban aged and the number of female aged is more than male aged.

Table 3.3 Elderly Population of Uttar Pradesh According to 2011 Census (In Millions)

	Total			**Rural**			**Urban**		
	Persons	**Males**	**Females**	**Persons**	**Males**	**Females**	**Persons**	**Males**	**Females**
All ages	199812341	104480510	95331831	155317278	80992995	74324283	44495063	23487515	21007548
Population of 60 years and above	15439904	8037133	7402771	12446468	6477635	5968833	2993436	1559498	1433938
Remaining population (0-59)	184372437	96443377	87929060	142870810	74515360	68355450	41501627	21928017	19573610

Source: census 2011

Table 3.4 Elderly population of Uttar Pradesh according to 2011 census

	Total			**Rural**			**Urban**		
	Persons	**Males**	**Females**	**Persons**	**Males**	**Females**	**Persons**	**Males**	**Females**
Percentage of 60-100+ population	7.73	7.69	7.77	8.01	8.00	8.03	6.73	6.64	6.83
Percentage of remaining population	92.27	92.31	92.23	91.99	92.00	91.97	93.27	93.36	93.17
Total	100	100	100	100	100	100	100	100	100

Source: Census 2011

3.3.4 Percentage Change between 2001 and 2011 Ageing Population

The figure 3.2 shows the percentage of ageing population in 2001 and 2011 census, in the table we can see the percentage change between the percentage of ageing population of census 2001 and 2011. The results show that in urban areas the percent change in ageing population is more than rural areas. It more than two times higher increase in urban areas (12.57) in comparison to rural areas (4.82). The reason behind this change is migration in urban areas due to education, employment and for the treatment of health.

Figure 3.2 Percentage of elderly population of age 60 and above, according to 2001 and 2011 census of U.P.

Source: census data of 2001 and 2011

3.3 Literacy among Elderly Persons of Uttar Pradesh

The state's literacy rate is 70%, which is below the national average of 74%. The state has shown major improvement in its literacy rate from 56% in 2001 to 70% in 2011. The Male literacy rate is higher than the female literacy rate in the state. Government of Uttar Pradesh has taken several steps to bring awareness about education and thus building a strong foundation for better literacy rate in the state.

The below table 3.5 shows the percentage of literate and illiterate person in age group of 7-59 and 60 and above. It is clearly shown in the table that the percent of literate (35.91 percent) ageing population is very low comparing with remaining population (70.98 percent), the literacy among remaining population is more than double of elderly literacy. Among the elderly female literacy is very low, it less than 10 percent while elderly male literacy is three times higher than female aged literacy. In the rural areas the situation of literacy among aged persons is too bad in comparison to urban

areas i.e. 24.44 percent male aged are literate in rural areas while only 6.26 percent are literate. The illiteracy among old person leads to unawareness, poverty and backwardness. This is the main reason behind they are not able to access health facilities properly. As far as the relation between literacy and ageing concerns, former research (UNESCO, 1995) showed a strong negative correlation mainly attributed to the lower educational levels of older people. There is not much known about other age-related factors influencing literacy competence. Because of the low level of education of older adults it was expected that they would have lower scores than the younger adults. As women have less education than men, another expectation was that men would do better on the IALS literacy tasks. (27th Annual SCUTREA Conference Proceedings, 1997)

Table 3.5 Percentage of Illiterate and Literate Person by Sex, Residence and Age Group as Per 2011 Census

Age Group	Illiterate				Literate		
Age group 7-59		Persons	Males	Females	Persons	Males	Females
	Total	29.02	10.47	18.55	70.98	41.78	29.21
	Rural	30.75	10.65	20.10	69.25	41.43	27.82
	Urban	23.28	9.86	13.42	76.72	42.93	33.79
Age group 60 and above	Total	64.09	25.16	38.93	35.91	26.89	9.02
	Rural	69.30	27.60	41.70	30.70	24.44	6.26
	Urban	64.60	26.29	38.31	35.40	25.82	9.58

Source: census 2011

3.4 Ageing Scenario and Health Infrastructure of Uttar Pradesh

Population ageing is an important emerging issue in India. With increasing mortality and declining fertility the number of elderly people is increasing globally. There are three main factors behind these past and projected increases in the share of the global population aged 60+ and 80+. First, declining fertility rates in recent decades have

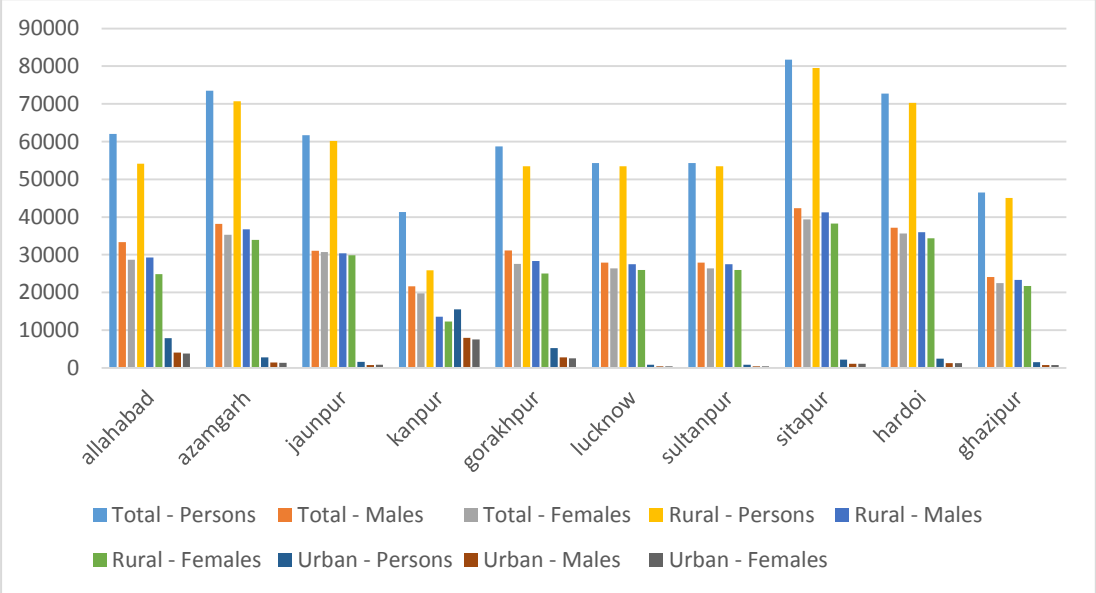
reduced the relative number of young people and pushed up the share of the elderly. The second key factor relates to recent increases in life expectancy. The third factor behind population aging relates to past variations in birth and death rates. Uttar Pradesh is India`s most populous state. It has a population of about 199,812,341 as per the 2011 census. If it were a separate country, Uttar Pradesh would be the world's fifth most populous nation, next only to China, India, the United States of America and Indonesia. Uttar Pradesh has a population more than that of Pakistan. The capital of Uttar Pradesh is Lucknow. Hindus and Muslims consider the state as a holy place. When we talk about ageing papulation Uttar Pradesh has highest number of ageing papulation in absolute number. India's political and public health leadership has led innovative schemes and translated the best of those into policy, and made substantial contributions for advancing population health. Healthcare must be made a core priority for the next decade, to enable transformation of the healthcare system, while promoting pro-health policies in other sectors. Kerala (with its strong action on social determinants) and Tamil Nadu (with its efficient public health system) are role models within India. A healthy India is crucial for the country to sustain economic prosperity.

3.4.1 Ageing Scenario of Districts

In the present study, we use the secondary data from the Census of India 2001 and 2011 and RHS (Rural Health Statistics) and AHS (annual health survey) data. We have chosen ten districts of Uttar Pradesh which have highest number of old population (60 and above) in absolute term. Uttar Pradesh is the largest state of India in terms of population, it has 70 districts. About 70percent population of Uttar Pradesh living in rural areas. Percentage of ageing Population in Uttar Pradesh is 7.8 according to census, 2011 but in absolute term state has highest number of ageing population among all states. In the below figure 3.3, we can see that Sitapur district

has highest number of old population followed by Azamgarh, Hardoi and Allahabad when we focus on residence wise population, the figure reveals that the Sitapur has highest rural population while Kanpur has highest number in urban population.

Figure 3.3: Area wise Total 60 and above Population of Census 2001

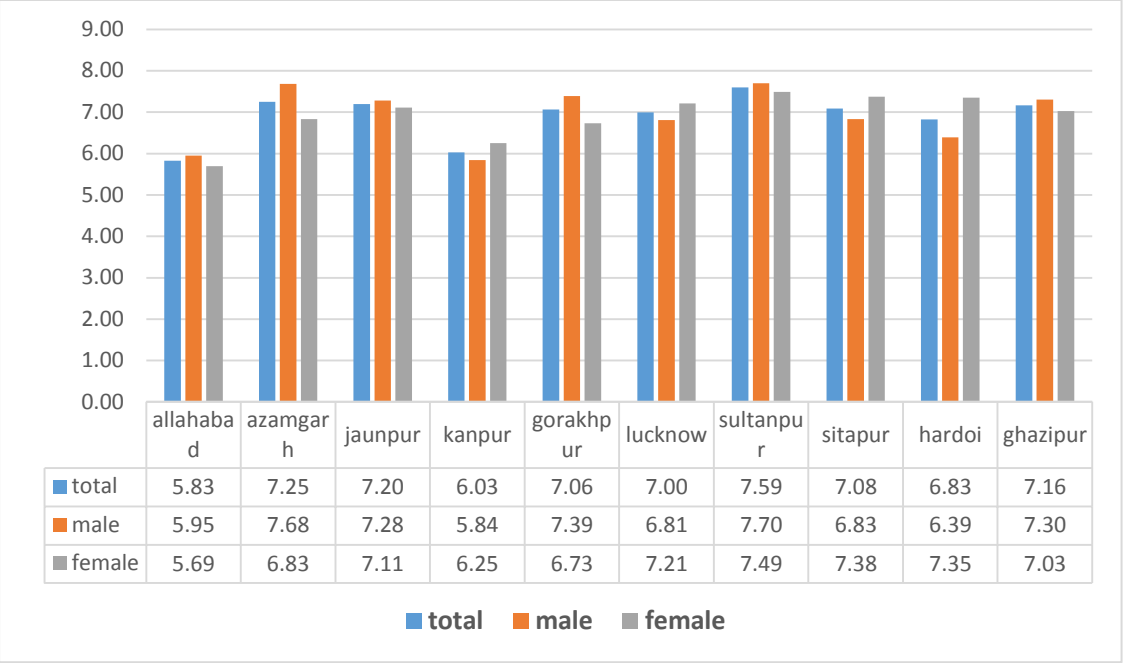


Source: census 2001

3.4.2 District Wise Percent Share of Ageing Population in 2001

District Sitapur has highest ageing population in terms of absolute number while we look at the percent of ageing population in total population Sultanpur has highest (7.59) percent of ageing population followed by Azamgarh (7.25), Jaunpur (7.20) and Ghazipur (7.16). Azamgarh has highest percent 7.68 percent of male population while Sitapur has highest percent (7.35) of female population.

Figure 3.4. Old Age Percentage in Total Population by Gender, Census 2001



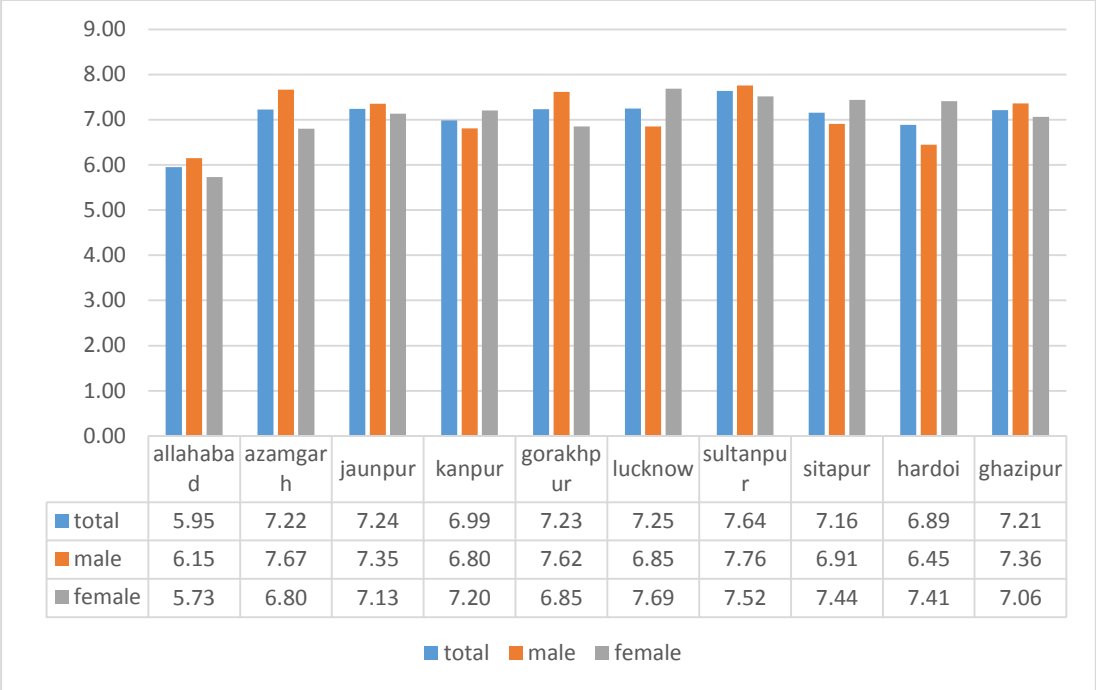
	allahabad	azamgarh	jaunpur	kanpur	gorakhpur	lucknow	sultanpur	sitapur	hardoi	ghazipur
total	5.83	7.25	7.20	6.03	7.06	7.00	7.59	7.08	6.83	7.16
male	5.95	7.68	7.28	5.84	7.39	6.81	7.70	6.83	6.39	7.30
female	5.69	6.83	7.11	6.25	6.73	7.21	7.49	7.38	7.35	7.03

Source: calculated from census 2001

3.4.3 District Wise Percentage Share of Rural and Urban Population of Old Persons

Area wise ageing population shows that in the figure 3.5, Sultanpur has highest rural population (7.64) followed by lucknow (7.25), Jaunpur (7.24) and Gorakhpur (7.23) but gender wise population shows different result as Lucknow has highest Rural aged female (7.69) in comparison to male (6.85) followed by Sultanpur (7.52), Sitapur (7.44) and Hardoi (7.41) while Sultanpur has highest percent (7.76) of rural male population followed by Azamgarh (7.67).

Figure 3.5. Percentage of Rural Population 60 and Above, Census 2001

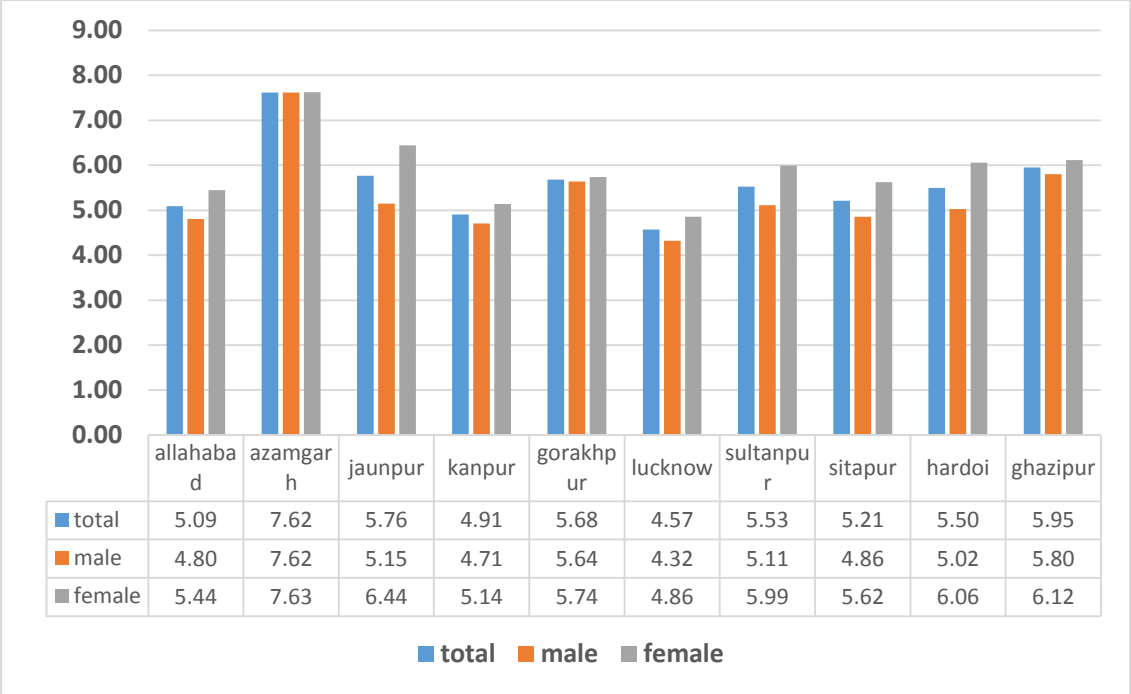


	allahabad	azamgarh	jaunpur	kanpur	gorakhpur	lucknow	sultanpur	sitapur	hardoi	ghazipur
total	5.95	7.22	7.24	6.99	7.23	7.25	7.64	7.16	6.89	7.21
male	6.15	7.67	7.35	6.80	7.62	6.85	7.76	6.91	6.45	7.36
female	5.73	6.80	7.13	7.20	6.85	7.69	7.52	7.44	7.41	7.06

Source: calculated from census 2001

In other hand focusing on urban ageing population we can see in figure 3.6, Azamgarh has highest percentage share of total (7.62) population as well as male (7.62) and female (7.63) among all districts. Lucknow has lowest urban aged population (4.57), where male are (4.32) and female (4.86). Jaunpur is second highest in female (6.44) aged population after Azamgarh.

Figure 3.6 Percentage Share of Urban Population of Old Persons 2001



	allahabad	azamgarh	jaunpur	kanpur	gorakhpur	lucknow	sultanpur	sitapur	hardoi	ghazipur
total	5.09	7.62	5.76	4.91	5.68	4.57	5.53	5.21	5.50	5.95
male	4.80	7.62	5.15	4.71	5.64	4.32	5.11	4.86	5.02	5.80
female	5.44	7.63	6.44	5.14	5.74	4.86	5.99	5.62	6.06	6.12

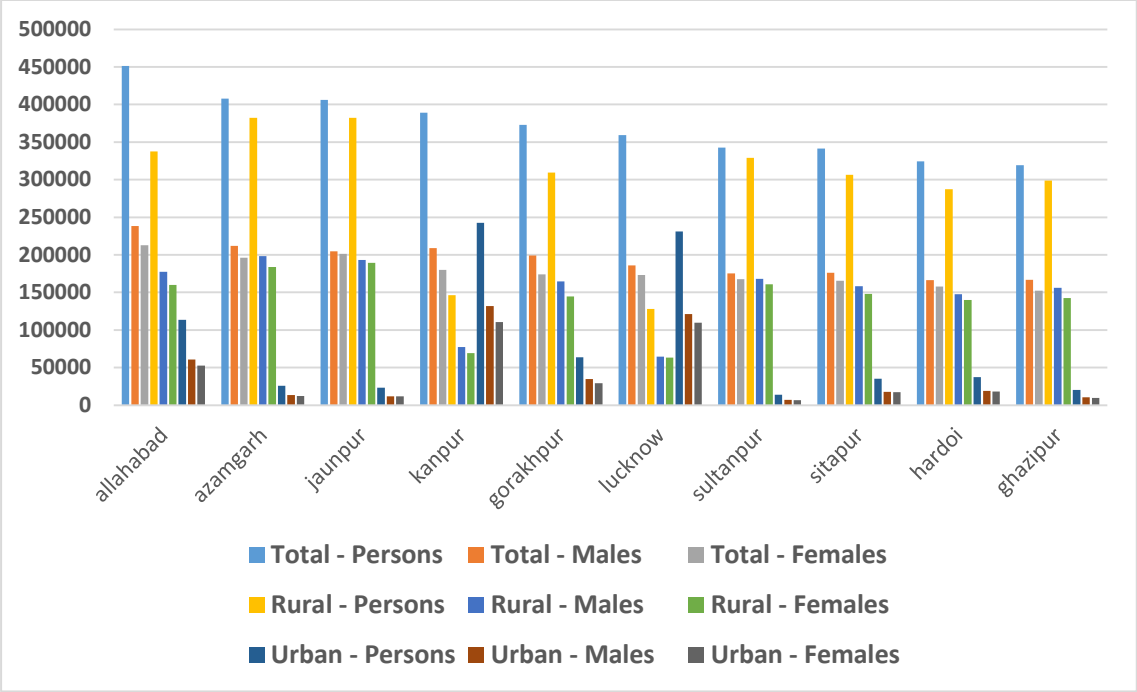
Source: calculated from census 2001

3.4.4 District Wise Ageing Population According to Census 2011

In 2011 census the percent of ageing population of Uttar Pradesh 7.73 where 7.69 percent male and 7.77 percent female. As figure 5 is showing, district Allahabad has highest number of total ageing population followed by Azamgarh, Jaunpur and Kanpur (Nagar). Observing area wise population we can see that Janpur has highest number of rural old person followed by Azamgarh, Allahabad and Sultanpur while Kanpur has highest number of urban old population followed by Lucknow and Allahabad. It is noticed that most of the ageing population is living in rural areas.

The below figure 3.7 is showing the district wise ageing population by gender and area, and found that Allahabad has highest total number of aged persons, followed by Jaunpur and Azamgarh while Ghazipur has the lowest aged population. In 2001, Azamgargh was the highest aged population district but 2011 it has shift on second number. That means in Allahabad, number of old population has been increased.

Figure 3.7 District Wise Ageing Population by Gender and Area

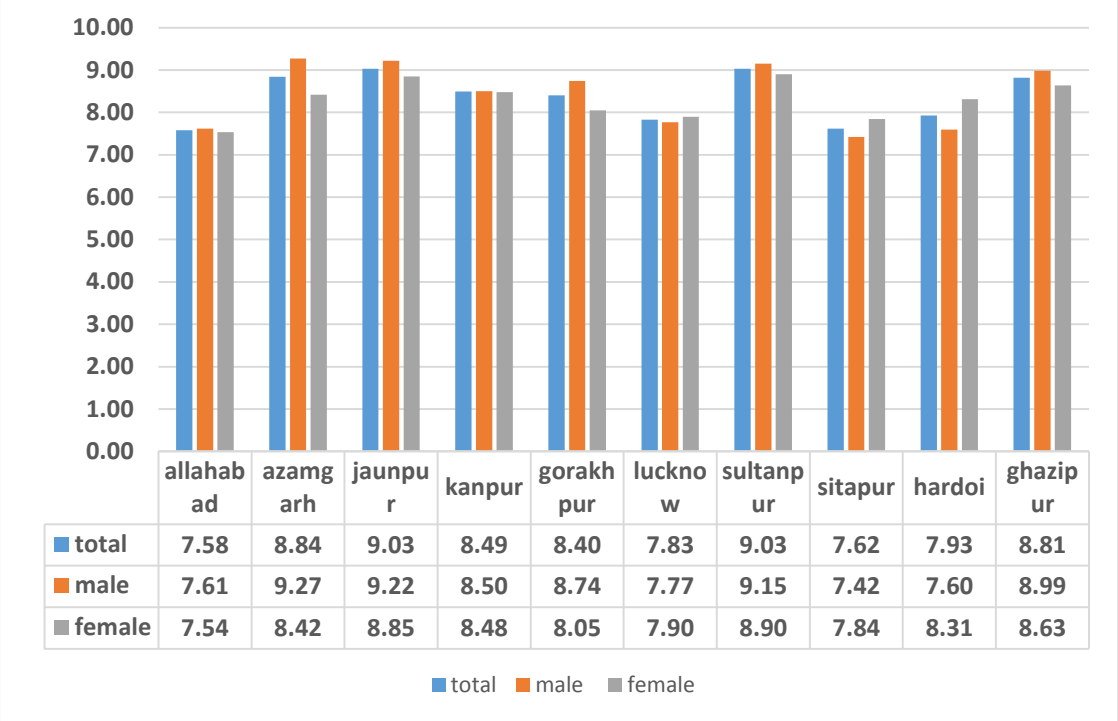


Source: census 2011

3.4.5 District Wise Percent Share of Old Population by Gender in 2011

In census 2011, total percent of ageing population is 7.76, in the below figure 6 we can see that Jaunpur (9.03) and Sultanpur (9.03) has highest percent of ageing population followed by Azamgarh(8.84), Ghazipur (8.81) and Kanpur (8.49). Azamgarh has highest percentage of male population (9.27) against female population (8.42) while Sultanpur has highest percentage of female population (8.90) but it is less than percentage of male population of the district. In other hand Hardoi has higher female (8.31) ageing population percentage in comparison to male (7.60) population, Sitapur also has higher female (7.84) population than male (7.42). Average male ageing population percentage in census 2011 is 8.43 while female average percentage is 8.29.

Figure 3.8 District Wise Percent Share of Old Population by Gender in 2011



	allahabad	azamgarh	jaunpur	kanpur	gorakhpur	lucknow	sultanpur	sitapur	hardoi	ghazipur
total	7.58	8.84	9.03	8.49	8.40	7.83	9.03	7.62	7.93	8.81
male	7.61	9.27	9.22	8.50	8.74	7.77	9.15	7.42	7.60	8.99
female	7.54	8.42	8.85	8.48	8.05	7.90	8.90	7.84	8.31	8.63

Source: calculated from census 2011

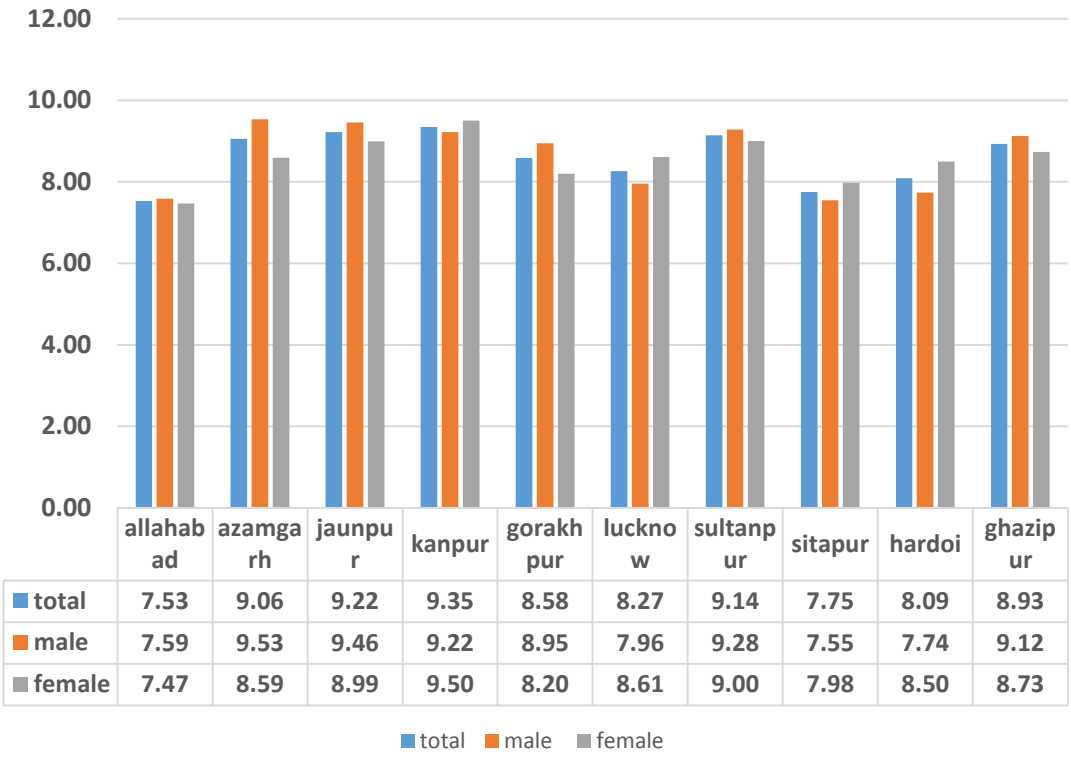
3.4.6 Percent Share of Old Population in Rural and Urban Areas by Gender 2011

In the below figure 3.9, we can see the rural population percentage of ageing population of 2011 census. Kanpur has highest rural population (9.35) followed by Jaunpur (9.22), Sultanpur (9.14) and Azamgarh (9.06). If we see gender wise ageing population percentage of rural areas, we find that Azamgarh has highest male population (9.53) of followed by Jaunpur (9.46), Sultanpur (9.28) and Kanpur while Kanpur has highest female population percentage (9.50) followed by Sultanpur (9.00), Jaunpur (8.99) and Azamgarh (8.59). Hardoi, Sitapur and Kanpur are only districts where female population is higher than male population.

Figure 3.10 shows the percentage share of old population in urban areas according to census 2011, in the figure we can see that Kanpur has highest urban ageing population

(8.05) in terms of male and female, followed by Allahabad (7.71), Gorakhpur (7.63) and Lucknow (7.61). Looking at gender wise population it can see in the figure 8 after Kanpur (8.13) followed by Gorakhpur (7.87), Allahabad (7.69) and Lucknow (7.67) has highest male ageing population while female urban ageing population after Kanpur (7.94) it is highest in Allahabad (7.74) followed by (Lucknow 7.54) and Gorakhpur (7.35).

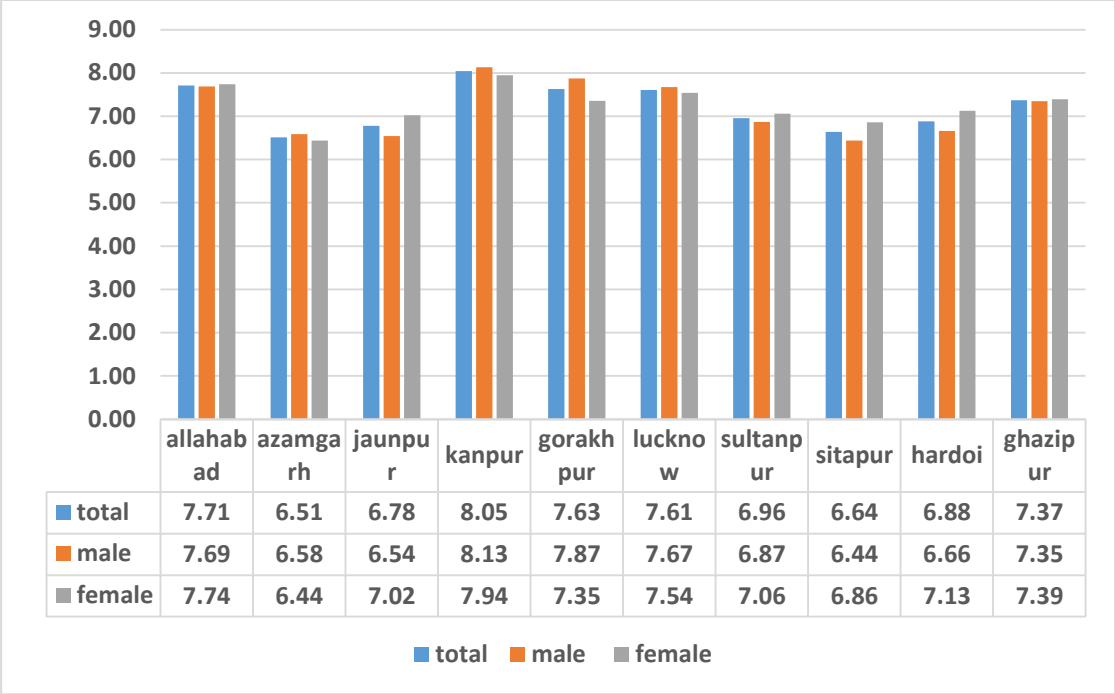
Figure 3.9 percent share of Old Population in Rural Areas by Gender, 2011



	allahabad	azamgarh	jaunpur	kanpur	gorakhpur	lucknow	sultanpur	sitapur	hardoi	ghazipur
total	7.53	9.06	9.22	9.35	8.58	8.27	9.14	7.75	8.09	8.93
male	7.59	9.53	9.46	9.22	8.95	7.96	9.28	7.55	7.74	9.12
female	7.47	8.59	8.99	9.50	8.20	8.61	9.00	7.98	8.50	8.73

Source: calculated from census 2011

Figure 3.10 Percent share of Old Population in Rural Areas by Gender, 2011



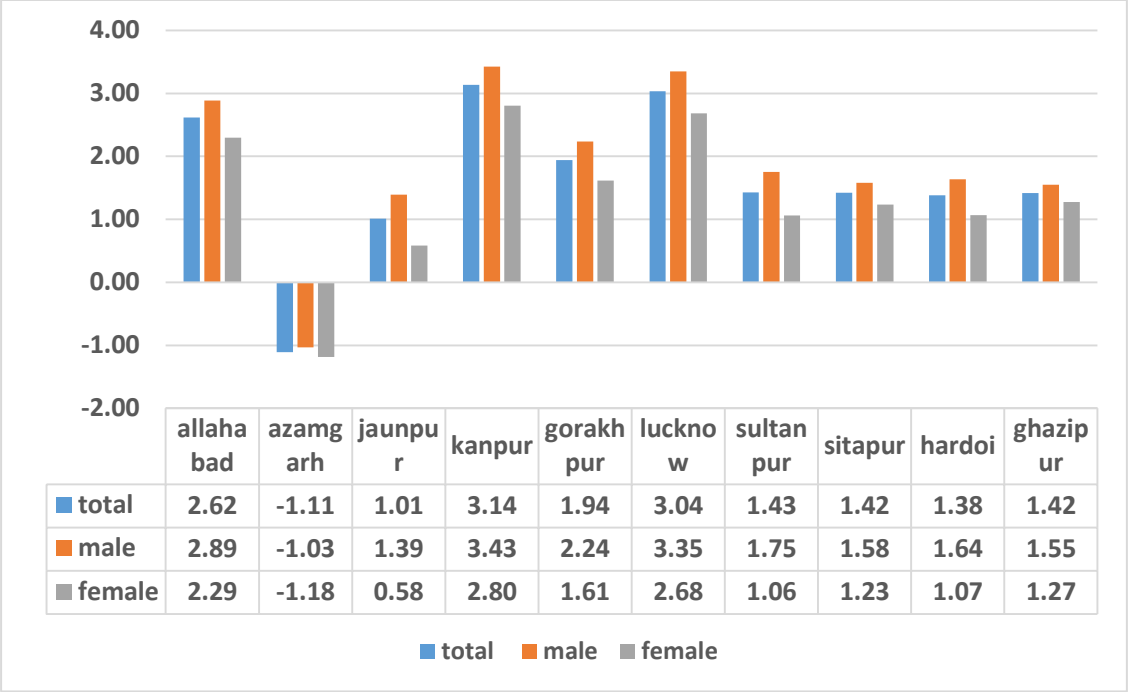
	allahabad	azamgarh	jaunpur	kanpur	gorakhpur	lucknow	sultanpur	sitapur	hardoi	ghazipur
total	7.71	6.51	6.78	8.05	7.63	7.61	6.96	6.64	6.88	7.37
male	7.69	6.58	6.54	8.13	7.87	7.67	6.87	6.44	6.66	7.35
female	7.74	6.44	7.02	7.94	7.35	7.54	7.06	6.86	7.13	7.39

Source: calculated from census 2011

3.4.7 Percentage Change in Census 2001 and 2011

Figure 3.11 depicts the percentage change between census 2011 and 2001, it shows the different ageing population of census 2011 and census 2001. In the figure we can see that highest increase seen in Kanpur district (3.14), second highest increase seen in Lucknow (3.04), and third in Allahabad (2.62). In other hand, Azamgarh district has negative change (-1.11) in ageing population.

Figure 3.11 Percentage Change in Aged Population during 2001 and 2011



	allahabad	azamgarh	jaunpur	kanpur	gorakhpur	lucknow	sultanpur	sitapur	hardoi	ghazipur
total	2.62	-1.11	1.01	3.14	1.94	3.04	1.43	1.42	1.38	1.42
male	2.89	-1.03	1.39	3.43	2.24	3.35	1.75	1.58	1.64	1.55
female	2.29	-1.18	0.58	2.80	1.61	2.68	1.06	1.23	1.07	1.27

Source: Calculated from census 2001 & 2011

3.5 Health infrastructure of Uttar Pradesh

Health infrastructure is very important factor for ageing population because ageing population suffering from more health issues, so they need more health accessibility for their healthy lives. The state has a three-tier public healthcare infrastructure, comprising Primary Health Centres (PHCs), Health Units, Community Health Centres (CHCs) and Sub-Centres. The state consist of 20,521 Sub centres, 3,692 PHCs, 515 CHCs, 72 District Hospitals.

In Uttar Pradesh, the number of public health centres (PHCs), the Frontline of the government's health care system, decreased 8 per cent over the last 15 years to 2015, a period when the state's population increased by more than 25 per cent. Smaller sub centres, the first point of public contact, increased by no more than 2 per cent over the 25 years to 2015, a period when the population grew by more than 51 per cent. UP contributed to the largest share of almost all communicable and non-communicable

disease deaths, including: 48 per cent of all typhoid deaths (2014); 17 per cent of cancer deaths.

Healthcare has been low on the priorities of successive UP governments. The per capita expenditure on health in UP increased from Rs.260 to Rs.372 over four years to 2010, according to a 2012 National Institute of Public Finance and Policy report, compared to Rs.356 to Rs.580 in Kerala and from Rs.299 to Rs.579 in Tamil Nadu over the same period. Among the major states of India, UP, Assam, Madhya Pradesh and Odisha account for the lowest life expectancy at birth, in contrast to the decade-long progress evident in most southern, western and eastern states. What are the reasons for UP's poor health care record? A combination of several factors, such as a shortage of healthcare professionals, increasing cost of health care, the mushrooming of private healthcare and a lack of planning. A third of the rural population in UP has been deprived of primary health care infrastructure, according to the norms of the Indian Public Health Standards (IPHS). The state requires 31,037 sub centres, 5,172 PHCs and 1,293 community health centres (CHCs) to meet the healthcare demands of its population.

In UP, private health providers – including unrecognized doctors and quacks – meet 85 per cent of medical needs, according to the report. It appears that the people of UP have two choices: an inadequate, inefficient public healthcare system and a private healthcare system offering low quality and expensive services.

3.5.1 Sub-Centres (SCs)

In the Sub-Centres there is no bed System only medicines are provided. At least two female worker and one male worker should be available in sub-centres. In normal areas or plain areas one Sub- Centre should available for 5000 population and 3000 in

hilly areas (NSSO Report, 574, 2014). The Sub-Centre is the most peripheral and first contact point between the primary health care system and the community. Each Sub-Centre is manned by one Auxiliary Nurse Midwife (ANM) and one Male Health Worker/ MPW (M), (One Lady Health Worker (LHV) is entrusted with the task of supervision of six Sub-Centres. Sub-Centres are assigned tasks relating to interpersonal communication in order to bring about behavioural change and provide services in relation to maternal and child health, family welfare, nutrition, immunization, diarrhoea control and control of communicable diseases programmes. The Sub-Centres are provided with basic drugs for minor ailments needed for taking care of essential health needs of men, women and children. The Ministry of Health & Family Welfare is providing 100% Central assistance to all the Sub-Centres in the country since April 2002 in the form of salary of ANMs and LHVs, rent at the rate of Rs.3000/- per annum and contingency at the rate of Rs.3200/- per annum, in addition to drugs and equipment kits. The salary of the Male Worker is borne by the State Governments. Under the Swap Scheme, the Government of India has taken over an additional 39,554 Sub Centres from State Governments / Union Territories since April, 2002 in lieu of 5,434 members of Rural Family Welfare Centres transferred 71 to the State Governments / Union Territories. There are 1, 45,272 Sub Centres functioning in the country as on March 2016.

3.5.2 Primary Health Centres (PHCs)

Primary Health Centre (PHCs) provides 4-6 bed service, one MBBS or AYUSH doctor facility. It available for 30000 population in normal areas and for 20000 population in hilly areas (NSSO Report, 574, 2014). It is sometimes referred to as public health centres, are state-owned rural health care facilities in India. They are essentially single-physician clinics usually with facilities for minor surgeries, too.

They are part of the government-funded public health system in India and are the most basic units of this system. Presently there are 28,863 PHCs in India. PHC is the first contact point between village community and the Medical Officer. The PHCs were envisaged to provide an integrated curative and preventive health care to the rural population with emphasis on preventive and promotive aspects of health care. The PHCs are established and maintained by the State Governments under the Minimum Needs Programme (MNP)/ Basic Minimum Services Programme (BMS). At present, a PHC is manned by a Medical Officer supported by 14 paramedical and other staff. It acts as a referral unit for 6 Sub Centres. It has 4 – 6 beds for patients. The activities of PHC involve curative, preventive, primitive and Family Welfare Services. Apart from provide medicines it also provide below facilities:

- **Infant immunization programs:** Immunization for new born under the national immunization program is dispensed through the PHCs. This program is fully subsidised
- **Anti-epidemic programs:** The PHCs act as the primary epidemic diagnostic and control centres for the rural India. Whenever a local epidemic breaks out, the system's doctors are trained for diagnosis. They identify suspected cases and refer for further treatment.
- **Birth control programs:** Services under the national birth control programs are dispensed through the PHCs. Sterilization surgeries such as vasectomy and tubectomy are done here. These services, too, are fully subsidised.
- **Pregnancy and related care:** A major focus of the PHC system is medical care for pregnancy and child birth in rural India. This is because people from rural India resist approaching doctors for pregnancy care which increases neonatal death. Hence, pregnancy care is a major focus area for the PHCs.

- **Emergencies:** All the PHCs store drugs for medical emergencies which could be expected in rural areas. For example antivenins for snake bites, rabies vaccinations, etc

3.5.3 Community Health Centres (CHCs)

It is located at block/ division or taluk level. It serves as referral centre for PHC. It gives the facility of medical specialist and medical officers, AYUSH doctors and paramedical staff. It has capacity of 10-30 beds**.** CHCs are being established and maintained by the State Government under MNP/BMS programme. It is manned by four medical specialists i.e. Surgeon, Physician, Gynaecologist and Paediatrician supported by 21 paramedical and other staff. It has 30 indoor beds with one OT, X-ray, Labour Room and Laboratory facilities. It serves as a referral centre for 4 PHCs and also provides facilities for obstetric care and specialist consultations.

3.5.4 District Hospitals

District Hospitals are the final referral centres for the primary and secondary levels of the public health system. It is expected that at least one hospital is in each district of India, although in 2010 it was recorded that only 605 hospitals exist when there are 640 districts. There are normally anywhere between 75 to 500 beds, depending on population demand. These district hospitals often lack modern equipment and relations with local blood banks.

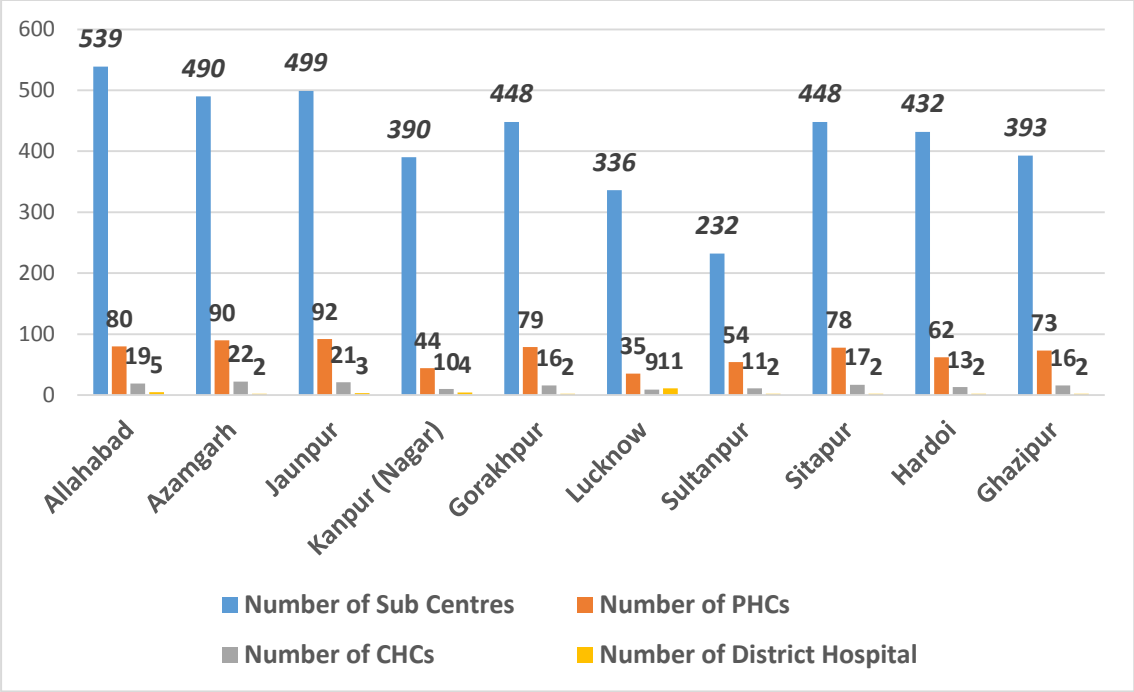
According to Data of RHS, 2018-19, as on 31st March, 2019, there are 157411 Sub Centres (SC), 24855 Primary Health Centres (PHCs) and 5335 Community Health Centres (CHCs) in rural areas which are functioning in the country. Further there are 7821 SCs which are upgraded as Health and Wellness Centre-Sub Centres (HWC-SCs) out of total 157541 SCs and 8242 Health and Wellness Centres-Primary Health

Centres (HWC-PHCs) has been upgraded out of total 24855 PHCs. 75.3% of Sub Centres, 94.5 % of PHCs and 99.3 % of CHCs function in government buildings. The position of specialists manpower at CHCs reveal that as on 31st March, 2019, out of the sanctioned posts, 79.9% of Surgeons, 64% of obstetricians & gynaecologists, 77.5% of physicians and 69.7% of paediatricians are vacant. However, in addition to the specialists, about 15395 General Duty Medical Officers (GDMOs), 3197 AYUSH and 1920 Dental Surgeons doctors are also available at CHCs as on 31st March, 2019. A total of 1234 Sub Divisional/Sub District Hospital are functioning as on 31st March, 2019 throughout the country. In these hospitals, 13750 doctors are available. In addition to these doctors, about 36909 paramedical staffs are also available at those hospitals as on 31st March, 2019. In addition to above, 756 District Hospitals (DHs) are also functioning as on 31st March, 2019 throughout the country. There are 24676 doctors available in the DHs. In addition to the doctors, about 85194 para medical staff is also available at District Hospitals as on 31st March, 2019.

3.5.4 Districts Wise Number of Sub Centres, PHCs, CHCs in Uttar Pradesh

The figure 3.12 shows the number of sub centres. PHCs, CHCs and Districts Hospitals in various districts of Uttar Pradesh. It reveals that Allahabad has highest number of Sub Centres (539), Jaunpur Has Highest number of PHCs (92), Azamgarh has highest number of CHCs (22) and Lucknow has highest number of District hospitals (11). The figure reflects that Lucknow has better health facilities because there are more districts hospitals because more medical facilities available in districts hospitals. Lucknow is the capital of the state so the burden of patients is also more because the patients of other districts come here for treatment.

Figure 3.12 Number of Sub Centres, CHCs, PHCs and District Hospitals



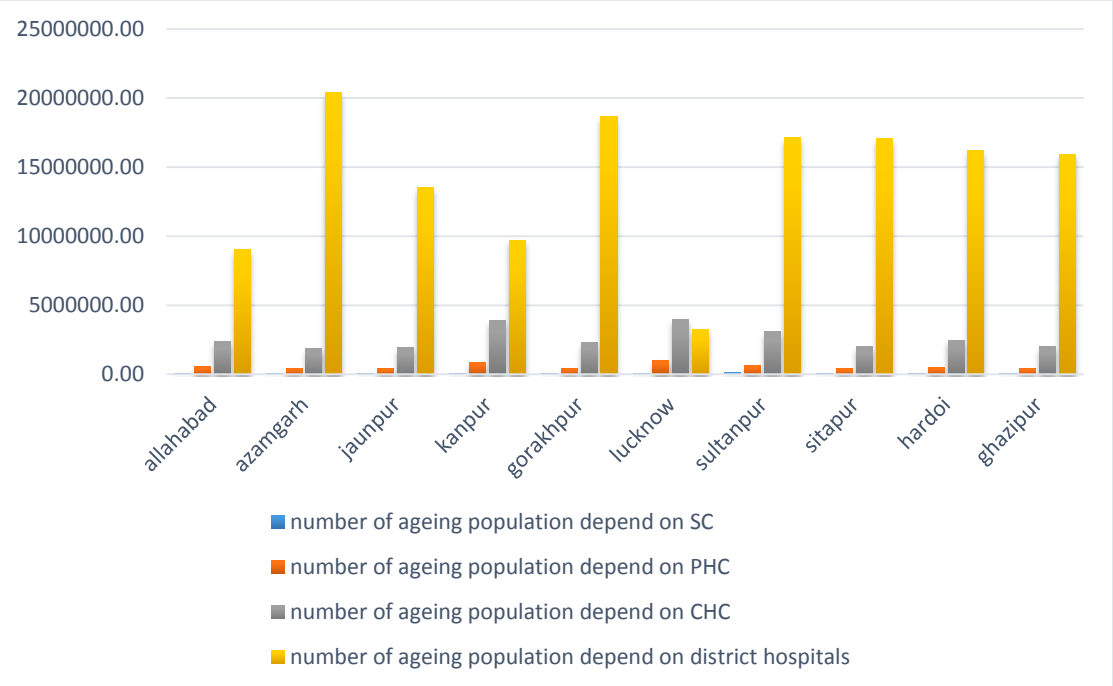
Source: RHS 2016

3.5.6 Availability of Sub Centres, PHCs, CHCs and District Hospitals according to Ageing Population

Table 3 is showing the district wise dependency of ageing population on per 100 hospitals of districts, the availability of health facilities is showing the health infrastructure of the area**.** This means that how many ageing population depend on 100 hospitals, the lower number of dependent ageing population means good health infrastructure while higher number of dependent ageing population means poor health infrastructure in particular district. This section includes only ageing population. As per NSSO report 574, round 71 (2014) norms one Sub Centres should be existing for 5000 population in normal or plain areas and for 3000 population in hilly areas, one Primary Health Centres (PHCs) should be existing for the population 30000 in normal areas and 20000 for hilly areas and Community Health Centre (CHC) are located at block/ division or taluk level.

The given figure 3.13 reveals that district Azamgarh has highest dependency of ageing population on available hospitals, this shows that Azamgarh has worst health Infrastructure, the second highest number of Gorakhpur district followed by Sultanpur, sitapur and Hardoi. In other had focusing on low dependency of ageing population on hospitals the district Lucknow has highest number followed by Allahabad and Kanpur Nagar, these districts have better health infrastructure than other districts. We can see the number of doctors and number of beds in hospitals are very less in comparison of number of ageing population in districts.

Figure 3.13: District Wise Number of Dependent Ageing Population on Per 100 HSC, PHC, CHC and District Hospitals[3]



Source: Calculated from census 2011 and RHS 2016 data

[3] Formulae- number of total ageing population/Number of total hospitals*100

3.5.7 Gap between Availability of Allopathic Hospitals and Total Strength of Allopathic Hospitals

The data points out a major crisis in government health sector i.e. in the hospitals of Districts Uttar Pradesh, there are shortage of doctors. The strength of hospitals is more but doctors are not available accordingly. The same is reflect in the table 3.6 which shows the gap of allopathic hospitals between total strength of allopathic hospitals and number of in position allopathic hospitals and gap of paramedical staff between strength of paramedical staff and in position paramedical staff. The result shows that in Kanpur District the gap between allopathic hospitals strength and in position is very high (144) same as paramedical staff the gap is also highest among all districts (417). Again the Allahabad and Lucknow districts having better condition among all districts. The gap show the lack of medical staff according to requirement of. It means that the seats are vacant in hospitals but the supply of staff is very slow.

Table 3.6 Gap between Availability of Allopathic Hospitals and Total Strength of Allopathic Hospitals

Districts Name 1	Hospital Allopathic (Numbers) 2	Hospital Allopathic Beds (Numbers) 3	Hospital Allopathic Doctors-Total Strength (Numbers) 4	Hospital Allopathic Doctors-In Position (Numbers) 5	Gap of Allopathic Doctors 6=4-5	Hospital Allopathic Para Medical Staff-Total Strength (Numbers) 7	Hospital Allopathic Para Medical Staff-In Position (Numbers) 8	Gap of Paramedical staff of allopathic doctors 9=7-8	Hospital Allopathic Nearest facility Distance (in Kms.) 10
Allahabad	12	476	112	100	12	177	161	**16**	55
Azamgarh	9	458	73	14	59	112	104	**8**	110.5
Jaunpur	8	225	53	27	26	183	163	**20**	55
Kanpur	67	4882	392	248	144	2140	1723	**417**	30
Gorakhpur	18	300	64	37	27	200	183	**17**	52
Lucknow	70	2418	162	144	18	298	294	**4**	65
Sultanpur	7	256	52	35	17	249	227	**22**	66
Sitapur	12	232	116	82	34	494	479	**22**	20
Hardoi	16	449	73	58	15	394	350	**44**	14
Ghazipur	7	277	48	42	6	189	166	**23**	36

Source: Censes 2011 (DCH)

3.6 Life Expectancy of India and States

Life expectancy is a statistical measure of the average time of a human is expected to live, based on the year of its birth, its current age and other demographic factors including gender. The most commonly used measure is life expectancy at birth (LEB), which can be defined in two ways. *Cohort* LEB is the mean length of life of an actual birth cohort (all individuals born a given year) and can be computed only for cohorts born many decades ago, so that all their members have died. *Period* LEB is the mean length of life of a theoretical cohort expected to be exposed, from birth through death, to the death rates observed at a given year.

The below table 3.7 is depicts the life expectancy at birth of India and states from 2009-2016. The life expectancy of India is 68.7 in year 2016, female has higher life expectancy (70.2**)** than male (67.4). Focusing on states condition on life expectancy we found that Kerala has highest life expectancy (75.1) followed by Delhi (74.2), Jammu and Kashmir 73.5, Punjab (72.5), Himachal Pradesh (72.3) and Maharashtra (72.2). Other than these states Uttrakhand (71.5), Tamil Nadu (71.4),), West Bengal (70.8), Andhra Pradesh (69.6), Gujarat (69.5), Haryana (69.4), Karnataka (69.1) and Bihar (68.7), are those states who have more than or equal life expectancy than India. But when we see the status of Uttar Pradesh, the data reveals that among all states Uttar Pradesh has lowest life expectancy (64.8) at birth, it reflects that the health care services are in poor condition in Uttar Pradesh.

Table 3.7 Life Expectancy of India and States (in years)

States	2009-13			2010-14			2011-15			2012-16		
	Male	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
	Higher Life Expectancy States than India											
Kerala	71.8	77.8	74.8	72.0	77.8	74.9	72.2	78.2	75.2	72.2	77.9	75.1
Delhi	-	-	-	72.0	74.7	73.2	72.5	75.4	73.8	72.7	75.9	74.2
Jammu and Kashmir	70.6	74.0	72.0	70.9	74.9	72.6	71.2	76.1	73.2	71.6	76.2	73.5
Punjab	69.1	73.4	71.1	69.7	73.8	71.6	70.3	74.2	72.1	71	74.2	72.5
Himachal Pradesh	69.0	73.1	71.0	69.3	74.1	71.6	69.1	75.2	72.0	69.4	75.5	72.3
Maharashtra	69.4	73.4	71.3	69.9	73.6	71.6	70.3	73.9	72.0	70.8	73.7	72.2
Uttrakhand	-	-	-	69.1	74.5	71.7	68.9	74.9	71.8	68.5	74.8	71.5
Tamil Nadu	68.2	72.3	70.2	68.6	72.7	70.6	69.1	73.0	71.0	69.5	73.4	71.4
West Bengal	68.5	71.6	69.9	68.9	71.6	70.2	69.4	71.8	70.5	69.8	71.9	70.8
Andhra Pradesh	65.5	70.4	67.9	66.3	70.8	68.5	67.1	71.2	69.0	68	71.4	69.6
Gujarat	66.0	70.5	68.2	66.6	71.0	68.7	66.9	71.6	69.1	67.4	71.8	69.5
Haryana	65.8	70.9	68.2	66.3	71.3	68.6	66.9	71.9	69.1	67.2	72	69.4
Karnataka	66.4	70.8	68.5	66.9	70.8	68.8	67.2	70.9	69.0	67.6	70.7	69.1
Bihar	67.3	68.0	67.7	67.8	68.4	68.1	68.5	68.3	68.4	68.9	68.5	68.7
ALL INDIA	**65.8**	**69.3**	**67.5**	**66.4**	**69.6**	**67.9**	**66.9**	**70.0**	**68.3**	**67.4**	**70.2**	**68.7**
Lower Life Expectancy States than India												
Rajasthan	65.4	70.0	67.5	65.5	70.2	67.7	65.7	70.4	67.9	66.1	70.7	68.3
Jharkhand	-	-	-	66.2	66.9	66.6	67.0	67.5	67.2	67.8	68	67.9
Odisha	63.8	65.9	64.9	64.7	67.1	65.8	65.6	68.3	66.9	66.2	69.1	67.6
Assam	61.9	65.1	63.3	62.7	65.5	63.9	63.5	66.2	64.7	64.4	66.8	65.5
Madhya Pradesh	62.3	65.5	63.8	62.5	66.0	64.2	63.2	66.5	64.8	63.7	67.2	65.4
Chhattisgarh	-	-	-	63.3	66.3	64.8	63.6	66.8	65.2	63.6	66.8	65.2
Uttar Pradesh	**62.5**	**65.2**	**63.8**	**62.9**	**65.4**	**64.1**	**63.4**	**65.6**	**64.5**	**63.9**	**65.6**	**64.8**
*: Quinquennial Survey. -: Not Available.												
Note: Data relating to Bihar, Madhya Pradesh and Uttar Pradesh includes Jharkhand, Chhattisgarh and Uttarakhand, respectively.												

Source: Sample Registration System, Bulletin, various issues, Office of the Registrar General and Census Commissioner, Ministry of Home Affairs, Government of India; Economic Survey

3.7 Conclusion

In this chapter we found that the ageing population has been increased in Uttar Pradesh during 2001 to 2011. In 2001 and 2011 census, the data reveals that the percentage of elderly females is more than elderly males in both rural and urban area while in age group 0-59 percentage of male population is higher than female population in both rural and urban areas and shows that the percent change or growth of elderly person in 2001 to 2011 is highest in urban area which is about 3 times higher than others.

The number of old age population is more than availability of hospitals and other health care facility. So the dependency of old person towards hospitals is more. As ageing population is increasing, the health facilities are not increasing in same ratio. This gap creates more difficulties to the ageing population as they are not able to access health facilities because of physical weakness. Government should provide more health facilities to old persons in terms of good health infrastructure, geriatric wards, and separate que in hospitals. There are poor health infrastructure in Uttar Pradesh. Central and State Governments is answerable in providing Health care, the major importance in this case is on Rural Health care. This is because of more ageing population living in rural areas. Health care's at urban and city level it is cared by private and trust owned hospitals. Nevertheless, the management is also trying to play some role by setting up and working with District Level head quarter's hospitals, Community Health Centres and Area Hospitals. It is considered that the Health care at the rural areas has turned out to be the sole obligation of the governments as the private agencies do not undertake even at a least. Besides all of this as India being a rural oriented economy the task of Health care in rural areas is being carried out by

the governments as their chief task. Government should increase finance for health care services and also implemented health program for old person. Nevertheless, the management is also trying to play some role by setting up and working with District Level head quarter's hospitals, Community Health Centres and Area Hospitals. It is considered that the Health care at the rural areas has turned out to be the sole obligation of the governments as the private agencies do not undertake even at a least. Besides all this as India being a rural oriented economy the task of Health care in rural areas is being carried out by the governments as their chief task.

Chapter 4

Socioeconomic Status of the Study Area

Chapter 4

Socioeconomic Status of the Study Area

4.0 Introduction

Socioeconomic status (SES) encompasses not just income but also educational attainment, financial security, and subjective perceptions of social status and social class. Socioeconomic status can encompass quality of life attributes as well as the opportunities and privileges afforded to people within the society. Poverty, specifically, is not a single factor but rather is characterized by multiple physical and psychosocial stressors. Further, SES is a consistent and reliable predictor of a vast array of outcomes across the life span, including physical and psychological health. Thus, SES is relevant to all realms of behavioural and social science, including research, practice, education, and advocacy. SES affects the overall human functioning, including our physical and mental health. Low SES and its correlates, such as lower educational achievement, poverty, and poor health, ultimately affect our society. Inequities in health distribution, resource distribution, and quality of life are increasing in the United States and globally. Society benefits from an increased focus on the foundations of socioeconomic inequities and efforts to reduce the deep gaps in socioeconomic status in the United States and abroad.

Demographic characteristics of an area provide an overview of its population size, composition territorial distribution, changes therein and the components of changes such as nativity, mortality, and social mobility. This section on demographic indicators has been subdivided into two parts- Population Statistics and Vital Statistics. Population statistics include indicators that measure the population size, sex ratio, density and dependency ratio while vital statistics include indicators such as

birth rate, death rate, and natural growth rate, life expectancy at birth, mortality and fertility rates (***Census, India).***

In this chapter, the focus is essentially on the demographic scenario of study area which covers the population of study area along with family structure, housing details and social categories details of study area. Education and economic status have also been discussed in this chapter which shows the overall socioeconomic situation of the study area.

4.1 Lucknow: A Brief Note

4.1.1 Climate of Lucknow

Lucknow districts have almost uniform tropical climate. The temperature varies from maximum of 45 degrees Celsius in summers to a minimum of 5 degrees Celsius in winter season. Rainfall is 100 cm per annum. The forest area is negligible in the district. Shisham, Dhak, Mahua, Babul, Neem, Peepal, Ashok, Khajur, Mango and Gular trees are grown here. In fact different varieties of mangoes especially, Dashari are grown in Malihabad block of the district and exported to other countries too. The main crops are wheat, paddy, sugarcane, mustard, potatoes, and vegetables such as cauliflower, cabbage, tomatoes and brinjals are grown here. Similarly sunflowers, roses, and marigold are cultivated on quite a large area of the land. Apart from this many medicinal and herbal plants are also grown here.

Lucknow is the capital city of the country's biggest populated state, Uttar Pradesh. The city is located in the central region of UP between 26` 30` and 27` 10` in the north latitude and 80` 30` and 81` 31` east longitude. The city is situated on the bank of river Gomti. The river divides the city into two parts. Lucknow city is spread among more than 369 square kilometres with the population of 3037718. The 21st Century Lucknow has added metro services to its infrastructure and has also been

developing in all sectors. Moreover, the city has emerged as a new commercial hub of northern India especially in education, service, etc. Lucknow city is separated from Kanpur, Manchester of north India, by 90 kilometres.

4.1.2 Demographic Status of Lucknow

District Lucknow ranks 5th in terms of population in the state and 6th in terms of the highest number of aging population. The ageing population in Lucknow stands at 359386, which is 7.8 percent of its total population. In the district, 128194 old persons live in the rural areas while 231192 old persons live in the urban regions. The percentage share of urban population in the district is 66.2 as against 22.3 of the population in urban areas of the state. Lucknow district ranks 6th in the literacy levels with 77.3 percent of literate population, which is higher than the state average of 67.7 percent.

Lucknow has 4 sub-districts (Tehsils) namely Malihabad, Lucknow, Bakshi ka Talab and Mohanlalganj. Each sub districts has certain number of towns, Lucknow sub-district has 5 towns which is the highest in number. Bakshi ka Talab and Mohanlalganj each has 3 towns and Malihabad has only one town.

4.1.3 District Highlights - 2011 Census

- District Lucknow has been ranked 5th in terms of the population in the state.
- The percentage share of urban population in the district is 66.2 as against 22.3 of the population in the urban areas of the state.
- Lucknow district has a population density of 1,816 persons per sq.km which is much more than the state average of 829 persons per sq. km
- Lucknow district is ranked 24th in terms of the sex ratio (917) which is higher than the state average of 912 females per thousand males.

- Lucknow district is ranked 6th in the literacy at 77.3 percent, which is higher than the state average at 67.7 percent.
- There are only 4 uninhabited villages out of a total 807 villages in the district.
- Decadal growth rate of the district is 25.8 percent; this is higher than the state average of 20.2 percent.
- Mohanlalganj tehsil has the highest number of inhabited villages (229), while Malihabad and Bakshi Ka Talab have the lowest numbers at 185.
- The district has 12 towns, out of which 10 are *Statutory towns* and 2 are *Census towns*. One new statutory town, Bakshi Ka Talab (NP) has been added after 2001Census.
- There are 806,703 households in the district accounting for 2.6 per cent of the total households in the state. The average size of a household in the district is 5.3 persons.

4.2 Demographic Status of Study Area

We have chosen four towns of Lucknow district B. K. T. NP, Kakori NP, Lucknow CB and Lucknow M. Corp. Furthermore, two wards from each town have been selected. The method of selection of study area has been already explained in the first chapter. A sum of 240 households has been taken and only those households have been selected who have at least one senior citizen in their family. A total of 318 elderly were found among 240 households.

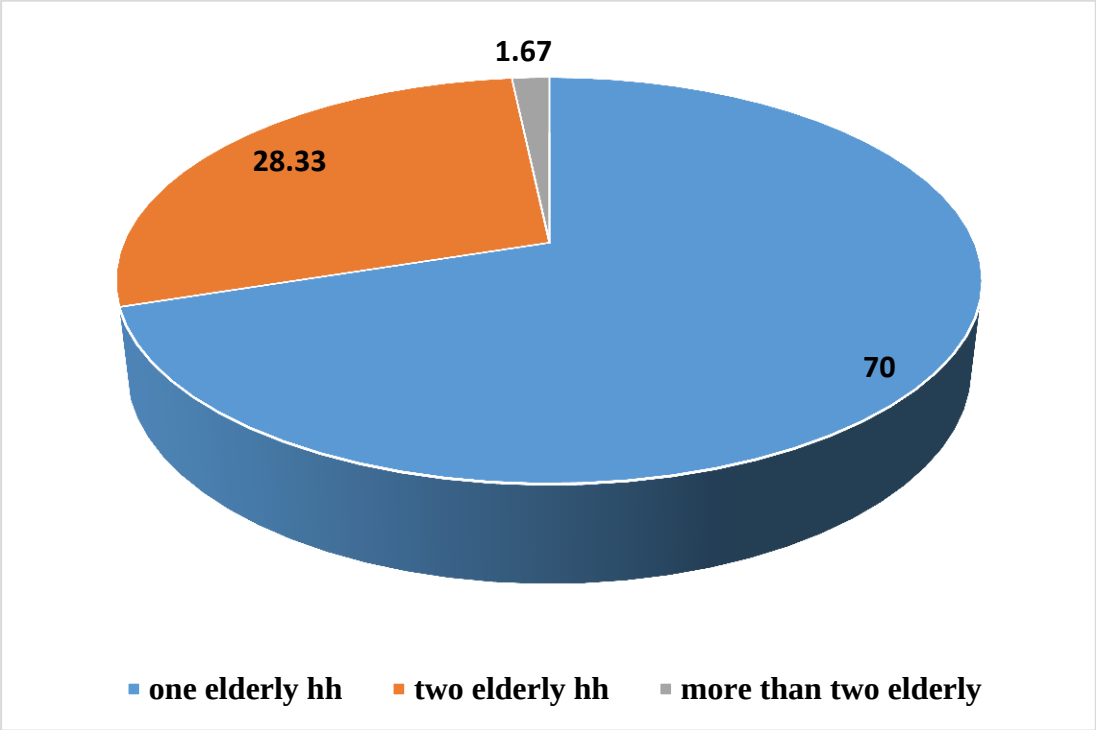
The table 4.1 below shows the total ageing population of Uttar Pradesh in absolute numbers (359440850), Lucknow (359386) and total ageing population of Study Area (318). This reveals that in Uttar Pradesh, Lucknow and in Study area, the number of male aged persons is more than the aged female, while in India, female aged are more than the male aged.

Table 4.1 Elderly Population in Uttar Pradesh, Lucknow and Study Area

Area	Total	Male	Female
U.P.*	359440850	18617399	17323376
Lucknow*	359386	186010	173376
Study Area**	318	160	158

Source: * Census 2011, ** Primary Survey

Figure 4.1: Percent Distribution of Elderly in a Household



Source: Estimated from Primary Survey

The above figure 4.1 shows the number of elderly persons in a household, we can see that out of 240 households, 70 percent of the households are living with one elderly either male or female while 28.33 percent households are living with two elderly. 2 percent of the households are living with more than two elderly.

4.2.1 Age Group of Elderly

This table shows the age composition of elderly persons, the table reveals that the 60-69 age group has the highest percentage of 66.67 among all followed by 70-79 age

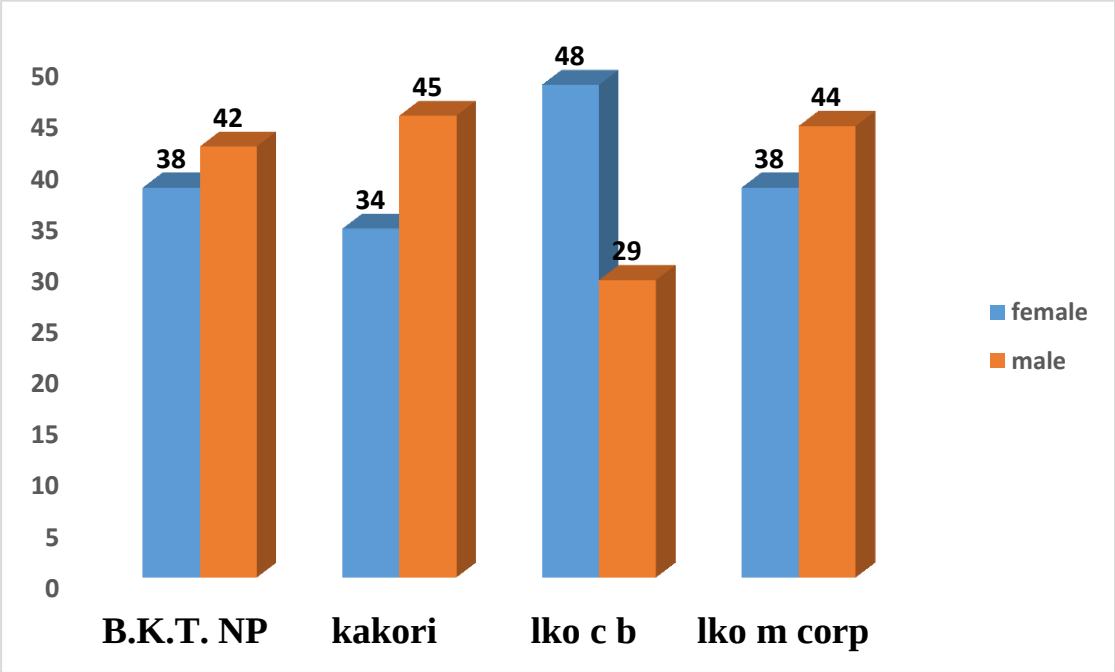
group at 23.9 percent and in the age group of 80-89 at 5.97 percent. The age group of 90 and above comprise the lowest percentage at 3.46.

Table 4.2 Distribution of Age Group of Elderly

Age Elderly	Freq.	Percent
60-69	212	66.67
70-79	76	23.9
80-89	19	5.97
90 and above	11	3.46
Total	318	100

Source: Estimated from Primary Survey

Figure 4.2 Town-Wise Distribution of Elderly Population by Gender



Source: Estimated from Primary Survey

The above table 4.2 depicts the number of ageing persons by gender in selected towns of study area, the figure reveals that Kakori NP has the highest number of aged male aged at 45, this is followed by Lko. M. Corp. at 44 and B.K.T. NP at 42, Lko CB has the lowest number of aged male at 29 among all towns. In the context of the aged

females, Lko. CB has the highest number at 48, followed by B.K.T. NP at 38, and Kakori NP at 34 which is the lowest count of aged females.

4.3 Religion and Category in Study Area

"Religion and caste is one of the many ideologies of social identification in India. It is becoming increasingly important - although, very often, what appears to be mobilisation on a religious basis can just as adequately, indeed more satisfactorily, be described in terms of caste, class or regional affiliations", (*Searle-Chatterjee M. 1993; p 147*). Religion and caste may decide individual's education, income and work status.

The below table 4.3 shows the religion wise frequency and percent of households in study area, the results show that the percent of the Hindu religion is the highest at 73.33 among all the religions, Muslim religion is the second highest at 24.17, while the others (Christian and Sikhs) religion have only 2.5 percent.

Table 4.3. Religion Wise Distribution of Households

Religion of Household	Freq.	Percent
Hindu	176	73.33
Muslim	58	24.17
Others	6	2.5
Total	240	100

Source: Estimated from Primary Survey

The table 4.4 shows the social categories of households, here we can see that OBC (43.33) category has the highest percent among all the categories followed by General Category (28.75), SC category has the lowest at (27.92) percent among all the categories.

Table 4.4. Social Categories Wise Distribution of Households

Categories of Household	Freq.	Percent
GEN	69	28.75
OBC	104	43.33
SC	67	27.92
Total	240	100

Source: Estimated from Primary Survey

4.4 The Social Status of Households

4.4.1 Public Distribution among Households of Study Area

The Public distribution system (PDS) is an Indian food Security System for the poor people established by the Government of India under the Ministry of Consumer Affairs, Food, and Public Distribution. While the Central government is responsible for procurement, storage, transportation, and bulk allocation of food grains, the State governments hold the responsibility for distributing the same to the consumers through the established network of approximately 5 lakh Fair Price Shops. Major commodities distributed include wheat, rice, sugar, and kerosene.

The table 4.4 shows the ration card facility availed by the households of study are. It is clearly seen in the table that number of those having no card holder is highest at 40.83 percent. The BPL card holders make for 34.17 percent, the second highest is followed by APL at 23.75 percent. The lowest percentage is that of Antyodaya Anna Yojna (AAY) which is at 1.25. No card holders belong to families which are in the high income group. Antyodaya card holders at 1.19 percent are those who are very poor. The situation shows that in the study area most of the people are economically strong.

Table 4.5. Distribution of Ration Cards Facility among Households

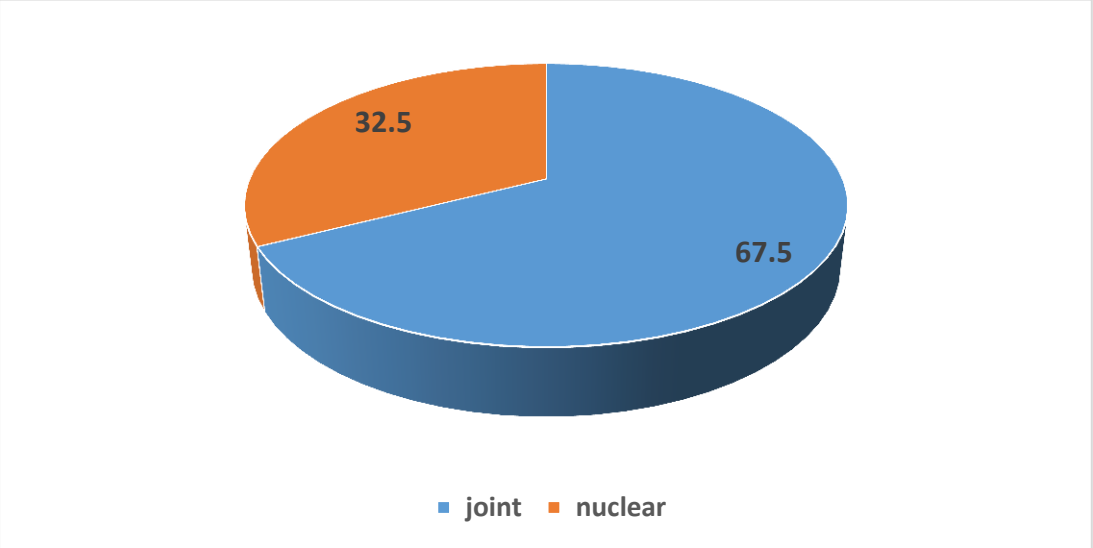
PDS facility	Freq.	Percent
APL	57	23.75
BPL	82	34.17
Antyodaya	3	1.25
No Cards	98	40.83
Total	240	100

Source: Estimated from Primary Survey

4.4.2. Nature of Family

Family is an integral premise of any individual's growth in terms of both grooming a person's social ethos as well as structuring a person's moral moorings. Indian families are a strong composite and filial bond is inextricably linked with each member's well-being. Family decides the future of individuals, there are two types of families that exist in India, Joint and Nuclear. Joint families are those families where two generation families are living together, for instance parents are living with their married children. While, Nuclear families are those where only one family is living together such as parents and their unmarried children. The Figure 4.3 shows the nature of family in the study area and reveals that 67.5 percent of the households are living in joint family while 32.5 percent are living in the nuclear families.

Figure: 4.3 Percent Distribution of Nature of Families

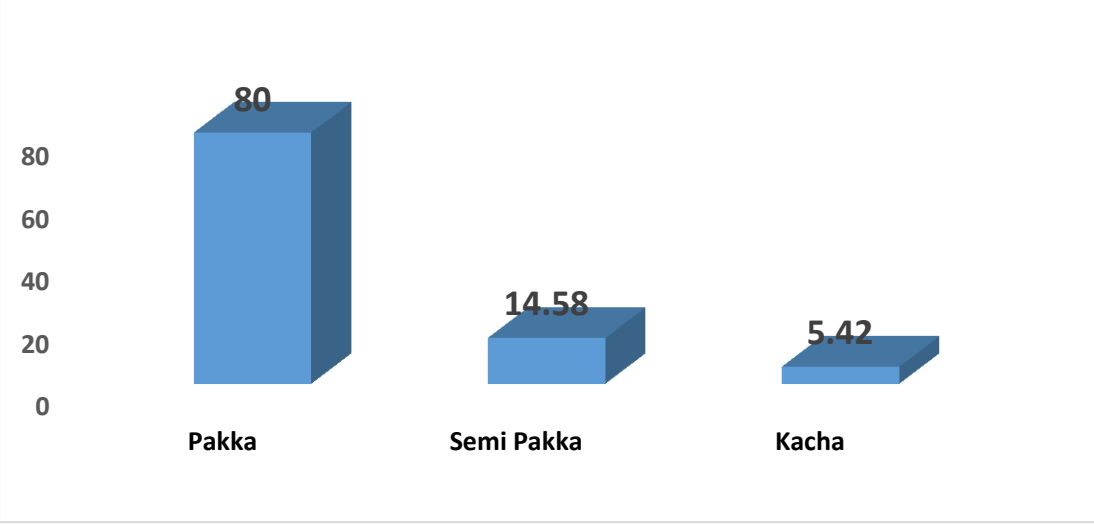


Source: Estimated from Primary Survey

4.4.3. Housing Condition in the Study Area

Housing condition reveals the standard of living of the dwellers and also reflects their socioeconomic stature. Figure 4.4 shows the housing details of the households. 80 percent of the households are living in *Pukka or the well constructed & cemented* houses, 14.58 percent are living in *semi-pukka* houses while 5.42 percent are living in *kuccha/ mud* houses.

Figure 4.4 Percent Distribution of Housing Conditions among Households



Source: Estimated from Primary Survey

Table 4.6 Percent Distribution of Housing Condition of Ration Card Holders

Ration Cards	Pukka	Semi-Pukka	Kaccha	Total
APL	44 77.19* 22.92**	7 12.28* 20.00**	6 10.53* 46.15**	57 100.00* 23.75**
BPL	55 67.07* 28.65**	21 25.61* 60.00**	6 7.32* 46.15**	82 100.00* 34.17**
Antodaya	3 100.00* 1.56**	0 0.00* 0.00**	0 0.00* 0.00**	3 100.00* 1.25**
No Cards	90 91.84* 46.88**	7 7.14* 20.00**	1 1.02* 7.69**	98 100.00* 40.83**
Total	192 80.00* 100.00**	35 14.58* 100.00**	13 5.42* 100.00**	240 100.00* 100.00**

Source: Source: Estimated from Primary Survey

**** (Row Percentage), ** (Column Percentage)***

The above Table 4.6 depicts the condition of the houses of different ration card holders, and reveals that among all types of house, the Pakka has the highest at 80 percent. Focusing on Pakka House, it is found that Antodaya card Holders are the highest at 100 percent followed by No Card holder (those who do not have any ration cards at 91.84, APL card holders are at 77.19 and lowest is BPL card holder at 67.07 percent. The Antodaya card holders are economically weaker sections; they have got Pakka Houses by the scheme of the Indira Awaas Yojna (presently, the Pradhan Mantri Gramin Awaas Yojna). In Semi Pakka House, the BPL card holders have the highest percentage at 25.61 followed by APL card Holders at 12.28 and those with no ration card are at 7.14 percent. Focusing on Kacha house, the APL card holders have

the highest percentage at 10.53 among all categories of ration cards, followed by BPL at 7.32. Those with no cards are count to be 1.02 percent. The reflection of data is showing that APL (Above Poverty Line) card holders are also living in Semi Kacha house even Kacha house. This is indeed a drawback in our economic system where the intended stakeholders are unable to get the benefits of the Pradhan Mantri Awas Yojna.

4.4.4 Ownership of House in Study Area

This section is focusing on the ownership of the house in study areas; the ownership of house is encouraged by many governments because it is supposed to have a positive effect on both the individual and society as a whole. The ownership of house is assumed to be preferred over renting, because it provides greater security, more freedom, and financial advantage and therefore higher housing satisfaction (***Elsinga M and Hoekstra J., 2005; p. 401).*** Table 4.7 shows the house ownership of households and implies whether the house is owned or rented. The data reveals that 90.42 percent of the households are living in their own house while 4.58 percent are living in the rented house, 2.09 percent are living in government quarters and 2.92 percent are living in their relatives' house.

Table 4.7 Distribution of House Ownership

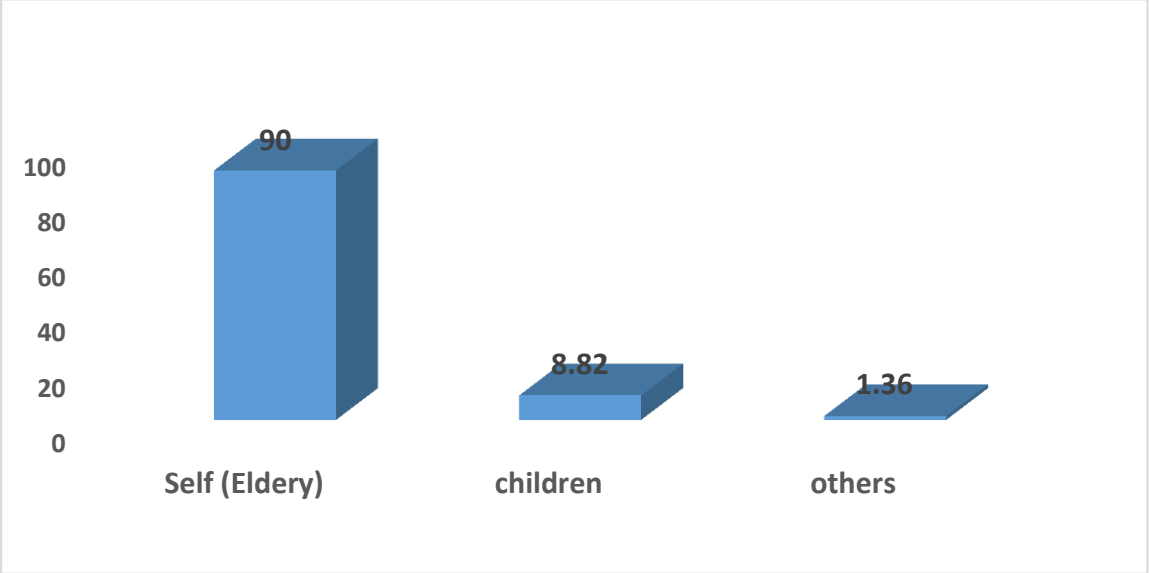
House Ownership	Freq.	Percent
Owned	217	90.42
Rented	11	4.58
Govt. Quarter	5	2.08
Owned By Relatives	7	2.92
Total	240	100

Source: Estimated from Primary Survey

4.4.5 Owner of the House

The table 4.5 depicts the owner of house, either elderly person or others. The data reveals that 90 percent houses are owned by the elderly persons in the study area, while about 9 percent houses are owned by their children and 1.36 percent houses are owned by others (relatives or neighbours).

Figure 4.5 Percent Distribution of Owner of House



Source: Estimated from Primary Survey

4.4.6 Availability of Water

The table 4.10 shows the source of water availability in households. This can be seen in the table that 72.92 percent of the households have own tap or hand pump in their houses but 27.08 percent households are using municipal tap or hand pump. The users of municipal tap are those families who have no water facilities in their houses; this shows the poor condition of households. The elderly are suffering more from this situation as they are often not able to move so due to the lack of the water they would have difficulties in daily routine activities like bathing, defecating and also for drinking water.

Table 4.10 Distribution of Availability of Water

Availability of Water	Freq.	Percent
Own Tap/Hand Pump	175	72.92
Municipal Tap/Hand Pump	65	27.08
Total	240	100

Source: Estimated from Primary Survey

4.4.7 Availability of Toilet Facility

The elderly, in particular, need the most conversant hygienic sanitation. Hence, the availability of clean toilet is the basic requirement for the aged who need to use the toilets frequently because of have various health related ailments. The table 4.11 shows the availability of toilets in households. In the table we can see that 78.75 percent of the households have their own toilet in their house while 15.42 percent of the households do not have any toilet facility in their house and 5.83 percent of the households are using public toilet. The scenario is dismal as more than 15 percent of the households do not have toilet facility in their homes, it is big challenge for the government to provide the toilet facility to aged persons for betterment of their health and lives.

Table 4.11. Availability of Toilet

Toilet Facility	Freq.	Percent
Own Toilet	189	78.75
Public Toilet	14	5.83
Not Available	37	15.42
Total	240	100

Source: Estimated from Primary Survey

4.4.8 Availability of Electricity

Electricity is also an important thing in our daily life. Electricity has many uses in our day to day life. It is used for lighting rooms, working fans and domestic appliances

like using electric stoves, A/C and more. All these provide comfort to people. In factories, large machines are worked with the help of electricity. The below table 4.12 shows the availability of electricity in households. 97.92 percent households are accepted that they have electricity facility in their homes but 2.08 percent households denied to have the electricity facility in their homes. The situation shows the good condition of electricity in study area. As the studies show that the joint family culture is a tradition in India.

Table 4.10 Distribution of Availability of Electricity

Availability of Electricity	Freq.	Percent
Yes	235	97.92
No	5	2.08
Total	240	100

Source: Estimated from Primary Survey

4.5 Marital Status among Elderly

Marital status is an important indicator of the well-being of the elderly population. An analysis of table 4.11 reveals that the percentage of Married, is highest among all marital categories (59.75), followed by widowed (39.31) percent while about 1 percent elderly never married. Among the aged, there is a heavy concentration in the category of widows and widowers especially in women 51.27 percent are widow while male widowed are only 27.5 percent because men in India marry for the second time or third time on the death of the former wife, whereas the same is almost impossible for a female who is expected to remain a widow all through her life.

Table 4.11 Distribution of Marital Status among Elderly

Sex	Married	Never Married	Widowed	Total
Female	75 (47.47)	2 (1.27)	81 (51.27)	158 (100)
Male	115 (71.88)	1 (0.63)	44 (27.5)	160 (100)
Total	190 (59.75)	3 (0.94)	125 (39.31)	318 (100)

Source: Source: Estimated from Primary Survey

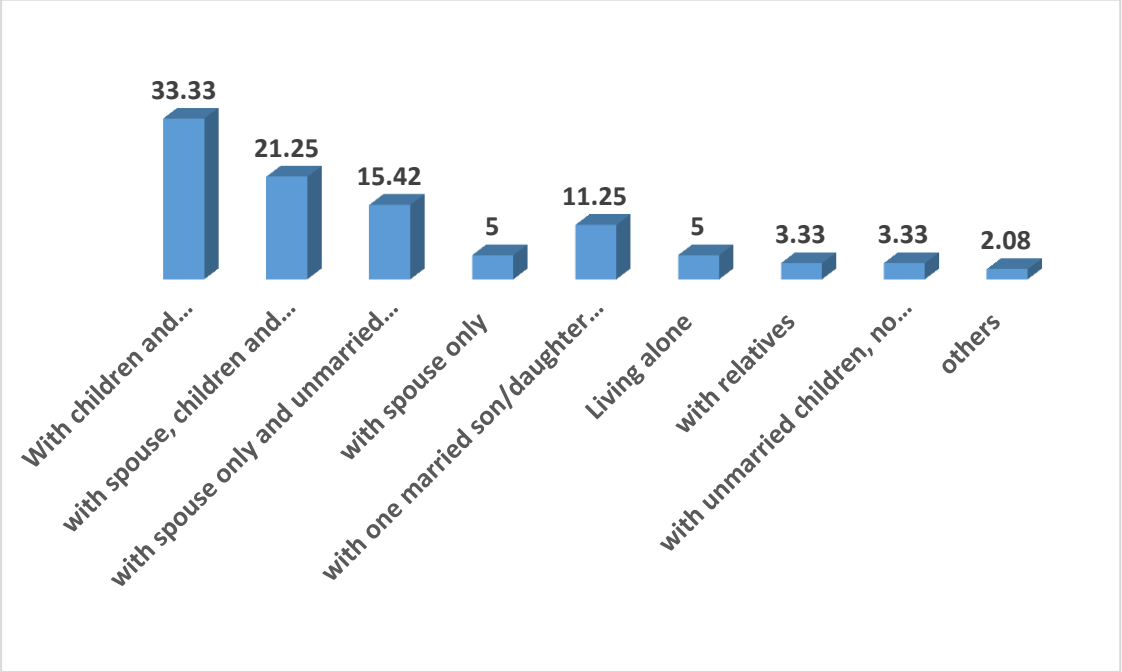
() shows the row percentage

4.6 Living Arrangement among Elderly

Living arrangement of elderly persons in India is of growing alarm in view of the expanding cohort of older ages resulting from increasing longevity. Moreover, with the rapid decline in fertility, there is a substantial reduction in the number of children to take care of the elderly. The increasing number of the elderly has been of concern in the developed world for many years, both from the individual and social policy perspectives and for efficiently answering to the increasing costs of providing care. (Sathyanarayana, K. M. et al. 2014). An analysis of figure 4.6 reveals that 33.33 percent elderly are living with their children and grandchildren but no spouse, 21.25 percent elderly are living with spouse, children and Grandchildren, 15.42 percent elderly are living with spouse and unmarried children and 11.25 percent are living with one married son/daughter. It could be seen in the figure that 5 percent elderly are living with their spouse only no children and 5 percent are living alone (completely

and alone in home), more than 3 percent are living with their relatives and 2.08 percent are living others such as with their neighbours or friends. The living arrangement among elderly is showing the poor condition of elderly, more than 10 parent elderly are not living with their family either they are living alone or living with relatives. It the matter to rethink in front of our society about the living condition of elderly.

Figure 4.6 Percent Distribution of Living Arrangement of Elderly Persons



Source: Estimated from Primary Survey

4.7 Literacy among Elderly

The condition of the elderly often depends upon their education. Longevity is also strongly related to education (Granhan, 1972). Education not only provides economic stability, but also ensures smoother adaptability towards the socio-economic transition in the societies. It is generally observed that education provided better ability to earn a living, which in turn leads to a tension-free life. Literacy rate is low among the elderly and therefore, one can observe that they are less aware about the importance of health.

Regarding women, no doubt literacy rate is very low. The table 4.12 is showing that about 50 percent elderly are illiterate where 67.74 percent elderly women are illiterate in while male elderly are 32.26 percent illiterate. 42.86 percent women have primary education and male are 57.14. Focusing on higher education only 22.73 percent women are graduate opposite to 77.27 male graduate. A good sign is reflecting among women in post-graduation, 53.85 percent women are post graduate opposite to 46.15 male post graduate. The overall scenario of education among elderly reflects the poor condition of literacy especially in women education. The illiteracy leads to unawareness among elderly, which is main obstacle to get the benefit of government health and other schemes.

Table 4.12 Gender Wise Percent Distribution among Elderly

Education	Female	Male	Total
Illiterate	105 (67.74)	50 (32.26)	155 (100)
Primary	21 (42.86)	28 (57.14)	49 (100)
Middle	9 (28.13)	23 (71.88)	32 (100)
Secondary	11 (23.91)	35 (76.09)	46 (100)
Graduate	5 (22.73)	17 (77.27)	22 (100)
Post Graduate	7 (53.85)	6 (46.15)	13 (100)
Other	0 (0)	1 (100)	1 (100)
Total	158 (49.69)	160 (50.31)	318 (100)

Source: Source: Estimated from Primary Survey

() shows the row percentage

4.8 Income of Households

In India majority of older persons face financial hardship in old age as most of them are not in a position to earn their livelihood. Their savings, if any, are not enough to meet their day to day, particularly the medical expenses. Many a times their family members and relatives exploit them due to their vulnerability. (Agewell Foundation, 2011; p. 5). This table (4.13) depicts the income quintile of households. There is five quintiles of income in increasing order that means quintile 1 shows the lowest income group, quintile 2 shows the lower income group, and quintile 3 shows the middle income group then quintile 4 represent the higher income group and last quintile 5 represent the highest income group. The result shows that the mean income of lowest income quantile is Rs.66978.46, the minimum income of lowest quantile is Rs.3600 and highest is Rs.96000, this income group represents the below poverty line families. Lower, middle and higher income quantile are about to double mean income in comparison to their earlier income group but we can see here a huge income inequality in highest income quantile which has three times higher mean income than higher income group. This data reflects the income disparity among society.

Table 4.13 Income Quintals of Households (Mean. SD, Min and Max) (Annual in Rupess)

5 quantiles of annual HH income	Mean Annual HH Income	SD Annual HH Income	Min Annual HH Income	Max Annual HH Income
1 (lowest)	66978.46	24331.36	3600	96000
2 (lower)	138000	27299.2	100800	192000
3 (middle)	277000	50463.13	194400	360000
4 (higher)	546000	140000	372000	804000
5 (highest)	1620000	1060000	816000	4800000

Source: Estimated from Primary Survey

4.9 Occupation among Elderly

Occupation reveals the economic condition of households, it shows the working status of individuals. The below figure 4.7 depicts the occupation among elderly, it can be seen that non-working (including housewife) elderly has highest percent (40.25) among all occupation categories, 28.62 percent elderly are pensioner (include retired from government job, government schemes pensioners like Old Age Pension etc. and pensioner of deceased person) and only 31.13 percent elderly are working, these are working in private jobs, self-employed and labour categories. The observation found in study area that some working elderly are work unwillingly and some want to work but cannot do because of social responsibilities. It is realty of the society that those elderly who do not work, also contributing to society by their unconditional services.

Figure 4.7 Percent Distribution of Occupation among Elderly

Source: Estimated from Primary Survey

4.10 Conclusion

This chapter is based on socioeconomic status of study area. The relation between socio economic status and is direct. The better socio economic status has better health status for instance education is one of the major component of socio economic status, so we observed in the field that most of the illiterate person are accepting that they have no disease from last 365 days, this unbelievable condition, actually this shows the unwariness towards health because they are illiterate. In other hand, if they were literate, they would have known more about their health and they would have been health conscious. Apart from health, it also depends on their economic status and how their health will be. Water facilities, electricity facilities and toilet facilities are also directly related to health. Moreover, the health of elderly is also depends on the living arrangements, family size etc. as those who are living alone, not able to access health care facilities properly in comparison to those who are living with their family. The society must be take care off to the living arrangement of elderly persons so that they would not have to live alone and not to be scared from any service they need. Changes in socioeconomic, demographic, and health care trends frequently raise new health policy issues. Such broad issues as the cost, the quality, or the availability of health care are continuously part of the general or systemic policy agenda of the country. When a particular issue becomes defined as a crisis, however, sufficient political interest may be generated to move alternative solutions to the more active policy agenda.

Chapter 5
Health Status of Old Person in Study Area

CHAPTER 5

Health Status of Elderly and Innovation Adoption

5.0 Introduction

Health is determined by many economic, social, psychological and physiological factors. Poor health and morbidity diminish the quality of life and wellbeing of the elderly while increasing psychological distress and perception of vulnerability. In India, with the majority of the population aged less than 30, the problems and issues of its grey population have not been given serious consideration and only a few studies on them have been attempted in our country. To reap the advantage of demographic dividend, the focus is mainly on the children and the youth and fulfilment of their basic needs for proper development. Also, the traditional Indian society and the age-old joint family system have been instrumental in safeguarding the social and economic security of the elderly people in the country. However, with the rapid changes in the social scenario and the emerging prevalence of nuclear family set-ups in India in recent years the elderly people are likely to be exposed to emotional, physical and financial insecurity in the years to come. This has drawn the attention of the policy makers and administrators at central and state governments, voluntary organizations and civil society. Since the Twentieth century there has been a trend of an increase in the population of old age. As per the Census 2011, out of total population of 1210 million, 103 million (8.6%) are above the age of 60 and 11 million are over 80 years of age. About 70 per cent of the elderly live in rural areas. By 2050, while the population below 60 would increase by 20 per cent, that above 60 would increase by 300 per cent, and that above 80 by 500 per cent.

Hence, it becomes overbearing to plot out a plan for enabling best health facilities for the elderly in the country. Health is not only the absence of illnesses; it is also the ability of people to develop and evolve to the best of their potentials during their entire lives. In that sense, health is an asset that an individual possesses. Health has both an intrinsic value and instrumental value as good health becomes the essential premise for one's well-being. Health is a direct source of human welfare and also an instrument for raising income levels. This study intends to discuss a number of mechanisms through which health can be affected and these include income, worker's productivity, children's education, savings and investment, and demographic structure. According to the **Geriatric Medicine Survival Handbook** (2008) Aging is a multidimensional process and refers to the process of "…*accruing maturity with the passage of time."* It begins with conception and continues throughout life until death occurs.

This chapter covers second and third objective of the thesis, '*to examine the health status and innovation'* and *'to examine the problem of exclusion in health sector which affect health of elderly*'. It focus is on health scenario which includes type of diseases, preference of hospitals, type of health problems faced by aged persons and innovation adopted by aged persons.

5.1 Health Status of Elderly in Study Area

Health status shows the morbidity condition of elderly persons, type of diseases and preference of hospitals. The analysis of morbidity configurations by age clearly identifies that the elderly bear a greater burden of ailments as illness, sickness, injury, and poisoning in comparison to other age groups (Dey S. 2012; p. 372). Now a days we are facing high proportion of old age population in India. This is because of our good achievement in the field of health sciences. This change in ageing population

also put forward the challenges on the present health care facilities of the country and states. (Zare, V. and et al, 2018; p. 3039). The elderly suffered from various physical & mental problems, therefore, the facilities providing geriatric health care services should be supported to offer complete services at every level to report the health care desires of the helpless elderly population. (Maroof M. and et al, 2016; p. 947).

5.1.1 Morbidity Status of Elderly

Morbidity status is seen that whether elderly persons are facing any health issue or not. The above table 5.1 depicts the health status of elderly persons in study area that whether they facing any ailment from last 365 days or not. It is clearly seen that out of 318 elderly total 83.33 percent are accepting that they are suffering from at least one or more than one diseases from last 365 days while 16.67 percent elderly told that they never fall ill during last 365 days. This is because of some diseases like cold, fever, dental problem, eye problem etc., they do not consider as curable diseases, they never take treatment for these type of diseases. The persons who have accepted that they are not suffering from any disease during last 365 days are mostly those persons who belong from military jobs or active in physical activities like yoga, farming, etc.

Table 5.1 Are Elderly Persons facing any Health Problems

Are you facing any health problem during last 365 days	**Freq.**	**Percent**
Yes	265	83.33
No	53	16.67
Total	318	100

Source: Estimated from Primary Survey

The table 5.2 shows the town wise illness status of elderly persons of study area. The table clearly showing that Bakshi ka Talab NP (BKT NP) has highest number of elderly (95 percent) which are suffering from one or more than one diseases followed by Lucknow M. Corp. (86.59 percent), Lucknow CB (77.92 percent) and the lowest number of ill persons are Kakori NP which is 73.42 percent**.** While, if we see the number of those elderly who are not facing any health problem, we found that Kakori NP has highest number (26.58 percent) followed by Lucknow CB (22.08 percent) and Lucknow M. Corp (13.41 percent). It means that B K T has highest frequency of illness.

Table 5.2 Town Wise Health Problems Facing by Elderly Persons

Town	Yes	No	Total
B.K.T. NP	76 95* 28.68**	4 5* 7.55**	80 100* 25.16**
Kakori NP	58 73.42* 21.89**	21 26.58* 39.62**	79 100* 24.84**
Lucknow C. B.	60 77.92* 22.64**	17 22.08* 32.08**	77 100* 24.21**
Lucknow M. Corp.	71 86.59* 26.79**	11 13.41* 20.75**	82 100* 25.79**
Total	265 83.33* 100**	53 16.67* 100**	318 100* 100**

Source: Estimated from Primary Survey, (*) row wise percentage, (**) column wise percentage

5.1.2 Distribution of Diseases among Elderly

Table 5.3, as cited below, marks out the details of diseases that affected the elderly. In the table we can see that diabetes has highest percent (21.34) followed by arthritis/joint pain (20.55), vision problem (9.43), Stomach Related Problems (kidney, liver and digestion) (8.3), Asthma (7.51), B.P. (7.11) and hearth disease (6.72) percent. Thyroid (4.74), paralysis (3.56) and nervous system (1.98) are other major diseases. About 7 percent of the elderly interviewed reported other diseases like cancer, infections, T.B., and memory loss. Some diseases are gender specific like cervical cancer and breast cancer and they were found to be only in females. The all diseases mentioned in below table are chronic in nature as the ailment period of the all these diseases is more than six month.

Table 5.3 Distribution of Non Communicable Diseases among Elderly

Name of Disease	Freq.	Percent
Diabetes	54	21.34
Heart Disease	17	6.72
Arthritis/ Joint Pain	52	20.55
Vision Problem	24	9.49
Dental Problem	5	1.98
Nervous System/Stroke	5	1.98
Asthma	19	7.51
Thyroid	12	4.74
B.P.	18	7.11
Paralysis	9	3.56
Stomach Related Problems	21	8.3
Others	17	6.72
Total	253	100

Source: Estimated from Primary Survey

Table 5.4 Distribution of Communicable Disease among Elderly

Communicable Diseases	Freq.	Percent
Infections	21	58.33
Viral Fever	12	33.33
others	3	8.33
Total	36	100

Source: Estimated from Primary Survey

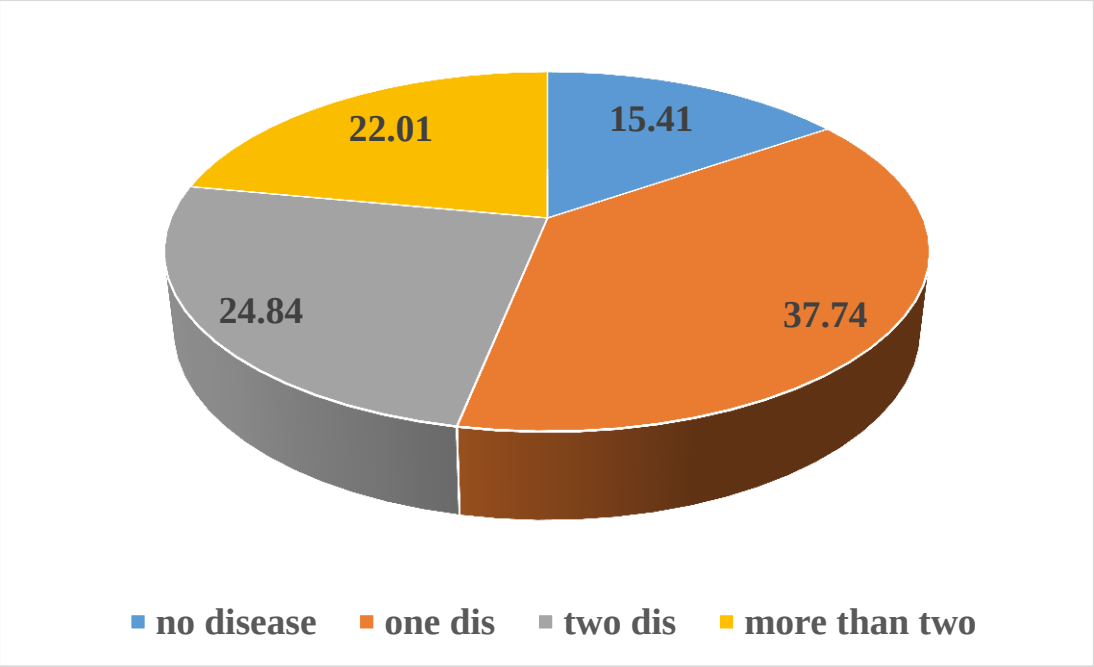
Table 5.4 shows the classification of communicable diseases among elderly mainly into the three forms of illness. It explains that the 58.3 percent of individuals suffer from infections while 33.3 percent of Individuals response to get usually a common disease such as viral fever. Further, remaining 8.3 percent of individuals responded for the mild illness. The ailment period of these diseases is sub chronic (more than one month) in nature.

5.2 Prevalence of Diseases among Elderly

This section is showing the prevalence of chronic diseases in elderly i.e. how many diseases occurs in a person's body. Some times more than one disease occurs together/ simultaneously. The co-existence of two or more than two diseases known as multimorbidity. Chronic diseases (non-communicable) comprise the most recurrent and costly health problems,in particular among the older population. It is prominent among the people belonging to a lower socio-economic group of the society (Arokiasamy, P.,*et al.* 2015) In India, more than half of the burden of non-communicable disease (NCD) and 25% of total disease burden occur in the 45+ age group (Chatterji et al., 2008) The multimorbidity, the co-occurrence of 2 or more (chronic) conditions within the same individual, is linked to higher health care use, higher expenditure, and impaired quality of life. The figure 5.1 shows the people with

one disease, has highest percentage (37.74), about 25 percent people with two diseases and 22.01 percent elderly are suffering from more than two chronic diseases. 15 41 percent elderly are accepted that they have no disease, these are people who are working as farmer or sport person or military retired officer, some they are not aware about their illness and accept that they are healthy.

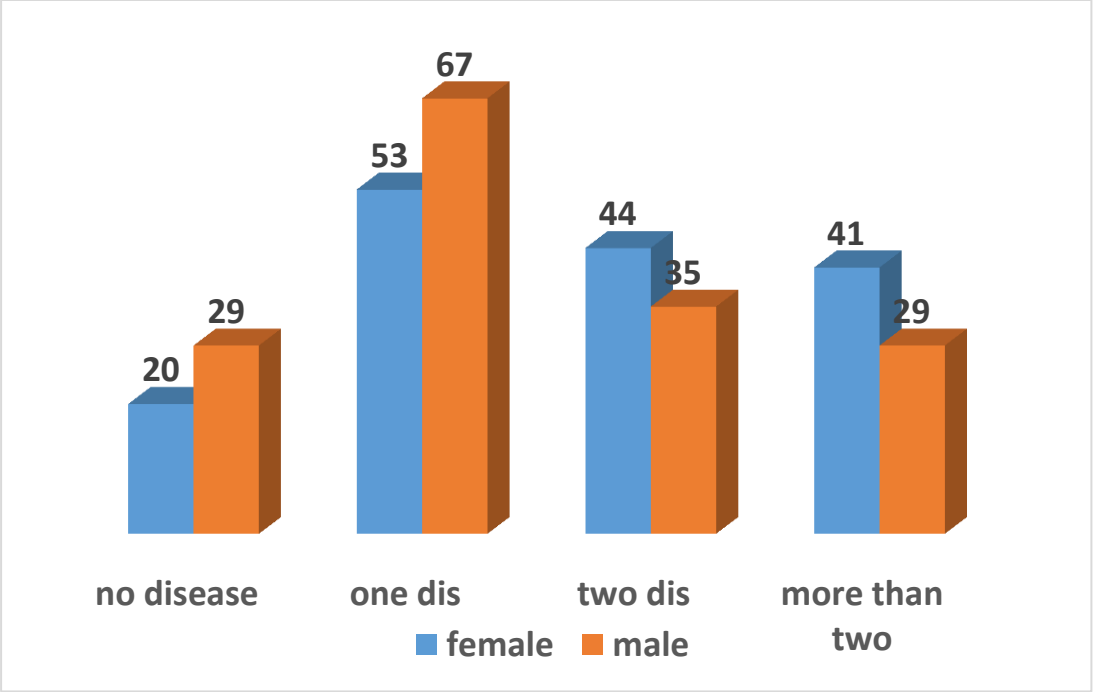
Figure 5.1 Percent Distribution of Disease Prevalence among Elderly



Source: Estimated from Primary Survey

The figure 5.2 is showing the gender wise disease prevalence and found that female are more prone to have more than two disease i.e. among 318 elderly having two or more than two diseases, female have higher frequencies, while having one disease or no disease female have lower frequencies than male**.**

Figure 5.2 Gender Wise Frequency Distribution of Disease Prevalence

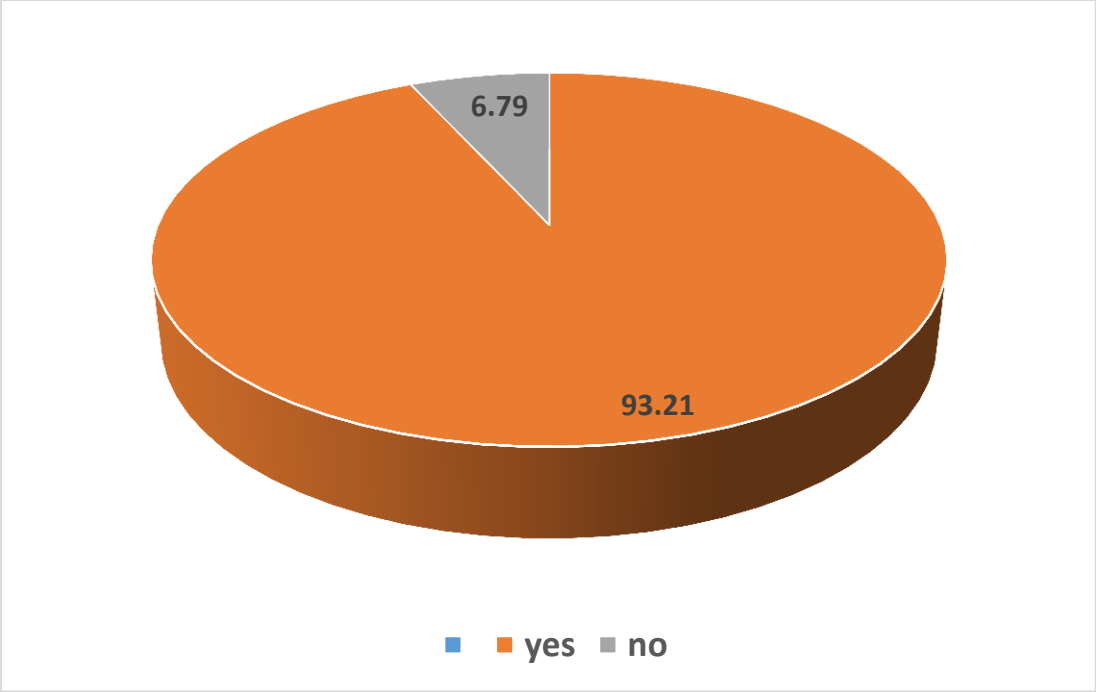


Source: Estimated from Primary Survey

5.3 Treatment Detail of the Elderly

Figure 5.1 shows the percent distribution of those old people who are or are not taking treatment. 93.21 percent of the elderly are taking some kind of treatment while about 7 percent persons reported that they are not taking any kind of treatment. The main reason of not taking treatment is financial problem or not satisfied with medical facilities.

Figure 5.3 Percent Distribution of Taking Treatment

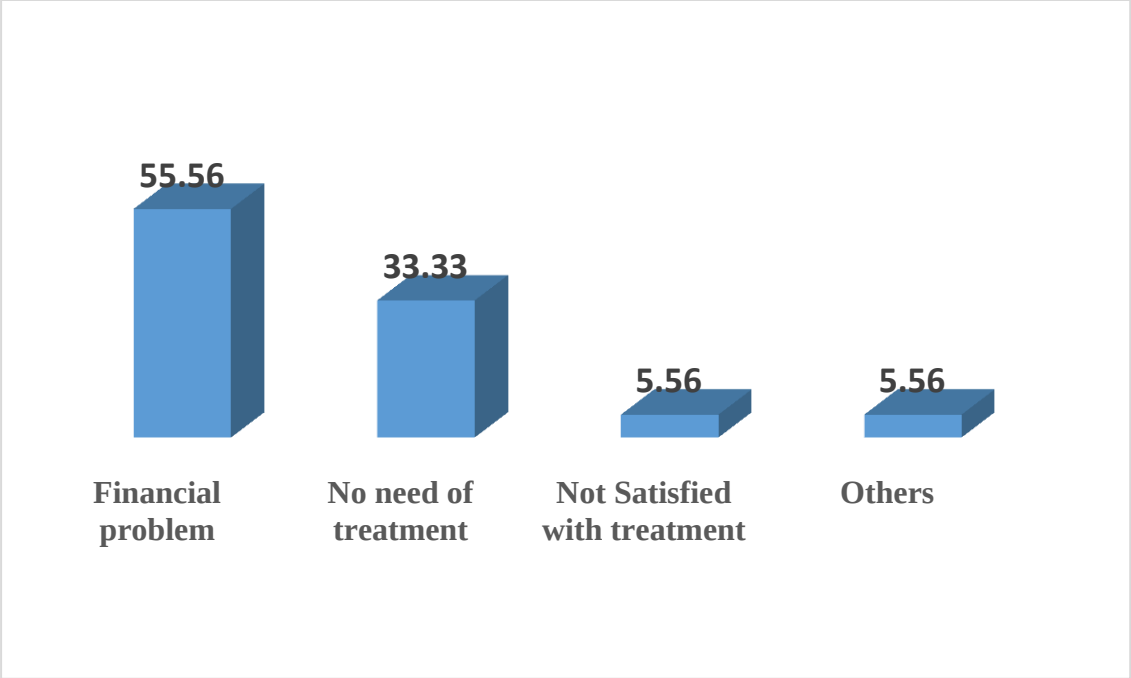


Source: Estimated from Primary Survey

5.3.1 Reason for Not Taking Treatment

Graph 5.3 shows that around 55.6 percent of elderly facing the serious financial problem, so they are not able to take the proper treatment from the doctors. The most pathetic fact observed here is that around 33.3 percent of elderly consider their disease very leniently and they do not consult to the doctors for taking treatment. However, 5.56 percent of elderly responds that they are not satisfied with the treatment and diagnostic procedures directed by the doctors to them. Lastly 5.5 percent of elderly don't consider any factor as possible reason for not consulting to doctors for treatment. This is clear from the graph financial restraint is the key responsible factor for not taking the treatment at immediate for any kind of disease among the elderly.

Figure 5.4 Percent Distribution of Reasons for not Taking Treatment



Source: Estimated from Primary Survey

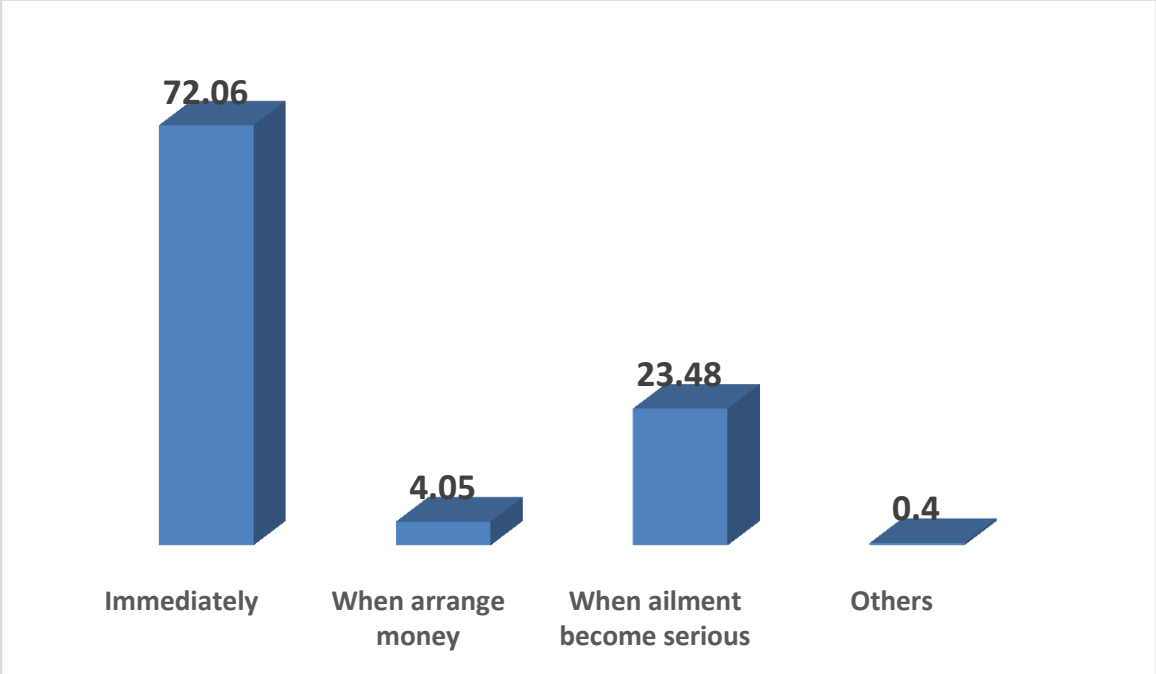
Table 5.5 Percent Distribution of Category wise Reason for not Taking Treatment

Categories of households	Financial problem	No need of treatment	Not satisfied with doctors	Others	Total
GEN	3 60* 30**	1 20* 16.67**	1 20* 100**	0 0* 0**	5 100* 27.78**
OBC	4 66.67* 40**	1 16.67* 16.67**	0 0* 0**	1 16.67* 100**	6 100* 33.33**
SC	3 42.86* 30**	4 57.14* 66.67**	0 0* 0**	0 0* 0**	7 100* 38.89**
TOTAL	10 55.56* 100**	6 33.33* 100**	1 5.56* 100**	1 5.56* 100**	18 100* 100**

Source: Estimated from Primary Survey, (*) row wise percentage, (**) column wise percentage

The above table 5.5 is showing the social categories wise percent distribution of the reasons for not taking treatment. It clears in table that 66.67 percent OBC has not taken treatment due financial problem, it highest among all categories. 57.14 percent SC are accepting that they do not need for the treatment while they have some kind of illness, it shows the backwardness of them.

Figure 5.5 Percent Distribution of Quickness for Treatment



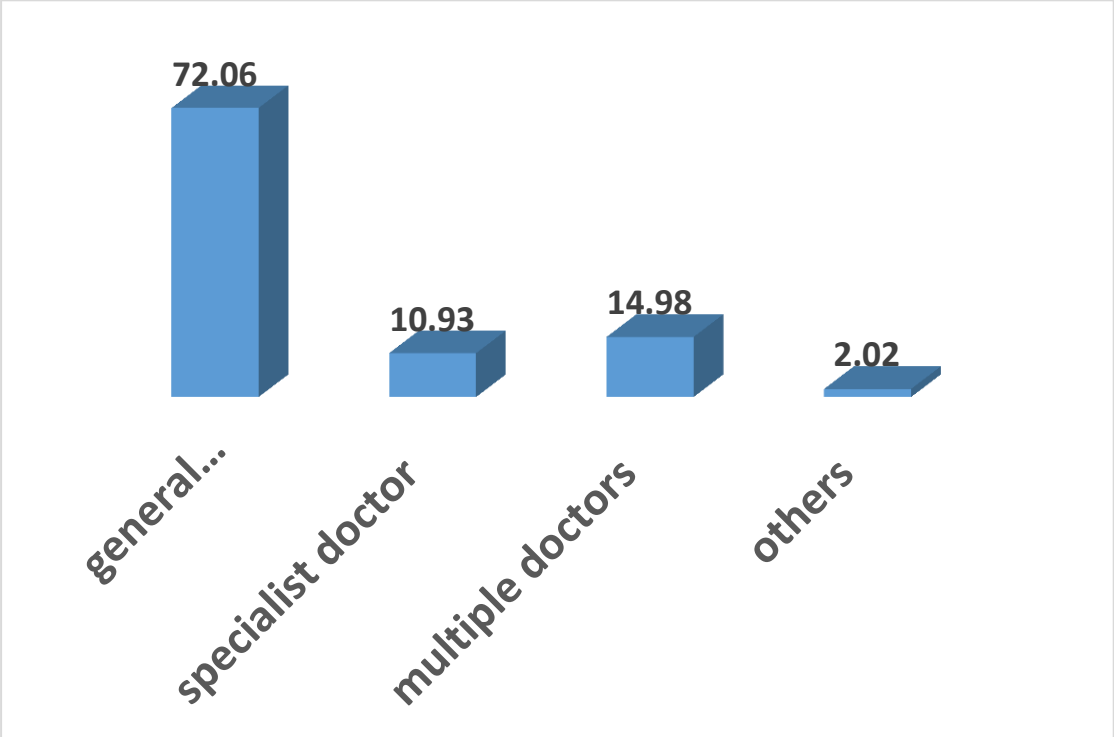
Source: Estimated from Primary Survey

The graph 5.5 shows the quickness among the elderly in order to get the treatment for their illness. It clears in the graph that 72.06 percent of individuals responded for opting an immediate treatment while 23.08 percent of elderly goes for treatment when their ailment become severe. Graph also shows that due to the unavailability of the financial resources 4.05 percent of elderly samples make move to opt the treatment when the money got arranged and only 0.4 percent of elderly did not respond clearly regarding the treatment of their illness.

5.3.2 Preference of Doctors

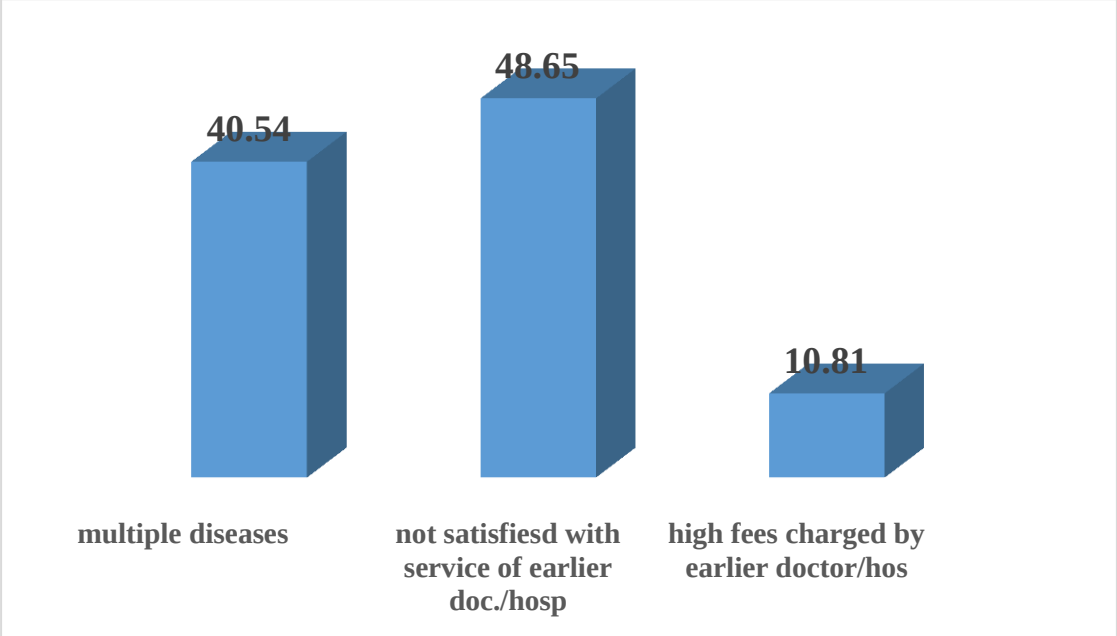
Graph 5.6 shows that preference of the multiple doctors is determined by mainly the three factors i.e. General or common physician usually dealt with the common diseases therefore the elderly may easily opt the general physician and graph shows that 72.6 percent of elderly consult with the general doctors. Similarly, some specific diseases may only considered by the expert doctors; therefore, around 10.03 percent of elderly consult with the specialists. Lastly, only 2.02 percent of elderly come under the 'others' reason for taking treatment from multiple doctors

Figure 5.6 Percent Distribution of Preference of Doctors for Treatment



Source: Estimated from Primary Survey

Figure 5.7 Percent Distribution of Reason for Choosing Multiple Doctors for Treatment



Source: Estimated from Primary Survey

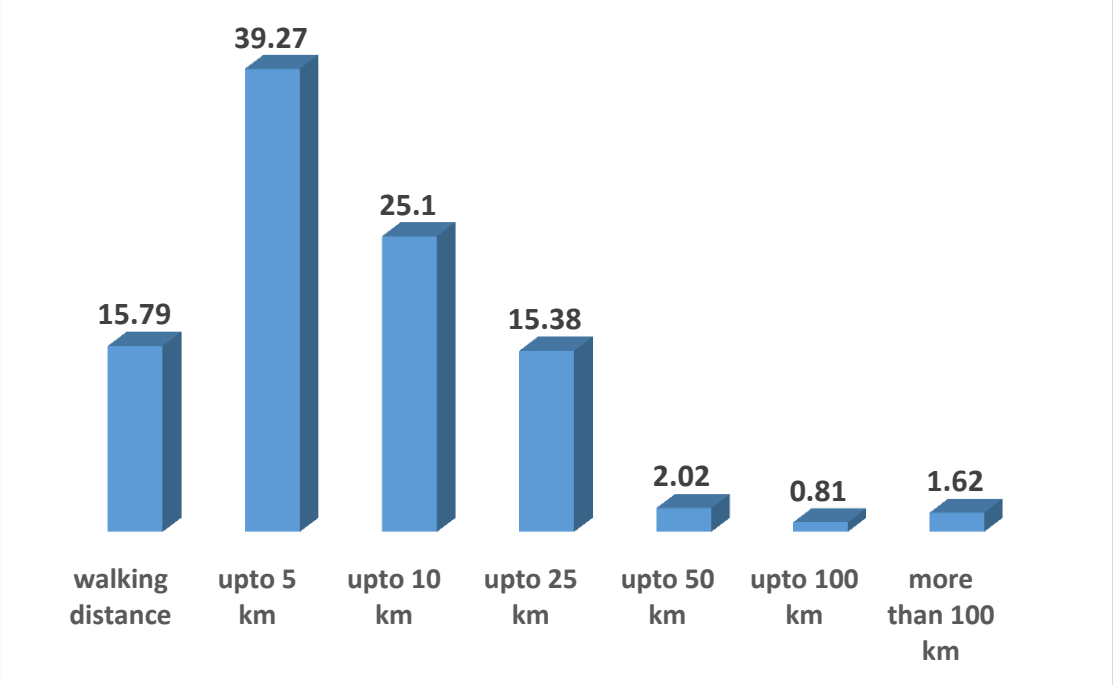
This graph 5.7 explains the reasons for taking treatment from multiple doctors, the elderly have multiple disease, and they are not satisfied with service of earlier doctors and the high fees charged by the earlier doctors/hospitals. It depicts from the table that around 48.6 percent of elderly preferring multiple doctors due to the dissatisfaction with the service of earlier doctors while 40percent of elderly prefers multiple doctors due to having a multiple diseases therefore they need the specialized doctor for each kind of disease. Lastly 10.8 percent of the elderly prefers the multiple doctors due to the high fee charge taken by their consulted doctors/hospitals.

5.3.3 Distance of Hospital from Home

Distance of hospitals from home is one of the important factor to increase the health cost and also the reason for not taking treatment by some persons. An alternative explanation for distance effects is that distance is correlated with unobserved

consumer preferences, a correlation we refer to as "home bias". When distance effects also reflect differences in preferences, counterfactual policy analysis may understate consumers' willingness to travel. For example, a main area of focus in the welfare analysis of hospital mergers has been estimates of patients' willingness to travel to obtain medical care, which can determine both the likely price effects and the proper antitrust market definition for a given merger. In retail and health care markets, demand declines with geographic distance to the establishment, but either transport costs or preferences correlated with distance ("home bias") could cause this decline (Raval, D., and Rosenbaum, T. 2018). The graph 5.8 is observing the distance of hospitals from home. The figure clears that most of the 39.27 percent elderly are taking treatment in the 5 km range while 25.1 percent are taking treatment in the range of up to 10 km. Moreover, it is the drawback of health care sector that about 20 percent elderly are taking treatment from the distance range of 25 km or more than 25 km.

Figure 5.8 Percent Distribution of Distance of Hospitals from Home



Source: Estimated from Primary Survey

Table 5.6 Area wise Percent Distribution of Distance of Hospitals from Home

Town	Walking distance	Up to 5 km	Up to 10 km	Up to 25 km	Up to 50 km	Up to 100 km	More than 100 km	Total
B.K.T. NP	6 8.7* 15.38**	38 55.07* 39.18**	15 21.74* 24.19**	8 11.59* 21.05**	2 2.9* 40**	0 0* 0**	0 0* 0**	69 100* 27.94**
Kakori	14 25.93* 35.9**	7 12.96* 7.22**	17 31.48* 27.42**	14 25.93* 36.84**	1 1.85* 20**	0 0* 0**	1 1.85* 25**	54 100* 21.86**
Lko. CB	8 14.29* 20.51**	13 23.21* 13.4**	25 44.64* 40.32**	9 16.07* 23.68**	0 0* 0**	0 0* 0**	1 1.79* 25**	56 100* 22.67**
Lko. M. Corp.	11 16.18* 28.21**	39 57.35* 40.21**	5 7.35 8.06	7 10.29* 18.42**	2 2.94* 40**	2 2.94* 100**	2 2.94* 50**	68 100* 27.53**
Total	39 15.79* 100**	97 39.27* 100**	62 25.1 100	38 15.38* 100**	5 2.02* 100**	2 0.81* 100**	4 1.62* 100**	247 100* 100**

Source: Estimated from Primary Survey, (*) row wise percentage, (**) column wise percentage

Table 5.6 shows the area wise distance covered by the elderly from home and hospital. Here the row wise analysis has been explained. It shows that elderly living in a particular location consult to their doctors with the range of walking distance to the maximum distance of 100 km. First row shows the detailed information about the distance between hospital and home for BKT elderly. It shows that around 55 percent of elderly go for treatment within the range of 5km. Likewise, 21.74 percent of elderly go for treatment within the range of 10km distance while only 11.6 percent of elderly go for the treatment by covering the distance of around 25 km in BKT. However it also shows that around 8.7 percent of elderly consult to their doctor just

by covering the walking distance; it means that minimal cost only bear by hardly 8 percent of aged samples in this town.

Second row shows the detailed information for the distance between hospital and home for Kakori elderly. It shows that around 31.48 percent of elderly go for treatment within the range of 10km. Likewise, 25.93 percent of elderly go for treatment within the range of 25km while only 12.9 percent of elderly go for the treatment by just covering the distance of around 5 km in Kakori. Further, it also shows that around 25.93 percent of elderly consult to their Doctor by traveling the walking distance which implies that minimal cost bear by around 26 percent of aged samples in this town. However, only 1.87 percent of elderly cover the distance of 50 km and above in order to meet their doctor for treating their several or multiple diseases. Third row explains the detailed information related to the distance between hospital and home for Lko CB elderly. It clears from the table that around 44.6 percent of elderly go for treatment within the range of 10km. Beside, 23.2 percent of elderly go for treatment within the range of 5km while 16.07 percent of elderly go for the treatment by covering the distance of around 25 km in Lko CB. Further, it is also reflect in the table that around 14.2 percent of elderly consult to their Doctor by traveling the walking distance. It implies that minimal cost of travel bear by around 14 percent of aged samples in this town.

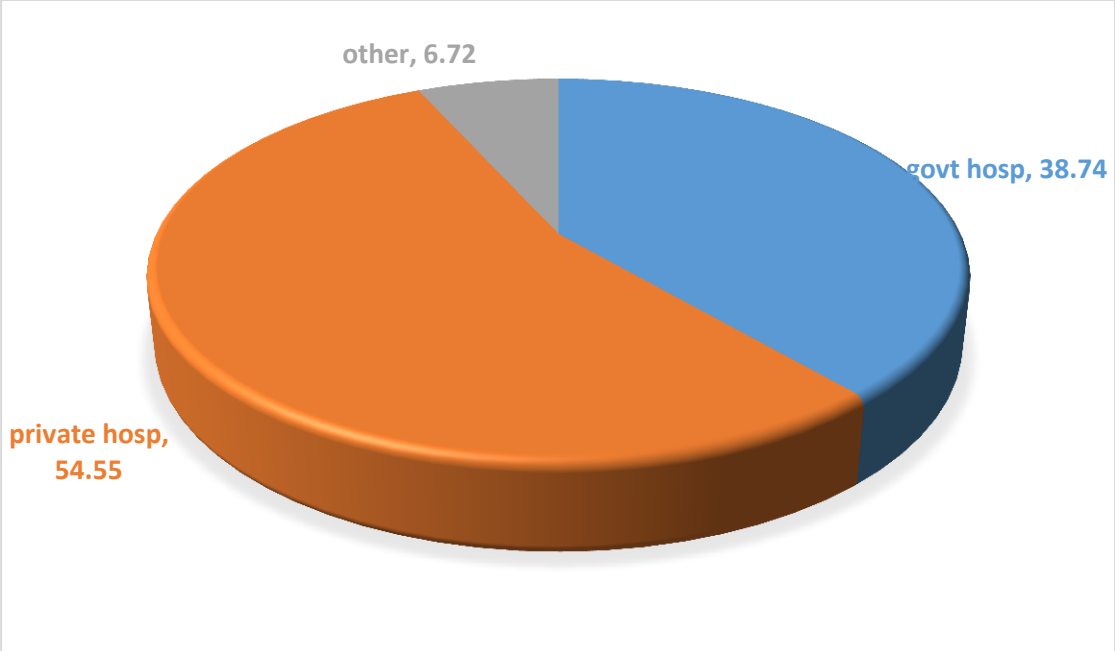
Lastly, the forth row expounds the detailed information about the traveling distance covered by the elderly of LKO m corp. It clears in the table that around 57.3 percent of elderly go for treatment within the range of 5km. Similarly, 10.29 percent of elderly go for treatment within the range of 25 km while only 16.8 percent of elderly consult to their Doctor just by traveling at the walking distance it means that minimal travel cost only bear by hardly 16.18 percent of aged samples in this town. Further,

travel cost for 50 km and above is bear by 7 percent of elderly. Therefore, row wise analysis reveals that majority of the elderly consult the doctors available within the range of 5 km distance, followed by the travelling distance of up to 10km. Further, the interesting analytical point is that a very lesser proportion of the elderly get the doctors at their walking distance which ultimately become the question of cost effectiveness in order to consult their general of specialized doctors in the surveyed area.

5.4 Preference of the Hospitals for Treatment

Figure 5.9 shows that the most of the old persons are taking treatment from private hospitals (39.13 percent) while 21.34 percent of the old people are taking treatment from government hospitals, 17.39 percent of the senior citizens are taking treatment from CHCs/PHCs and 15.42 percent are taking treatment from private clinics while about 7 percent of the aged persons are taking treatment from others sources like *Jhola chhap (quack)* doctors, medical store, Deshi Vaidya, etc. The results show that more than 50 percent of the aged persons are taking treatment from private hospitals or private clinics. Few of the elderly interviewed said that they are unwillingly taking treatment from private hospitals because the treatment is very expensive. However, they did not prefer government hospitals either due to lack of medicine and inadequate infrastructure, unavailability of doctors and beds, etc. Moreover, the dependency of persons on government hospitals is very high which leads to long que and tedious waiting hours in government hospitals which only worsens the health of the elderly.

Figure 5.9 Percent Distribution of Preference of Hospitals



Source: Estimated from Primary Survey

5.4.1 Town Wise Preference of Hospitals

Table 5.7 shows the town wise preference of the hospital considered by the elderly in order to cure the diseases. Table explains that 55.07 percent of elderly prefers private hospitals while 42 .03 percent of elderly relies on the government hospitals for taking the treatment in BKT NP However, 2.9 percent of elderly probably visit neither the government hospitals nor private hospitals. It may be they follow unprofessional and medically unqualified doctors for curing their disease. Kakori town shows that 47.07 percent of elderly prefers private hospitals while 43.64 percent of elderly believe to consult the government hospitals for taking the treatment. Remaining 9.09 percent of elderly cure their disease with the help of home remedies. Now coming to the third town i.e. Lko CB, it also shows kind of finding. Around 48.28 percent of prefers private hospitals while 41.38 percent of elderly relies on the government hospitals for taking the treatment. Beside this, 10.34 percent of elderly probably visit neither the government hospitals nor private hospitals. The forth town Lko. M.Corp shows that

around 64 percent of elderly choose the private hospitals and 29.58 percent of elderly opt the government hospital for curing their health disease. Remaining 5.63 percent of elderly cure their disease with the help of home remedies.

Table 5.7 Area Wise Percent Distribution of Preference of Hospitals

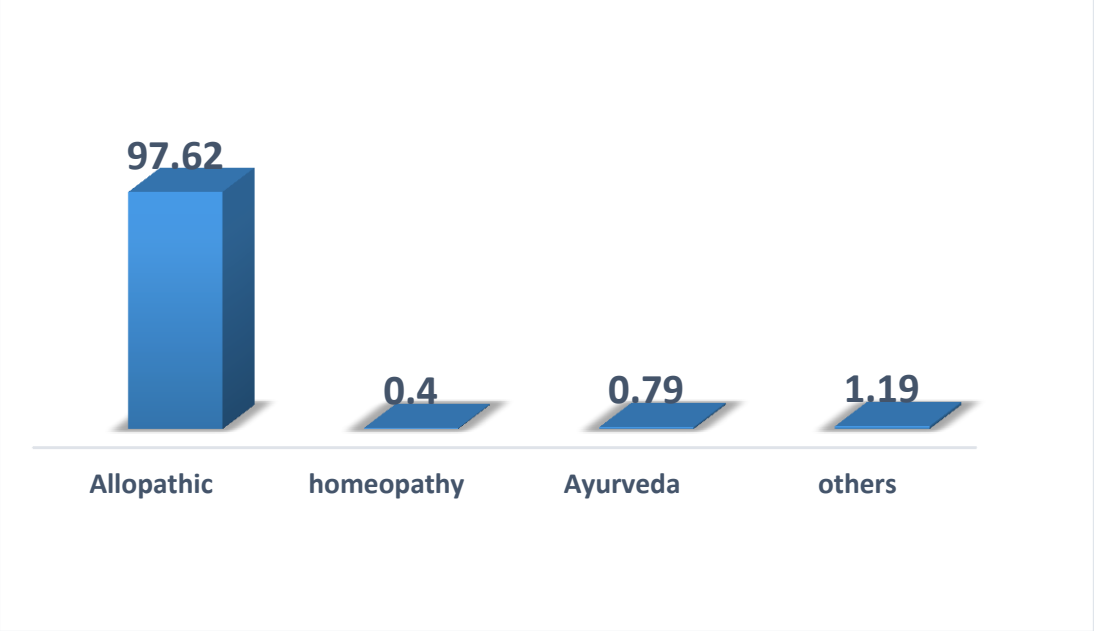
Town Govt.	Govt. Hosp.	Private Hosp.	Other	Total
B.K.T. Np	29 42.03* 29.59**	38 55.07* 27.54**	2 2.9* 11.76**	69 100* 27.27**
Kakori	24 43.64* 24.49**	26 47.27* 18.84**	5 9.09* 29.41**	55 100* 21.74**
Lko C B	24 41.38* 24.49**	28 48.28* 20.29**	6 10.34* 35.29**	58 100* 22.92**
Lko M Corp	21 29.58* 21.43**	46 64.79* 33.33**	4 5.63* 23.53**	71 100* 28.06**
Total	98 38.74* 100**	138 54.55* 100**	17 6.72* 100**	253 100* 100**

Source: Estimated from Primary Survey, (*) row wise percentage, (**) column wise percentage

5.4.2 Preference of Treatment

The present era not only offers a conventional form of western medical treatment, commonly known as allopathic medicine, but many other alternative forms are also available like Homeopathic, Ayurveda etc. Graph shows that 97.6 percent of elderly prefers allopathic treatment in order to cure their disease and 0.79 percent of elderly opt Ayurveda treatment. Beside this, 0.4 percent of elderly choose the homeopathy treatment in the surveyed area. Therefore, it is clear from the graph that majority of elderly are depending on the allopathic medicines for curing any specific disease.

Figure 5.10 Percent Distribution of Preference of Treatment



Source: Estimated from Primary Survey

5.5 Innovation Adoption

In 21st century there are many innovations came in existence in the field of health sector just like other sectors. To reach the benefits of these innovations to the people, government has implemented several policies to adopt these innovations. According to Directory of Innovations Implemented in the Health Sector there more than 200 innovations has been implemented by Ministry of Health and Family Welfare in the year 2009. In the above process a large number of innovations being adopted by States to enhance the reach and effectiveness of the programme.

The Government of India has implemented the health support schemes for the old persons for betterment of their life such as old age pension schemes, Pradhan Mantri Suraksha Bima Yojna and Employers health Protection. The table below shows the health support schemes adopted by elderly persons. "Innovation: An intervention to address a specific problem through the creative use of resources, often through public partnerships, often introduced on a pilot basis at the periphery level, with scope of

scaling up." (Directory of Innovations Implemented in the Health Sector, First Draft, Ministry of health and family welfare March 31, 2009)

5.5.1 Major innovations in health sector for elderly

Generic Medicines- "Over the past decades, medicines have made a major contribution to improving the health status of patients. At the same time, pharmaceutical expenditure has increased rapidly, with spending on medicines outpacing economic growth in many European countries (Simones, S., 2006).

A generic drug is a medication created to be the same as an already marketed brand-name drug in dosage form, safety, strength, route of administration, quality, performance characteristics, and intended use. These similarities help to demonstrate bioequivalence, which means that *a generic medicine works in the same way and provides the same clinical benefit as its brand-name version***.** In other words, you can take a generic medicine as an equal substitute for its brand-name counterpart.

5.5.2 Government Schemes-

A. Ministry of Rural Development

The Ministry of Rural Development is implementing the Indira Gandhi National Old Age Pension Scheme (IGNOAPS) under which Central assistance is given towards pension @ Rs. 200/- per month to persons above 60 years and Rs. 500/- per month to persons above 80 years belonging to a household below poverty line, which is meant to be supplemented by at least an equal contribution by the States.

B. Ministry of Health and Family Welfare

The Ministry of Health and Family Welfare provides the following facilities for senior citizens of:

- Separate queues for older persons in government hospitals.

- Geriatric clinic in several government hospitals.
- The Ministry implemented the National Programme for the Health Care for the Elderly (NPHCE) from the year 2010-11.

States implementing NPHCE programme in four or more than four districts are

1. Andhra Pradesh, 2. Bihar, 3. Gujrat, 4. Kerala, 5.Madhya Pradesh, 6. Maharashtra, 7. Orissa, 8. Rajasthan, 9. Tamil Nadu, 10. Uttar Pradesh. The total no. of states in this category is ten. Hence total 20 districts would be included in the study as per criteria laid down.

States implementing NPHCE programme in three or less than three districts are:

1. Assam, 2. Chhattisgarh, 3. Himachal Pradesh, 4. Jammu & Kashmir, 5. Jharkhand, 6. Karnataka, 7. Sikkim , 8. Punjab, 9.Uttrakhand, 10. West Bengal, 11. Haryana

Objectives of the National Programme for the Health Care for the Elderly

- Provide preventive, curative and rehabilitative services to the elderly persons at various level of health care delivery system of the country
- Strengthen referral system
- Develop specialized man power and
- Promote research in the field of diseases related to old age.

Major Components of NPHCE

- To establish geriatric department in all the existing 8 Regional Geriatrics Centres
- Strengthening healthcare facilities for elderly at various levels of 100 identified districts in 21 States of the country.
- Regional Institutions to provide technical support to geriatric units at district hospitals whereas district hospitals will supervise and coordinate the activities down below at CHC, PHC and sub-centers.

5.5.3. Ministry of Finance

A. Health Insurance

Health Insurance is a medical insurance given by an insurance company, wherein it reimburses the medical expenses incurred for a valid hospitalization. The individual has to pay a certain amount (subject to conditions) once each year, known as premium, to keep the health insurance policy active. Insurance Regulatory Development Authority (IRDA) vides letter dated 25.5.2009 issued instructions on health insurance for senior citizens to CEOs of all General Health Insurance Companies which, inter-alia, includes:

- Allowing entry into health insurance scheme till 65 years of age,
- Transparency in the premium charged
- Reasons to be recorded for denial of any proposals etc. on all health insurance products catering to the needs of senior citizens. Likewise the insurance companies cannot deny renewability without specific reasons.

5.5.4 Innovations in Health Insurance

There are various innovations in Health Insurance sector in India which are beneficial for elderly person have taken place in the recent past. Some of them are listed below:

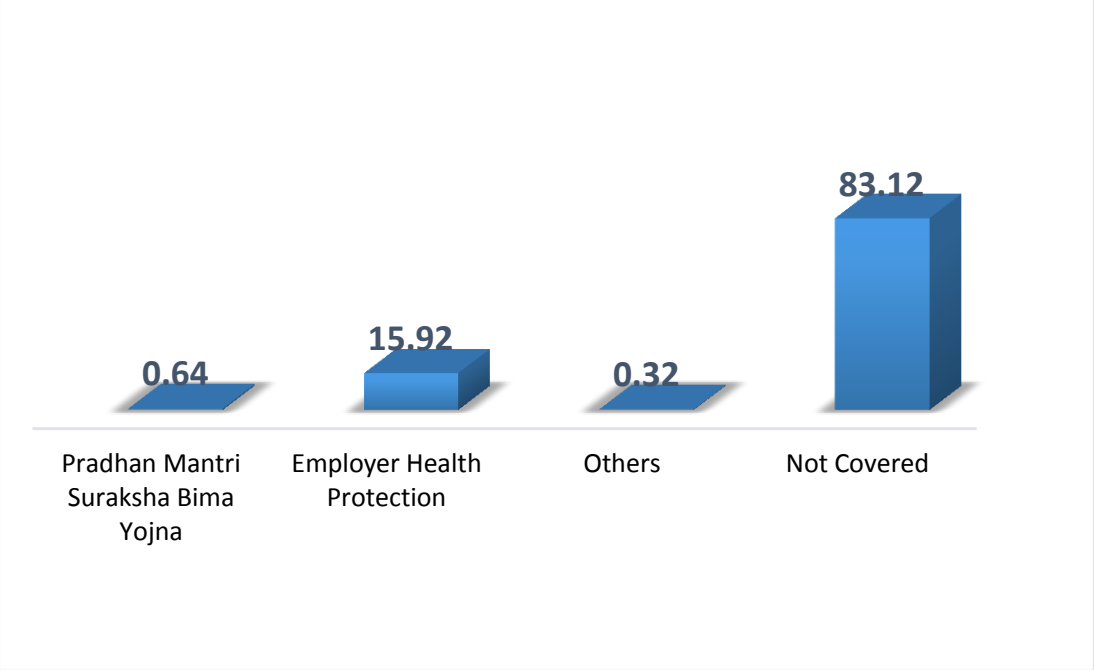
Health Insurance portability: This will allow all existing health insurance policyholders to freely switch their policy to another insurance company without losing on benefits like the credit earned on pre-existing diseases and no claim bonus etc. Thus, if you are shifting locations, changing jobs, or dissatisfied with your insurer, you can move from your present insurance policy. Or if you find different or more suitable features in another policy, you may shift from your present insurance policy. However, you need to weigh the pros and cons of the same at your end as well.

Rashtriya Swasthya Bima Yojna: RSBY is a National Health Insurance Programme for the people below poverty line. This scheme provides cashless hospitalization in public as well as private hospitals for the people living below poverty line with a sum assured of Rs. 30,000 by paying Rs.30 as premium.

Hybrid Product: This is a combination product which includes health insurance as well as life insurance cover under one policy only. This was first developed by Sriram Life Insurance and Star Alliance health Insurance in India by the name of Star Shri Individual Care Insurance. **Critical Illness cover:** Under this cover of critical illness the insurer (the insurance company) is liable to pay a lump sum amount to the policyholder if he is diagnosed with the critical illnesses listed as follows: blindness, deafness, Alzheimer's disease, kidney transplant, organ transplant, paralysis etc.

The table 5.11 is showing the percent distribution of having health insurance, this can be seen that 83.12 percent persons are not covered under any health protection, 15.92 percent persons are covered under Employer Health Protection while 5.73 while 5.73 percent are covered under the Old Age Pension Scheme. On the other hand, the number of elderly benefitting from the Pradhan Mantri Suraksha Bima Yojna and other health protection schemes or insurance policies is negligible. The results show the real situation of the elderly persons, only those persons who retired from government jobs have health protection and financial support but most of the senior citizens do not have any financial support and depended on their relatives for basic needs.

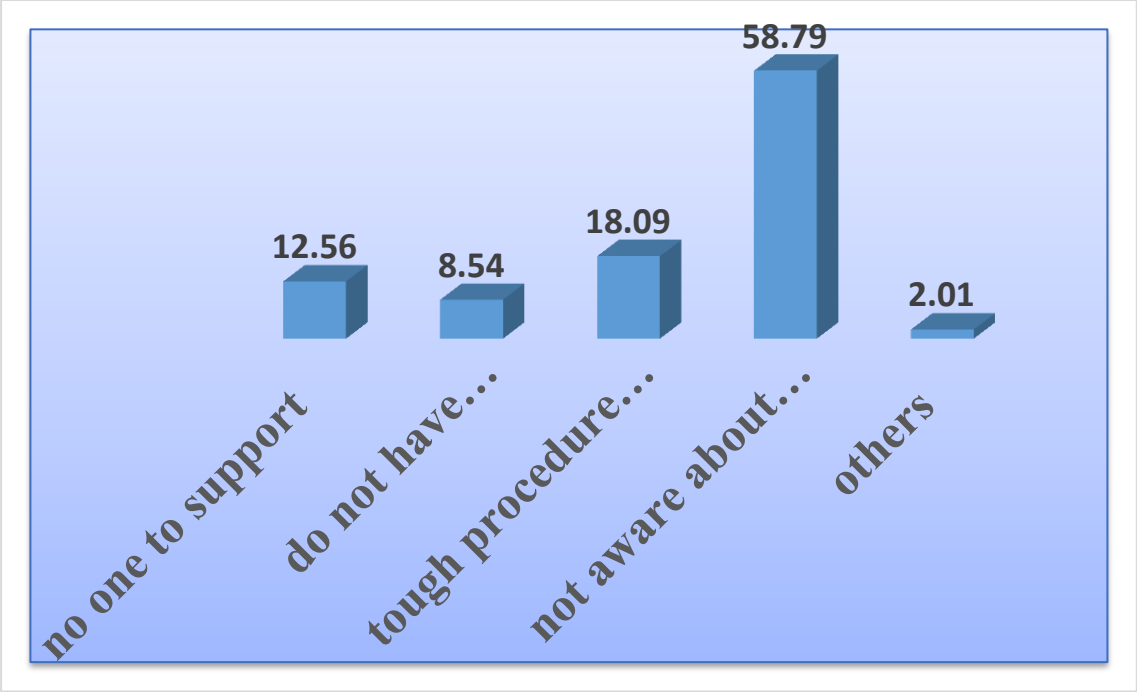
Figure 5.11 Percent Distribution of Having Health Insurance among Elderly



Source: Estimated from Primary Survey

Figure 5.12 shows the main reasons behind the elderly not being a part of any health insurance scheme. Reasons cited are varied and include: Lack of awareness which is among 58.79 percent of the elderly, lack of support is 12.56 percent and tough procedure for taking benefits of the schemes is 18.09 percent. Need of health insurance for elderly are very necessary because it could be beneficiary for old persons like, With an appropriate health insurance policy, lifestyle diseases can be dealt properly with senior citizens, without causing further damage to your lifestyle and dent to your pocket. Old age is highly unpredictable and one does not even have the strength to fight a stressful situation. You might already be having an insurance policy but is it adequate. The cost of medical treatment in India is always on the rise. With adequate medical insurance, you can ensure that an unfortunate ailment at old age does not erode your hard earned savings.

Figure 5.12 Percent Distribution of Reason for Not Availing Health Insurance Among



Source: Estimated from Primary Survey

The table 5.8 shows the awareness about Jan Aausadhi Stores opened under Pradhan Mantri Bhartiya Jan Ausadhi Pariyojna where the facility of generic medicines are provided by GOI at a cheaper price. Further, the table reveals that only 32.08 percent elderly have heard about Jan Aausadhi Store while about 70 percent are accepted that did not head about this scheme. 29.17 percent elderly have heard about generic medicine, remaining elderly more than 70 percent have not heard generic medicine. On asking for prescription of generic medicine by doctor, about 3 percent accepted yes. 88.75 percent people never heard about geriatric wards in hospitals, only 11.25 percent have heard about geriatric ward and 1.67 elderly had taken treatment in geriatric wards. This data indicate the unawareness about innovation in health sector. This data showing the problem of exclusions among elderly. To promote these schemes, government should pay attention on inclusion of elderly at the block and

village level and also should take help of media. T.V. and mobile services so that people could aware at home.

Table 5.8 Awareness about JAS, Generic Medicine and Geriatric Wards

	Yes	No	Don't Know	Total
Have you ever heard about Jan Aausadhi Store	77 (32.08)	163 (67.92)	-	240
Have you ever heard about Generic Medicines	70 (29.17)	17 (70.83)	-	240
if yes, did your doctor ever prescribe generic med	7 (2.92)	189 (78.75)	44 (18.33)	240
Have you ever heard about Geriatric Wards in Hospitals	27 (11.25)	213 (88.75)	-	240
if yes, have you ever taken treatment in geriatric wards	4 (1.67)	236 (98.33)	-	240

Source: Source: Estimated from Primary Survey

() shows percentage

5.5.5 Medical Camps

The Graph explains that majority of the elderly around 45.4 percent are not aware of the medical camps and only 9.17 percent of elderly have attended these camps. In spite of the various awareness programs in UP., only 1.25 percent of elderly attend the medical camps regularly. Further, 4.17 percent of elderly respond that due to the distance factor they don't attend the medical camps while 27.5 percent of elderly even never heard about these medical health's oriented camps in their respective towns.

Figure 5.13 Percent Distribution among Elderly of Attending any Medical Camps

Source: Estimated from Primary Survey

5.5.6 Health Equipment Using by Elderly

In the old age, people are often need to use some health supporting systems like Spectacles, walking stick, dentures etc. here the table 5.9 gives a preview to how many elderly are using these tools. The highest using tool by elderly is spectacles about 57 percent followed by contact lances (13.51) and walking stick (11.32). The below table 5.10 highlights the reasons for why elderly are not using these health support tools, 75.79 percent elderly accepted that do not have need to use while 24.21 percent elderly told that they need to use some of these tools but cannot afford because of financial problem. This data reveals the existence of exclusion in the health sector as the necessary things for elderly are not available on affordable price for elderly from all income groups.

Table 5.9 Percent Distribution among Elderly of Using Health Equipment

	Contact Lances	Spectacles	Wheel Chair	Hearing Tool	Thermo meter	Dentures	Gluco meter	Walking Stick
No	275 (86.48)	137 (43.48)	315 (99.06)	314 (98.74)	283 (88.99)	283 (88.99)	298 (93.71)	282 (88.68)
Yes	43 (13.51)	181 (56.92)	3 (.94)	4 (1.26)	35 (11.01)	35 (11.01)	20 (6.29)	36 (11.32)
Total	318 (100)	318 (100)	318 (100)	318 (100)	318 (100)	318 (100)	318 (100)	318 (100)

Source: Estimated from Primary Survey

Table 5.10 Percent Distribution among Elderly of Reasons for not Using Health Equipment

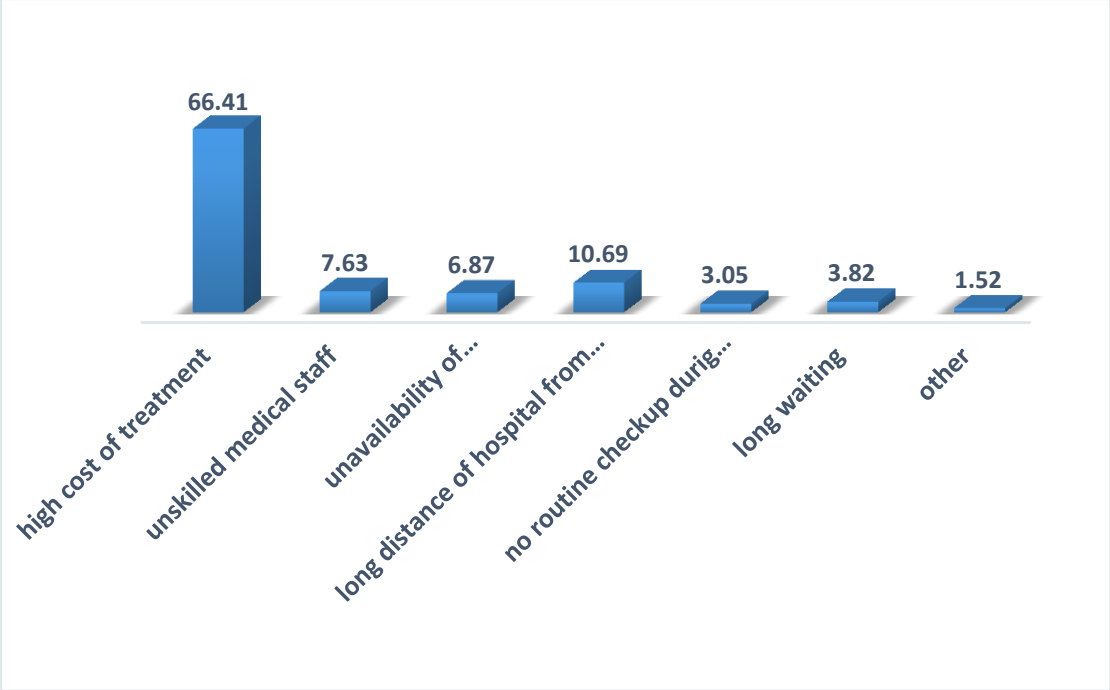
Reason for not using these devices/tools	Freq.	Percent
need to use but can't afford due to financial problems	77	24.21
no need to use	241	75.79
total	318	100

Source: Estimated from Primary Survey

5.5.7 Problem Facing During Treatment by Elderly

The figure 5.14 is showing the problems facing by elderly during treatment, according to 66.41 percent respondents expensive treatment is the major problem during treatment while about 11 percent respondent told that the long distance of hospitals from home is the major problem. Some other problem facing by elderly during treatment are unskilled medical staff, unavailability of medical facilities in the hospitals no routine check-up during hospitalised and others.

Figure 5.14 Percent Distribution of Problem Facing During Treatment



Source: Estimated from Primary Survey

5.6 Conclusions

Old people face many problems like physical weakness, immobility, loneliness along with poor financial condition. Hence, most of the elderly in India are not able to access health facilities properly like insurance, medical camps, health support tools and also unaware about the new schemes launched in health sector. This shows the problem of exclusion in health sector which urgently need to inclusion at lower level of the society. As per the observation, the study found that in the remote areas like Kakori NP and Bakshi ka Talab NP due to the absence of government hospitals, the old people residing in these areas resort to taking treatment from the nearest private hospitals or clinics. In some cases of Kakori they are also taking medicine from *'Jhola chhap'* doctors or quacks. Old persons are not even aware about their health problems. For example, many old people do not consider dental problems, vision problems, hearing problem, memory loss, skin diseases to be ailments. They are not aware about health insurance policies as they believe that in old age what is the need

of insurance. Results show that the elderly, at times, do not even visit the overcrowded government hospitals finding the services inadequate for their care. Society, the government and NGOs need to invest in renewed efforts to ensure that the elderly in our country get the most basic of their dues which is a healthy life.

Chapter 6

Health Expenditure Details of Elderly Persons in Study Area

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Health Expenditure Details of Elderly Persons in Study Area

6.0 Introduction

Healthcare sector in India is one of the largest sectors, in terms of revenue and employment, and it is expanding rapidly. During the 1990s, Indian healthcare grew at a compound annual rate of 16% and its value reached to the level of $34 billion in 2007 (Mogha S K. and Yadav S. P., 2014; p. 22). India's healthcare infrastructure has not kept pace with the economy's growth. The physical infrastructure is woefully inadequate to meet today's healthcare demands, much less tomorrows. While India has several centres of excellence in healthcare delivery, but due to the poor condition of the infrastructure in the vast majority of the country these facilities are limited to few people. India is rapidly transforming with persistent augmentation of the physical infrastructure and technological capabilities across all sectors. Healthcare sector is also witnessing significant transformation with the Estimating technical and scale efficiencies of private hospitals 23 liberalization of the market and increasing involvement of the private sector. The importance of good quality of healthcare infrastructure is reiterated by the government's commitment to offer a five year tax holiday, for private providers, establishing multi-specialty healthcare facilities (Shah and Mohanty, 2010). Over the past few decades, Indian healthcare sector has witnessed a significant growth in the number of corporate and private hospitals, providing specialized and tertiary level medical care. Since independence, healthcare sector was dominated by the public sector, with minimal contribution of the private sector to health services. However, due to inadequate and ineffective delivery of public healthcare services to large masses of India, private healthcare sector has grown rapidly over the period and now it accounts for more than 80% of total

healthcare spending in India (ibid). Still, keeping in view the large size of population, especially in rural and remote areas not having adequate access to the healthcare services at the affordable prices, there seems to be immense scope for future growth of private healthcare sector in India. Since resources (both physical and financial) at the disposal of healthcare service providers are scarce and have competitive uses, these resources need to be utilized in an efficient manner so that the delivery of services may be provided at the affordable prices to the masses. It, therefore, becomes desirable to examine up to what extent various inputs involved in the delivery of healthcare services are utilized and also to identify the slacks in the utilization of inputs and set the input-output targets for inefficient hospitals to monitor their performance. It is in this background that this study has been carried out to measure the technical and scale efficiency of 50 private hospitals of India for the period from 2004–2005 to 2009–2010.

This chapter covers the fourth objective of the thesis, *to examine health expenditure on elderly.*

This chapter includes the detail of health expenditure on elderly and covers the age group wise, disease wise and type of hospital wise doctors' fees, test cost, medicine cost, travel cost and total out-patient health cost spend by old persons on their health.

6.1 Age Group Wise Health Cost

Spending on health care services for the elderly has been increasing since 1965; between 1977 and 1984 it increased at an annual rate of 14.5 percent. The increase in expenditures is reflected in the increasing cost to the federal and state governments of operating the Medicare and Medicaid programs as well as in the increase in out-of-

pocket payments made by the elderly. As a consequence, health care financing has become one of the more critical policy issues to be addressed by the nation (Gilford D.M., 1988). The below table 6.1 represents the statistical analysis of health cost according to age group which includes doctor's fees, test cost, medicine cost, travel cost and other cost. It also shows the total out-patient and inpatient cost. Focusing on *doctor's fees*, we can see that 80-89 age group are paying highest mean of doctor's fees (Rs.3347.37) followed by 70-79 age group (Rs.3015.79).The interesting fact is reflecting in the highest age group 90 and above has paying lowest doctor's annually (981.82). The reason behind this fact that oldest persons has less attention among all family members. Focusing on test cost, the table reveals that age group of 90 and above has highest mean of test cost (Rs.1181.82) followed by age group of 70-79 (Rs.726.18) and the lowest mean of test cost paid by age group of 60-69. The test costs are including the charge on X-Ray, Blood Test, Ultrasound and other pathological tests. Further focus on the medicine cost (which includes all types of medicines like drugs, syrups, injections etc.) it has found that the age group of 90 and above (Rs.16690.91) has highest spending on medicine cost followed by 80-89 age group (Rs.16505.26) and the 70-79 age group spends (16495.26) on medicine cost and the lowest spending on medicine cost by age group 60-69 (Rs.12620.38). The medicine cost data is showing in the table that as age increases medicine cost also increases accordingly i.e. lower age group is paying low income on medicine costs and higher age group is paying high medicine cost. When we are taking about travel cost and found that the age group of 70-79 is paying highest (Rs.1955) amount on travel cost. The minimum cost of all tests is showing zero because the some of the elderly are taking free treatment from government hospitals where the doctor's fees is '0' and the minimum of test cost is '0' because some of the patients have no test cost during last 365 days. Minimum test cost is '0' because some hospitals or clinics are located at walking distance.

Table 6.1 Age Group Wise Mean Distribution of Various Health Costs (Annual, in Rupees)

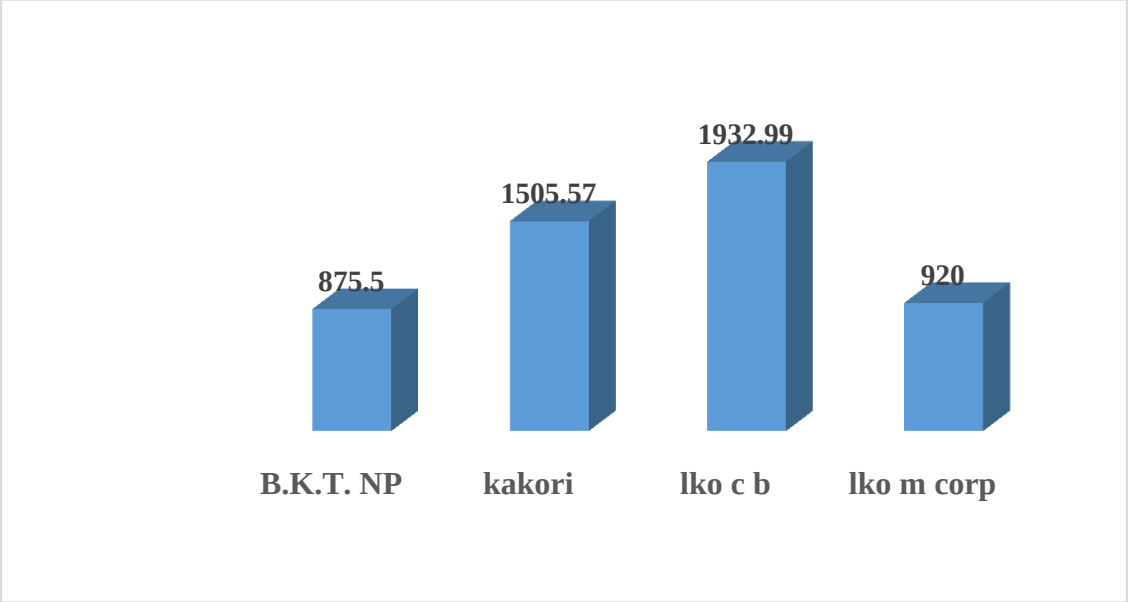
Doctor's Fees	**Age Group**	**Mean**	**SD**	**Min**	**Max**	**Skewness**
	60-69	2644.91	4815.454	0	26400	2.412
	70-79	3015.79	5193.818	0	24000	2.044
	80-89	3347.37	6047.531	0	19200	1.952
	90 and above	981.82	2328.011	0	7200	2.42
Test Cost	60-69	569.43	1503.916	0	11000	4.396
	70-79	726.18	1623.102	0	10000	3.435
	80-89	592.11	1080.929	0	4000	2.18
	90 and above	1181.82	2968.777	0	10000	3.148
Medicine Cost	60-69	12620.38	22587.59	200	192000	3.896
	70-79	16495.26	23121.54	150	96000	1.926
	80-89	16505.26	27904.55	300	120000	3.125
	90 and above	16690.91	22071.22	120	69600	1.504
Travel Cost	60-69	1121.7	2829.789	0	24000	4.398
	70-79	1955	7126.692	0	60000	7.473
	80-89	751.58	1548.079	0	6000	2.595
	90 and above	1145.45	2406.809	0	6000	1.899
Other Cost	60-69	324.53	1801.595	0	18000	7.066
	70-79	363.16	2182.283	0	18000	7.472
	80-89	631.58	2752.989	0	12000	4.359
	90 and above	0	0	0	0	

Source: Estimated from Primary Survey

The travel cost is depends on the distance of hospital from home. In the last, focusing on other costs (includes the cost like food cost during treatment, ambulance charge and tip given to nurses etc.) it is found that age group of 80-89 has highest spending on other cost among all groups. At the population level, mean costs of health care utilization increased with age at least until the mid-nonagenarian years before declining in centenarians. The latter trend may result from a selection effect where the healthiest individuals survive to the oldest ages When controlling for proximity to

death, comorbidity and impairment age was only weakly associated with various types of health costs, (Hazra NC. 2018; Et al. p. 838). Healthcare cost is age dependent, after the high cost in the first year of life, it is lowest for children, rise slowly throughout adult life, and increase exponentially after age 50 (Meerding, et al.1998). The studies found that annual costs for the elderly health care are-four to five times than these in early times.

Figure 6.1 Mean Distribution of Town Wise Travel Cost



Source: Estimated from Primary Survey

The above figure 6.1 is showing the mean of travel cost according to surveyed towns. The Travel Cost is directly related to the distance of hospital from home, the figure reveals that LKO CB has highest (Rs.1932.99) mean of travel cost among all surveyed towns followed by Kokori NP (Rs.1505.57) and the B.K. T. NP has lowest (Rs. 920) mean of travel cost. Lucknow C B has long distance from hospitals, the residents of Lko. CB do not have direct transportation system from the main market where hospital is located, they who don't have self-convenience for travel, have to hire Taxi or Rickshaw for the travel. Kakori has long distance from home to hospitals as they prefer the KGMU for the treatment which has located at the 20-25 km. far

away from Kakori. So the data indicates that the distance of hospital is also an importance factor to increase health cost.

6.1.1 Age Group Wise Out-Patients Health Cost of Elderly

Out patients are those who are taking treatment from hospital without taking admission in the hospital. In this reference the below table 6.2 depicts that the 70-79 age group has highest mean of health cost while in other hand age group of 60-69 has lowest mean of total health cost of out-patient. The minimums cost is showing very low in all age groups because some of the elderly are not taking treatment properly or using home remedies as medicine which has low cost than allopathic medicines.

Table 6.2 Age Wise Mean Distribution of Total Health Cost of Out Patients

	Age Group	Mean	Median	S.D.	Min.	Max.	Skewness
Total Health Cost of OP	60-69	17280.94	6600	27007.68	350	206400	3.054
	70-79	22555.39	11100	28126.86	450	96500	1.436
	80-89	21827.89	13700	29680.9	200	120000	2.269
	90 And Above	20000	6000	27799.03	400	92800	2.013

Source: Estimated from Primary Survey

6.1.2 Age Group Wise In-Patients Health Cost of Elderly

Table 6.3 Mean Distribution of Total Health Cost of In Patients

	Age Group	Mean	S.D.	Min.	Max.	Skewness
Total Health Cost of IP	60-69	8001.42	37212.41	500	380000	7.562
	70-79	10892.11	49669.42	1000	410000	7.233
	80-89	4473.68	18325.36	1500	80000	4.331
	90 And Above	4636.36	15048.41	300	50000	3.314

Source: Estimated from Primary Survey

The above table 6.3 is depicts the annual health cost of In Patients of surveyed area and reveals that the age group of 70-79 has highest mean of total cost. It means that this age group spends more as in patients in comparison to other age groups. The minimum cost among all age groups is highest in 80-89 age group and the maximum health cost is highest in 70-79 age group.

6.2 The Diseases and Health Cost among Elderly

The elderly people suffer from dual medical problems in India, i.e., both communicable as well as non–communicable diseases. This is further compounded by impairment of special sensory functions like vision and hearing. A decline in immunity as well as age-related physiologic changes leads to an increased burden of communicable diseases in the elderly.

6.2.1 Disease Wise Doctor's Fees

The table 6.4 is expounding the detail information about the disease wise mean annual cost of doctor's fees, and reveals that diabetes (Rs.4847.55) has the highest mean cost of doctors' fees, followed by other diseases (includes cancer, breast cancer, memory loss, allergy etc.) (Rs.4285.71), Stomach Related Ailments (Rs.4142.86), B.P. (Rs.3766.67) and Heart Disease (3166.67). It clears in the table that the highest minimum cost is 200 among all diseases while the maximum annual doctor's fees is again diabetes. The observation of the field reveals that the health services are expensive. Mostly People prefer to go to private doctors for treatment, especially for diabetes, B.P. Thyroid and stomach related diseases etc. while for heart disease, paralysis and nervous system related disease, people prefer government hospital.

Table 6.4 Disease Wise Mean Distribution of Total Doctor's Fees (Annual, in Rupees)

Diseases	Mean	SD	Min	Max	Skewness
Arthritis	2550	4730.191	0	19200	2.266
Asthma	2273.68	3707.177	0	12000	1.652
B.P.	3766.67	4340.371	0	12000	0.954
Dental Problem	0	0	0	0	
Diabetes	4847.55	6652.088	0	26400	1.744
Hearing Problem	2000	9000	0	18000	2
Heart Disease	3166.67	4460.678	200	14400	1.244
Nervous System	2040	3163.542	200	7200	1.485
Thyroid	4000	4916.762	200	16800	3.589
Vision Problem	1000	2364.962	0	7200	2.149
Stomach Related	4142.86	6761.403	0	24000	1.773
Paralysis	3333.33	5011.986	200	14400	1.591
Others	4285.71	5953.003	0	20400	1.845

Source: Estimated from Primary Survey

6.2.2 Disease Wise Test Cost

The below table 6.5 gives an overview of the disease wise total test of cost. On an average the highest total cost of disease relates to the heart related diseases (Rs.1741.67). Following the heart disease the second disease which amounts for high amount of cost relates to thyroid related problems (Rs.1741.67). The lowest test cost of disease observe among the surveyed people is hearing problem Rs (75), it clears in the table that the test cost of dental problem is '0' because people do not consider it as a curable disease and self-medication or home remedies use for it.

Table 6.5 Disease Wise Mean Distribution of Test Costs (Annual, in Rupees)

Diseases	Mean	SD	Min	Max	Skewness
Arthritis	565.38	1225.207	0	5000	2.59
Asthma	218.37	425.91	100	1500	2.059
B.P.	384.44	846.934	0	3500	3.275
Dental Problem	0	0	0	0	-
Diabetes	1028.87	1942.39	100	11000	3.39
Hearing Problem	75	150	0	300	2
Heart Disease	1769.44	2603.343	150	10000	2.196
Nervous System	840	1314.534	500	3000	1.531
Thyroid	1741.67	2973.354	300	10000	2.356
Vision Problem	225	565.878	0	2000	2.885
Stomach Related	766.67	1893.234	100	8500	3.749
Paralysis	840	1654.66	500	5000	2.442
Others	1053.57	2670.96	100	10000	3.341

Source: Estimated from Primary Survey

6.2.3 Disease Wise Medicine Cost

The below table 6.6 observes the total medicine cost on various diseases. On an average other diseases includes cancer, breast cancer and other (Rs.34757.14) has the highest cost followed by Nervous System (Rs.37680) diabetes (Rs.28418.49 etc., apart from various other diseases for which observation were done incur the highest cost while dental problems have the lowest cost (Rs.600).

Table 6.6 Disease Wise Mean Distribution of Medicine Cost (Annual, in Rupees)

Diseases	Mean	SD	Min	Max	Skewness
Arthritis	12224.62	13011.98	100	60000	1.358
Asthma	7869.47	11570.61	500	48000	2.626
B.P.	12613.33	14326.69	600	48000	1.375
Dental Problem	600	1200	0	2400	2
Diabetes	28418.49	30002.4	500	120000	1.203
Hearing Problem	22500	41097.45	500	84000	1.972
Heart Disease	21640	20204.03	1000	69600	0.764
Nervous System	37680	47088.34	2000	120000	1.972
Thyroid	17265	16803.2	1800	60000	1.545
Vision Problem	3500	6326.755	0	20400	1.936
Stomach Related	10142.86	9796.559	100	36000	1.266
Paralysis	15293.33	19630.65	2500	60000	1.78
Others	34757.14	53168.19	2350	192000	2.448

Source: Estimated from Primary Survey

6.2.4 Disease Wise Travel Cost

The above table 6.7 observes the total travel cost incurred by the patients for the treatment of various kinds of diseases. On an average heart diseases treatment incurred the highest cost (Rs.5060). Patients incurred the highest travel cost for getting treatment for heart disease, hearing related diseases (Rs.3800) and other diseases (Rs.2785.71). The lowest travel cost was incurred on dental problems (Rs.150).

Table 6.7 Disease Wise Mean Distribution of Travel Cost (Annual, in Rupees)

Diseases	Mean	SD	Min	Max	Skewness
Arthritis	929.23	2188.463	0	12000	3.583
Asthma	1155.79	1783.574	0	6000	1.712
B.P.	1654.44	3155.841	0	12000	2.472
Dental Problem	150	300	0	600	2
Diabetes	1810.94	4051.709	0	24000	3.939
Hearing Problem	3800	5635.601	0	12000	1.674
Heart Disease	5060	13895.17	0	60000	4.06
Nervous System	360	536.656	0	1200	1.258
Thyroid	708.33	910.003	0	2400	1.146
Vison Problem	650	1696.288	0	6000	2.93
Stomach Related	1411.43	3002.856	0	12000	2.744
Paralysis	1266.67	1421.267	0	4800	2.225
Others	2785.71	4004.969	0	14400	2.116

Source: Estimated from Primary Survey

6.2.5 Other Cost[4] Disease Wise (Annual)

The below table 6.8 explains the other health cost and reveals that people spends highest on diabetes followed by stomach related ailments and arthritis, while asthma, B. P., dental problem, and many others have no other cost.

[4] Other medical expenses (attendant charges, physiotherapy, personal medical appliances, blood, oxygen, etc.): All other expenditure involved in medical treatment were recorded as'Other'. NSSO, 574, 2014

Table 6.8 Disease Wise Mean Distribution of Other Cost (Annual, in Rupees)

Diseases	Mean	SD	Min	Max	Skewness
Arthritis	482.69	2155.224	0	12000	4.865
Asthma	0	0	0	0	
B.P.	0	0	0	0	
Dental Problem	0	0	0	0	
Diabetes	1041.51	3668.862	0	18000	4.074
Hearing Problem	0	0	0	0	
Heart Disease	0	0	0	0	
Nervous System	0	0	0	0	
Thyroid	300	1039.23	0	3600	3.464
Vision Problem	250	1224.745	0	6000	4.899
Stomach Related	595.24	2615.43	0	12000	4.57
Paralysis	266.67	800	0	2400	3
Others	0	0	0	0	

Source: Estimated from Primary Survey

6.2.6 Total Health Cost of Outpatient (Annual)

The below table 6.9 calculates the total health cost of outpatients for various diseases. On an average the outpatient spends the highest amount on diseases related to other diseases (Rs.42882.14) followed by nervous system (Rs.40920), diabetes (Rs.37147.36), heart disease (Rs.31636.11) and many other diseases which have more than or about to near twenty thousand rupees spends annually while the lowest is spent on dental problems. Following nervous system diseases it is diabetes and heart diseases which incur the second and third highest cost for outpatient.

Table 6.9 Disease Wise Mean Distribution Total Health Cost Out Patient (Annual, in Rupees)

Diseases	Mean	Median	SD	Min	Max	Skewness
Arthritis	16751.92	12300	17549.07	0	62000	1.132
Asthma	11517.32	5400	15976.47	0	61000	2.083
B.P.	18418.89	14660	17985.49	0	63500	1.184
Dental Problem	750	300	1135.782	0	2400	1.659
Diabetes	37147.36	24000	34439.93	0	125250	0.972
Hearing Problem	30875	19650	37264.23	0	84200	1.487
Heart Disease	31636.11	33015	30358.6	0	96500	0.822
Nervous System	40920	27600	45923.33	0	120000	1.803
Thyroid	24015	19000	21946.47	2700	78400	1.469
Vision Problem	4512.04	550	8967.005	0	32400	1.836
Stomach Related	17059.05	15200	17077.13	0	57200	1.135
Paralysis	21000	9600	24657.61	2700	73400	1.506
Others	42882.14	19700	57975.46	0	206400	2.136

Source: Estimated from Primary Survey

6.2.7 Total Health Cost of Inpatient (Annual)

The below table 6.10 observes the total cost incurred by the inpatients on various diseases. The highest cost is incurred on other diseases followed by arthritis, paralysis and heart diseases. These are some common diseases among elderly for which they have to admit in hospitals. In other hand while the lowest on vision problem because vision problem, dental problems and Hearing diseases are not considered as serious problem by elderly.

Table 6.10 Disease Wise Mean Distribution Total Health Cost In Patient (Annual, in Rupees)

Diseases	Mean	SD	Min	Max	Skewness
Arthritis	18164.42	68016.68	0	380000	4.555
Asthma	4057.89	11392.36	0	40000	2.821
B.P.	2444.44	10370.9	0	44000	4.243
Dental Problem	2500	5000	0	10000	2
Diabetes	12830.19	57897.42	0	410000	6.491
Hearing Problem	0	0	0	0	
Heart Disease	14186.11	27697.58	0	80000	1.583
Nervous System	1420	3175.217	0	7100	2.236
Thyroid	2500	8660.254	0	30000	3.464
Vision Problem	416.67	1411.649	0	5000	3.22
Stomach Related	3547.62	11460.7	0	50000	3.786
Paralysis	15111.11	32922.05	0	100000	2.669
Others	27107.14	44947.91	0	150500	1.852

Source: Estimated from Primary Survey

6.3 Health Cost and Income of Households

Health cost has direct impact on income of households or in other words income has an impact on health because people cannot access health care facilities without income as the treatment is very expensive especially in private hospitals. Households' in India bear significant financial burden on account of medical treatment, as the current prepayment and risk pooling mechanisms are inadequate (Selvaraj, S., et al. 2018). Over a hundred million people are pushed into poverty annually due to health spending, and the impact of health spending on poverty is high in low-resource settings. (Dash, A. and Mohanty, S. K. 2019). Below table is showing the income quantile wise health cost of outpatient i.e. which income group spend more or less, it clears in the table 6.11 that on an average the highest income group is

spending highest amount (Rs.34800.48) on health of their elderly outpatients which is more than three times higher than lowest income groups average spending (9520.308). If we compare the maximum amount spend by all groups we find that fourth income group (higher) has spent maximum amount (Rs.206400). the minimum amount has spent by all groups is highest in higher group Rs.300 while it is zero in lowest income group as some elderly have no health cost, they visit to nearest CHC/PHC and took medicine free of cost.

Table 6.11 Income Quintile Wise Mean Distribution of Total Health Cost of Out-Patient (Annual, in Rupees)

Quantiles of Annual HH Income	Mean AC OP	SD_AC OP	Max_ AC OP	Min_ AC OP
1 (Lowest)	9520.308	10397.65	51800	0
2 (Lower)	10651.43	18544.36	118200	100
3 (Middle)	14969.84	18375.2	61000	150
4 (Higher)	24954.59	34268.96	206400	300
5 (Highest)	34800.48	37463.78	125250	200

Source: Estimated from Primary Survey

The below table 6.12 depicts the analysis of total annual cost of In Patients of various income groups households. The table is showing almost similar condition like table 6.10 but in this table the higher income group spent highest amount (Rs.12292.06) on hospitalized elderly which is six times higher than lowest and lower income group. Focusing on Maximum health cost, we found that middle income group has spent highest amount (Rs.380000) and Minimum amount has spent by lowest income group which is Rs.0, again it is because of CHC/PHC free medical facility.

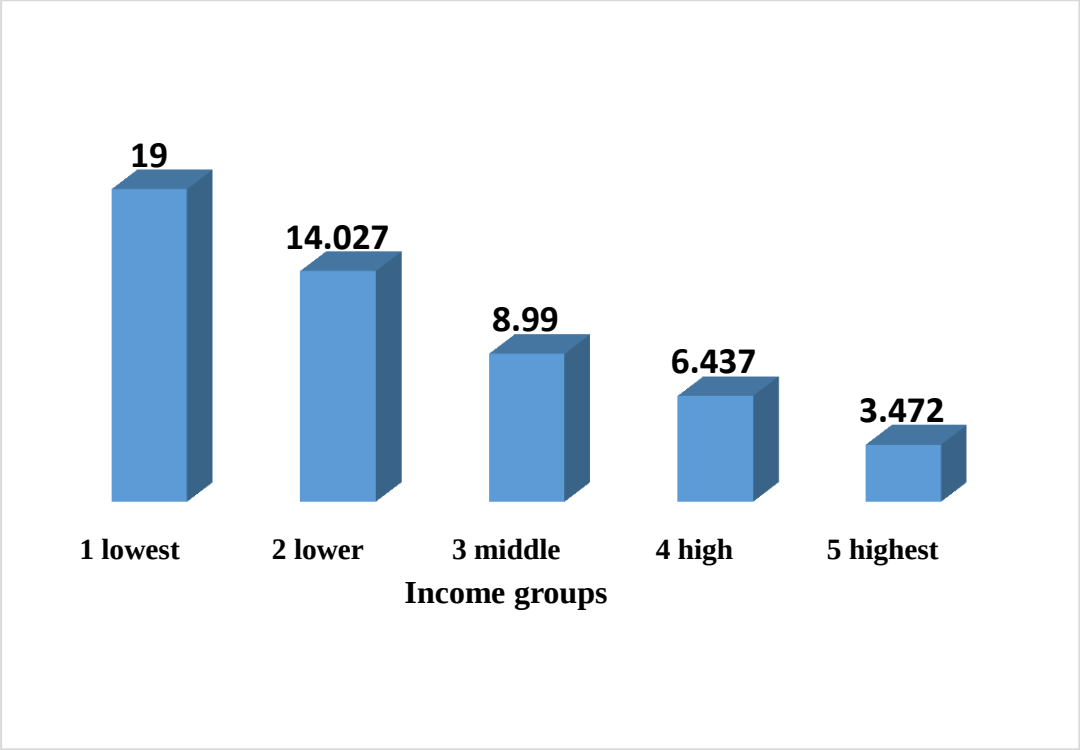
Table 6.12 Income Quintile Wise Mean Distribution of Total Health Cost of In-Patient (Annual, in Rupees)

Quantiles of Annual HH Income	Mean AC In Patient	SD_AC In Patient	Max AC In Patient	Min AC In Patient
1 (lowest)	2076.923	10034.8	60000	0
2 (lower)	7403.968	19572.16	100000	1000
3 (middle)	9239.063	49101.45	380000	2000
4 (higher)	12292.06	44411.67	300000	2200
5 (highest)	10999.21	53584.1	410000	3000

Source: Estimated from Primary Survey

In the both tables 6.11 and 6.12, it is reflecting that the lowest and lower income group has spent less on health cost, this is not a sign of their good health but this happens because of their income as they have less income so the spend less, even some times they have to borrow from others for health expenditure.

Figure 6.2 Income Group Wise Percent Distribution Total share of Income on Health Expenditure



Source: Estimated from Primary Survey

The figure 6.2 depicts the income quintile of household wise total share of their income on health expenditure of elderly in study area. In other words this table is showing the out of pocket health expenditure of households. This figure reveals net burden of health expenditure on the health of elderly only. We can see that quintile 1 which denotes lowest income group, has highest percent share (19 percent) of their income on health expenditure on elderly that means lowest income group bear highest burden of health expenses followed by lower income group which has 14.027 percent net burden of health and middle income group has about 9 percent share of health expenditure. This is a contradiction of the society that the highest income group has the lowest burden of health expenditure which is 3.47. If we analyse the average burden of all types income groups, it will be more than 10 percent that means every household has been expending more than 10 percent share of their income on the health care of elderly persons.

As the level of income is increases the burden is decreases i.e. the poor families are bearing more burden of health expenditure on elderly than upper income group. This shows that the lower income group families become more affected by expensive health care services.

6.4 Type of Hospital and Health Cost

In India, healthcare is delivered at private and government clinics, community health centers (CHCs), Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) clinics, and hospitals. According to the classification set forth in the Ministry of Health's National Health Accounts, which measures the flow of expenditures in the health sector, the Indian hospital system comprises general hospitals and specialized hospitals in the public and private sectors, as well as mental

hospitals in the public sector. Public general hospitals include medical college hospitals, district hospitals, sub-district hospitals and CHCs. Private General hospitals include all private hospitals and nursing homes. Specialized hospitals provide care for specific illnesses, e.g., tuberculosis, cancer, and lung disease, or in specific practice areas, e.g., neurology, nephrology, and cardiology. Specialized hospitals also include AYUSH clinics and those providing maternal and child health care. This study does not discuss mental hospitals. Hospital care in India represents a large portion of many people's consumption expenses, but it has received much less attention from the government, non-profits, and international organizations than primary healthcare.

Table 6.13 Hospital Wise Mean Distribution of Doctor's Fees (Annual, in Rupees)

Type of Hospitals	Mean Total Doc Fees	SD Total Doc Fees	Max. Total Doc Fees	Min. Total Doc Fees
Govt. Hosp.	18.367	58.056	200	0
Private Hosp.	5834.453	5546.701	26400	400
Others	0	0	0	0

Source: Estimated from Primary Survey

The above table 6.13 is showing the hospital wise doctor's fees spent by Elderly, the table reveals that doctor's fees in private hospital is much higher than government hospitals approximately 320 times. It shows the high health cost in private health sector. In government hospitals the maximum doctors annual fees is Rs.200 hundred which is actually the registration charge of government hospitals like SGPGI Sanjay Gandhi Post Graduate Institute of Medical Science, Lucknow) and KJMU (King George Medical University, Lucknow), there is no doctor's fees in government hospitals while in private hospitals the maximum annual doctor's fees is Rs. 26400 and the minimum annual fees is Rs. 400. The data reveals that there is huge gap in

Doctor's fees in between public and private hospitals. While focusing on the other source of treatment (AYUSH, self-medication and home treatment) we found there is no doctor's fees in paid by elderly.

Table 6.14 Hospital Wise Mean Distribution of Total Health Cost (Annual, in Rupees)

Type of Hospitals	Mean AC Out-Patient	SD_AC Out Patient	Max. AC Out-Patient	Min. AC Out-Patient
Govt. Hosp.	15108.46	30650.04	106400	0
Private Hosp.	31165.47	26147.67	120000	500
Others	4200	5994.531	18000	0

Source: Estimated from Primary Survey

The above table 6.14 explains the total health cost of outpatient according to type of hospitals, it is clearly seen in the table that on an average people has spent highest amount by taking treatment from private hospitals. It is more than two times higher in comparison to government hospitals. Moreover, the minimum amount is zero in government hospitals while in private hospitals it is Rs.500. the data indicates that it cheaper to take treatment from government hospitals in comparison to private hospitals.

Table 6.15 Hospital Wise Annual Cost of Elderly In-Patient (Mean, SD, Max, Min) (in Rupees.)

Type of Hospitals	Mean AC In-Patient	SD_AC In Patient	Max. AC In-Patient	Min. AC In-Patient
Govt. Hosp.	38572.22	30993.11	100000	100
Private Hosp.	64200	98029.38	410000	3000
Others	35000	-	35000	0

Source: Estimated from Primary Survey

The above table 6.15 depicts the hospital wise total annual cost of elderly *in patient*[5] of study area. Result reveals that on average of total annual health cost in the private hospitals is approx. two times higher (Rs.64200) than the average annual health of in patient of Government hospital (Rs.38572.22). The maximum amount of total AC (annual health Cost) of IP (In- Patient) of government hospitals is Rs.100000, while in the private hospitals it is higher (Rs.410000) more than four times with Government hospitals and the Others has lowest minimum AC of IP which is Rs.35000. Focusing on minimum amount of AC of IP, we found that there is huge difference between both government and private hospitals i.e. in private hospitals the minimum AC of IP is 30 times higher (Rs.3000) than government hospitals (Rs.100). The picture is clearly the reality of health sector that in the private hospitals, treatment two or three times more expensive than government hospitals, still people prefer private hospitals for treatment due to poor health facilities in government hospitals such as long que, unavailability of doctors and long distance of hospitals from home etc.

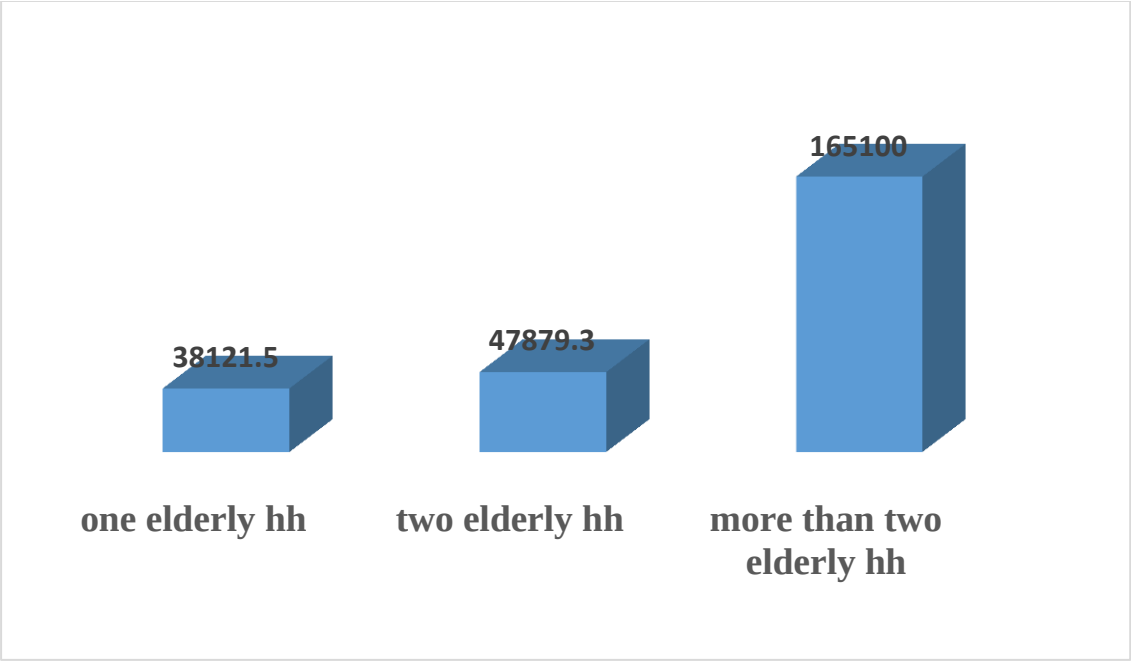
6.5 Health Expenditure according Number of Elderly in Household

The monthly per capita health spending of elderly households is 3.8 times higher than that of non-elderly households. While the health spending accounts 13 % of total consumption expenditure for elderly households, it was 7 % among households with elderly and non-elderly members, and 5 % among non-elderly households. Controlling for socio-economic and demographic correlates, the per-capita household health spending among elderly households and among household with elderly and

[2] According to NSSO, In-patient means that those patient who ever stayed in the hospital at least for one night from last 365 days.

non-elderly members was significantly higher than non-elderly households. The health expenditure is catastrophic for poorer households, casual labourer and households with elderly members. Based on the finding we suggest to increased access to health insurance and public spending on geriatric care to reduce the out-of-pocket expenditure on health care in India. (Mohanty S. K., 2014)

Figure 6.3 Mean Distribution of Health Expenditure on the Number of Elderly in HH



Source: Estimated from Primary Survey

The above figure is showing the average health expenditure of households according to number of elderly living in the family. The table clears that those family who has more than two elderly has spent more than double amount than those families who has one or two elderly.

6.6 Source for Health Expenditure

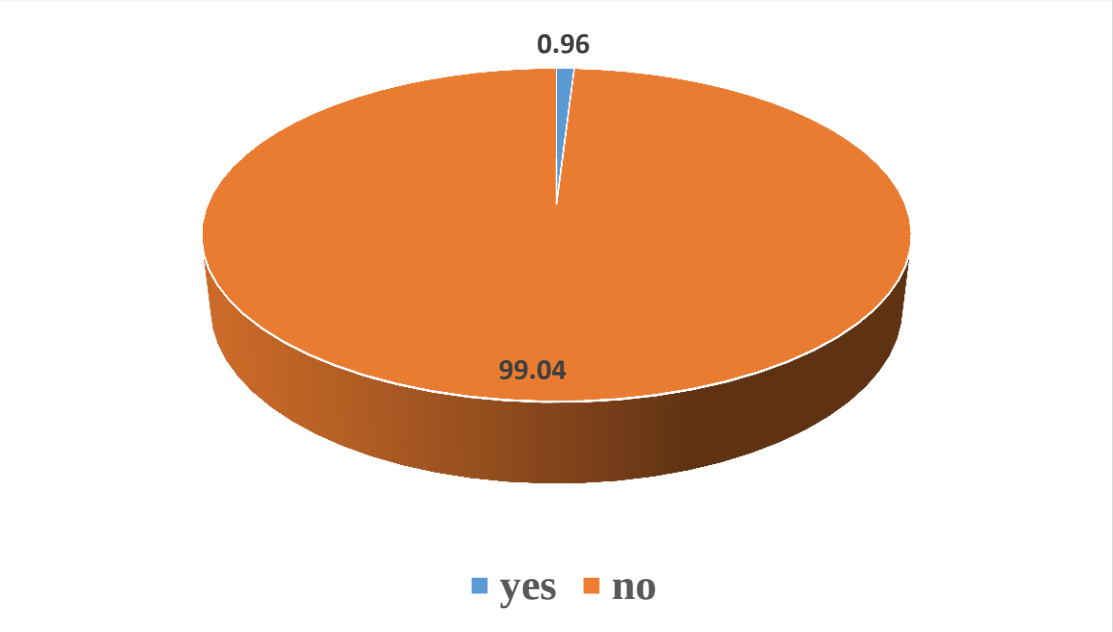
This section shows the source for health expenditure on elderly. It observed that 100 percent households are using their income as first source of health expenditure and

most of the respondents are using their savings also but some time they need more money than their income and savings as the health care services are too expensive so they use another sources for the health care expenditure of elderly.

6.6.1 Use of Institutional Funds for Treatment

The figure shows that all the respondents other than one did not specify utilizing bank funds for treatment of a disease as there are no such dedicated loan products. In a number of cases in Bakshi ka Talab area farmers often utilize crop loan cash credit funds for purposes other than the raising crops such as social ceremonies, purchase of durables and during medical emergencies. One such respondent stated that he used some bank funds for a medical treatment.

Figure 6.4 Percent Distribution of Use of Institutional Funds for Treatment



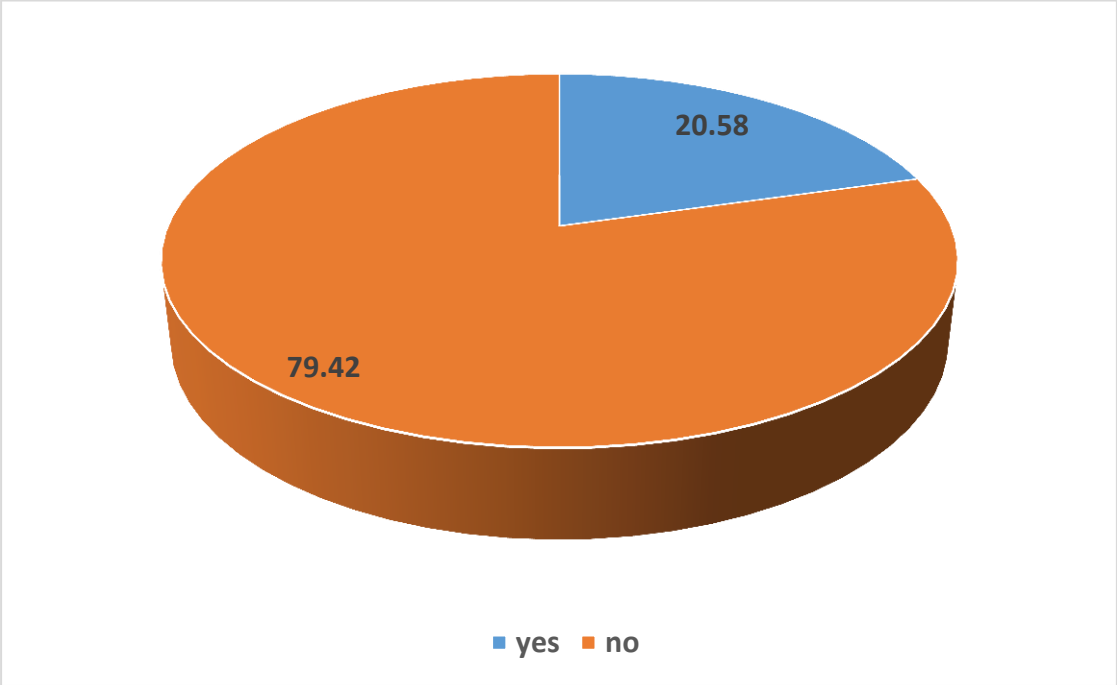
Source: Estimated from Primary Survey

6.6.2 Borrowing from Other Sources

The figure 6.5 is showing that about one fifth of the respondents (20.58%) stated that they resorted to borrow money from friends and relatives for the treatment of ailing

elderly members of the family. Such informal borrowing are mostly unrecorded and are based on oral promises and very often free of interest payments. These fund based support are highly useful if available as there are almost no formalities needed.

Figure 6.5 Percent Distribution of Borrowings from Other Sources

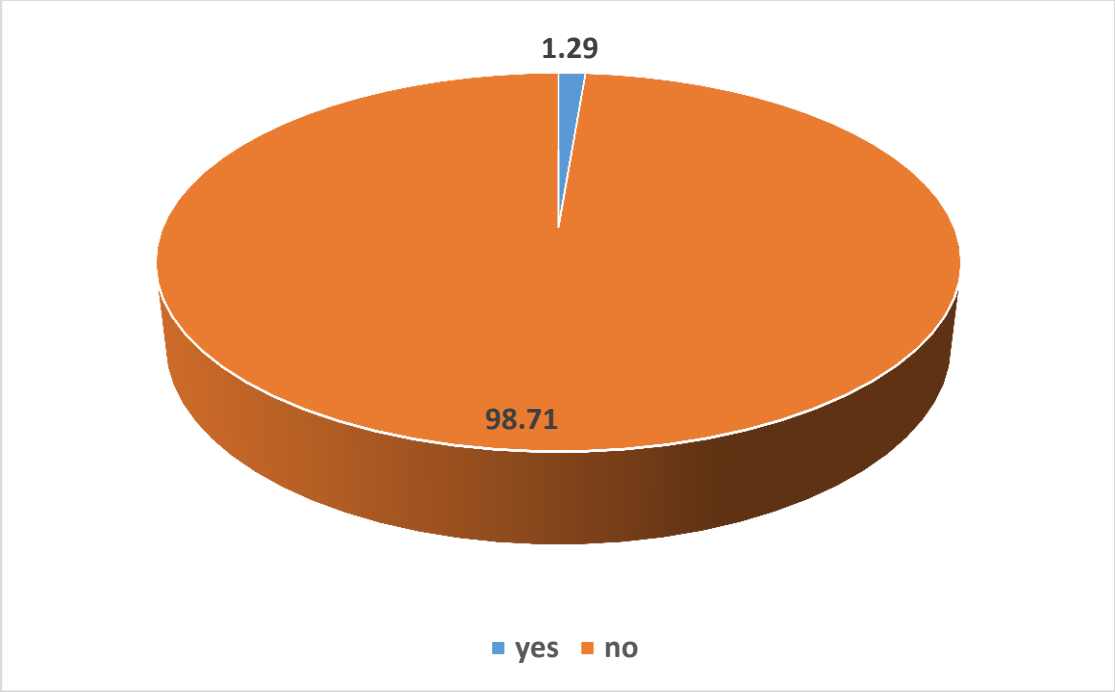


Source: Estimated from Primary Survey

6.6.3 Selling Assets for Health Expenditure

The above figure 6.6 is showing that three respondents out of 240 household surveys stated that they had to sell some of their assets such as land and cattle for raising funds to provide medical treatment for elderlies. Such liquidation of assets is never a usual phenomenon but an extreme step as people do not wish to sell their land specially farm land until and unless there is a grave situation in the family. Taking such a step indicates that these families value the health status of the old people although such families were in negligible number which went on to sell landed properties and other assets so as to provide due medical care to elderlies.

Figure 6.6 Percent Distribution of Selling Assets for Health Expenditure



Source: Estimated from Primary Survey

6.7 Conclusion

There is a significant gap between household and public health spending throughout the period. This may need simultaneous future growth of health spending as the higher prevalence of morbidity among elderly causes elevated health expenditure, which turns into more requirement of money under the assumption that the elderly will seek treatment equally to younger. Health care expenditure in a country can be determined by the health status, socioeconomic factors and demographic factors, cost of treatment, pharmaceutical, medical technology, health insurance and public policy. Health spending as percentage of GDP is quite low in India, however, showing the increasing trends over the past. Age profile clearly shows relatively higher health expenditure in older ages unveiling positive association of age and poor health status. Since India's population is large in younger ages therefore, total health expenditure is higher among young ages and slightly lowers down with the age advancement. Our

analysis shows that the presence of elderly in a household increases health expenditure, mostly through the impact of chronic disease, though there remains much to be explored. The impact of using private care is much less obvious given the wide range of private services available in Lucknow district. Population ageing is likely to influence pattern of health care spending in both developed and developing countries in the decades to come. In developed countries, where acute care and institutional long-term care services are widely available, the use of medical care services by adults rises with age, and per capita expenditures on health care are relatively high among older age groups. Accordingly, the rising proportion of older people is placing upward pressure on overall health care spending in the developed world, although other factors such as income growth and advances in the technological capabilities of medicine generally play a much larger role. A large proportion of health care costs associated with advancing age are incurred in the year or so before death. As more people survive to increasingly older ages, the high cost of prolonging life is shifted to ever-older ages. In many societies, the nature and extent of medical treatment at very old ages is a contentious issue.

Chapter 7
Conclusion and Major Findings

CHAPTER 7

CONCLUSION AND MAJOR FINDINGS

7.0 Introduction

Population ageing has profound social, economic and political implications for a country. The increasing number of older persons put a strain on health care and social care systems in the country. Old age comes with lot of ailment and diseases. In case of large number of elderly persons in the population, the country needs more and more health and medical services, facilities and resources. More and more number of hospitals, doctors, nurses are required Government spending on health care is increased with the increase of average age of population. (MOSPI, 2016). Health is now higher on the international agenda than ever before, and concern for the health of elderly people is becoming a central issue in development. The nations of the world have agreed that enjoying the highest attainable standard of health is one of the fundamental rights of every human being, without distinction of race, religion, and political belief, economic or social condition. Beyond its intrinsic value to individuals, health is also central to overall human development and to the reduction of poverty**.**

The breakthroughs in medical science, effective control on communicable diseases, advances in healthcare and improved standards of living have led to high life expectancy and low mortality, thus leading to a laudable trend of increase in the ageing population. The changed demography across the world, India in particular, needs urgent policy interventions to ensure that the senior citizens are afforded accessible and affordable healthcare benefits. The plight that the aged encounter while seeking medical help is because of increased alienation in family, lack of financial empowerment, dearth of appropriate government primary healthcare units in local

zones, depleted healthcare infrastructure in rural regions and expensive treatments in private hospitals. Furthermore, the elderly are themselves not sensitised to the various schemes, insurance brackets that they can avail of. They are also unaware about generic medicines that are far cheaper and accessible. Moreover, even though the private hospitals are expensive, the trust quotient is more for the private than the government sponsored medical aid. Society, nations and families have to create inclusive forums to benefit from the august experience of those who are in their advanced years. The elderly must be afforded with the pedestal of tranquil and dignified life

7.1 Major Findings

These conclusions and findings of this study were mapped by analysing the previous six chapters which have been summated below:

- ***The First Chapter*** includes the basic information about the terminology of the topic that is international and national scenario of ageing population. In this chapter we can see that the ageing population is increasing globally. Related literature is also revived in this chapter which also enlists the objectives of the thesis, hypothesis and methodology.
- ***The Second Chapter*** includes the theoretical aspect of ageing and health and establishes the relationship between ageing and development. The chapter shows that the ageing is directly related to health because as ageing population is increasing health challenges are also increasing.
- ***The Third Chapter*** statistically maps that the ageing population has increased rapidly from 2001 to 2011 with a high growth rate. the data reveals that the percentage of elderly females is more than elderly males in both rural and urban

area while in age group 0-59 percentage of male population is higher than female population in both rural and urban areas and shows that the percent change or growth of elderly person in 2001 to 2011 is highest in urban area which is about 3 times higher than others. And, that there is a lack of health infrastructure in terms of CHC, PHC, District hospitals. The data clears that in 7 years Uttar Pradesh has poor health infrastructure as there are nominal change in number of sub centres, CHCs and PHCs in comparison to India. The state's literacy rate is 70% which is below national average of 74%. The state has shown major improvement in its literacy rate from 56% in 2001 to 70% in 2011. Male literacy rate is higher than female literacy rate in the state. Government of Uttar Pradesh has taken several steps to bring awareness about education and thus building a strong foundation for better literacy rate in the state. In age group 7-59 total 29.02 percent persons are illiterate in which 10.47 percent males and 18.55 percent females. And 70.98 percent persons are literate in which 41.78 percent male and 29.21 percent female are literate. Out of total population of elderly person of Uttar Pradesh 64.09 percent persons are illiterate in which 21.16 percent male and 38.93 percent females and 35.91 percent elderly persons are literate in which 29.89 percent male and 9.02 percent female are literate. In both groups either rural or urban female literacy percent is less than male. Literacy percent of females in age group of 60+ is very less than females of 7-59 age group.

The chapter was based on the objective, *to examine the ageing scenario of Uttar Pradesh.* And hypothesis, 'There is increasing scenario in ageing population and inadequate health facilities for elderly persons in Uttar Pradesh'

Ageing population increased in Uttar Pradesh by about 35 percent growth rate during 2001 to 2011 census.

Life expectancy of Uttar Pradesh is lowest among all states.

Poor health infrastructure in districts of Uttar Pradesh.

- ***The Fourth Chapter*** posits the socioeconomic condition of the elderly person and traces the marital status of aged person, living arrangement, literacy, etc., all of which determine their healthcare amenities. Religion wise Hindu population is highest (73.33), categories wise OBC has highest percent (43.33) followed by General (28.75). 60-69 age group elderly has highest population (66.67). 48.75 percent elderly are illiterate where 66.46 female and 31.25 are male

    - ***The Fifth Chapter***: this chapter is based on second and third objective of the thesis, *to examine health status of elderly population and to examine the problem of exclusion in health sector which affect health of elderly*. The result found that elderly are suffering from multimorbidity specially women. It is found that females have more tendencies to getting sick than men. Women are suffering from more multiple diseases as compared to their male counterpart. 72.06 percent told that they have taken treatment immediately, 23.48 percent have accepted that they take treatment when disease become serious.

- Information about Jan Aausadhi Store, generic medicine and geriatric ward, the results shows that more than 70percent population are unaware about these facilities. 24.21 percent elderly needs to use these health support equipment's but cannot afford due to financial problems, this is shows the critical condition of old persons. Having insurance by elderly, we found that highest population (77.39) have no insurance. Which shows the problem of exclusion among elderly. Only those were in government job they are getting employer health protection (15.92). About 5.73 percent are getting old age pension. Less than one percent are getting PMSBY.

- The non communicable diseases are more common diseases among old persons such as diabetes (21.34), arthritis (20.53), vision problem (9.49), stomach related problems (liver, kidney and gastric) (8.3), asthma, B.P. and hearth diseases are more than 7 percent.
- People prefer private hospitals more than government hospitals due lack of facilities, long que and more distance from home of government hospitals.
- There are problem of multi-morbidity and polypharmacy, 22.01 percent having more than two diseases and about 23 percent having two diseases at same time. About 15 percent people are taking treatment from multiple doctors.
- Women have more tendency to fall ill, about 55 percent women reported as sick. 58.57 percent women have more than two diseases.
- There are financial problem among old persons as about 7 percent are not taking treatment due to financial problem similarly 24.21 percent not using health support tools while they need it due to financial problems.
- There are unawareness among elderly about health insurance and generic medicines,
- Problem of exclusion is found among elderly as they are unaware about health care innovations and financial problem is the major cause to not access the health facilities.
- ***The Sixth Chapter:*** shows the expenditure details of elderly person. Result reveals that the treatment is very costly especially in private hospitals. Focusing on Doctor's fees, medicine cost, test cost and all health costs are more than three times higher in private hospitals in comparison to the government hospitals. Especially doctor's fees is 320 time higher in private hospital than govt. hospitals.

- Age group 70-79 has spends highest on their health that means this age group has highest frequency to fall sick.
- The highest and higher income groups have spent more on health than lower and lowest group. So health cost affected by income status.
- People spends highest an average of, on other diseases (about 70000), diabetes (about 50000), heart disease (about 46000) nervous system (43060) and arthritis (about 35000). This data shows that the treatment is very expensive especially in private hospitals.
- Those who have multiple diseases spend more (16.32%) on health comparing to those who have one disease (11.11%).

7.2 Conclusions

In this available backdrop of research work, this study draws its conclusions in the following core bases:

1. The breakthroughs in medical science, effective control on communicable diseases, advances in healthcare and improved standards of living have led to high life expectancy and low mortality, thus leading to a laudable trend of increase in the ageing population.
2. The changed demography across the world, India in particular, needs urgent policy interventions to ensure that the senior citizens are afforded accessible and affordable healthcare benefits.
3. The plight that the aged encounter while seeking medical help is because of increased alienation in family, lack of financial empowerment, dearth of appropriate government primary healthcare units in local zones, depleted

healthcare infrastructure in rural regions and expensive treatments in private hospitals.

4. Furthermore, the elderly are themselves not sensitised to the various schemes, insurance brackets that they can avail of. They are also unaware about generic medicines that are far cheaper and accessible.
5. Moreover, even though the private hospitals are expensive, the trust quotient is more for the private than the government sponsored medical aid.
6. Society, nations and families have to create inclusive forums to benefit from the august experience of those who are in their advanced years. The elderly must be afforded with the pedestal of tranquil and dignified life.

7.3 Policy Recommendation

1. There is an imminent need for a dedicated department through which the GOI and the state governments can monitor the healthcare provisions and schemes that are being introduced to facilitate prompt, accessible and affordable healthcare services for the elderly in the entire nation.
2. Hospitals, as far as possible, must be mandated to open geriatrics centre and even the primary healthcare centres should have a weekly visit of specialists in geriatric healthcare to cater to the needs of the aged. Furthermore, the senior citizens have to be accorded first preference through separate queues and assistive devices whenever they visit healthcare centres.
3. Nutritionists, dietetics and food technologists also must be sensitised towards contributing with more feasible innovations through R & D to launch products and healthcare scaffolds that are healthy and inexpensive options for the ageing population. A preventive and palliative approach to treat the elderly would be an effective means of containing the chronic diseases in the elderly.

4. The study reveals that the elderly people who live alone and have no one to take care of them are unable to visit hospitals to seek treatment. Hence mobile healthcare units that offer basic treatments can be introduced. For this special recruitment should be made in hospitals and the staff should maintain a separate registration of all old people who are living in the given vicinity of the healthcare centre and visit the hospital regularly. These senior citizens can be contacted monthly as a means to extend them immediate help in case of emergency.
5. It is found in the study that most of the old persons do not have any kind of health insurance cover neither public nor private. The government should promote and mandate for special health insurance keeping in mind the senior citizens and the private sector should also be encouraged to provide insurance facility for the old.
6. Free Medical Camps should be organized for the awareness of health education and to promote preventive healthcare system.
7. To reduce the elderly health expenditure burden on households, regulations should be made by the government in health sector as given below
    - Fix the higher limit of doctor's fees in private hospitals and private clinics. As the study reveals that in private hospitals doctor's fees is 30 times more than the government hospitals which is increasing the out-of-pocket health expenditure. So there is an urgent need to make regulations and fix the higher limit of doctor's fees taken the private hospitals and clinics.

    - Government should fix the price of medicines supplied by medicals stores/ pharmacies, especially in private hospitals. For this, the government should promote the compulsory prescription of Generic medicines by the medical

practitioners/doctors because the prices of generic medicines are cheaper than the branded ones.

- Free Medical Camps should be organized for the awareness of health education and to promote preventive healthcare system. It is important for the elderly to be aware of instrumental schemes launched by the GOI to aid them finanicilally. These schemes are:
    1. Senior Citizens Saving Scheme (SCSS)
    2. Pradhan Mantri Vaya Vandana Yojana (PMVVY)
    3. Varishta Pension Bima Yojana
    4. Rashtriya Vayoshri Yojana (RVY)
    5. Indira Gandhi National Old Age Pension Scheme

Moreover, the GOI has also launched a Central Sector Scheme to improve the quality of life of the Senior Citizens. This scheme is aimed at providing basic amenities like shelter, food, medical care and entertainment opportunities for the senior aged. The scheme encourages productive and active ageing through providing support for capacity building of State/ UT Governments/Non-Governmental Organizations (NGOs)/Panchayati Raj Institutions (PRIs) / local bodies and the community at large. Following are its key achievable:-

1. To conduct programmes catering to the basic needs of Senior Citizens particularly food, shelter and health care to the destitute elderly.

2. To conduct programmes to build and strengthen intergenerational relationships particularly between children / youth and Senior Citizens, through Regional Resource and Training Centres (RRTCs).

3. To conduct programmes for encouraging Active and Productive Ageing through RRTCs.

4. To conduct programmes for proving Institutional as well as Non-Institutional Care/ Services to Senior Citizens.
5. To promote Research, Advocacy and Awareness building programmes in the field of Ageing through RRTCs.
6. To facilitate any other programmes in the best interest of the Senior Citizens.

The elderly healthcare needs both the vision and dedication to ensure that the veterans of our country are not lost in the din of mismanagement and neglect.

- As found in the study that more than 10 percent elderly are living alone, 5 percent of them are living completely alone

To face the challenges of ageing population, the country needs to be well prepared. Appropriate social and economic policies need to be made to mitigate its ill effects. Social policy development for the elderly needs to be critically examined for society to adapt to ageing as well as for older population to adapt to a changing society. Suitable redistributive policies are required. New priorities must be added to the scarce resources for social programs for elderly, while still having to deal with the problems of the younger populations. Women issues also are of paramount importance in considering social policies for elderly population. Due to better life expectancy women live longer than men. Exacerbated risks for women across the life course make them more vulnerable in old age. Appropriate care and support for them is a priority.How to provide a fair-deal to the senior citizens so that they are able to peacefully, constructively and satisfactorily pass their lives, and how to utilize the vast treasure of knowledge and rich life experience of the older people so that they are able to utilize their remaining energies and contribute to the all-round development of their nation.

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Appendix

Appendix

Innovation and Exclusion in Health Sector: A Study of Old Age Persons in Uttar Pradesh

Kanti Devi **Department of Economics**

Research Scholar **BBAU, Lucknow, 226025**

Date: - …. /…./…... **SL. No.…….**

Place- Lucknow, Uttar Pradesh

Household-Schedule

Section: A General profile

1. Name of the respondent……..

2. Age…….. …….3. Gender……

4. Name of Head of Household…….....

5. District……

6. Sub-District (Tehsil)…….

7. Town……..

8. Ward/ Mohalla……

9. Religion: ☐

Hindu-1, Muslim-2, Christian-3, Others-4

10. Categories ☐

GEN -1, OBC-2, SC-3, ST-4, Others-5

Others, Specify: ……

11. Nature of family ☐

Joint-1, Nuclear-2

12. Which type of PDS facility do you have**?** ☐

APL-1, BPL-2, Antyodaya -3, no cards-4

Section B: Socio-Economics and Demographic Characteristics of the Family

1. Household characteristics detail

S. No.	Name	Relation to HH	Age	Gen-der	Education	Marital Status	Occupation	Monthly Income*
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

Codes: Relation to HH: Head of the Household-1, Spouse of HH-2, Son-3, Daughter-4, Daughter-in-law/son-in-law-5, Grand Children-6, Mother-7, Father-**8**, Parents in law-9 Brother-10, sister-11, brother/sister-in-law-12, grandparents -13, Others-14

Gender: Male-1, Female-2

Education: Illiterate-1, primary (class 1-5)-2, middle (junior high school, class6-8) -3, secondary (9-10)-4, Higher secondary (11-12)-5, Diploma/Certificate course-6, Graduate-7, Post Graduate-8, Others-9

Marital status: Never Married-1, Married-2, Unmarried-3, Widowed-4, Divorced-5, Separated-6

Occupation:-self-employed-1, government job-2, private job-3, casual lobour -4, daily wage worker-5, student-6, housewife-7, retired from govt job-8, retired from private job-9, not working-10, Farming-11, dependent of deceased pensioner (widow pensioner)-12, dependent on other family members-13,beneficiary of social security scheme-14, others-15

2. Whether your (elderly) current occupation is same as previous occupation? ☐

Yes -1, no-2

2.1. If no, then what was your previous occupation? Specify your previous **Occupation……..** …and **previous Income** ……..

2.2. What are the reasons to change the occupation?

Codes: *because of old age-1, not comfortable in previous job-2, health problems-3 others-4*

Section-B.1: Detail of housing facilities:

1. Housing conditions:

Codes: Pakka-1, semi pakka-2, kacha-3, thatched-4 Others-5

1.1. House Ownership:

Owned-1, Rented-2, government quarter-3, Owned by relatives-4

1.2. If rented, who pays the rent? 1

Yourself (elderly)-1, children-2, shared-3, Borrow from relatives-4, borrow from bank-5

1.3. If owned, ownership of house:

Self (elderly)-1, Spouse-2, Children-3, others-4

2-**Availability of electricity**: Yes-1, No-2

3. **Availability of water**: own pipe or handpump-1, Municipality hand pump or tap-2, others-3

4. Toilet facility: Own toilet-1, public toilet-2, not available-3, others (specify)

5. Living arrangement of elderly:

Codes: *With children and grandchildren, no spouse-1, with spouse, children and grandchildren-2, with spouse and unmarried children only-3, with spouse only-4, with one married son/daughter s(among all children)and his family-5, Living alone-6, with relatives-7, with unmarried children, no spouse-8, others-9*

6. Who is the caretaker of elderly person?

Self-1, spouse only-2 unmarried children-3, married son only-4, married son and daughter-in-law-5, married daughter-6, son/ daughter-in-law only-7, all family-8, NGO-9, relatives-10, no one to care-11, servants-12, others-13

B.2: Households Consumption Expenditure Details

Households Consumption Expenditure		
	Items Group	**Last 30 days Expenditure (In Rs.)**
1.	Non-Durables goods (a) Food grains (b) Non-food grains **Total**	
2.	**Durable goods**	**Last 365 days expenditure (In Rs.)**
2.1	Clothing and Bedding	
2.2	Education	
2.3	Medical Expenses (*all family*)	
2.4	Others (electricity, furniture etc.)	
	Total	

Section C: Health Evaluation of Elderly Persons

(Only old persons are included in this section)

1. Are you suffering from any disease during 365 days? ☐

Yes-1, no-2

1.1. If yes, are you taking treatment? ☐

Yes-1, no-2

1.1. A. If yes, how many doctors are treating you? ☐

Single docror-1, specialist doctor-2, multiple doctor-3, others-4

1.1. B. If you are taking treatment from multiple doctors what are the reasons? ☐

Multiple disease-1, not satisfied with the service of earlier doctors-2, high fees charged by earlier doctors-3, others-4

1.2 How many days after illness you start taking treatment? ☐

Codes: *immidiatally-1 when arrange money-2, when ailment become serious-3, others-4* ☐

1.3. If you are **not** taking treatment, what are the reasons?

Codes: Financial problem-1, not aware about medical facilities-2, long distance of hospital from home-3, lack of time-4, don't need to treatment-5, can't able to move to go to hospital-6, not satisfied with treatment/ no improvement with previous treatment-7,others-8

2. Distance of hospital from home……..

3. With whom do you go to hospital mostly? ☐

Codes: Self-1, Spouse-2, Son-3, Daughter-4, Daughter/son in law-5, others-6

4. Which convenience do you use to go to hospital? ☐

Cycle-1, bike-2, Car-3, Auto-4, Riksha-5, others-6, walking-7

5. Detail of disease and treatment

Name of the elderly person	Age	Sex	Name of disease/s*		Type of hospital*	How long you suffering from particular disease	whether hospitalized during last 3 years *Yes-1, no-2*	If code 1 of col 7 then how many times of hospitalized	Type of hospital when hospitalized (code of col 6)	*Place* of hospital where taking treatment *	Are you covered by any scheme for health expenditure support
1	2	3	4		5	6	7	8	9	10	11
			CD	NCD							

Col 4. Codes:, Non communicable diseases (NCD): Diabetes-1, Heart diseases-2, Joint pain/Arthritis/body pain-3, Hearing problem-4, Vision Problem-5, Memory Loss -6, Depression/ Hypertension -7, Cancer-8, Dental problem-9, nervous system(Stroke)-10 Chronic Lung Disease/ bronchitis- 11, Asthma-12, headache-13, Cervical Cancer (only women)-14, Breast Cancer (only women)-15, Thyroid- 16, B.P.-17, Mental illness.18, Paralysis-19, anemia/ weakness-20, stomach related problems-21, specify……..

Communicable diseases (CD): Viral fever-22, Malaria-23, T.B.-24, Infections -25 others-26

Col 5. Type of Hospitals CHCs-1, PHCs-2, SCs-3, District hospital-4, Medical colleges-5, semi government-6,

Private Hospital-7 Private Clinics-8, others-9

Col 10. Place of Hospital, code: *within town-1, within district-2, out of district but within state-3, out of state but within country-4, Abroad-5*

Col 11, Name of health Insurance, code: Indira Gandhi National Old Age Pension Scheme-**1**, Varishtha Pension Bima Yojna-**2,** Rastriya Swasthya Bima Yojna-**3**, Senior Citizen Health Insurance Scheme-**4,** Pradhan Mantri Suraksha Bima Yojna-**5**, Arogyashri-**6**, Employer Health Protection -**7**, Arranged by households with insurance companies-**8**, othes-**9, not covered-10**

Duration of disease. Code- 1 to 30 days -1, up to 6 months -2, up to one year-3, up to 5 years-4, more than 5 years-5

6. Which type of treatment are you taking? ☐

Allopathic-1, Homeopathic-2, Ayurveda-3, Unani-4, Others-5

7. Which type of hospital do you prefer for treatment? ☐

***Code**s: Government hospitals-1, private hositals-2, both-3 others-4*

7.1. If you are **not prefer** government hospitals for treatment, give the reasons... ☐

Codes: *long que-1, absence of doctors-2, unavailability of medicines-3, insufficient medical facilities-4, unhygienic atmonsphere-5, poor infrastructure-6, others-7*

8. If you are **covered** under any **health insurance scheme/ health support system**, are these schemes beneficial for you?

Yes-1, no-2, can't say-3

8.1 If yes, how?

Codes: *reducing burden of medical expenditure-1, providing social security-2, other-3*

8.2 If you covered under any health insurance scheme, did you ever get the return amount after treatment*?*

Yes-1, no-2, others-3

8.2. A- If yes, then how much?

Codes: *Full amont-1, half-2, one fourth-3, one third-4, not getting-5*

9. If you are **not covered** under any health insurance scheme, what are reasons?

Codes*: no one to support-1, do not have enough money for insurance-2, tough procedure of taking insurance-3, do not aware about such schemes-4, others-5*

1**0**. Have you attend any medical camp organized by Nagar Panchayat or other institutions in the locality?

Attended once -1, attends regularly-2, no such camps-3, not aware about it-4, not able to move to go there-5 never attendend-6

Section C.1: Medical expenditure details

1. Type of patient
   ***Codes**: Non- hospitalized -1, Hospitalized-2, both-3*

Name of elderly person with number of disease	**Non Hospitalized expenditure detail (1 year)**						**Hospitalized expenditure detail (3 year)**					
	***Total visit** (monthly)*	***Doctor's fees** (in per visit) in Rs.*	***Tests cost** (all tests) yearly in Rs.*	***Medicine cost** (per month) in Rs.*	***Travel cost** in per visit) in Rs.*	*Others charges) in Rs*	Total days of admit	*Doctor's fees (in per visit)) in Rs.*	***Tests cost** (all tests) per month) in Rs.*	***Medicine cost** (per month) in Rs.*	***Bed Charge+ Room** Charge) in Rs.*	*Others charges) in Rs.*
1.												
Disease( )												
Disease( )												
Disease( )												
Disease( )												
2.												
Disease ( )												
Disease ( )												
Disease ( )												
Disease ( )												
3.												
Disease( )												
Disease ( )												
Disease ( )												
Disease ( )												
Total												

Note: write disease code in brackets from detail of disease table

2. What is your source of expenditure for health?

Table.3

Source of expenditure	Yes-1, no-2,	Amount	How many time you have taken the amount during treatment
Income			
Saving			
Barrowing from bank			
Borrow from relatives and others			
Selling Assets			
Others			
Total			

Times to taking amount: **codes**- always-1, sometimes-2, rarely-3, never-4, often-5

4. Did you ever faced any type of problem during treatment? ☐

Yes-1, no-2,

4.1. If yes, what kind of problem? ☐

Codes: high cost of treatment-1, unskilled medical staff-2, unavailability of medicine/doctors/nurses-3, long distance of hospital from home-4, no routine checkup-5, misbehavior of medical staff-6, demand of bribe by any medical staff-7, long waiting-8, wrong treatment-9, others, specify……..

5. from where you buy the medicines for the treatment? ☐

Code: *from medical store-1, pharmacy of the hospital -2, and online-3*

4.2 Because of health expenditure on elderly persons do you think that your economic condition changed in last 3 years? ☐

Codes: remain same-1, deteriorated little-2 deteriorated a lot-3, do not know-4

Mortality

1. Has any elderly member died in last 3 years? ☐

Yes-1, no-2

2. If yes, give the detail

Name of elderly person	age	Sex M-1, /F-2	Reason to death*	Name of disease*	What was the occupation of dead person

Reason to death, Codes: natural death-1, illness (mention the name of disease)-2, unavailability of hospital-3, lack of treatment due to financial problem-4, accident-5, others-6

Name of disease- use code of col 8 from table 1

Section D: Innovation in Health Sector

1. Have you ever heard about Pradhan Mantri Janausadhi Pariyojna (Jan Aausadhi Store)? ☐

Yes-1, no-2

1.1. If yes, have you ever heard any generic medicine? ☐

Yes-1, no-2

1.1.a. If yes, did your doctor prescribe you generic medicine in your last visit? ☐

Yes-1, no-2, do not know-3

2. Have you ever heard about geriatric wards in hospitals? ☐

Yes-1, no-2

2.1 If yes, did you ever taken any treatment from the geriatric ward/hospital? ☐

Yes-1, no-2

2.2. **If no**, is there any special facility is provided to you (elderly person) by hospital from where you taking treatment? ☐

Yes-1, no-2, do not know-3

2.2. a. If yes, which type of facilities provided by hospitals to you? ☐

Code: *Separate ward-1, Separate que-2, Meal-3, Wheel chair-4, lift-5, Stick-6, Ambulance service-7. Discount in treatment/low cost treatment- 8, free treatment-9, and others-10*

3. Are you using any of following health support device? ☐

Yes-1, no-2

3.1- if yes, which of these

a. Contact lances-1, spectacles-2 ☐

b. Hearing tool/ device ☐

c. Wheel chair ☐

d. Thermometer ☐

e. Dentures ☐

f. Fit bit ☐

g. Glucometer ☐

h. walking stick

i. Other, specify…….

3.1.A- Are these devices able to help in your daily routine?

Yes-1, no-2

3.1. B- If yes, how much helpful?

Very much-1, normal-2, no help-3, do not know-4

3.1. C. - if you are not using these all/some devices, what are the reasons?

Codes*: need to use but can't afford due to financial problem-1, no need to use-2, lack of information-3, others, specify……*

Curriculum Vitae

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DOB: 20-10-1988

Academic Record

- Presently Pursuing Ph.D. (since August 11, 2014) from Babasaheb Bhimrao Ambedkar University Lucknow.

  Topic: Innovation and Exclusions in Health Sector: A Study of Old Age Persons in Uttar Pradesh

- **UGC NET qualified in September 2012**

Post-Graduation

- M.A in Economics, from University of Lucknow, Lucknow (2011) with 50.56% marks.

Graduation

- B.A. (Economics, Sociology and English Literature) from the Chhatrapati Shahu Ji Maharaj University, Kanpur (2009) with 50.78% marks.

Intermediate:

- Intermediate (12^{th}), (2006) (Hindi Sahitya, *English, Economics, Civics, and Education)* from Board of High School and Intermediate Education Uttar Pradesh with 61.80% marks.

High School:

- High School (10^{th}) (2004), (Hindi, *English, Science, Social Science, Home Science and Drawing*) from Board of High School and Intermediate Education Uttar Pradesh with 58.83% marks.

Computer Knowledge

- Well versed with MS Office, Stata, SPSS and C S Pro.
- Comprehensive problem-solving abilities, willingness to learn, team facilitator and hard worker

Workshops and Conferences Attended

1. Participated in the Three Days Workshop on **"Research Methodology using SPSS"** conducted by Amity University Lucknow Campus on December 21-23, 2017.
2. Participated in the ICSSR Sponsored workshop on, **"Statistical Data Processing and Use of Unit Level Data of NSSO"** organised by Babasaheb Bhimrao Ambedkar University (A Central University) Lucknow, from 23rd April- 2nd May, 2018.
3. Participated in the ICSSR Sponsored workshop on "**Research Methodology Course: Focus on Computer Application" jointly organised by** Babasaheb Bhimrao Ambedkar University and Association of Socio-Economic Development Studies (ASEDS), from 24th October -2nd November 2018.
4. Participated in the ICSSR Sponsored workshop on "**Research Methodology Programme for Ph.D Student in Social Science"** organized by *the Giri Institute of development Studies, Lucknow,* from March 16 to 25 April 2015.
5. Participated in Two Day National Symposium on '**The Contribution of Babasaheb Ambedkar for Development of Modern India'** April 13th -14th 2016, organised by Babasaheb Bhimrao Ambedkar University (A Central University) Lucknow, Uttar Pradesh.
6. Participated in Two Day National Seminar on '**Implications of Pradhan Mantri Jan Dhan Yojna (PMJDY) on Inclusive Development: Issues and Challenges'** 19th -20th February, 2015, organised by Babasaheb Bhimrao Ambedkar University (A Central University) Lucknow, Uttar Pradesh.

7. Participated in Two Day National Level Workshop sponsored by UGC on **'Global and Higher Education Exploring Interconnections….. Opportunities'** at Isabella Thoburn College, Lucknow, 06th -07th October, 2010.
8. Participated in Two Day National Seminar sponsored by ICSSR on **'Diversification of Agriculture in Uttar Pradesh'** organised by Isabella Thoburn College, Lucknow, 1st – 2nd September 2010.

Paper Presented in Conferences/ Seminars

1. Presented Paper entitled, ***'Ageing Scenario and Health Infrastructure of Uttar Pradesh'*** in 15th Annual Conference of Uttar Pradesh- Uttarakhand Economic Association organized by Department of Economics, DSB Campus, Kumaun University, Nainital (Uttarakhand), 10th -11th November 2019.
2. Presented Paper entitled, ***'Health Care Availability and Ageing Population in Uttar Pradesh'*** in two days national seminar on **'Problem of Sectoral Scarcity and Choice in India'** jointly organised by Babasaheb Bhimrao Ambedkar University, Lucknow and Association of Socio-Ecomonic Development Studies (ASEDS), Lucknow, March 14th-15th, 2019.
3. Presented Paper entitled, ***'Health Problems among Elderly Persons in India'*** in 2nd annual conference of Association of Socio-Economic Development Studies (ASEDS) on **'Emerging Issues on Society, Economy and Governance with Special Reference to Digital India'** organised by Giri Institute of Development Studies, Lucknow, December 6th-7th, 2018.
4. Presented Paper entitled, ***'An Evaluation of Social Security Schemes for Old Persons in India'*** in 1st annual conference of Association of Socio-Economic Development Studies (ASEDS) on **'Growing Economic and Social Insecurity in India'** organised by Ram Manohar Lohia Avadh University, Faizabad, December 11th-12th, 2017.
5. Presented Paper entitled, ***'Income Inequalities among Old Persons in India'*** in two days national seminar on **'Emerging Socio-Economic Inequalities in India'** jointly organised by Babasaheb Bhimrao Ambedkar University,

Lucknow and Association of Socio-economic Development Studies (ASEDS), Lucknow, December 4th-5th, 2017.

6. Presented Paper entitled, ***'Health Care Financing during 12th Five Year Plan'*** in two days national seminar on **'Socio-Economic Progress during XIIth Five Year Plan, 2012-2017'** jointly organised by Babasaheb Bhimrao Ambedkar University, Lucknow and Association of Socio-economic Development Studies (ASEDS), Lucknow, December 15th-16th, 2016

Publications

1. **Devi, K. and Verma, NMP (2019),** ***"Ageing Scenario and Health Infrastructure of Uttar Pradesh"*** UPUEA Economic Journal, Volume-15, Conference no. 15(section-2&3), ISSN-0975-2383
2. **Devi, K. and Verma, NMP (2019),** ***" Health Facilities of Elderly Persons: Some Preliminary Findings from Lucknow City"*** International Journal of Social Science and Development Policy, Vol. 5, No. 1, January-June 2019, ISSN:2454-5732

Declare that the information given above is all correct.

Kanti Devi

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