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Financing of Health Care Expenditure of Indoor Patients in Rural Punjab: A Study of Non - Communicable Diseases

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Abstract: ***This paper deals with the financing pattern of non - communicable diseases expenditure in rural Punjab. it is established in the relevant literature that healthy people play a substantial role in the economy. Since better or bad health directly or indirectly impacts economic growth in their own way. Non - communicable diseases prevalence has increased in terms of deaths and disability more than communicable diseases. Therefore, it is natural that the burden of non - communicable diseases in monetary terms would be increased on households. Hence, there becomes a need to examine the source of finance for expenditures. The study has conducted primary and secondary data. The study results shows that cancer, diabetes, and cardiovascular are the leading diseases in this pattern of non - communicable diseases. On the other side, financing of the NCDs patients' expenditure largely depends on their pocket. As a result, households have been pushed into debt trap. In the end, the study suggests that government needs to take step in several dimension such as financial assistance, reduce the prevalence of NCDs and so on.***

Keywords: Non - communicable diseases, Health Care Expenditure, Financing Pattern, Indebtedness, Punjab

1. Introduction

Good health plays a very considerable role in the economic growth and development of a country. Good health is not only the absence of illness/disease; it is also the capability of people to enlarge their prospective life years during their whole lives (Kaur, 2017). Improving the health status of people has become the most important objective of every country's development agenda for two reasons. First, improved health status has directly become relevant for measuring the socio - economic welfare of the people (Sen, 1985). Second, an improvement in health status leads to better educational attainments of children in the schools (Bartal and Taubman, 1979), increases labour supply (Grossman and Benham, 1974), achieve greater economic productivity (Strauss and Thomas, 1995) and more earnings for the labour force (Luft, 1976). From these benefits, mainstream growth economists across the world countries favoured public provisioning of health care services. They stated that more public expenditure on health and healthcare services is the most productive investment that enhances the productive capacity of human beings by keeping them healthy both physically and mentally (Mushkin, 1962: Schultz, 1970; World Bank, 1993; and Misra, et al.2003).

An examination of the economic literature on health care services produced so far both in developed and under - developed countries (Singh, 1991) revealed that public health services generally stand for providing quality health care and treatment at low/zero cost against diseases/illnesses; and preventing occurrence of disease/illnesses through creating strategic facilities such as public health education, immunization, safe drinking water and better sanitation (Kumar, 2010; Singh, 2016). These studies also decoded that there are sound and abundant social and economic reasons behind this strategy adopted by the state and/or cited three main reasons in favor of public health interventions in a country. These reasons are: (i) 'achieving equity' in the health outcome across different societies; (ii) 'market failure' in the purchase and create the provisions of health services; and (iii) 'imperfect information' on the part of the people about their health problems and available treatment processes (Grosh and Glewwe, 2000).

A perusal of the basic principle of health economics showed that access to economic healthcare is largely determined by how the healthcare services are financed and organized in a country (Duggal, 2007) and how the people perceived the benefits of healthcare. All those countries who claimed that their citizens are enjoying better and universal access to health care have been financing healthcare sectors through the tax - payers' monies or social/national insurance or a mixture of both. In these countries, an autonomous public agency (mostly a health department) or a few coordinated agencies (departments) mandated by the law pooled resources to finance health care under a regulated system. The UK, Canada, Sweden, Germany, South Korea, Australia, Japan and Costa Rica are very few examples of such a publicly funded healthcare system (Duggal, 2007). The experiences of these countries suggested that a high proportion of their public resources are being allocated to the health sector - a key factor to achieve equity in assessing health care and health outcomes in these countries. Interestingly, public expenditure in the most of these countries accounts for nearly 80 percent of people's total healthcare expenditure (OECD, 2003). In contrast, public health expenditure in India accounted for just 17 percent of people's health expenditure and the rest of health expenditure was contributed by the beneficiaries. That is the main reason that India has a poor equity record in access to health care and health outcomes (WHO, 2004).

On the other hand, non - communicable diseases are a major concern globally as it has been increasing at pace. In 2016, non - communicable diseases comprised 52 percent of all deaths in India, including cardiovascular diseases (27%), chronic respiratory diseases (11%), cancer (9%), diabetes (3%), and other NCDs (13%). The prevalence of NCDs is likely to increase in the coming years due to higher life expectancy as well as factors such as urbanization and industrialization (Gupta, 2019). With the increasing prevalence of NCDs, it is natural that the burden of expenditure on households would be increased. To accomplish the objectives of the study, this paper has been divided into five parts. Firstly, it deals with the introductory part and secondly, it discusses the data source and methodology. Further, it highlights the financing pattern of health care (overall) expenditure in Punjab as well as the country. Moreover, in the fourth part, the paper highlights the types and treatment expenditures of NCD patients. The fifth part of the paper deals with the source of Financing and Indebtedness of Indoor Patients in rural Punjab. next part. In the end, the concluding part has been discussed.

2. Data Sources and Methodology

The study is largely based on the primary data. However, the secondary data, both published and unpublished forms, have been used for building a support base to the main theme of study. The main sources of secondary data used in the study are: (i) Statistical Abstract of Punjab published by the Economic Adviser, Government of Punjab; and (ii) national reports of National Sample Survey Organisation. (iii) State Health Accounts Punjab (2014 - 15). In addition, some secondary data has been in use from the individual research papers, books and non - government agencies dealing with the health statistics and problems of the people. Various statistical tools like percentages, averages, compound growth rate, combined mean, etc. have been used for the purpose of displaying quantitative analysis.

The study has taken into account of the household rather than individuals as the basic unit of analysis. In fact, health outcome of an individual depends upon the composition of households and how it is being organized. Our concern with the household as a unit of analysis stems from the existence of a central decision making unit within the family, command over the resources, communicability and hereditary aspects associated with many diseases (Singh, 1991).

The primary data were collected from 180 rural households located in 12 villages of Bathinda district of Punjab. For conducting the survey, a multi - stage sampling technique was applied. The selection of Bathinda district was done purposely. Of the eight blocks in Bathinda district, three blocks (Maur, Sangat and Nathana) were selected by non contiguous criteria. Further, 12 villages (four from each block) were selected randomly based on the population classification (less than 1499, 1500 - 2499, 2500 - 3999 and 4000+ populations). In each of these villages, only those households were listed where at least one family member was suffering or suffered from the NCDs and stayed for 24 hours and above duration of the time at the any hospital/health centre for indoor treatment. Of these listed households, 180 households were selected randomly through the lottery method. If any selected household was unwilling to share the information or the households had left the village or the house was locked or for any other reason, a suitable replacement was made.

Further, 180 sampled households were divided into three broad categories of households, i. e., high status, medium status, and low status. Three major characteristics were selected to differentiate the socio - economic status of sampled households, i. e., educational level of household head, primary occupation of household, and monthly per capita consumption expenditure (instead of per capita income) of the household. Further, these characteristics were given weight - age in descending order from 7 to 1 in terms of education level of household head, main occupation and monthly per capita consumption expenditure, the former denoting the better - off position and the latter denoting bottom - off position.

3. Source of Financing Health Care in India and Punjab

Further an analysis of total health care expenditure in Punjab by different sources (Table - 1) revealed almost a similar pattern. In Punjab, total health care expenditure incurred consisted of public sources (Union, state and local governments), private and social insurance, out - of - pocket expenditure (private), etc. The Union Government's health expenditure has been made through many different channels such as the National Health Mission, central government's grants - in - aid given to other health schemes (e. g. family planning, control of communicable diseases, etc.), and funds allocated to the tertiary health care institutions such as Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh. An analysis of data (Table 1.2) highlighted that out of total health care expenditure incurred (Rs.13414.38 crores) by Punjab, a little more than three - fourths (76.56 percent) was borne by the families/households; 15.30 percent of health expenditure (Rs.2052.67 crore) was made by the state government; 3.20 percent (Rs.429.46 crore) shared by the central government; and 2.05 percent (Rs.274.46 crore) came from the Employees' State Insurance Scheme (ESIS). Further, big firms/industries shared just 1.95 percent (Rs.261.60 crore) of total health care expenditure in Punjab. This little contribution made by the big firms/industries revealed underdeveloped industrial sector of Punjab. Moreover, local bodies and not - for - profit (NGOs) contributed as low as 0.49 percent and 0.43 percent shares of total health expenditure respectively. Surprisingly, the share of tax financed health insurance was negligible (0.02 percent) in Punjab.

Table 1: Financing of Health Care Expenditure in Punjab by Sources, 2013 - 2014

Entities	Rs. (in Crore)	Percent Share	Per Capita (Rs.)
Central Government	429.46	3.20	155
State Government	2052.67	15.30	963
Local Bodies	66.16	0.49	24
Social Insurance	274.46	2.05	99
Tax Financed Insurance	2.18	0.02	1

Family/Household (OOP)	10270.32	76.56	3702
Firm/Industries	261.60	1.94	94
Not - for - Profit (NGOs)	57.53	0.43	21
Total	13414.38	100.00	5059

Source: State Health Accounts Punjab 2013 - 14.

On the other hand, analysis of per capita total health expenditure in India and per capita health expenditure incurred by households and government (at current prices). Table - 2 indicates that two - third part of the per capita expenditure was incurred by household while the rest part is incurred by governments and others which indicate that a large proportion of health expenditure is coming from the out of pocket. On the other hand, per capita total health expenditure was Rs.3638 during 2013 - 14 compared to Rs.1228 during 2004 - 05 and 2001 - 02 (Rs.1021) which shows the per annum growth rate of per capita total health expenditure had been increasing faster between (12.83 percent) 2004/05 - 2013/14 compared to 6.35 percent during 2001/02 - 2004/05. Per capita, household expenditure on health (at current prices) increased from Rs.734 during 2001 - 02 to Rs.2465 during 2013 - 14. Per capita, public expenditure on health (at current prices) increased from Rs.207 during 2004 - 05 to Rs.1042 during 2013 - 14. The annual rate of per capita household expenditure on health was increased in faster between 2004/05 - 2013/14 (12.14 percent) compared to 2001/02 - 2004/05 (6.03 percent). Per capita, government expenditure on health grew at 17.61 percent per annum during 2004/05 - 2014/15 compared to 5.35 percent per annum during 2001/02 - 2004/05. The per capita other expenditure on health was Rs.231 during 2013 - 2014 compared to Rs.111 during 2004 - 05 and during 2001 - 02 (Rs.90). The annual growth rate of other expenditure on health was increased faster between 2004/05 - 2013/14 (8.24 percent) compared to 2001/02 - 2004/05 (7.24 percent).

Table 2: Per Capita Health Expenditure in India at Current Prices, 2001 - 02, 2004 - 05, and 2013 - 14.

Indicators	Per capita health expenditure in Rs.			Growth rate per annum	
	2001 - 02	2004 - 05	2013 - 14	2001/02 - 2004/05	2004/05 - 2013/14
Household Expenditure (at current prices)	734	875	2465	6.03	12.14
Govt Expenditure (at current prices)	207	242	1042	5.35	17.61
Other Expenditure (at current prices)	90	111	231	7.24	8.48
Total Health Expenditure (at current prices)	1021	1228	3638	6.35	12.83

Source: NHA estimates2016 and (DILIP and Nandraj, 2017)

4. Types and Treatment Expenditures (Rural Punjab): Non - Communicable Diseases

So far, the paper has discussed the financing pattern of healthcare expenditure in Punjab as well as per capita expenditure financed by different sources in India. However, this section deals with the treatment expenditure of NCDs patients and their source of finance or how they manage their expenditure when they stay in hospital (Indoor Patients) due to their illness in rural Punjab especially in case of non - communicable diseases. Non - communicable diseases persist long time relative to communicable diseases and sometimes these patients stay in hospital. Therefore, they incurred treatment expenditure.

The data (table - 3) showed that the different types of NCDs found among the sampled households, 35.56 percent were cancer patients, which showed a majority in the sampled patients, followed by the diabetes patient (18.33 percent), heart patients (26.11 percent), injuries patient (9.44 percent), asthma patient (4.44 percent), mental abnormality (2.22 percent), joint pains (1.67 percent), Blood pressure (1.67 percent) and other patients (0.56 percent). In the case of different categories of household status, cancer disease was more prevalent (40.30 percent) in the medium status households compared to the high status (39.66 percent) and low status households (25.45 percent). Diabetes disease was more prevalent in the low status households (21.82 percent) followed by the high status (18.97 percent) and the medium status households (14.93 percent). Heart disease was more prevalent in the medium status households (28.36 percent) compared to the high status (25.86 percent) and low status households (23.64 percent). In the case of injuries, 12.73 percent patients belonged to the low status households, followed by the high status (8.62 percent) and medium status households (7.46 percent). Mental abnormality disease was more prevalent in the low status households (5.45 percent) followed by the medium status households (1.49 percent), but in the high status households, no mental abnormality patients was reported. Joint pains were only prevailed in the high status households (5.17 percent) but do not prevail in the medium status and the low status households. Blood pressure was found in the medium status households (2.99 percent) and the low status households (1.99 percent), but do not prevail in the high status households. Asthma disease was more prevalent in the low status households (9.09 percent) compared to the medium status (1.49percent) and low status (1.72 percent) households. Other diseases were only prevalent in the medium status households (1.49 percent).

Table 3: Distribution of Patients by Types of NCD.

Types of NCD	**Status of Households**			
	High	**Medium**	**Low**	**Total**
Cancer	23	27	14	64
%	39.66	40.3	25.45	35.56
Diabetes	11	10	12	33
%	18.97	14.93	21.82	18.33
Heart	15	19	13	47
%	25.86	28.36	23.64	26.11
Injuried	5	5	7	17
%	8.62	7.46	12.73	9.44
Mental abnormal	0	1	3	4
%	0.00	1.49	5.45	2.22
Joint pains	3	0	0	3

%	5.17	0.00	0.00	1.67
Blood pressures	0	2	1	3
%	0.00	2.99	1.82	1.67
Asthma	1	2	5	8
%	1.72	2.99	9.09	4.44
Others	0.00	1	0	1
%	0.00	1.49	0.00	0.56
Total	58	67	55	180
%	100.00	100.00	100.00	100.00

Source: Primary Survey

The data (table - 4) highlight that overall, per patient expenditure of indoor treatment expenditure was of NCDs Rs.119759/ - . Since the NCDs are considered to be the diseases of life styles, cost of treating such illness/disease was estimated to be very high in the case of high status households (Rs.140476/ -) compared to the medium status (Rs.135048/ -) and the low status households (Rs.79288/ -). Across the major item of health expenditure i. e., medicines/injections cornered more than one - half of per patient expenditure (50.96 percent), followed by the hospital stay (12.86 percent), diagnostic tests (11.31 percent), operation (9.88 percent), transport cost (4.30 percent), consultation fees (3.55 percent) and special diet (3.34 percent), Interestingly, special diet and surgery consisted of a small portion of per patient expenditure (2.79 percent). Across the various status of households, diagnosis test constituted 13.01 percent of per patient cost in the high status households compared to the medium status (12.62 percent) and the low status households (10.38 percent). On the other hand, medicines/injections cornered away 58.84 percent, 49.41 percent and 48.47 percent of per patient expenditure in the low, medium and high status households respectively. As expected, per - patient indoor expenditure incurred on different items, in absolute terms, increased when one moved from the low status patients to the high status patients, with few exceptions. In the case of patients seeking indoor treatment, per patient NCDs patient expenditure, in relative terms, did not show much variation across different categories of patients.

Table 4: Per patient Treatment Expenditure of Indoor NCD Patients by Category of Households.

Item	Status of Household			
	High Status	Medium Status	Low Status	All
Consultation Fees	5578	3899	3290	4254
%	3.97	2.89	4.15	3.55
Medicines, Injections	68084	66721	46653	61028
%	48.47	49.41	58.84	50.96
X - Ray, etc.	18269	17040	8231	14744
%	13.01	12.62	10.38	12.31
Surgeries, if any	621	634	218	503
%	0.44	0.47	0.28	0.42
Transportation cost	5647	6702	2736	5150
%	4.02	4.96	3.45	4.3
Special Diet, if any	6316	3740	1893	4006
%	4.5	2.77	2.39	3.34
Hospital stay	18806	16481	10500	15402
%	13.39	12.2	13.24	12.86
Operation	13328	16254	4855	11828
%	9.49	12.04	6.12	9.88
Others	3828	3576	913	2843
%	2.72	2.65	1.15	2.37
Total	140476	135048	79288	119759
%	100	100	100	100

5. Source of Financing and Indebtedness of Indoor Patients (Rural Punjab): Non - communicable Diseases

Table - 5 revealed different sources through which the NCDs patients/households financed their indoor treatment expenditure. An assessment of the data clarified that, on average, 69.46 percent of NCD patients financed their indoor expenditure through borrowed funds and the rest of the households (30.54 percent) used their past/current savings of through insurance claims or by selling assets or combination of all these. For instance, 37.93 percent of NCD patients in the case of high status households financed treatment expenditure through own funds (36.21 percent through current/past savings and 1.72 percent through selling assets) compared to the 32.84 percent in the case of medium status households (16.42 percent through current/past savings, 8.96 percent through insurance and 7.46 percent through sale of assets) and 20.00 percent in the case of low status households (3.64 percent through current/past savings, 3.64 percent through insurance and 12.72 percent through sale of assets).

The data also showed that 80 percent of NCD households in the low status category were dependent on borrowed funds as compared to 67.16 percent of households in the medium status category and 62.07 percent in the high status category. On average, within the own sources of financing, current income and past savings together contributed 18.88 percent of the share, followed by insurance claims (4.44 percent) and selling assets (7.22 percent). Within the borrowings a major source of financing was the money lenders (60.56 percent), friends/relatives (6.67 percent), commission agents (1.67 percent) and others (0.56 percent). Further, there were wide variations about the relative importance of different sources of financing indoor expenditure across different categories of households.

Table 5: Distribution of Sampled Households by Source of Financing Indoor Expenditure

Sources	Status of Households			
	High	Medium	Low	Total
Current income/Past saving	21	11	2	34
%	36.21	16.42	3.64	18.88
Insurance claims	0	6	2	8
%	0	8.96	3.64	4.44
Selling assets	1	5	7	13
%	1.72	7.46	12.72	7.22
Sub - Total	22	22	11	55
%	37.93	32.84	20	30.54
Borrowing source				
Commission agent	2	1	0	3
%	3.45	1.49	0	1.67
Landlord/money lender	32	37	40	109
%	55.17	55.22	72.73	60.56
Friend/Relatives	2	6	4	12
%	3.45	8.96	7.27	6.67
Other	0	1	0	1
%	0	1.49	0	0.56
Sub - Total	36	45	44	125
%	62.07	67.16	80.00	69.46
Total	58	67	55	180
%	100	100	100	100

Source: Primary Survey

Table - 6 pointed out that the average per - patient debt due to NCDs illness was (Rs.82578/ -). Across the different categories of diseases, a large proportion of debt burden on NCDs patients (Rs.88284/ -) in the medium status households, followed by the high status (Rs.87879/ -) and the low status households (Rs.70036/ -). In the case of types of diseasesa large proportion of debt is due to cancer illness (Rs.124375/ -), followed by mental abnormality (Rs.110000/ -), injuries (Rs.98882/ -), heart diseases (Rs.65979/ -), asthma (Rs.55000/ -), diabetes (Rs.36636/ -), others (Rs.30000) and joint pains (Rs.1000). By comparing the different category "in relative term" highest debt burden on medium status household compared to high status and low status household.

Table 6: Distribution of Indebtedness Burden due to NCDs Illness by Types of Diseases. (Rs.)

Types of Diseases	Status of Households			
	High Status	Medium Status	Low Status	Combined Mean
Cancer	127391	133333	102143	124375
%	34.59	23.85	22.88	23.83
Diabetes	53636	15000	39083	36636
%	14.56	2.68	8.76	7.02
Heart	64067	72632	58462	65979
%	17.4	12.99	13.1	12.64
Injuries	123200	93000	85714	98882
%	33.45	16.64	19.2	18.95
Mental Abnormality	0	140000	100000	110000
%	0.00	25.05	22.4	21.08
Joint Pains	0	0	0	0
%	0.00	0.00	0.00	0.00
Blood Pressures	0	0	3000	1000
%	0.00	0.00	0.67	0.19
Asthma	0	75000	58000	55000
%	0.00	13.42	12.99	10.54
Others	0	30000	0	30000
%	0.00	5.37	0.00	5.75
Total	368294	558965	446402	521872
%	100.00	100.00	100.00	100.00
Mean	87879	88284	70036	82578

Source: Primary Survey

6. Conclusion

Globally, Non - communicable diseases prevalence has been increasing over the past years. This study was conducted in rural Punjab by collecting data from 180 households who were NCDs patients. The study reveals that public institutions like centre and state government, and local bodies, share in health expenditure is very meager in Punjab as well as the centre is fall in the same queue. As a result, a large proportion (75 percent approximately) of health expenditure comes from the out of pocket of the households. The study found that cancer (35.56 percent) diabetes (18.33 percent), and heart patients (26.11 percent) have been the dominant diseases in rural Punjab followed by injuries patient (9.44 percent) asthma patient (4.44 percent), mental abnormality (2.22 percent), joint pains (1.67 percent), Blood pressure (1.67 percent) and other patients (0.56 percent). Further, per patient expenditure of indoor treatment expenditure was of NCDs Rs.119759/ - . Since NCDs are considered to be diseases of lifestyles, the cost of treating such illnesses/diseases was estimated to be very high. According to the status of the household, high status households' expenditure was higher (Rs.140476/ -) compared to the medium status (Rs.135048/ -) and the low status households (Rs.79288/ -). In the case of the financing pattern of households, on average, 69.46 percent of NCD patients financed their indoor expenditure through borrowed funds and the rest of the households (30.54 percent) used their past/current savings through insurance claims or by selling assets or a combination of all these. Moreover, borrowing funds and household status have negative relation: when status gets down, it borrowing fund gets increase. This argument is corroborated by the study data such as it shows that 80 percent of NCD households in the low status category were dependent on borrowed funds as compared to 67.16 percent of households in the medium status category and 62.07 percent in the high - status category. The borrowing dependency of NCDs patients has pushed households into the debt trap. The data results show that the average per - patient debt due to NCDs illness was (Rs.82578/ -). Across the different categories of diseases, a large proportion of debt burden on NCDs patients (Rs.88284/ -) in the medium status households, followed by the high status (Rs.87879/ -) and the low status households (Rs.70036/ -). The study suggests that government should provide financial assistance to NCD patients and protect their citizens from this kind of disease. In addition, some measures need to be taken to reduce the prevalence of non - communicable diseases.

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