

**AN ANALYSIS AND FINANCING OF OUT OF POCKET
HEALTH EXPENDITURE ON ELDERLY POPULATION: A
CASE STUDY OF HARYANA**

A

Synopsis

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*“It is health that is real wealth
and not the pieces of gold and silver.”*

-Mahatma Gandhi

Introduction

Human health stands as a significant factor in its economic development of a country because of two main reasons, i) as a key for measuring welfare level of people (Sen, 1985), ii) improved health ranking of people implies better school performance of children (Bartel and Taubman, 1979), more labour supply (Grossman and Benham, 1974), and higher economic productivity (Strauss and Thomas, 1998). Most of the growth economists stress on increased public spending on healthcare services. Investment on health improves efficiency level of human capital by maintaining mental and physical productivity (Mushkin, 1962; Schultz, 1970). Public health services aim at providing better health facilities at nominal or zero cost basis. The World Health Organisation (WHO) supports the need for improving the healthcare services and system as it leads to better life and exercise of citizen rights.

It is the prime duty of the state to regulate and maintain the health standards, render preventive and corrective services, construct the infrastructure for health and medical facilities. In India, where poverty level stands around 30 percent (Tendulkar, 2009), high burden of medical and health expenditure forces many to poverty or near poverty. This is the reason the government of India agreed to provide accessible and affordable Universal Health Care (UHC) to all Indians by 2022.

In past few decades, there is a reawakening that health is a fundamental human right and a social goal to be attained by all the human beings worldwide. With the adoption of health as an integral part of socio-economic development by the United Nations (UN) in 1979, health, while being an end in itself, has also become a major instrument of overall socio-economic development and the creation of a new social order. India's strong commitment to healthcare planning for good health and well-being, as reflected in National Health Policy (NHP, 2017), is a testimony of importance of health in economic development.

Health status and need for health expenditure

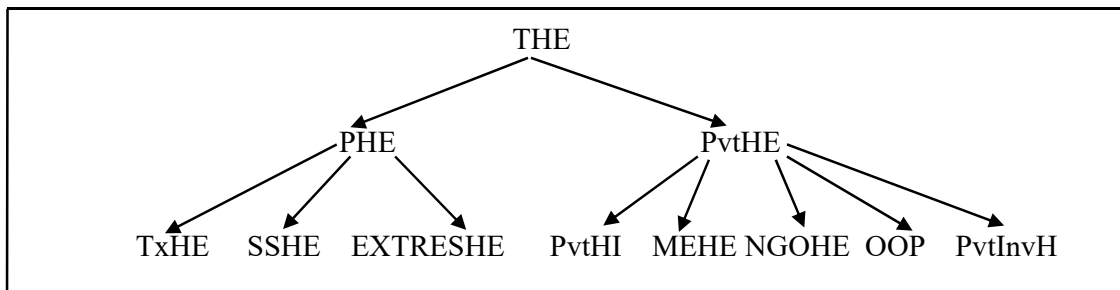
The constitution of the WHO, defines health “as a state of complete physical, mental and social well-being.” Today, three types of definition of health seem to be possible and are used. First is that health is the absence of any disease or impairment, the second is that health

is a state that allows the individual to adequately cope with all demands of daily life implying also the absence of disease and impairment, and the third definition states that health is a state of balance, an equilibrium that an individual has established within himself and his social physical environment (WHO, 1948). Many other definitions of health have been also provided time to time which stress on conditions of being sound in body, mind or spirit and freedom from pain or disease.

Health is substantially dependent on health spending. Expenditures or outlays on medical care, prevention, promotion, rehabilitation, community health activities, health administration and regulation, and capital formation are the predominant objective of improving human health (Hong Kong Domestic Health Accounts, 2011). Health expenditure is considered as the money spent on total healthcare and its components by individuals, families, communities, along with private and public organizations. The Total Health Expenditure (THE) is defined to include both Public Health Expenditure (PHE) and Private Health Expenditure (PvtHE).

$$THE = PHE + PvtHE$$

Total health expenditure and its components can be explained through the following flow chart:



Note: Diagramtic representation of composition of total health expenditure based on Poullier (2002)

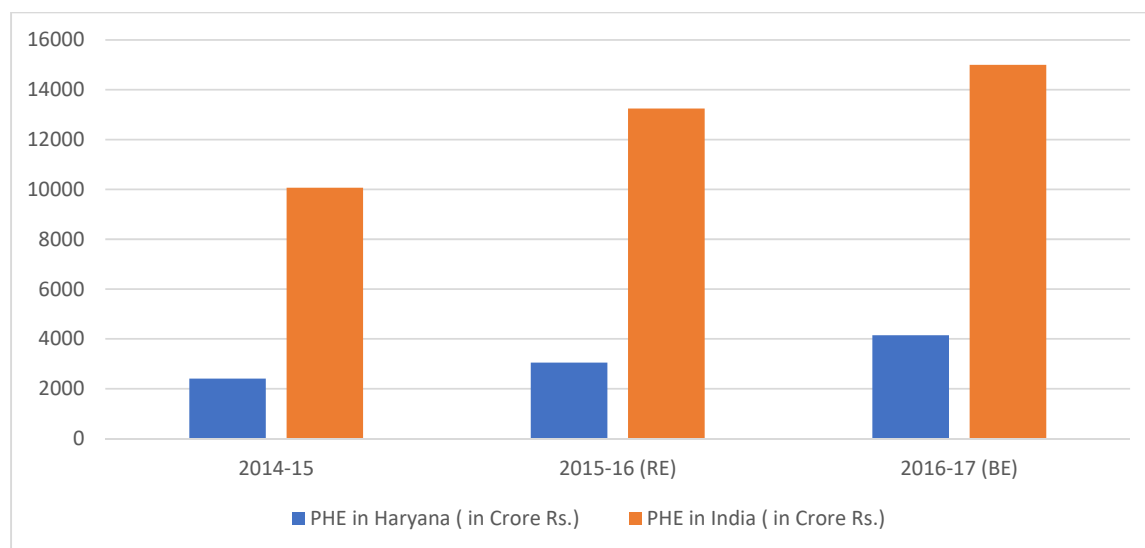
Where,

- i) PHE consists of Tax funded Health Expenditure (TxHE), Social Security (SSHE) and External Resources Health Expenditure (EXTRESHE), and
- ii) PvtHE includes Private Health Insurance (PvtHI), Mandated Enterprise Health Expenditure (MEHE), Expenditure on Health through Non Profit Health Services (NGOHE), Direct Payments or Out Of Pocket Expenditure on Health (OOPHE) and other uncaptured expenditure including Private Investment in Health (PvtInvH) (Jean-Pierre Poullier, 2002).

Levels and trends in public health expenditure

According to WHO, “public health expenditure consists of recurrent and capital spending from government (central, state and local) budgets, external borrowings and grants, and social or compulsory health insurance funds.” Such health expenditure by the government, as data suggest, has been traditionally very low and stagnant in India— hovering around 1.3-1.5 percent of the national GDP. Centre’s expenditure on health is higher in Haryana, Punjab and Karnataka which are relatively high income states as compared to low performing states like Madhya Pradesh and Chattisgarh. From 2006-2010, per capita expenditure by the centre in good performing states has increased by 23 percent while it has increased by 15 percent in poor performing states (Mita Choudhury, 2012). This shows that Haryana’s total health expenditure is increasing significantly and health market is at boom. Also total public health expenditure of Haryana is increasing over the years (figure 1).

Figure 1: Total public health expenditure of Haryana and India (2014-17)



Source: National Health Accounts Cell, Ministry of Health & Family Welfare, Government of India, New Delhi, 2017

This low expenditure on health by the state is being offset by high private healthcare expenditure. A substantial share of the such private health expenditure in India is paid out of the pocket. Consistently rising cost of healthcare services in Indian situation means an increasing out of pocket health expenditure for individuals and households.

Given the importance of health, government expenditure plays a significant role for the betterment of health situation in a country like India as public health spending helps in reducing the financial burden of households. After bearing the repercussions of long British rule, India needed to boost its economy which gave birth to the “Five-year plans”. The expenditure incurred on health during the plans provided an insight of understanding of public expenditure on health. As indicated in the following outlay the public expenditure on health was negligible till fifth plan and even afterwards, a slight increase in the public health expenditure was witnessed. The public spending on health was 0.22 percent of GDP during 1950-51 and then rose to 1.05 percent during mid-1980s. It was stagnated around 0.9 percent of the GDP during later years (NHP, 2009).

Table 1: Public expenditure on health and its trends, India, 2017

Year	Public Expenditure on Health (in Rs. crore) [#]	Population ^{\$}	GDP* (in Rs. Crore)	Per Capita Public Expenditure on Health (in Rs.)	Public Expenditure on Health as Percentage of GDP (%)
2009-10	72536	117	6477827	621	1.12
2010-11	83101	118	7784115	701	1.07
2011-12	96221	120	8736039	802	1.1
2012-13	108236	122	9951344	890	1.09
2013-14	112270	123	11272764	913	1.0
2014-15	121600.23	125	12433749	973	0.98
2015-16 (RE)	157743.37	126	13675331	1252	1.15
2016-17 (RE)	180656.77	128	15251028	1411	1.18

Sources: # “Public Expenditure on health from "Health Sector Financing by Centre and State/UTs in India", National Health Accounts Cell, Ministry of Health And Family Welfare.

\$ "Report of the Technical group on Population Projections May 2006", National Commission on Population, Registrar General of India.”

* “GDP from Central Statistics Office”

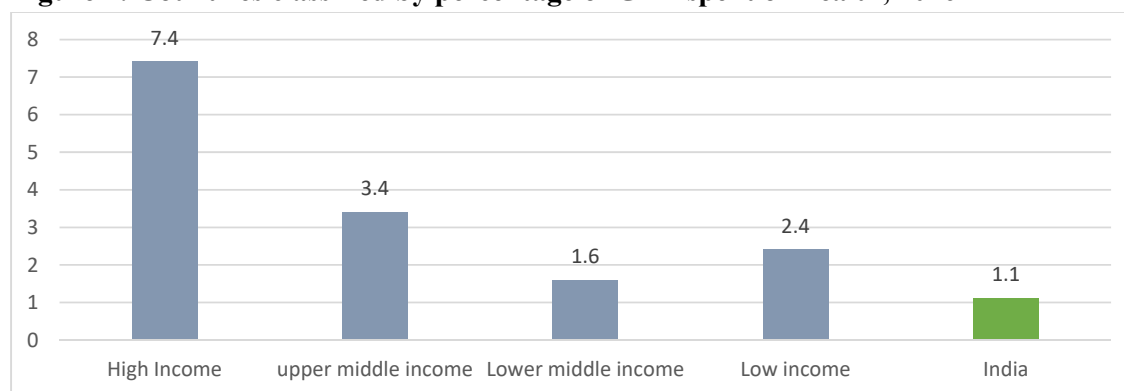
In the first systematic analysis by national health accounts of India 2001-02 the results showed that households accounted for more than two-thirds of health spending in India which is three time of the government expenditure taken together by central, state and local governments. Table 1 highlights the trend in public health expenditure in the latest years (NHP, 2017). It can be perceived that public expenditure on health is showing an upward trend in absolute terms but on the contrary there has been a downward trend in public expenditure on health as percentage of GDP till 2014-15. The revised estimates show that the public expenditure on health is increasing in the latest years but a significant increase is still

absent as in 2014-15 the public expenditure on health as percentage of GDP was 0.98 percent which rose up to 1.18 percent in the budget estimate of 2016-17, this upsurge is important but an increase of 0.2 percent is insignificant.

According to National Health Profile (2017), India is suffering from “Triple burden of diseases”. There is still an unfinished agenda of combating communicable diseases and along with it, huge challenge of dealing with non-communicable lifestyle driven diseases and emerging infectious diseases which have created a worrisome situation for the health sector. The declining public health expenditure by the government is worsening the situation. The general government health expenditure per capita of India in 2014 stood at 15 dollars and whereas the country which tops the list in incurring per capita expenditure is Germany which spent 4,165 dollars per person in the given year. Even our neighbouring nation Sri Lanka is ahead of us as it spent 71 dollars per person in the year 2014 on health. Germany spends almost 278 times more than India on health which shows how far we are from the state of bliss, therefore, there is a need for accelerating the government expenditure on health.

Data from Global Health Observatory of WHO (2017) also give an insight into that how much India is spending on health as compared to other nations, and offers a wider picture of health spending gap between India and other countries. The lower-middle-income group, in which India falls lags behind in terms of percentage of GDP spent on health in comparison to high income group which spends 7.6 percent of the GDP on health. India’s average spending on health is 1.1 percent of GDP (Figure 2).

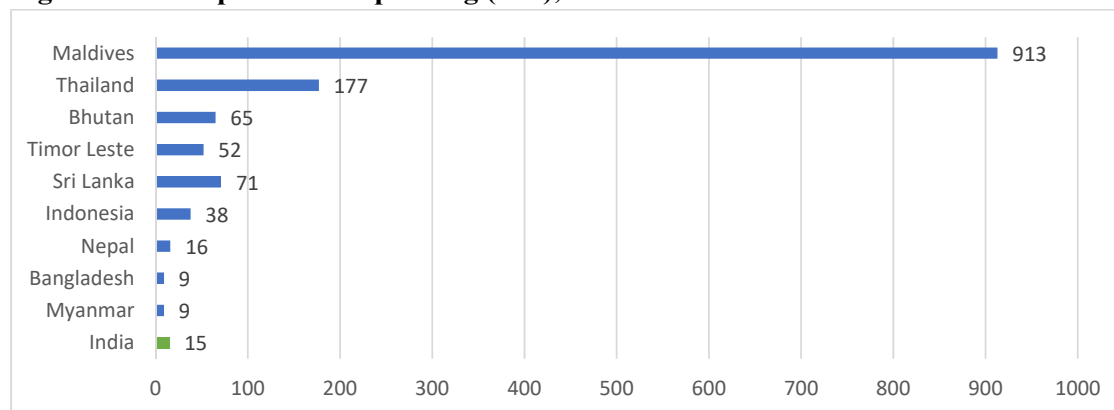
Figure 2: Countries classified by percentage of GDP spent on health, 2016



Source: Global Health Observatory, WHO, 2017

In comparison to South East Asian countries (SEARO), the health spending of India is below the group average. Maldives is at top in terms of per capita health spending. (Figure 3).

Figure 3: Per capita health spending (in \$), 2016



Source: Global Health Observatory, WHO, 2017

In India, the Government spend approximately Rs. 2000 per person on health. Kerala is at top in terms of per capita OOP health expenditure with Rs. 5023 whereas Bihar is at bottom with per capita OOPHE is around Rs. 350. In the state of Haryana, per capita OOPHE is Rs. 2376 and per capita health spending by government is approx. Rs. 1000. This implies that the private and public health expenditure, both are high in Haryana and highlights the variation in public and private spending on health. High OOP expenditure reduces the Disposable income to fulfil the basic necessities. This wide disparity in government expenditure on health between the states also results in a corresponding variation out of pocket health spending (See figure 4).

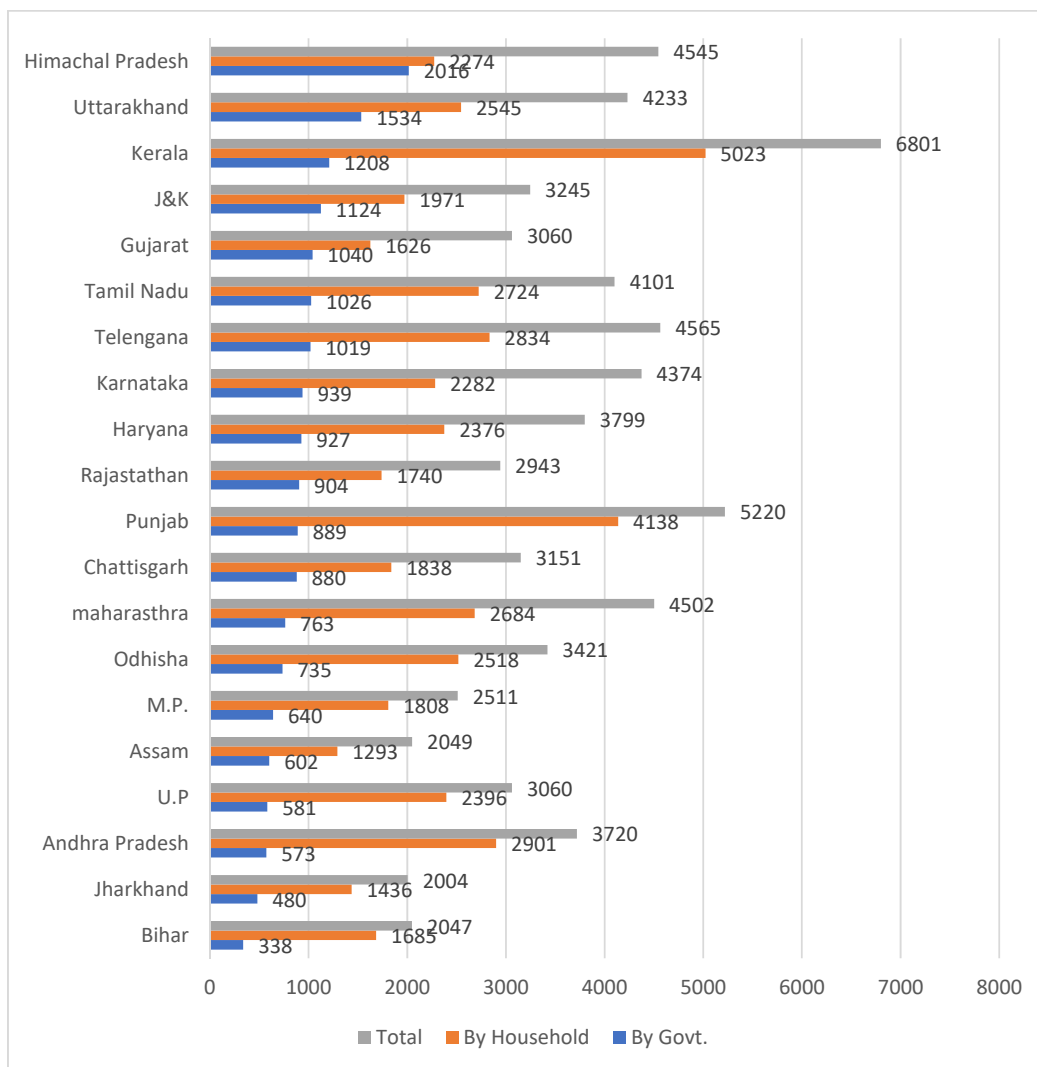
Private health expenditure and its role

Private health expenditure is defined by WHO as “direct (OOP) spending, private insurance, charitable donations, and direct payments by private corporation”. Private health expenditure comes into prominence where government health expenditure is low. Estimates by WHO suggest that 85 percent of the private health expenditure in low income countries is out of pocket (WHO, 2009).

Out of pocket health expenditure

According to WHO “Out-of-pocket payments (OOPs) are defined as direct payments made by individuals to health care providers at the time of service use. This excludes any prepayment for health services, for example in the form of taxes or specific insurance premiums or contributions and, where possible, net of any reimbursements to the individual who made the payments.”

Figure 4: Per capita health spending, 2014-15



Source: National Health Accounts (NHA), 2014-15, Ministry of Health, Government of India, New Delhi.

Out of pocket health expenditure in most of the countries constitute the part of health financing landscape depending on user charges and supporting payments to mobilize the government revenue, health facility cost and improvement of efficiency and service quality. Sometimes direct usage charges leads to major barrier to avail required health care and leads to high OOPHE creating problem of financial burden. Dependence on OOPHE varies across the world but strong correlation exist between the OOPHE level and two main indicators (the incidence of catastrophic health expenditure and the incidence of impoverishing health

expenditure) which are used to check how sound is the health system in terms of financial protection. The scope to which OOPHE soak up household financial resources will determine these two indicators.

Catastrophic out of pocket health expenditure

“Any out of pocket healthcare seeking expenditure which reduces a household’s basic expenditure by such amount which affects social consumption and necessities over a period of time to finance the health costs is considered catastrophic in nature” (Ke Xu et al., 2003). It is not necessary that catastrophic expenditure means high healthcare costs. A large surgery invoice will not be considered catastrophic in nature if the full cost is not borne by the household and provided for free or at subsidised price or may be covered under third party insurance. On the other hand, even a bijou cost for illness for poor household can be financially dangerous with no insurance cover.

Ageing in Haryana and its implications for health

To understand the health of elderly population, it is important to understand the term elderly and elderly population in India. In India, the persons who have attained age of 60 and above are normally considered as elderly. This definition of elderly is usually demographic and has made a way into programs and policies in India. Such a definition of elderly may vary from social construct of elderly or a biological stage attainment. Hence, the precise onset of old age may differ from individual to individual, culture to culture or from one point of time to another in history of a society.

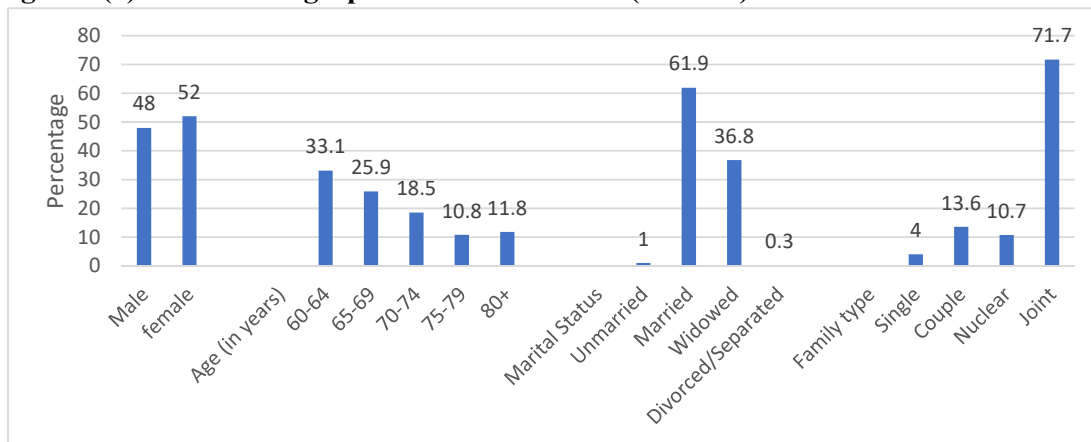
Around 9 percent of Indian population is above the age of 60 as per the last 2011 census rising from 5.6 percent. Thus, a considerable increase has been noticed in the number of the elderly in India the share of which, according to the estimation of United Nations (2012), is expected to reach to 19 percent in 2050. When one looks at the gender composition of the elderly in India in 2011, the share of the female (9%) exceeds that of the males (8.2%). Also, it is important to note that 71 percent of the elderly population in the country resided in rural areas in 2011.

As “Old Age is usually associated with declining faculties, both mental and physical, and a reduction in social commitments (including sport participation), of any person” (NHRC, 2011), it is the short, medium and long term implications of the process of ageing. The increasing number of elderly adds to the burden of health and social care system in the country as aged population is more vulnerable to ailments, injuries, trauma, diseases etc. The demand for health,

medical services, hospitals, doctors etc. is much higher in the countries which have higher elderly population and the statistics shows that such demand is increasing in India too. The households with elders need to spend more on health services and also government spending is increasing. Elderly sex ratio is 48 (males):52 (females) in India. Out of elderly population only 32.7 percent of the population is working and rest 67.3 percent is dependent on pensions, savings, borrowings and their children. 57.4 percent of the elderly population is illiterate which is huge and one of the major reason for their poor living and health standards. They have formed orthodox thinking regarding diseases and its treatment. So, they don't avail new treatments. Most of the time they have no knowledge about the treatment, schemes and cost of health services. 71.7 percent of the elders reside in joint families which increases their dependency on their children and other family members increase.

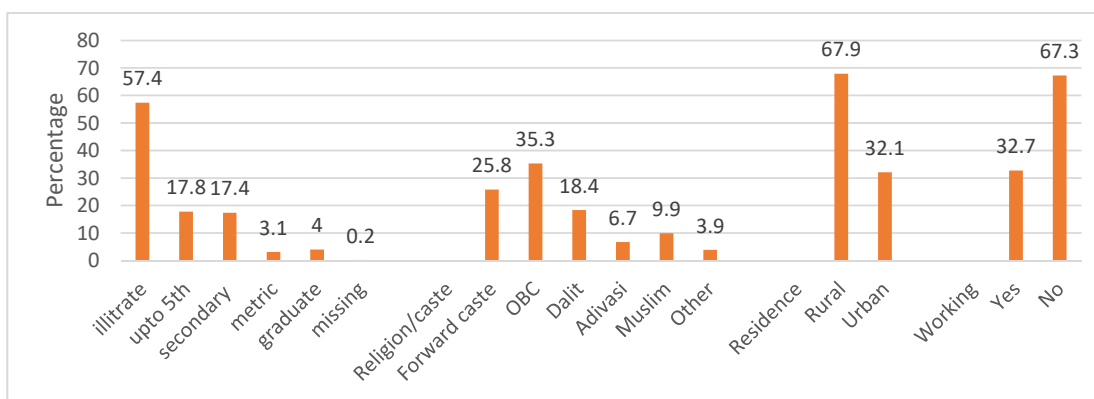
Also, the most of the elderly population lives in rural areas where the health facilities and level of reach is poor which further affects their health level and most of the time seek treatment from local self-proclaimed doctors which have no medical background or run to urban private health institutions which increases the financial burden. Other socio-demographic features of Indian elderly is shown in the following Figures 5(a) and 5(b):

Figure 5(a): Socio-demographic features in India (2011-12)



Source: India Human Development Survey (IHDS), 2011-12

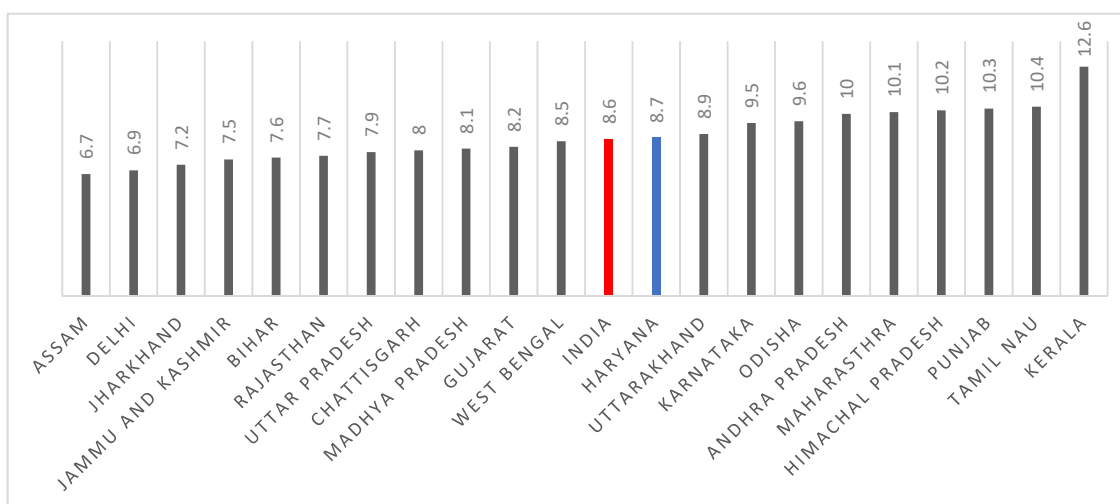
Figure 5(b): Socio-Demographic Features in India (2011-12)



Source: India Human Development Survey (IHDS), 2011-12

Figure 6 shows states wise elderly proportion in comparison with India :

Figure 6: States classified by the share of elderly population to total population, India,2011



Source: Census of India, 2011, ORGI, New Delhi

The aged (60+) demographic composition of Haryana as per census 2011 is 8.7 percent of the state population and out of which 68 percent population resides in rural areas. Haryana is among the states with higher share of population ageing 60 years or above as compared to national average of India (8.6%). There has been an increase in number of elderly in Haryana since its formation because of improved health standards, declining death rates and higher life expectancy. Growth of elderly population can be ascertained from the following table 2 and figure 7:

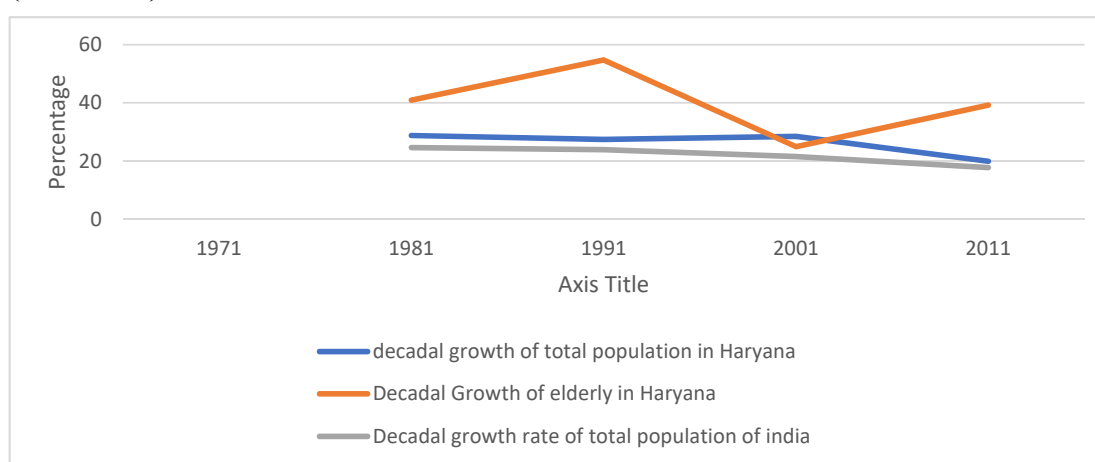
Table 2: Growth of elderly (60+) population in Haryana (1971-2011)

Year	Total population of Haryana (in 000)	Total population of elderly (in 000)	% share of elderly	Decadal growth of total population in Haryana	Decadal growth of 60+

1971	10036	581	5.78	-----	-----
1981	12922	819	6.33	28.75	40.94
1991	16463	1267	7.69	27.40	54.78
2001	21144	1584	7.49	28.30	24.95
2011	25351	2205	8.69	19.89	39.23

Source: Social and Cultural Tables, Census of India (various years), ORGI, New Delhi

Figure 7: Decadal growth rates of total population and elderly population in Haryana (1971-2011)



Source: Social and Cultural Tables, Census of India (various years), ORGI, New Delhi

The crude death rate declined to 6.3 in 2013 from 9.9 in 1971 and the crude birth rate dwindled from 42.1 in 1971 to 21.3 in 2013 in the state of Haryana which reflects improved healthcare standards. As we can see from the above table the elderly population has increased from 5.81 lakhs to 22.05 lakhs in 2011. Elderly sex ratio in Haryana is 50.36 (Males): 49.64 (Females). Life expectancy at the age of 60 has improved to 19.05 for 2009-13 from 16 years in 1970-75. The elderly of Haryana are increasing both— relatively and absolutely.

Health schemes for the welfare of the elderly in Haryana

Given the importance of healthcare services in human efficiency, economic growth and social equity, governments have launched a range of healthcare intervention programmes to make provision for health as a merit good. The foremost motive of these health schemes is to reduce the financial burden associated with the expenditure on elderly in the households. The schemes are either funded by the centre or by the state governments or are in joint partnership to tackle

the needs of senior citizens arising out of hospitalisation expenses, medical treatments and aids, reimbursements and insurance. Few health and insurance coverage schemes which are currently active in Haryana are: Janshree Bima Yojana, Aam Aadmi Bima Yojana, Universal Health Insurance Scheme, Employment State Insurance Scheme, Rashtriya Swasthya Bima Yojana (RSBY), Ayushman Bharat project - National Health Protection Scheme. (Budget 2018), National Programme for Health Care of Elderly (NPHCE).

Rationale of the study

Higher OOPHE on elderly indicates the priority health of elderly gets. It also implies that there is no effective health care delivery system either through insurance or little provision of services in public health system. Increasing private healthcare providers and privatisation of healthcare system also responsible for the rising OOPHE as private providers are better than the public ones. Higher out of pocket health expenditure is significant in nature as it means health is at priority and better health leads positive externalities like increased efficiency and skills of the people. It also adds up to Human development Index. But the out of pocket expenditure on the health of 60+ population is more catastrophic as the elderly are mostly dependent on others for finance as their own earnings are less and it will be determined by others who are actually paying for it. According to a study conducted by Mohanty et al. (2014) found that monthly per capita health expenditure by elderly is 3.8 times more than that of non-elderly in the households in India, this shows the higher burden of health expenditure on elderly. More out of pocket expenditure on healthcare reduces disposable income of elderly which is already insufficient to finance the basic needs. There is no substantial public funds and programmes for protecting health of the elderly in Haryana except National Programme for Health Care of Elderly (NPHCE), that is too restricted to few districts. This implies that there is significant difference in healthcare expenditure burden between elderly and non-elderly.

Haryana has around 8.7 percent of the population which is of the age 60 years or above. Elderly is an important segment of the family as they have social and political hold in Haryana and families are headed by the elderly. More of joint family structure prevails in Haryana and its unknown that how Health expenditure on elderly is financed, who bear the final incidence and impact. Elderly are more vulnerable to the diseases as they are in the last stage of life cycle. Haryana is a rich state in the Indian Union, though Haryana is geographically a small State, the contribution of the State in the National Gross Domestic Product at constant (2011-12) prices has been estimated to be 3.6 percent as per the Quick Estimates of 2016-17 (Economic Survey of

Haryana 2017-18), the state is prosperous in terms of per capita income as according to the economic survey the per capita income of Haryana was 1,45,163 in 2016-17 whereas for India per capita income is 82,229 in 2016-17, advance estimates is expected to reach at the level of 1,54,587 during 2017-18, state also excels in trade, implementing government schemes etc. Haryana has strong agriculture background and significantly doing better in industrial and tertiary sectors.

The OOPHE on elderly has received little attention in academics enquiry. There is limited research on the subject, but in the state of Haryana this subject has received no attention at all. Elderly are increasing in terms of absolute numbers and share in Haryana. There is no such study conducted in Haryana to know the level, trends, composition and dynamics of healthcare of old age. Understanding of OOPHE will not only help to explain the dynamics of human development but also the welfare of the elderly. It will also be helpful in investigating the policy avenues of OOPHE and will help to find out the out of pocket health expenditure by the elderly and non-elderly households, its nature, its impact on standard of living and social consumption level, their health seeking behaviour, impact of health policies on out of pocket health expenditure of elderly etc. in Haryana.

STATEMENT OF THE PROBLEM: Healthcare of elderly in Haryana: An analysis of out of pocket health expenditure on 60 + population and it's financing.

Theoretical and conceptual framework

Theoretical framework

Health occupies a central place in development and has been the content of discussion by many development economists from different perspectives. Sen (1999) examines the relationship between development and health, and acknowledges that the primary goal of the process of development is to universally enhance human health. This leads to his next basic question, i) whether health can be best advanced through a consistently rising real per capita national income which in turn grows due to the process of economic growth, or ii) health can be promoted as a distinct goal by separating it from the process of development and making it the foremost choice. Besides this, he underscores that the process of health and its availability must reflect social equity. Fuller understanding of the development hence, requires analysis of health. It is not sufficient to consider merely the maximisation of wealth as our only objective in the course of development as income or wealth cannot be treated an end in itself. In “Development as Freedom”, concerned with the lives of people, Sen, focuses mostly on capabilities rather than on income. In his capability paradigm, poverty is understood as

deprivation of basic capabilities rather than as low per capita income. People get deprived of capabilities due to ill health, lack of education, poor financial resources and so on. It is not the increase in GNP that leads to better health, it is the increase in health expenditure by the government that is responsible for strengthening the capabilities of people. A support-led approach by the state gives more priority to social services like healthcare that reduces mortality and improves quality of life leading to slow but significant economic development for all the sections of the society. This approach is considered by Sen as more beneficial for an economy like India, where major health advancements can be achieved by using existing resources in a socially productive way. Indian economy, with low wages and greater supply of labour, have a relative advantage in focusing on healthcare because process of provisioning of healthcare continues to be labour intensive.

The public health expenditure which is regarded to be crucial for social welfare and development by economists and health experts is extremely inadequate in India. In spite of constitutional commitment to health and high GDP growth rates, successive governments at the centre and in the states have failed to provide enough resources to health in the process of planning. India's health budget has been consistently low and stagnant (hovering between 1.12 % of GDP in 2009-10 to 1.18 % of GDP in 2016-17). Even if the central government has promised to take this share to 2.5 percent of GDP by 2025, yet this amount is considered to be grossly insufficient compared to other large developing countries (8% of GDP in Brazil in 2017-18, and 4.3% of GDP in South Africa in 2017-18), according to the World Bank. Such a low public health expenditure not only makes the public sector health institutions in India poor in terms of infrastructure, diagnostics, skilled manpower and efficiency leading to low capacity utilisation but also adds to the disease burden to general population. Hence, it makes strong economic sense for governments to invest in health. In order to compensate for a low share of public health expenditure in India, the households incur regular and high private health expenditure while seeking better health outcomes. This leads to a high volume of private health expenditure—estimated as 3.3 percent of GDP in 2014 (World Bank). Greater public health spending and strengthening of public health services are also supported because they are not elitist and contribute to reduction of general economic inequality in Indian society (Dreze and Sen, 2015). Even, If India has improved its rank on Healthcare Access and Quality (HAQ) index by moving up from a position of 153 in 1990 to 145 in 2016, the inequalities at the sub-national level remain a cause of concern (Fullman, 2018)

According to Bhat and Jain (2004), four factors are mainly responsible for the recorded growth of the private health expenditure in India—a) financing mechanisms including provider payment system, b) demographic trends and epidemiological transition, c) production function of private health services delivery system, and d) dwindling financing support to public health system. The income elasticity of private health expenditure was measured as 1.95 while studying the relationship between private health expenditure and GDP in India (Bhat and Jain, 2004). A high share of private health expenditure is not without adverse consequences for individuals and their households and continues to be a major policy challenge. Unfortunately, no reliable and time relevant information is available on the size of private health expenditure in the country arising out of healthcare for the elderly who remain vulnerable in the households.

The proposed research is an attempt to further our understanding of private healthcare expenditure particularly in relation to the aged in the state of Haryana in the above discussed theoretical framework.

Conceptual framework

This section lays out the map that provides the context to present research and also guide its operationalization. OOPHE on elderly is a complex and multi-dimensional issue, more so in Indian situation. Its understanding depends on a set of factors some of which are well documented and some remain to be explored in the context of Haryana- a state which has seen rapid economic and social changes in the recent times (Figure 8).

OOPHE on elderly is enormous and rising among Indian households over the time (Joe and Mishra, 2009; Reddy et al, 2011). Studies suggest its nature and volume of this expenditure depends on interplay of social, economic, demographic and health conditions of elderly, besides their source of financing and health services providers.

OOPHE on elderly depends primarily on the type and frequency of illness and injuries (Indrani Gupta, 2009; Alam and Karan, 2011). Long term, chronic and debilitating conditions namely cancer, heart ailments, asthma, mental illness, kidney diseases, diabetes, arthritis, haemophilia, hepatitis C, high BP, obesity, often have high treatment cost both indoor and outdoor treatment because of expensive diagnostics, drugs and consultation charges.

Similarly, slips, falls and accidents often lead to injuries that result in high treatment and rehabilitation costs.

Economic determinants are also significant for OOPHE as far as the elderly are concerned. They include a host of variables such as the current income and savings, past financial status, ownership of economic assets, taking out health/accident insurance policy, employer's contribution in organised sector etc. at the level of household or the aged individual. Some economic determinants may operate at the community level which may cover donations.

Demographic factors that influence OOPHE on elderly include gender, age and place of residence (rural/urban) of the elderly. In patriarchal societies of Haryana where most of the family decisions are taken by males, there may be situations where women are forced to forego their basic health rights or are the target of gender-based discrimination. Common restrictions on elderly women tend to skew their access to health care facilities.

Social forces such as level of education, family type (joint or nuclear), health awareness, knowledge of health schemes, and attitude of non-elderly towards elderly also affect the OOPHE on elderly. As an enabling factor, education empower individuals to enhance their social capital stock and to utilise available facilities more optimally for the elderly. It makes families more conscious of early health warnings and competent to reduce OOPHE on elderly. Similarly a good kinship relation, based on marriage and blood ties, also helps to reduce OOPHE on elderly by providing support of different kinds and care.

In Indian health care system the treatment providers play important roles in shaping the OOPHE on elderly. Since the public sector health care facility is inadequate to cater the needs of all the elderly as they are underfunded, lack capacity, priority and are mostly clustered in urban areas. So the private health facilities cater to health needs of a large sections of aged individuals. But the private sector services are saddled with issues of affordability, pricing, profit, quality variations, unnecessary medication etc. NGOs and charitable hospitals often offer need-based health care in remote and far-off areas but their services are fragmented, irregular and do not cater fully to the health needs of the elderly.

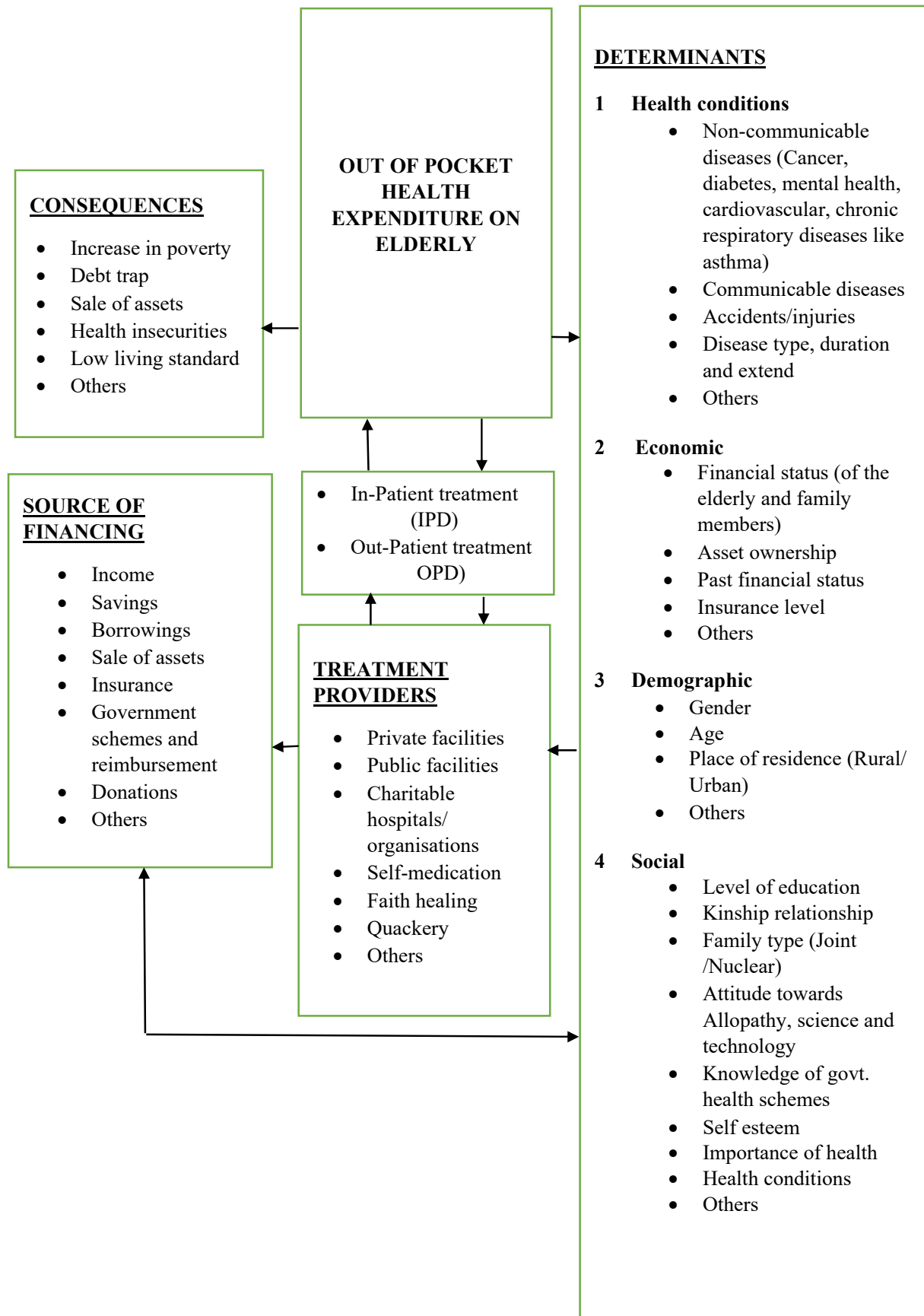
Health expenditures on the elderly are financed in a variety of methods by individuals and households from a range of sources. Source of financing of OOPHE on elderly is based on factors like access to finance, banking, economic, demographic determinants, health

conditions, duration of disease and type of providers. (Sauerborn et al., 1996), (Carter and Maluccio, 2003), (Russel, 2005), (Xu et al., 2003) and (van Damme et al., 2004) analysed that households finance healthcare cost from savings, credit, asset sales etc. (Van Doorslaer et al., 2006) found that the burden of out of pocket in India is among the highest in Asia.

High OOP health expenses often have severe consequences. It can be both economic and non-economic. Economic consequences expose households to debt trap, sale of assets and potential financial risk, and in severe condition push families to poverty (Berman et al. 2010; Shahrawat and Rao, 2011; van Doorslaer et al. 2006; O' Donnell et al., 2005; Garg and Karan, 2009). Besides this, high OOP health expenditure also leads to impoverishment. The unguarded groups such as those which are not covered under any health insurance or scheme may have to reduce their nonmedical goods and services to afford their basic and necessary health services (Paulin and Weber 1995), and sometimes they have to forego healthcare treatment. Households which are financially burdened by high OOPHE time and again have low consumption level of basic needs which lowers the standard of living and the incidence can be dangerous for those with diverse medical conditions especially the elderly. OOPHE may also have non-economic consequences. Individuals especially elderly have to sell their house, land, gold and other assets, have to borrow from relatives and friends, or both to finance their health expenditure and it leads to psychological stress, poor reputation in the society and pressure to repay the loan.

OOPHE and its determinants, disease type, source of financing and treatment providers are inter-related as one affect the other phenomenon and vice versa. Refer to figure 8 to know the factors inter-related affecting each other and determining the OOPHE.

Figure 8: Out of pocket health expenditure on elderly: A conceptual framework



Review of literature

Levels and trends in OOPHE

Evidences suggest that the OOPHE is poised for an increase. For instance, **Rubin and Koelln** (1993) estimated that mean total out of pocket health expenditure in U.S. was higher for the household with elderly members. For India, the total household spending on health was estimated to be 3.3 percent of the GDP (**Rao et al.**, 2005). This estimation ranked Kerala on top in terms of annual household spending (Rs. 1700) followed by Haryana and Punjab whose comparative spending were Rs. 1000 each approximately. Interestingly, all these three states also are known to have higher public health expenditure. **Joe and Mishra** (2009) analysed the Consumer Expenditure Survey (2004-05) and found that the average monthly per capita OOP payment stood at Rs. 36.3 in rural India and Rs. 57.4 in urban India. According to them, in India the OOP health expenditure varied from state to state with the rich states recording higher OOP spending on health as compared to the poor ones. In this study, the average OOP health spending stood at Rs. 50.9 and Rs. 53.2 in rural and urban Haryana respectively.

Gupta (2009) contradicted the findings of Joe and Mishra (2009) and argued instead that the poor states have higher out of pocket health spending as compared to the rich states in India. Similarly, **Selvaraj and Karan** (2009) recorded the rising trends of household health expenditure in India with average per capita monthly OOP moving up from Rs. 17 in 1993-94 to Rs. 33 in 1999-2000 and to Rs. 42 in 2004-05. **Berman et al.** (2010) observed that in India, 76 percent of total health expenditure is paid out of pocket in comparison to 63 percent in Bangladesh, 46 percent in Sri Lanka and 30 percent in Brazil. **Ghosh** (2011) analysed the OOP health expenditure in 16 states for 1993-94 and 2004-05 and found that mean OOPHE of India in relation to monthly household consumption expenditure rose from 4.39 percent in 1993-94 to 5.51 percent in 2004-05. She also recorded Kerala as the state with highest mean OOPHE as a percentage of household consumption expenditure (10.36%) in 2003-04. The corresponding figure for Haryana, according to her, was around 5.60 percent. During the study period, she observed a rise in OOPHE for both rich (Kerala, Himachal Pradesh, Maharashtra and Gujarat and poor (U.P., Madhya Pradesh) states due to decline in the Government spending on healthcare. **Selvaraj and Karan** (2012) highlighted the rising trend of OOPHE in India wherein the OOP, as a percentage of total household expenditure, increased from 3.93 percent in 1993-94 to 5.73 percent in 2009-10. **Prinja et al.** (2012), using the data from 61st round of NSSO examined the OOP of Haryana, Punjab and Union Territory of Chandigarh, and concluded that the respective OOP hospitalisation expenditure, as percent of annual

consumption expenditure, was 19.7, 24.3 and 18.3. **Ladusingh and Panday** (2013) measured the average OOPHE in India to be Rs. 430 per month in 2003-04. The share of this expenditure in total health expenditure varied from 8.10 percent in rural areas to 12.20 percent in urban areas. The Sri Lankan experience also highlights the rising trends of OOPHE (**Kumara and Samaratunge**, 2016) like that of the neighbouring Bangladesh (**Mahumud et al.**, 2017).

Determinants of OOPHE

Factors that determine the volume and composition of OOPHE in Indian setting are varied and have been investigated by a number of studies. **Rubin and Koelln** (1993) summarised income, age, race, assets, ownership of house and land-holding, education level of household head, size of the family, insurance and welfare measures by the government as the determinants of OOPHE. In their analysis, income, race, education, financial assets and insurance turn out to be positively correlated to OOPHE unlike the ownership of house and welfare measures that are negatively correlated. Insurance premiums, life cycle stages (age), size of the family, geographical location and income level were identified as determinants of OOPHE by **Hong and Kim** (2000) where high health insurance premium means high OOPHE like larger family size, greater distance of the household from the facility and higher age. OOPHE was found to be a function of insurance, family health needs, socio-economic factors and health infrastructure by **Shen and McFeeters** (2006) in their analytical model. A study on variation in economic burden of OOPHE discovered caste, landholding, healthcare need, and sex of the household head and level of healthcare utilisation as the main determinants (**Mukherjee et al.**, 2011). However, Mukherjee et al. failed to include insurance as a determinant of OOPHE.

Lara and Gomez (2011) analysed the General Social Security Health System (GSSHS) of Bogota, Colombia and factors responsible for catastrophic health expenditure. Under GSSHS catastrophic spending is referred to OOPHE in high cost events. In this article major determinants are household income, household size, disability of family member, dependency index, child births, gender and age of head of household, working area (private, public sector, self-employed or unemployed) of household head, social security situation, health insurance. It is concluded that the health system is protecting poor from OOP expenditure on out-patient and medicine but more financial assistance is needed for in patient events. Higher the income level, number of family members working, dependency ratio will lead more OOPHE but that would be less catastrophic in nature. A contradicting finding of this study in relation to others is that the insurance coverage tends to lower down the catastrophic OOPHE. **Ram Pal** (2012) examined the determinants of catastrophic OOPHE and categorised them into economic

variables (land, wealth, cooking method, electricity, regular salary, and education), demographic and social variables (household size, number of children, number of elderly persons, caste status, gender and age of head) and regional variables (rural/urban). His findings suggest that possession of land and high wealth reduce the probability of catastrophic health expenditures by 9.1 percent. In his analysis, education has highest effect only if the head of the household is educated above primary level as compared to illiterate head. According to him, households belonging to socially deprived castes and rural areas are more likely to have catastrophic OOPHE.

Fan et al. (2012) evaluated Aarogyasri scheme Andhra Pradesh considering insurance as the vital determinant of OOPHE, and found that the scheme has very less effect on OOPHE or medical impoverishments. **Prinja et al.** (2012) ascertained OOPHE in the states of Haryana, Punjab and Union Territory of Chandigarh and concluded that the rich spend more as a proportion of income than poor for the medical treatment. According to him, Haryana reported lower OOPHE than neighbouring Punjab and Chandigarh. Moreover, more than one-fifth of the total OOP hospitalisation expenditure in Haryana was financed from borrowing/debt/sale of assets. **Ladusingh and Pandey** (2013) found that income, geographical location, insurance, family size, education level are statistically significant determinants of OOPHE. They conclude that the households in states with higher income inequality are 19 percent more likely to incur health expenditure than households in states with low income inequality. **Kumara and Samaratunge** (2016) recorded a consistent rise in OOPHE in Sri Lanka which was higher as well as significant in households with more than one elderly person, pre-school children, chronic illness and higher education level of household heads.

Gupta et al. (2016) investigated OOPHE on OPD care in U.P., Gujarat and Haryana and came out with conclusion that a better provision of public sector healthcare facilities in an area tend to reduce OOPHE. They also found that the poor spend relatively more on OOPHE out of their consumption expenditure as compared to the rich in Haryana except for the district of Gurgaon. Evidences from Bangladesh (**Mahumud et al.**, 2017) showed that the age and gender of an individual were significant in determining the OOPHE. Older persons have to incur higher health expenditure because they to approach private health providers in the absence of required facilities for geriatric care in government sector and this lead to high OOPHE. Similarly, women had to pay more for their healthcare in relation to men as the employer took care of healthcare expenditure for most of the male employees but women had to pay for their own healthcare as they were not employed. The other important predictors of OOPHE in this study

were marital status, residence location and wealth of the family. **Loganathan et al.** (2017), in their study of Wadhra district of Maharashtra, find that the significant predictors of catastrophic (higher) OOPHE are caste, family head's vocation, and distance of residence from healthcare facility. They also add that insurance does not necessarily protect the households from health expenditure induced poverty.

Composition of OOPHE

Sanyal (1996) examined the total health expenditure in rural and urban areas based on NCAER (1990) data. He concluded that the fees (consultation as well as hospital) and medicine constituted a very high share (around 65% in urban areas and 66% in rural areas) in the total health expenditure while seeking any medical treatment. Diet contributed around six percent of total health expenditure in rural areas as against seven percent in urban areas. The share of transport to a health facility and back varied between five percent in urban areas to 7 percent in rural areas. The other significant heads of health expenditure in NCAER study were hospitalisation expenses and clinical tests. Sanyal's analysis of NSSO (1986-87) data also revealed that payment to hospitals (fees and medicines, clinical tests, surgery and hospitalisation taken together) accounted between 70-79 percent in rural areas for the in-patients and out-patients respectively and, for 83 percent in urban areas for both in-patient and out-patients each. **Gupta** (2009) in her paper identified drugs and medicines, medical equipment, hospitalisation, doctor consultation fees, and diagnostics on the basis of a study of 16 Indian states. But she failed short of indicating the relative importance of each of these major expenditure heads.

Joe and Mishra (2009) viewed drugs, diagnostics, and service charges etc. as major components of OOPHE in India. They observed that in rural and urban areas the expenditure on drugs was 76 and 70 percent respectively in 2004-05 making it the single largest component of OOPHE. **Ghosh** (2011) observed drugs and medicine as the most prominent component of OOPHE in India. According to him, in 2004-05, 71.71 percent of total OOPHE was spent on drugs and medicines, 12.94 percent on in-patient care, 11.58 on ambulatory and 4.31 other health services. Separate estimation by Ghosh shows that drugs spending in Haryana was 70.11 percent of total OOPHE as compared to 15.71 percent on in-patient care and 9.07 percent on ambulatory services during 2004-05. Unfortunately no rural-urban break-up of this estimation is made available by Ghosh. **Silva et al.** (2015) found that the expenditure on medicines is the most common expenditure and is observed to be inversely proportional to the child's growth. To him, other major sources of expenditure are medical care, tests and X-rays, and private

health insurance. **Kumara and Samaratunge** (2016) in their Sri Lankan study undertaken at three points of time (2001-02, 2006-07 and 2009-10) concluded that in 2009-10, 50 percent of the total OOPHE was for payment of fees to private practitioners followed by 19 percent for purchase of medicines and pharmacy products, 19 percent for payment to private hospitals, 8 percent for payment to medical laboratories, 6 percent for payment to specialists consultation fees and 3 percent other health expenses. Statistics on National Health Accounts by Ministry of Health and Family Welfare (**NHSRC**, 2016) recorded that the pharmacies accounted for highest share of household health expenditure (49.04%) in 2013-14 trailed by private hospital fee (25.48%), medical and diagnostics charges (9.12%) and transport (5.92%).

Similarly, **Mahumud et al.** (2017) from Bangladesh experience discovered that the medicines constitute the highest portion (61.38%) of total OOPHE followed by physician fees (13.38%), conveyance cost (13.04%), diagnostic test (6.20%), hospital bed fee (1.99%), informal payments (0.45%) and others (3.56%). **Loganathan et al.** (2017) through their study in Wadhra district divided OOPHE into direct and indirect health expenditures. On an average, direct expenditure included consultation (Rs. 163.84), drugs (Rs. 424.15), investigations (Rs. 1320.68) and hospitalisation (Rs. 1237.84) whereas indirect expenditure included transport (Rs. 253.33), loss of wages of attendants (Rs. 1247.28) and loss of wages of patient (Rs. 1813.40).

Consequences of OOPHE

As noted earlier, in India, private health expenditure is significant in course of treatment. Studies have overwhelmingly recorded the role of OOPHE in addressing healthcare needs of Indian population in a life course perspective. Households, with an elderly member are more in need of regular as well as diverse healthcare services as the elderly are more vulnerable to illness, injury, trauma and disability. The OOPHE are not without consequences for the individual, household and community. A high OOPHE can be also be catastrophic in nature and may have wide economic and non-economic manifestations (figure 8). Some such consequences are outlined below as available from the literature review.

High OOPHE often leads to greater health insurance coverage. This is endorsed by **Rubin and Koelln** (1993) in their research in U.S. They explained that the families seek insurance coverage to reduce the health expenditure burden. But, contrary to their expectations, insurance leads to more OOPHE because of requirement of minimum co-payments, high premiums and other formalities attached in availing of insurance coverage. **Hong and Kim** (2000) observed in a study conducted in U.S. that high healthcare expenditure of elderly may endanger their

own financial well-being and create difficulty in absorbing the cost of healthcare. **Selvaraj and Karan** (2009) concluded that households in India who spend large share of their budget on healthcare (catastrophic) are more vulnerable to poverty. **Gupta** (2009) suggested that an increase in OOPHE, in the absence of insurance coverage, is likely to push those who are just above poverty line into poverty and those who are already poor into further impoverishment. **Joe and Mishra** (2009) indicated that the incidence of poverty in India for 2004-05 increased to 32 percent from 28 percent when OOP payment for health were factored-in. Their study also indicated that OOP health spending enhanced the poverty level of the family and pushed many below the poverty line in the backward rural areas. It also made households to trade off their minimum social consumption needs with uncertain health expenditures.

Berman et al. (2010), on analysing the countrywide NSSO (60th round) data on national morbidity and healthcare, suggested that 6.2 percent of the households become poor due to high health expenditure in 2004. Their analysis of BPL households showed that increasing health expenditure which was mostly self-financed lead to impoverishment and lowering of minimum consumption level. Example of households from Bogota in Colombia revealed that catastrophic health spending lowered the living standards of households which were without social security benefits and had an elderly member (**Lara and Gomez**, 2011). **Ghosh** (2011) examined the impoverishing impact of OOPHE. OOPHE increased the poverty level by 4 and 4.4 percent in 1993-94 and 2004-05 respectively. To tackle this increased catastrophic OOP payments, households have to reduce their basic expenditure over a certain period of time, sell assets and borrow from others. **Prinja et al.** (2012) observed that high OOPHE was a barrier for poor people to avail healthcare services. Due to high OOPHE, people often avoided seeking treatment for diseases that were cost intensive leading to unmet health treatment and deteriorated the health conditions.

Ladusingh and Pandey (2013) examined the impoverishment effect of OOPHE in India and noticed that the poor households were sacrificing their basic necessities due to increasing OOPHE which was mostly unseen. To meet OOPHE, households had to take loan from a range of sources and sell assets which lowered the standard of living and increased inequality in availing healthcare treatment. **Kumara and Samaratunge** (2016) in their Sri Lankan study of OOPHE revealed that the OOPHE caused financial hardship especially among the poor and households with elderly and children due to loans and selling of assets. On the basis of a study in Bangladesh, **Mahumud et al.** (2017) pointed towards surrendering of consumption of current necessities and financial insecurity because of high OOPHE. As they found, high OOP

spending also pushed people to the traditional healers. **Loganathan et al.** (2017) found out that one-fifth of the families had catastrophic OOPHE and face financial hardship and met by selling assets or borrowing with interest. Also contributions from relatives and friends act as a source of financing OOPHE.

From the above review, it is evident that the private health expenditures have increased substantially over time and have become burdensome for a large section of society particularly in a developing country like India. The studies in India indicate significant debilitating effect of high and rising OOP health spending which have pushed households to adverse situations like debt, poverty, distressed sale of assets, higher inequality, sacrifice of basic consumption, foregoing of healthcare etc. However, no study has focused exclusively on health expenditure on elderly and its consequences. Moreover, Haryana figures poorly when it comes to research on consequences of private health spending. Since Haryana has a substantial elderly population, it is essential that the healthcare needs and OOPHE of this segment of population is studied from the perspective of policy, program and welfare.

Summary and Results of Review of Literature

Author(s)	About the study	Results
Theme: Levels and trends in OOPHE		
Rubin and Koelln (1993)	Examined the variation in out of pocket expenditures for health services among different types of households in U.S. and identified the socioeconomic variables necessary for determining these expenditures.	Mean total out of pocket health expenditure to be around USD 1226 in 1986-87 in U.S. and it was higher for the household with elderly members.
Rao et al. (2005)	Found the sources and structure of health financing in India.	Household spending on health was estimated to be 3.3 percent of the GDP of India and Kerala was on top in terms of household spending with Rs. 1700 annually followed by Haryana and Punjab whose household spending was Rs. 1000 each approximately. All these three states also had higher public health expenditure.
Joe and Mishra (2009)	Analysed the distribution and magnitude of out of pocket health spending across states, and between rural and urban areas, along with the impact of OOP payments on	Kerala had the highest average per capita OOP with Rs. 101.8 and Rs. 122.2 in rural and urban areas respectively. In rural Haryana, average OOP health spending stood at Rs. 50.9 and Rs. 53.2 for urban Haryana. OOP health spending

	poverty and it also evaluated progressivity of OOP payments with regards to the levels of healthcare utilisation.	was 6.5 percent of total consumption expenditure and 14.5 percent of total non-food expenditure in rural India and it was approximately 5.5 percent and 9.5 percent respectively in urban India.
Gupta (2009)	Reviewed the existing methodology, proposed a methodology for India and showed some estimates using 61 st round data of the NSS and highlighted the concerns that remained in measurement and estimation of both health expenditure and poverty.	The out of pocket health spending was 4.7 percent of total household expenditure and found contradicting results against the findings of Joe and Mishra (2009) as it was observed that the poor states had higher out of pocket health spending as compared with other states.
Selvaraj and Karan (2009)	Observed the falling trends of public healthcare expenditure and emergence of private players which led to manifold increase in out of pocket health financing which were sometimes catastrophic in nature because they pushed millions below the poverty line every year.	Supported the rising trends of household health expenditure in India. Average per capita monthly OOP stood at Rs. 17 in 1993-94, Rs. 33 in 1999-2000 and Rs. 42 in 2004-05.
Berman et al. (2010)	Observed that the high private healthcare spending in India was creating huge financial burden on the households.	In India, 76 percent of total health expenditure was paid out of pocket in comparison to other developing countries like Bangladesh (63%), Sri Lanka (46%) and Brazil (30%).
Ghosh (2011)	Explored the changes that occurred in the 1990s and starting years of 2000 as a result of increase in OOP spending on healthcare in 16 major states of India.	Mean OOPHE of India in relation to monthly household consumption expenditure rose from 4.39 percent in 1993-94 to 5.51 percent in 2004-05. Kerala (10.36%) had the highest mean OOPHE as a percentage of household consumption expenditure while Haryana had it around 5.60 percent in 2003-04. During the study period, Kerala (4.7%) observed the highest increase in OOPHE followed by Himachal Pradesh (2.5%).
Selvaraj and Karan (2012)	Analysed the impact of Government financed health insurance schemes on financial risk protection namely <i>RSBY</i> , <i>Rajiv</i>	OOP as a percentage of total household expenditure stood at 3.93 percent in 1993-94 and has increased to 5.73 percent in 2009-10. It was observed that healthcare spending was

	<i>Aarogyasri</i> in Andhra Pradesh and Health insurance scheme of Tamil Nadu.	around 4.2 percent of the GDP of India.
Prinja et al. (2012)	Studied the inequities in health status, service utilisation and OOP health expenditures in Haryana, Punjab and Chandigarh using mean consumption expenditure quintiles from 60 th NSSO round data on morbidity and healthcare.	OOP hospitalisation expenditure as percent of annual consumption expenditure was 19.7, 24.3 and 18.3 in Haryana, Punjab and Chandigarh respectively.
Ladusingh and Panday (2013)	Examined the out of pocket health expenditure and its impoverishment effects in India.	Average OOPHE stood at Rs. 430 per month in 2003-04. OOPHE constituted 8.1 and 12.2 percent of the urban and rural total health expenditure.
Kumara and Samaratunge (2016)	Highlighted the rising trend of OOPHE in Sri Lanka.	Nominal monthly OOPHE per household stood around LKR 380 in 2001-02, LKR 690 in 2006-07 and LKR 1000 in 2009-10. Per capita monthly Out of pocket health expenditure as a percent of total household expenditure stood at 2.4 percent in 2009-10.
Mahumud et al. (2017)	Determined the levels and trends of OOPHE in Bangladesh.	Average total OOPHE was USD 27.66 in 2010-2011 out of which cost of medicines was the highest expenditure (61% of total OOPHE).
Theme: Determinants of OOPHE		
Rubin and Koelln (1993)	Examined the variation in out of pocket expenditures for health services among different types of households and identify the socioeconomic variables necessary for determining these expenditures.	Considered income, age, race, assets, ownership of house and land holding, education level of household head, size of the family, insurance and welfare by government as the factors determining the OOPHE and it was concluded that income, race, education, financial assets and insurance factors are positive and significant which leads to higher OOPHE.
Hong and Kim (2000)	Observed the OOPHE trends of households and the financial burden of health services costs over the life cycle stages using the data from the Consumer Expenditure Survey (CES) 1995.	Insurance premiums, life cycle stages (age), size of the family, geographical location, and income level were the major determinants of OOPHE.
Shen and McFeeters	Tried to study the impact of health	Modelled OOPHE as a function of insurance,

(2006)	insurance schemes, healthcare needs, demographic and area attributes on OOPHE for low and high income insured people.	family health needs, socio-economic factors, and health facilities infrastructure.
Mukherjee et al. (2011)	Tried to analyse caste based inequalities in household out of pocket health expenditure in the south Indian state of Kerala	Evaluated the variation in economic burden of OOPHE across different caste groups considering caste, landholding, and healthcare need, sex of the household head and level of healthcare utilisation as the major determinants of OOPHE.
Lara and Gomez (2011)	Analysed the General Social Security Health System (GSSHS) and factors responsible for catastrophic health expenditure in Bogota, Colombia.	Major determinants were household income, household size, disability of family member, dependency index, child births, gender and age of head of household, working area (private, public sector, self-employed or unemployed) of household head, social security situation, health insurance.
Ram Pal (2012)	Tried to deliver a new measure of catastrophic out of pocket health expenditure based on consumption of necessities.	Analysed determinants of Catastrophic OOPHE and categorised it into three groups, namely, economic variables (land, wealth index, cooking method, electricity, regular salary, education), demographic and social variables (household size, no. of children, no. of elderly persons, SC/ST, OBC, Gender and age of head) and regional variables (rural-urban).
Fan et al. (2012)	Evaluated <i>Aaogyarsi</i> health insurance scheme implemented in the state of Andhra Pradesh, India.	Considered insurance as the vital determinant of OOPHE and examined the trends and changes in OOPHE.
Prinja et al. (2012)	Studied inequities in health status, service utilisation and OOP health expenditures in Haryana, Punjab and Chandigarh using mean consumption expenditure quintiles from 60 th NSSO round data on morbidity and healthcare.	The determinants considered for the study were based on income, gender, educational status, geographical region and occupation.
Ladusingh and Pandey (2013)	Examined the out of pocket health expenditure and its impoverishment effects in India.	Income level, place of residence, sex of household head, wealth index, loan, age and size structure of the household, annual remittances, doctor density, Gini-coefficient, and insurance were identified as major

		determinants of OOPHE.
Kumara and Samaratunge (2016)	Highlighted the rising trend of OOPHE in Sri Lanka.	The OOPHE varied across households in terms of demographic characteristics, sectors of healthcare and ability to pay. Households with more than one elderly person, pre-school children, chronic illness and educated head had higher and significant OOPHE.
Gupta et al. (2016)	Provided new evidences on the levels and drivers of OOPHE on outpatient care as well as choice of providers using household survey of eight districts from three states- three districts each from Haryana and Gujarat and two districts from UP.	Considered age, gender, education, economic status, residence and type of facility used, insurance coverage in determining OOPHE.
Mahumud et al. (2017)	Identified the levels and trends of OOPHE in Bangladesh.	The major determinants of OOPHE were age, gender, education, location, access to insurance and its coverage.
Loganathan et al. (2017)	Studied OOPHE in Wadhra district of Maharashtra and surveyed its rural area.	Explored age, gender, education, economic status, residence and type of facility used, insurance coverage in determining OOPHE.
Theme: Composition of OOPHE		
Sanyal (1996)	Tried to analyse the use of government and private sources of treatment, the expenditure sustained, trends in utilisation, expenditure and differentials across the rich and poor.	Most of the payment were incurred for fees and medicine which is 65.74 percent in rural areas and 64.75 percent in urban areas followed by transportation cost which is higher in rural areas (6.76 %) as compared to urban areas (4.98%). Also higher payments were made for special diets (6.42 and 7.40 % in rural and urban areas respectively).
Gupta (2009)	Reviewed the existing methodology, proposed a methodology for India and showed some estimates using 61 st round data of the NSS and also highlighted the concerns that remain in measurement and estimation of both health expenditure and poverty.	Divided health expenditure in drugs and medicines, medical equipment, hospitalisation, doctor consultation fees, diagnostics and other related expenditures.

Joe and Mishra (2009)	Analysed the distribution and magnitude of Out Of Pocket health spending across states and between rural-urban areas, grasped the impact of OOP payments on poverty and evaluated progressivity of OOP payments with regards to levels of healthcare utilisation.	Considered drugs, diagnostics, service charges etc. as major components of OOPHE and noticed that in rural and urban areas the expenditure on drugs was 76 and 70 percent respectively in 2004-05 making it the single largest component of OOPHE.
Ghosh (2011)	Explored the changes that occurred in the 1990s and starting years of 2000 as a result of increase in OOP spending on healthcare in 16 major states of India.	Observed drugs and medicine as the most vigorous component of OOPHE. In 2004-05, 71.71 percent of total OOPHE was spent on drugs and medicines, 12.94 percent on inpatient care, 11.58 and 4.31 on ambulatory and other health services respectively. Drugs spending in Haryana was 70.11 percent of total OOPHE, 15.71 and 9.07 percent on inpatient and ambulatory services correspondingly.
Silva et al. (2015)	Analysed the effects of socio-economic, demographic and health status factors on out of pocket expenditure on health care for children.	Found that the expenditure on medicines was the most common expenditure and its trend observed to be inversely proportional to the child growth, followed by expenditure on medical care, tests and X-rays, and private health insurance.
Kumara and Samaratunge (2016)	Highlighted the rising trend of OOPHE in Sri Lanka.	Concluded that in 2009-10, 50 percent of the household total OOPHE was paid for fees to private practices, followed by purchase of medicines and pharmacy products, payments to private hospitals, medical laboratories, specialists consultation fees and other health expenses.
NHSRC (2016)	Estimated the household health expenditure in India for the year 2013-14.	Witnessed that the pharmacies (49.04%) establish the highest share of current household health expenditure in 2013-14 trailed by private hospital fee (25.48%), medical and diagnostics laboratories (9.12%), patient transportation (5.92%) and others.
Mahumud et al. (2017)	Determined the levels and trends of OOPHE in Bangladesh.	Discovered that the medicines cost (61.38%) constitute the highest portion of total OOPHE followed by physician fees (13.38%), conveyance cost (13.04%), diagnostic test

		(6.20%), hospital bed fee (1.99%), informal payments (.45%) and other health payments (3.56%).
Loganathan et al. (2017)	Studied of OOPHE in Wadhra district of Maharashtra and surveyed its rural area.	Divided OOPHE in direct and indirect health expenditure. Direct expenditures included consultation (Rs. 163.84), Drugs (Rs. 424.15), investigations (Rs. 1320.68) and hospitalisation (Rs. 1237.84) and indirect expenditure included transportation (Rs. 253.33), loss of wages of attendants (Rs. 1247.28) and loss of wages of patients (Rs. 1813.40).
Theme: Consequences of OOPHE		
Rubin and Koelln (1993)	Examined the variation in Out of Pocket expenditures for health services among different types of households and identified the socioeconomic variables necessary for determining these expenditures.	Families with high OOPHE seek insurance coverage to reduce the health expenditure burden but, contrary to the expectations insurance led to more OOPHE as there was minimum co-payments, high premiums and other formalities are attached for availing insurance coverage.
Hong and Kim (2000)	Observed the OOPHE trends of households and the financial burden of health services costs over the life cycle stages using the data from the Consumer Expenditure Survey (CES) 1995.	Witnessed in their study that high healthcare expenditure of elderly might endanger their financial well-being and difficulty in absorbing the costs.
Selvaraj and Karan (2009)	Observed the falling trends of public healthcare expenditure and emergence of private players which led to manifold increase in out of pocket health financing which were sometimes catastrophic in nature because they pushed millions below the poverty line every year.	Explored that the households who required more medical need end up spending large share of household budget on healthcare which was catastrophic in nature and this made people vulnerable to poverty.
Gupta (2009)	Reviewed the existing methodology, proposed a methodology for India and showed some estimates using 61 st round data from NSS and also highlighted the concerns that remained in measurement and estimation of	In the absence of any insurance coverage, the effect of increasing OOPHE clearly had an impact on poverty pushing those who were just above poverty line into poverty and those who were already poor into further impoverishment.

	both health expenditure and poverty.	
Joe and Mishra (2009)	Analysed the distribution and magnitude of Out Of Pocket health spending across states and between rural and urban areas, the grasp the impact of OOP payments on poverty and to evaluate progressivity of OOP payments with regards to levels of healthcare utilisation.	Indicated that the poverty in 2004-05 increased by 4.4 percent (4.6% in rural and 3.7% in urban areas) that means revised incidence of poverty in India would be 32% against pre-payment poverty headcount statistic of 27.6% for OOP payments.
Berman et al. (2010)	Analysed the NSSO (60 th round) data on national morbidity and healthcare.	Suggested that 6.2 percent of the household fell in poverty due to total health expenditure in 2004. Out of 6.2 percent of the increased BPL households, 6.6 percent belongs to rural areas and 5 percent to urban areas.
Lara and Gomez (2011)	Analysed the General Social Security Health System (GSSHS) and factors responsible for catastrophic health expenditure in Bogota Colombia.	Households having catastrophic health spending in Bogota was 4.9 percent and its incidence was more in low income families with no social security benefits and where the head of the household was over 60 years of age which lowered their living standards.
Ghosh (2011)	Explored the changes that occurred in the 1990s and starting years of 2000 as a result of increase in OOP spending on healthcare in 16 major states of India.	OOPHE increased the poverty level by 4 and 4.4 percent in 1993-94 and 2004-05 respectively. To tackle this increased catastrophic OOP payments, households had to reduce their basic expenditure over a certain period of time, sold assets and borrowed from others.
Prinja et al. (2012)	Studied inequities in health status, service utilisation and OOP health expenditures in Haryana, Punjab and Chandigarh using mean consumption expenditure quintiles from 60 th NSSO round data on morbidity and healthcare.	High OOPHE served as a restriction to poor people as it posed financial constraints to avail health services, especially the expensive hospitalisation treatment and that was too reflected in high unmet health treatment which further deteriorate the health conditions.
Ladusingh and Pandey (2013)	Examined the out of pocket health expenditure and its impoverishment effects in India.	The poor households were most affected by the increasing and unseen OOPHE that were met at the cost of basic necessities. 10.1 percent of rural and 6.2 percent of urban households in

		India had either become poor or poorer as a consequence of the OOPHE. To meet OOPHE, households took loan, borrowed from relatives and sold assets.
Kumara and Samaratunge (2016)	Highlighted the rising trend of OOPHE in Sri Lanka.	The OOPHE caused adversity and financial hardship especially in poor households and families with elderly and children. This increased health expenditure was covered by loans and selling of assets.
Mahumud et al. (2017)	Determined the levels and trends of OOPHE in Bangladesh.	OOPHE was covered by household budgets, families were in danger of surrendering current necessities consumption to pay for these remedial costs. Increasing healthcare payments led to financial insecurity to poor households. If they were unable to access the health services due to lack of funds then they took help from traditional healers.
Loganathan et al. (2017)	Studied OOPHE in Wadhra district of Maharashtra and surveyed its rural area.	One-fifth of the families had catastrophic OOPHE and faced financial hardship and met by selling assets or borrowing with interest. Also contributions from relatives and friends acted as a source of financing OOPHE.

Research gaps

Out of pocket health expenditure is of great scholarly importance in order to understand the access to healthcare services, patterns of private health financing and conditions of the individuals or the households due to heavy and unbearable private health spending. Review of literature indicates that a reasonable amount of studies have been conducted on dynamics of out of pocket expenditure in India. However, these studies are highly region specific and ignore the state of Haryana which ranks high in India in terms of growth in GSDP and annual per capita income. It is an irony that the private health expenditure is little researched and hence, little understood in a state like Haryana which remains at top as compared to the national scene in average spending on health by the households and the government.

The incidence of ageing is increasing in Haryana and the state has a higher share of elderly as compared to the national average. Yet, the studies have not at all focused on financial dimensions of healthcare spending on this rising segment of the population. Little

information is available to understand the out of pocket health expenditure on elderly in the state of Haryana in terms of context, health seeking behaviour, rural-urban differences, gender dimensions, caste and religious affiliation, household living standards, source of financing, impact of health policies on health spending etc. The current level of knowledge of out of pocket health spending does not allow us to explore the differences, if any, between elderly and non-elderly in a predominant agrarian society of Haryana.

Research questions

The proposed study will involve the following research questions:

1. Why OOPHE on elderly is increasing in spite of various government health schemes?
2. What are the sources and composition of OOPHE on elderly?
3. What is the relationship between increasing OOPHE and Poverty?
4. What are the determinants of OOPHE on elderly?
5. How OOPHE differs across socio-economic categories of the households?

Objectives of the study

The overall goal of the proposed study will be to explore the selected dimensions of the out of pocket healthcare expenditure (OOPHE) on the elderly (aged 60 years and above) in the state of Haryana. The specific objective of the study, however, will be as under:

1. To measure the OOPHE on the elderly in the households and link them to the selected social, current economic and demographic background characteristics,
2. To assess the prevailing patterns of OOPHE on the elderly in the households in the context of communicable and non-communicable diseases, injuries/accidents, and other health conditions,
3. To study the composition of OOPHE on elderly in terms of drugs, diagnostics, medical equipment and aids, ancillary services, doctor fee, health insurance premiums etc.,
4. To find the sources of financing the OOPHE along with the constraints in financing, and
5. To consider the difficulties that the households encounter and the strategies they adopt to reduce the burden of OOPHE on the elderly.

Hypothesis

While conducting this study, the followings will be null (H_0) and alternate (H_1) hypotheses:

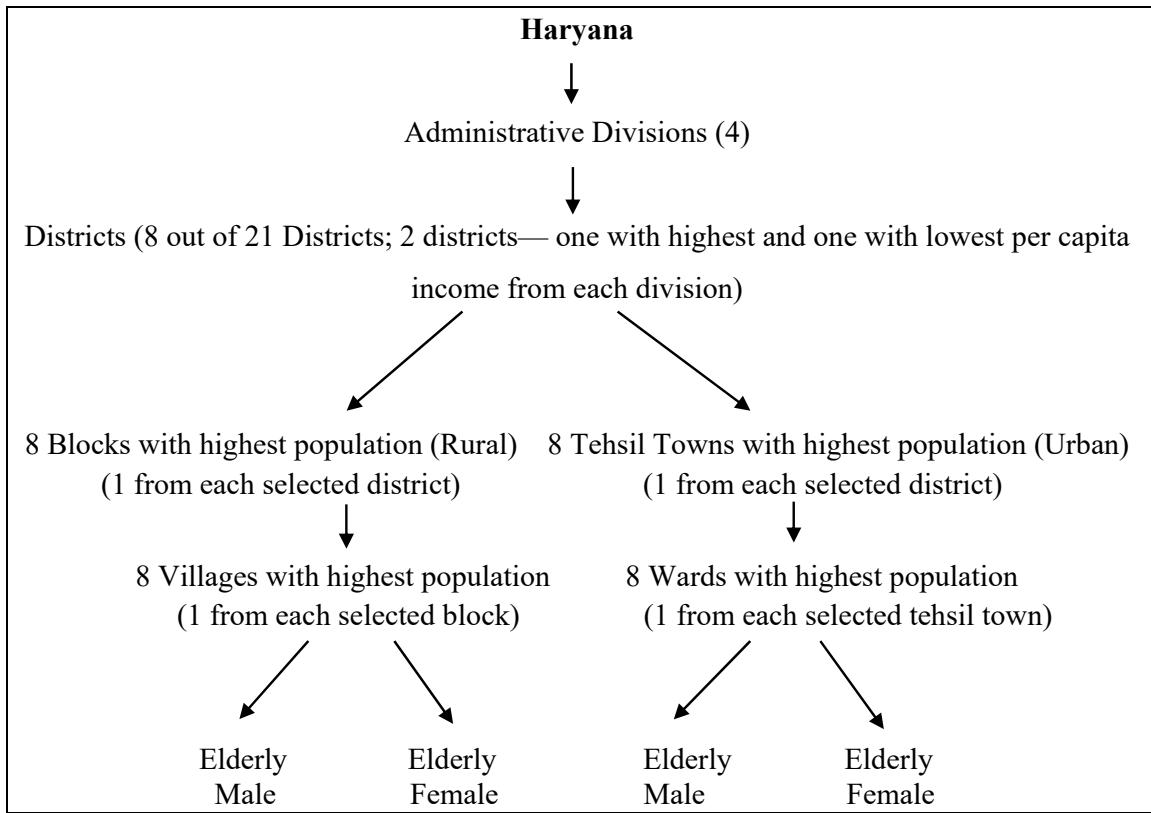
1. H_0 : The OOPHE on elderly is same as the OOPHE on non-elderly.
 H_1 : The OOPHE on elderly is not same as the OOPHE on non-elderly.
2. H_0 : In the households, socio-economic factors don't affect the OOPHE on elderly as compared to non-elderly.
 H_1 : In the households, socio-economic factors affect the OOPHE on elderly as compared to non-elderly.
3. H_0 : OOPHE does not reduce the savings and assets of elderly.
 H_1 : OOPHE does reduce the savings and other assets of elderly.
4. H_0 : Health insurance coverage does not reduce the OOPHE.
 H_1 : Health insurance coverage reduces the OOPHE.

Methodology

Sample design

The study would be based on multi-stage stratified systematic random sampling method to obtain the primary data for the state of Haryana. The multi-stage sample will involve stages like selection of administrative divisions, then districts, then C.D. blocks, then towns, then villages from blocks, then the urban wards from towns and finally the households to target the elderly individuals. Probability Proportionate to Sample (PPS) method will be used to select sample in different stages. Two districts— one with highest and one with lowest per capita income will be selected from each division (Four Divisions in Haryana). At different stages of sample selection, different type of indicators are used. Further the samples will be representative in terms of education, age religion, caste, sex, residence- rural/urban, land ownership, income level. The order for the selection of sample for the study has been explained below:

Figure 9: Flow chart of sample selection in Haryana



Stage I: Sample size determination

The minimum total sample individuals of elderly (n) required for the study in Haryana will be determined by formulae:

$$n = \frac{z^2 \hat{p}(1 - \hat{p})}{ME^2}$$

Where,

ME = Margin of Error or confidence interval = 0.05

z= z-score= 1.96 (value of z at confidence level @ 95%)

\hat{p} = prior judgment of correct value of p (50-50 per cent)

n= sample size of beneficiaries .i.e. number of elderly (to be found)

So,

$$n = \frac{(1.96^2) \times 0.5(1 - 0.5)}{(0.05^2)} = 384$$

Fifteen percent of the total sample size (57) shall be added to the calculated total sample size (384) to recoup for the anticipated loss/non-response/absence/drop-out among the

respondents during the survey. This leads to a final sample size of 441 elderly (=384+57) individuals. The estimated sampling fraction would be:

$$k = \frac{441}{2193755} = 0.0002$$

Stage II: Selection of districts

For selection of sample a set of criterion will be employed. In the first stage the state will be divided into administrative divisions. Divisions are important units for governance and administration. The state of Haryana had four administrative divisions in 2011 namely: (i) Hisar, (ii) Ambala, (iii) Gurugram, and (iv) Rohtak. Administrative divisions in the state so as to give representation to all parts of the state. In the second stage, Two districts—one with highest and one with lowest per capita income will be selected from each division. Per capita income continues to be an important determinant of standard of living. It also factors as a significant indicator of regional disparity (GoH, 2015). The districts of Haryana are widely apart in terms of annual per capita income. Districts with highest per capita income from each division are: Ambala from Ambala division, Panipat from Rohtak division, Hisar from Hisar division, Gurugram from Gurugram division and districts with lowest per capita from each division are: Kaithal from Ambala Division, Jhajhar from Rohtak division, Bhiwani from Hisar division, Mewat from Gurugram division.

Table 3: Districts of Haryana classified by Administrative divisions, per capita income and elderly population.

Admin. Division	District	Per capita income (in Rs.)@	Total Population of elderly^s	Male elderly^s	Female elderly^s
Ambala	Panchkula	115962	50932	26268	24664
	Ambala	116329	111587	55840	55747
	Yamunanagar	82232	112009	56694	55315
	Kurukshetra	82590	90650	45150	45500
	Kaithal	69360	105180	52215	52965
Gurugram	Mahendargarh	54835	95360	45415	49945
	Rewari	118250	86328	41331	44997
	Gurugram	446305	113703	56548	57155
	Mewat	45934	64888	32828	32060
	Faridabad	163247	113012	59127	53885

Hisar	Palwal	65009	75766	37820	37946
	Fatehabad	80425	86333	41589	44744
	Sirsa	86792	120305	59053	61252
	Hisar	88759	145738	70964	74774
	Bhiwani	67050	150519	72630	77889
Rohtak	Karnal	93231	132981	66259	66722
	Panipat	164541	90408	46281	44127
	Sonipat	95053	129352	65033	64319
	Jhajhar	76292	92754	44889	47865
	Rohtak	79002	102931	51060	51871

Note: @: for the F.Y. 2011-12 at current prices

Source: i) \$: Census of India, ORGI, New Delhi 2011, ii) @: Department of Economic and Statistical Analysis, Government of Haryana, Chandigarh 2015.

Stage III: District specific sample selection

Here, we make clear about the sample size determination from each districts. Sample size of each district is in proportion to the elderly population of that district with respect to total elderly population of all 8 selected districts.

Table 4: District specific sample of elderly person selected for survey in Haryana

Administrative Division	No. of elderly	Selected Districts	No. of elderly	% of district in total sample	Sample of elderly individuals to be covered
Ambala	470358	Ambala	111587	13	57
		Kaithal	105180	12	53
Gurugram	549057	Gurugram	113703	13	57
		Mewat	64888	07	31
Hisar	625914	Bhiwani	150519	17	75
		Hisar	145738	17	75
Rohtak	548426	Jhajhar	92754	11	49
		Panipat	90408	10	44
HARYANA	2193755	All	874777	100	441

Source: Census of India, ORGI, New Delhi 2011

Stage IV: Rural/Urban sample selection

Rural-urban sample will be determined on the basis of rural-urban elderly population percentage of the respective district as per census 2011. The following table shows the district level sample details.

Table 5: Rural-Urban break-up of sample by district, Haryana

Selected Districts	Rural elderly population^s	Urban elderly population^s	% Share of rural elderly population^s	% Share of urban elderly population^s	Estimated rural sample	Estimated urban sample
Ambala	64232	47355	58	42	33	24
Kaithal	84919	20261	81	19	43	10
Gurugram	38863	74840	34	66	19	38
Mewat	57338	28197	88	12	27	04
Bhiwani	125537	24982	83	17	62	13
Hisar	103149	42589	71	29	53	22
Jhajhar	74160	18594	80	20	39	10
Panipat	53460	36948	59	41	26	18
HARYANA	328497	180715	69	31	302	139

Source: Census of India, ORGI, New Delhi 2011

Stage V: Selection of blocks, towns and primary sampling units (PSUs)

Further, the blocks and towns with highest population according to the census 2011 are selected from the nominated districts. Also one village and ward from each selected block and town respectively will be nominated. Respondents will be divided into males and females as per sex ratio of elderly in the respective district. (Table 6, 6(a) and 6(b)).

Table 6: Selection of C.D. blocks and villages, and town and wards

Admin Division	District	Block/Village/Sample			Town/Ward/Sample		
		Block	Village	No. of Respondents	Town	Ward	No. of Respondents
Ambala	Ambala	Ambala II	Khojkipur	33	Ambala	Ward XIII	24
	Kaithal	Kaithal	Keorak	43	Kaithal	Ward XVII	10
Guru-gram	Gurugram	Gurugram	Naharpur	19	Gurugram	Ward VIII	38
	Mewat	Punhana	Lohinga Kalan	27	Ferozpur Jhirka	Ward III	04
Hisar	Bhiwani	Bhiwani	Bapora	62	Bhiwani	Ward I	13
	Hisar	Hisar II	Bir Hisar	53	Hisar	Ward VII	22
Rohtak	Jhajhar	Bahadurgarh	chhara	39	Bahardur-garh	Ward XXXI	10
	Panipat	Panipat	Sondhapur	26	Panipat	Ward XXIII	18

Note: Block and Municipal Corporation are selected from the respective tehsil.

Source: Census of India, ORGI, New Delhi 2011

Table 6(a) Selection of respondents from selected villages

Districts	Village	No. of Respondents	Male Respondents	Female Respondents
Ambala	Khojkipur	33	17	16
Kaithal	Keorak	43	21	22
Panipat	Sondhapur	26	13	13
Jhajhar	chhara	39	19	20
Hisar	Bir Hisar	53	26	27
Bhiwani	Bapora	62	30	32
Gurugram	Naharpur	19	9	10
Mewat	Punhana	27	13	14

Source: Census of India, ORGI, New Delhi 2011

Table 6(b) Selection of respondents from selected wards

Districts	Ward	No. of Respondents	Male Respondents	Female Respondents
Ambala	Ward XIII	24	12	12
Kaithal	Ward XVII	10	5	5
Panipat	Ward XXIII	18	9	9
Jhajhar	Ward XXXI	10	5	5
Hisar	Ward VII	22	11	11
Bhiwani	Ward I	13	6	7
Gurugram	Ward VIII	38	19	19
Mewat	Ward III	04	2	2

Source: Census of India, ORGI, New Delhi 2011

The selected samples of elderly (60+) male and female will be heterogeneous in terms of its socio-economic and demographic background. Variations in terms of age, household's size, religion, caste, education, financial status, land ownership, living standard etc. that exist in general population shall be captured to make it more representative.

Data collection

For the study, data will be collected from primary sources through a survey conducted by canvassing structured, pre-coded and thematically sequenced questionnaire designed for the elderly individuals of the household selected in the sample, for the households and for the village. The reference period for the assessment of health expenditure will be 6 months from the date of interview of the respondents. The language of the printed questionnaire will be English whereas the investigator being proficient in English as well as Hindi will canvass

questions in the language in which the respondents are comfortable in Haryana. To make the research ethical, informed consent will be taken from the respondents before their participation in the survey. The secondary data for the study will be taken from the reliable sources, namely, Census of India, NSSO, National Health Accounts, RBI, Government of Haryana and others.

Data analysis

Primary data collected from the— i) elderly individual ii) households and iii) village will be checked for normalisation with the help of various statistical techniques. The primary data collected shall be arranged in the form of tables, charts and graphs (bar graphs, line diagrams etc.) for the presentation of initial data. Wealth index of the households to where the elderly live will be computed to understand the situation in different types of households. Logistic regression for estimating the effect of explanatory variable on outcome variables will be used with the help of statistical software. Lorenz curve, Concentration Index and curve will be applied to inspect the relation between OOP payments and total household consumption expenditure. The Concentration Index, conceptually derived from the concentration curve, quantifies the degree of inequality in a health variable caused by certain socio-economic factors (Kakwani et al 1997; Wagstaff et al 1989).

Limitations of the study

The proposed research study will primarily be based on the data collected from the elderly individuals and the households in selected districts of Haryana. The study will be limited by its power of generalisation for the entire state even if it is based on a robust and scientific sample. Also, the usual recall lapses that the elderly may encounter during the survey given their age and mental alertness will affect the reporting of OOPHE pattern during the reference period. New policies and intervention programmes that may come into force during the period of study may also affect the pattern of OOPHE in the study. There are also chances that the respondent's report of the expenditure will be subject to personal perception and biases.

Chapter scheme

The thesis is proposed to have seven chapters in total with varying focus, coverage and:

The first chapter will introduce the various concepts that are crucial to the study. It will also highlight the importance of human health in the context of rapidly changing socio-economic development and health transition in India. It will also examine health expenditure

dimensions of healthcare initiations which explains the reason for a study in this area with the help of previous studies which have shown indispensability of health. Along with this, health and various other variables, namely, out of pocket health expenditure, health expenditure, public and private health expenditure, growth in elderly population, catastrophic out of pocket health expenditure will be defined. This chapter will also include the present and past elderly health scenario in India which consists of percentage of elderly population to total population in India and state wise and socio demographic features in India. The present and past health scenario specifically in Haryana will also be included in the chapter since the study focuses on Haryana. This chapter will further give an insight into history of health expenditure in India and Haryana and discuss various health schemes launched by central and state government for the benefit of elderly. Lastly, this chapter will include theoretical and conceptual framework of the study. It will also include review of literature in the field of healthcare expenditure and out of pocket health expenditure (OOPHE) which will give an insight into the scope of previous studies and methodology adopted by them along with current aspects. Research studies conducted in India and abroad are examined to find out the determinants, processes and consequences of OOPHE in different sections and their relevance to the situation in the state of Haryana. This review will help to understand the research gap that is commonly witnessed while attempting to understand the private health expenditure holistically. This chapter will also discuss the objectives, hypothesis and research questions formulated and focus on data and methods that will be used in the study and procedure of sample selection in terms of administrative divisions, district, tehsils, block, town, village, ward and aged individuals. Further, this chapter will contain sample size determination, sample design and the primary sampling units (PSUs) in the survey with allocation of sample. It will also discuss the protocols, questionnaires, reference period, recall lapse, nature and items of expenditure that are to be used for data collection from the households and the elderly individuals. This chapter will also include background characteristics of the study area i.e. geographical elaboration of the Haryana state, its demographic conditions, size and growth of population in Haryana, economic performance of the state which explains the involvement of the population in different sectors of the economy, GSDP status and growth of GSDP of the state, sectorial composition of GSDP, per capita income, infrastructural status which includes transportation status, irrigation facilities and energy status in the state and social status; education status, health status, medical facilities and drinking water facilities.

The second chapter will discuss socio-economic profile of elderly in Haryana. It will also include the pattern of OOPHE on elderly and linking it to socio-economic and demographic background characteristics of the individuals and the households. Living arrangements, work,

income, savings, pension, decision making etc. by the elderly in the households will be included in this chapter.

The third chapter will explain the health seeking behaviour of the elderly population of the study area. This chapter will assess the behaviour of the respondents and their household members when they have health issues. In this analysis the behaviour will be analysed by further bifurcating the elderly population in different age categories. It will also include the examination of the financial position of elderly and their households

The fourth chapter will include analysis of out of pocket health expenditure (OOPHE) and its determinants. Patterns of OOPHE on elderly in a household in the context of non-communicable diseases, communicable diseases, injuries, accidents and other health conditions and composition of OOPHE in terms of drugs, medical equipment, ancillary services, insurance premiums etc. will be discussed in this chapter. This chapter will also dwell on consequences of OOPHE along with the sources of financing the OOPHE and strategies that the household adopt for undertaking such expenditure.

The fifth chapter will incorporate the summary and conclusions of the study, policy and program recommendations based on field evidences and identification of issues or areas for further research or investigation in the subject of OOPHE in the state of Haryana.

Time frame of Ph.D thesis completion

The proposed research study will have different phases of work as indicated below (Table 7) which will be undertaken either singularly or simultaneously. The time duration for completing the study will be two and half years from the date of approval of synopsis by RAC.

Table 7: Time frame of Ph.D. thesis completion

Sr. No.	Nature of Activity	Time duration
1.	Updating of review of literature	4 Months
2.	Finalization of data collection tools and protocols	2 Months
3.	Collection of field data through primary survey and collection of secondary data.	6-8 Months
4.	Data editing, processing and analysis	6 Months
5.	Thesis writing	1 Year
6.	Total duration of proposed study	2.5 Years

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