

HEALTH EXPENDITURE OF AN AGEING POPULATION WITH REFERENCE TO
TIRUCHIRAPPALLI DISTRICT, TAMIL NADU

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ABSTRACT

The world is ageing and so are India and her constituent states, including Tamil Nadu. Along with an increase in the ageing population, their healthcare needs are also increasing. They are affected by both age-related degenerative diseases as well as lifestyle diseases which require short term and long-term care. India is not yet fully prepared to take on this new emerging situation of providing appropriate healthcare provisions to this vulnerable section of her population. If this state of affairs is ignored, it could cause the country a heavy fiscal burden by means of increasing not only elderly healthcare expenditures but social security and transfer payments as well. This study makes an assessment of the health expenditure of the elderly people living in Tiruchirappalli, Tamil Nadu. The study found a majority of the elderly to be diabetic, spending poorly on healthcare, had very low health insurance coverage and majority of healthcare expenses were out-of-pocket.

KEYWORDS: Fiscal burden, Healthcare, Outpatient expenses, Inpatient expenses, Health insurance, Elderly, Insurance claim, social security, Transfer payments.

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1. INTRODUCTION

India is an ageing country with 8.6 per cent of her population categorised under the 60 and above age group. India has crossed the benchmark of 7 per cent 60 plus population (Census 2011) which qualified her as a 'Greying Nation'. With increase in the total population inching towards becoming the highest in the world, India needs to take a serious look into its ageing population and its needs. The ageing population which was 76 million in 2001 has touched nearly 104 million in 2011. This is a tremendous jump by a record 35.5 per cent in a decade's time.

An ageing population that is healthy becomes an invaluable resource and an asset to the nation. But it is also a well-known fact that, in current times due to lifestyle changes, as one ages past the 60s, degenerative health issues related to ageing combined with communicable and/or non-communicable diseases manifest themselves landing the health of the elderly people in jeopardy. Indian elderly are living longer than ever before up to the ripe old age of the 90s and further nowadays. Taking care of them is becoming a demanding situation as a majority of them are retired without any pension to fall back on during the rest of their lives. With the existence of nuclear families and children migrating to other places for employment, again a majority of the elderly are not properly cared for.

There is a no fit for all solution in providing social security to the elderly in India and hence most of the elderly continue to work after the age of 60 for their basic survival. Insurance coverage of elderly persons is very poor as a majority of them have morbidities and co-morbidities that are not covered by insurers. This is due to the fact that higher the age and higher the incidence of diseases, lesser is the insurance coverage in such cases. This situation will have a heavy impact on the economic progress of a

country and warrant a large portion of the budget allocation to be set aside for elder care by the governments. It is in this context that this study has been taken up with a view to analyse the situation in Tiruchirappalli District of Tamil Nadu and further suggest measures to cope with the emerging situation.

2. LITERATURE REVIEW

In his editorial, **Dey (2006)** wrote about the challenges of elder care in India. Of the many determinants of the quality of life, financial security, emotional security, health and well-being, the last one occupied the prime position, as all other issues became irrelevant under conditions of poor health. As no model for older people exists in India, it may be a challenge as well as an opportunity for innovation in health system development.

Irudaya Rajan (2006) in his research paper said that health problems were supposed to be the major concern of a society as older people were more prone to suffer from ill health than younger groups. Ageing was accompanied by multiple illnesses and physical ailments. Therefore, the health status of the aged had to occupy a central place in any study of the elderly population. The study on health status was all the more essential because disease patterns had serious implications for health care expenditure.

Dey, Nambiar, Lakshmi et al., (2012) felt that growth of elderly population in the coming decades would bring with it unprecedented burdens of morbidity and mortality across the country. Key challenges in accessing healthcare for the elderly included social barriers determined by gender and other social causes like religion, caste, socio-economic status, stigma etc. physical barriers included reduced mobility, declining social engagement and limited reach to the health system. Health affordability constraints included limitations in income, employment and assets as well as limitations of financial protection offered for health expenditures in the Indian health system.

Brinda et al., (2016) in their study attempted to measure socio-economic inequalities in self-reported health and healthcare visits. They also tried to identify factors contributing to health inequalities among older people aged 50 plus years. The challenges of increased burden of chronic diseases and subsequent healthcare demand have heightened concerns over the aged population. Socio-economically disadvantaged older adults made less use of health services.

3. STATEMENT OF THE PROBLEM

The healthcare expenditure incurred in the treatment of people aged sixty and above has been found to be increasing rapidly when compared to the other age groups. Most of the healthcare expenditure is out-of-pocket with very poor support from health insurance services. Several challenges arise in imparting care to the elderly people. As far as India is concerned there is no model for elder health care. A country like India needs to include preventive, curative, promotive and rehabilitative care for the ageing generation. The health care system has to be innovative enough to ensure aged based and need based health care facilities for this segment of the population. This study endeavours to make an assessment of the health status of the elderly population of Tiruchirappalli District in Tamil Nadu.

4. OBJECTIVES

1. To make an assessment of the health disorders among the elderly people of the study area.
2. To suggest steps to improve the healthcare services rendered to the elderly people.

5. RESEARCH METHODOLOGY

Srirangam, Tiruchirappalli West and Tiruverumbur – three assembly constituencies out of nine in Tiruchirappalli District, Tamil Nadu - were randomly selected based on the size of their elderly population. The sample size consisted of 385 respondents, male and female, aged above 60 years randomly selected for the study from both the rural and urban areas of Tiruchirappalli District. The respondents were distributed proportionately among the three selected assembly constituencies. An assessment of the health status of these respondents was done by collecting primary data with the help of an interview schedule that contained pertinent questions.

Data interpretation

The data collected was analysed with the help of SPSS software to arrive at the conclusions of the study. To understand the health status, disease-wise classification of the respondents, cost of outpatient treatment, in-patient treatment expenditure, insurance claims made and investigation of the level of healthcare expenditure among the various age groups among the elderly were studied in detail. The interpretations pertaining to the above investigations are explained below.

Table No:1 Disease-wise classification of respondents based on age group

Major Diseases	Age Group				Total
	60-69	70-79	80-89	>=90	
Diabetics	76	44	32	7	159
Heart Disorders	18	12	10	2	42
Hypertension	36	21	18	1	76
Visual Impairment	30	29	17	5	81
Hearing Impairment	19	24	12	5	60
Dementia	5	1	1	2	9
Kidney Disorders	5	8	3	2	18
Parkinson's	1	2	3	1	7
Alzheimer's	0	0	0	2	2
Psychiatric Disorders	0	1	0	0	1
Psychological Disorders	2	1	1	0	4
Arthritis	37	27	16	1	81
Dental Issues	12	5	2	0	19
Other Diseases	3	3	1	0	7

Source: the author

From table no:1, it is evident that out of 159 out of 385 respondents were diabetic, 42 respondents had heart disorders, 76 respondents had hyper tension, 81 respondents had visual impairments, 60 respondents presented hearing impairments, 9 respondents had dementia, 18 respondents had kidney disorders, 7 respondents had Parkinson's disease, 2 respondents had Alzheimer's disease, 1 respondent had psychiatric disorders, 4 respondents had psychological disorders, 81 respondents had arthritis, 19 respondents had dental issues, 7 respondents presented other diseases like skin issues, respiratory disorders, common illnesses and so on. It is strikingly clear that in all the age groups, diabetes was the predominant health disorder that has affected the respondents.

Table No: 2 Total out-patients (OP) cost of health care based on age group of the respondents for the period April 2018 to March 2019

Total OP Cost of Health Care	Age group				Total
	60-69	70-79	80-89	>=90	
<10000	121	91	34	13	259
10000-20000	17	8	7	3	35
20000-30000	14	11	1	0	26
30000-40000	11	2	7	0	20
40000-50000	6	3	1	1	11
50000-100000	7	1	3	0	11
100000-200000	3	7	2	1	13

200000-300000	1	2	0	0	3
>300000	3	2	2	0	7
Total	183	127	57	18	385

Source: the author

From table no: 2, an idea can be obtained regarding the total cost of health care of the respondents during a period of one year (April 2018 to March 2019). A total of (259) respondents consisting of (121) respondents in the age group (60-69) years, (91) respondents in the age group (70-79) years, (34) respondents in the age group (80-89) years, (13) respondents in the age group (above 90) years had spent less than rupees 10,000 on health care expenses during the mentioned year. A total of respondents (35) consisting of 17 respondents in the age group (60-69) years, 8 respondents in the age group (70-79) years, 7 respondents in the age group (80-89) years, 3 respondents in the age group (above 90) years had spent rupees 10,000 to 20,000 on health care expenses during the mentioned year. A total of respondents (26) consisting of 14 respondents in the age group (60-69) years, 11 respondents in the age group (70-79) years, 1 respondent in the age group (80-89) years, 0 respondents in the age group (above 90) years had spent 20,000 to 30,000 on health care expenses during the mentioned year. A total of (20) respondents consisting of 11 respondents in the age group (60-69) years, 2 respondents in the age group (70-79) years, 7 respondents in the age group (80-89) years, 0 respondents in the age group (above 90) years had spent 30,000 to 40,000 on health care expenses during the mentioned year. A total of (11) respondents consisting of 6 respondents in the age group (60-69) years, 3 respondents in the age group (70-79) years, 1 respondent in the age group (80-89) years, 1 respondent in the age group (above 90) years had spent 40,000 to 50,000 on health care expenses during the mentioned year. A total of (11) respondents consisting of 7 respondents in the age group (60-69) years, 1 respondents in the age group (70-79) years, 3 respondents in the age group (80-89) years, 0 respondents in the age group (above 90) years had spent 50,000 to 100,000 on health care expenses during the mentioned year. A total of (13) respondents consisting of 3 respondents in the age group (60-69) years, 7 respondents in the age group (70-79) years, 2 respondents in the age group (80-89) years, 1 respondent in the age group (above 90) years had spent 100,000 to 200,000 on health care expenses during the mentioned year. A total of (3) respondents consisting of 1 respondent in the age group (60-69) years, 2 respondents in the age group (70-79) years, 0 respondents in the age group (80-89) years, 0 respondents in the age group (above 90) years had spent 200,000 to 300,000 on health care expenses during the mentioned year. A total of (7) respondents consisting of 3 respondents in the age group (60-69) years, 2 respondents in the age group (70-79) years, 2 respondents in the age group (80-89) years, 0 respondents in the age group (above 90) years had spent more than 300,000 on health care expenses during the mentioned year. Out of the four age groups mentioned in this table, it is clear that the age group of (60-69) years had the majority respondents spending on health care. With increase in the age, as depicted by the higher age groups, the numbers of respondents spending higher amounts of money on healthcare were showing a declining trend.

Table No: 3 Cost of in-patient treatment incurred by the respondents during the year 2018-19

Treatment Expenditure (Rs.)	No: of respondents	Percentage
Rs.1000 to Rs.1,50,000	0	0
Rs.1,50,000 to Rs.3 lakh	1	0.3
Rs.3 lakh to Rs.4.5 lakh	2	0.5
Rs.4.5 lakh to Rs.6 lakh	2	0.5
Rs.6 lakh to Rs.7.5 lakh	3	0.8
Rs.7.5 lakh to Rs.9 lakh	3	0.8
Rs.9 lakh to Rs.10.5 lakh	4	1.0
Rs.10.5 lakh to Rs.12 lakh	31	8.1
Rs.12 lakh to Rs.13.5 lakh	2	0.5
Rs.13.5 lakh to Rs.15 lakh	2	0.5
Above Rs.15 lakh	2	0.5
Nil expenditure	333	86.5
Total	385	100.0

Source: the author

From table no. 3, it can be observed that majority of the respondents (31), 8.1 per cent spent an amount of Rs.10.5 lakh to Rs.12 lakh for in-patient treatment. Among the other respondents, (4) 1.0 per cent, spent Rs.9 lakh to Rs.10.5 lakh, (3) 0.8 per cent respondents spent Rs.6 lakh to Rs.7.5 lakh and another (3) 0.8 per cent Rs.7.5 lakh to Rs.9 lakh, (2) 0.5 per cent respondents spent Rs.3 lakh to Rs.4.5 lakh, (2) 0.5 per cent spent Rs.4.5 lakh to Rs.6 lakh, (2) 0.5 per cent spent Rs.12 lakh to Rs.13.5 lakh, (2) 0.5 per cent spent Rs.13.5 lakh to Rs.15 lakh and another (2) 0.5 per cent spent above Rs.15 lakh. Only (1) 0.3 per cent of the respondents spent Rs.1,50,000 to Rs.3 lakh, on in-patient treatment.

Table No: 4 Total amount of insurance claim received, total out-of-pocket expenditure and total expenditure of the in-patient respondents during 2018-19

No: of respondents	in-patient	Total amount of insurance claimed	Percentage of insurance claimed (%)	Out-Of-Pocket expenditure in total (Rs.)	Percentage of OOP expenditure (%)	Total expenditure on in-patient treatment (Rs.)
Insurance claimed	7	4,95,500	15.1	27,87,075	84.9	32,82,575
No claim	45	nil	—	—	—	—
Total	52	4,95,500	15.1	27,87,075	84.9	32,82,575

Source: the author

From table no. 4, the total in-patient or hospitalization expenditure of the 52 in-patient respondents has been calculated along with the total insurance claim amount settled to them. It was found that the total in-patient expenditure for 52 respondents was Rs.32,82,575 out of which Rs.4,95,500 (15.1 per cent) was the insurance claim received. As a result, the out-of-pocket expenditure was found to be Rs.27,87,075 (84.9 per cent). It can therefore inferred from table no. 4 that the out-of-pocket expenditure remains very high and **possessing health insurance does not necessarily insulate the elderly respondents from financial difficulties in times of health needs specially in terms of hospitalization.**

6. HYPOTHESIS

ANOVA – To test the significant differences in healthcare expenses based on age group.

Null hypothesis, H₀: There is no significant difference in expenses on health care between the age groups of 60 plus persons

Alternative hypothesis, H₁: There is a significant difference in expenses on health care between age groups of 60 plus persons.

Table No: 5 ANOVA – To test the significant difference based on age group

Age group		N	Mean	Std. Deviation	P Value	Result
Expense on healthcare needs per year	60-69	183	6689.071	12651.1788	0.523	Not Significant
	70-79	127	4822.0472	12181.69922		
	80-89	57	6371.9298	9120.53715		
	>=90	18	4416.6667	6358.52832		
	Total	385	5920	11802.01706		
Money spent on medicine	60-69	183	8671.86	13586.008	0.128	Not Significant
	70-79	127	6262.2	11280.308		

	80-89	57	7441.23	9741.182		
	>=90	18	2870	4239.557		
	Total	385	7423.53	12084.288		
Total cost of Diagnostic and lab test	60-69	183	1104.67	2312.031	0.482	Not Significant
	70-79	127	1337.01	2649.696		
	80-89	57	1159.65	2260.658		
	>=90	18	427.78	1644.887		
	Total	385	1157.81	2395.682		
Total cost	60-69	183	16964.7705	52175.26865	0.721	Not Significant
	70-79	127	19107.0472	63313.73809		
	80-89	57	22891.2105	57235.19179		
	>=90	18	6356.2222	14668.32806		
	Total	385	18052.8805	55710.36086		

Source: the author

7. RESULT AND INTERPRETATION

The calculated P values (0.523) for expenses on healthcare needs per year, (0.128) for money spent on medicine, (0.482) for total cost of diagnostic and lab tests and (0.721) for the total cost, were found to be more than the standard P value (0.05) and therefore it can be inferred that there were no significant differences in healthcare expenses between the age groups of 60 plus persons. Hence, **the null hypothesis H_0 has been accepted.**

Findings

1. Among the 385 respondents in the sample study 159 were diabetic, 42 were cardiac patients and 76 were hypertensive – these are lifestyle related diseases and non-communicable in nature.
2. Among the 385 respondents, 81 were affected with visual impairment, 81 had arthritis and 60 had hearing impairments – these are age related degenerative diseases and non-communicable in nature.
3. A majority of the respondents numbering 259 spent less than rupees ten thousand per year for their health needs, which indicates that most of the health care expenditure is outpatient care.
4. It was found from Table No: 2 that, as the outpatient expenditure increased the number of respondents decreased indicating that they were not able to afford the higher costs of healthcare.
5. Only 52 of the respondents received inpatient care indicating that the elderly people either preferred to postpone the need for inpatient care to a later date or did not have enough financial support to undergo the inpatient treatment.
6. Out of the 52 inpatient respondents only 7 were successful in claiming health insurance for their treatment whereas 45 respondents were unsuccessful in claiming insurance benefits.
7. The insurance claimed accounted for 15.1 per cent of the total healthcare expenditure while 84.9 per cent of the same expenditure was totally out of pocket.
8. Out of the 52 inpatient respondents, 31 of them spent Rs.10.5 lakh to Rs.12 lakh for the inpatient treatment that they had undergone. This indicates that average inpatient care expenditure for the elderly persons amounts to rupees 10 -12 lakhs.
9. Further from the hypothesis that was assumed and tested, it was found that there were no differences in the healthcare expenses among the various classified age groups of the respondents

indicating that healthcare expenses remained almost the same irrespective of the difference in the age group to which the elderly respondents belonged.

Suggestions

1. A serious effort needs to be taken by the governments, non-governmental and private stakeholders to provide healthcare services to the elderly citizens through a well-planned network system that integrates medical treatment, home-care, insurance coverage, elder support services and elder friendly infrastructure provisions.
2. Health insurance for the elderly irrespective of their financial status can be made mandatory after the age of 60 years.
3. Health check-ups can be made mandatory through house visits by health care personnel at regular intervals, using the existing public primary and secondary healthcare centres.
4. Awareness on lifestyle diseases and their complications in later ages can be disseminated through the social media to enlighten the younger generations to take necessary preventive and precautionary measures to avoid health complications in old age.
5. Young entrepreneurs can be encouraged to innovate and establish start-ups that can cater to the needs of the healthcare for the elderly.

8. CONCLUSION

Ageing is a phenomenon that has a great impact on economic progress of a country. The older the country the lesser will be its capacity to achieve economic progress. With ageing catching up in different countries all over the world, it is high time that the Indian government as well as the government of Tamil Nadu give serious consideration to the health needs of the elderly population. With India racing towards becoming the diabetes capital of the world in the background of the elderly population also being afflicted with such lifestyle diseases, the healthcare burden in the country could increase multi-fold. Necessary action needs to be initiated at the earliest to prevent heavy burden on the fiscal status of the nation and the constituent states.

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