ORIGINAL RESEARCH PAPER
Volume - 11 | Issue - 05 | May - 2022 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A STUDY OF OUT-OF-POCKET EXPENDITURE ON HEALTH AMONG HOUSEHOLDS IN A RURAL POPULATION OF MAHARASHTRA

Community Medicine

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ABSTRACT

Out-of-pocket expenditure (OOPE) is the principal source of health care finance in most Asian countries, and India is no exception. Availability and accessibility of the health care are important for the overall health status of any community 1. Health expenditures of households are the expenditures incurred by households on health care and includes out-of-pocket expenditures and prepayments. OOPE are the expenditures made directly by individuals at the point of service where the entire cost of the health, goods or services is not covered under any financial protection scheme. When an individual or household has to bear the out of pocket expenditures for health care, most of the times expenditures tend to be high in relation to their income which leads to low living standards (decrease in expenditure on basic necessities like food and clothing). OOPE becomes a burden for the poor households or individuals especially when they have to spend large amounts from their disposable income 2. **AIM & OBJECTIVE:** To assess the magnitude and determinants of out-of-pocket expenditure on health among households in a rural population. **METHODOLOGY:** A longitudinal community based study carried out among households in a rural population of Chanai village, Tal.Ambajogai, Dist.Beed, Maharashtra from 1st November 2017 to 31st October 2018 in 400 households including 2009 household members from these households were studied. **RESULTS & CONCLUSION:** Magnitude of household out-of pocket expenditure per year in rupees with respect to mean and std. deviation in terms with total expenditure was 2130.19 ±369.84. Mean total OOP expenditure of household with chronic diseases in household members was significantly more than household members without chronic diseases.

KEYWORDS

Magnitude, Out-of pocket, Expenditure, Health, Households.

INTRODUCTION

Out-of-pocket expenditure (OOPE) is the principal source of health care finance in most Asian countries, and India is no exception. Availability and accessibility of the health care are important for the overall health status of any community[1].

Health expenditures of households are the expenditures incurred by households on health care and includes out-of-pocket expenditures and prepayments. OOPE are the expenditures made directly by individuals at the point of service where the entire cost of the health, good or service is not covered under any financial protection scheme. When an individual or household has to bear the out of pocket expenditures for health care, most of the times expenditures tend to be high in relation to their income which leads to low living standards (decrease in expenditure on basic necessities like food and clothing). OOPE becomes a burden for the poor households or individuals especially when they have to spend large amounts from their disposable income[2].

Majority of Indian population lives in rural areas, where facilities for health care are much more behind their urban counterpart. Regarding health expenditures, most figures are indirect statistical estimates from different national and international organizations[3].

In spite of the economic growth in India, wealth has not been distributed equally between the rich and the poor. Increased use of technology in diagnostics and treatment of diseases, together with the rising knowledge and expectations of the population regarding therapeutic measures, has led to an increase in the cost of treatment. This increase in health care cost in turn has led to inequity in access to health care services[4]. In view of this high share of out-of-pocket expenditure on health care, the Government of India has commissioned a task force, to develop a framework for universal health coverage, as a part of the 12th five year plan[4].

In Maharashtra, per capita expenditure was 1576, public spending was 22.1 percent. In some areas where the services of a primary health centre (PHC) are not accessible to a majority of the population due to inconvenient distance, people in these areas are more likely to avail facilities in the private sector which may lead to higher per capita OOP health expenditure. OOP expenditure exacerbates poverty and has a negative impact on equity and can increase the risk of vulnerable groups slipping into poverty[5].

Around 600 million people fail to access the health services they need and 63 million Indians are living in poverty because of healthcare costs. Around two thirds of health expenditures in India are made in the form of user fees, which is one of the highest rates in the world[6].

NEED FOR THE STUDY

There is need to understand the behaviour of expenditure on health by rural population, in our country where approximately more than 70% population is a rural population unfortunately we have limited literature available to evaluate the out-of-pocket expenditure of households in a rural population & also some studies on healthcare expenditure have been conducted in India but most of these studies are cross-sectional in nature and provide data at a single point of time. With this regard, it was thought of importance to make a longitudinal community based study about the out-of-pocket expenditure on health among households in a rural population with the objective to assess the magnitude and determinants of out-of-pocket expenditure on health among households in a rural population.

MATERIALS & METHODOLOGY

1.Study design: A community based longitudinal study.

2.Study setting: The study was carried out among households in a rural population of Maharashtra i.e. in Chanai village, Tal.Ambajogai, Dist.Beed, Maharashtra in a field practice area of the tertiary care hospital.

3.Ethical considerations: Ethical committee approval was obtained from the Institutional ethical committee prior to the start of the study.

4.Study duration: The present study was carried out over a period of 1 years from **1st** November **2017** to **31st** October **2018**.

5.Study population: 50% of households[3] in a rural population of Maharashtra were selected by systematic random sampling and enrolled in the study as per following inclusion and exclusion criteria.

Inclusion criteria:

a. Households residing more than 6 months in a rural area under study.
b. Households who were given consent for the study.

Exclusion criteria:

Households residing less than 6 months duration in a rural population and guest visitors in a rural population under study.

6.Sampling Technique and Sample Size: Study was done in Chanai village, Tal.Ambajogai, Dist.Beed, Maharashtra in a field practice area of the tertiary care hospital, from that village **50%** households[3] were selected by systematic random method after taking household list from Grampanchayat of the village. All households were numbered and samples were selected by systematic random sampling. Households were enrolled in this study according to inclusion and exclusion criteria. Thus with the list, out of 800 households from a village 400 households were enrolled in the study.

7.Conduct of the Study:

Selection of a village:

Chanai village was selected for the study out of three adopted villages under the field Practice area of a tertiary care hospital by lottery method.

Selection of households:

Study was done in a Chanai village in a field practice area of the tertiary care hospital. The list of all households in a village was obtained from Grampanchayat of the village. All households were numbered and samples were selected by systematic random sampling. So alternate household was selected and enrolled in the study after obtaining the consent from the head of the household. With the help of the list obtained from the Grampanchayat of the village total 800 families were enlisted and with the sampling technique 400 households were enrolled for the study.

Consent of study participants:

Head of the households from a selected village were informed about the objective and purpose of the study. Those who were willing to participate in the study, their written informed consents were taken and enrolled in the study.

Data collection:

- The objective and purpose of the study was explained to the respective Head of the households. Before starting the data collection process, a good rapport was built with the household members by giving a short introduction and pre-designed and pre-tested questionnaire was explained.
- Total 4 face to face visits were conducted, one face to face visit for every 3 month for 1 year (12 months) was conducted and in between these face to face visits monthly follow up of the households were obtained by phone contact from head of the household only and if head of the household was not came in contact on phone due to some reason then face to face visit was conducted.
- The head of household was interviewed by the investigator and data was collected using pre-designed and pre-tested questionnaire which includes socio-demographic factors such as house number, name of head of household, mobile number, age, sex, religion, type of family, socioeconomic status, monthly income of the household, family composition containing name of all family members, their age, sex, marital status, relation to head of the household, education, occupation, health related issues, household out-of-pocket expenditure with the follow-up for consecutive 12 months containing month, name of ill member, type of health facility, disease, direct ,indirect and total health expenditure in rupees.

Data compilation:

Collected data was entered into Microsoft-Excel 2010 worksheets and coded appropriately.

Data analysis:

Data was analysed using Microsoft Excel 2010, Open EPI-Info Version 3.01 updated on 2013/04/06. Descriptive statistics (percentage, mean, standard deviation) were used to describe the data appropriately.

Advice and Referral services: All households were advised about the appropriate health facility available nearby Government and private health care centers, importance of daily physical activity and healthy diet. All those household members having morbidities or any other health problems detected during the study period were referred to the tertiary care hospital for further investigations and management.

Reference Citation[8]:

Vancouver system of listing and citing of reference was used. The references were numbered according to their appearance in the text and listed accordingly.

OBSERVATIONS AND RESULTS

A. Socio-demographic Characteristics:

Figure 4: Distribution of households on the basis of type of family:-

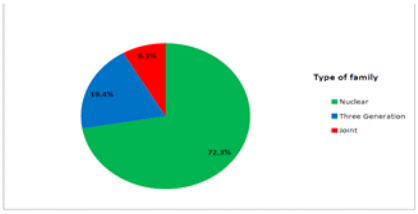

Figure 5: Distribution of households on the basis of socioeconomic status:-

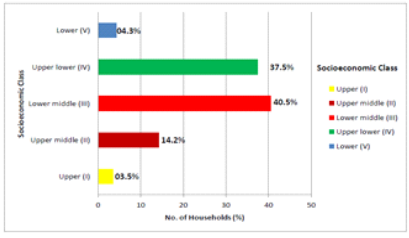

Table.1: Distribution of household members on the basis of marital status:-

Marital Status	No. of Household Members (n)	Percent (%)
Married	1142	56.8
Unmarried	785	39.1
Widow	80	04.0
Divorced	2	00.1
Total	2009	100.0

B.Distribution of households on the basis of having Out-Of-Pocket Expenditure on health (Table-2):-

Table-2.

Out-Of-Pocket Expenditure	No. of Households (n)	Percent (%)
Yes	357	89.2
No	43	10.8
Total	400	100.0

Study was conducted in Chanai village under field practice area of tertiary care hospital to assess magnitude of out-of-pocket expenditure on health among households in a rural population of Maharashtra. Total (n) 400 households including 2009 household members from these households were studied.

In this study out of 2009 household members majority of household members 1200(59.8%) were from age group 20-60 and least of household members i.e. 138(06.9%) were from age group <5 years of age (Figure.1), 1058(52.7%) were males and 951(47.3%) were females (Figure.2), whereas out of 400 households 347(86.8%) were Hindu, 51(12.8%) were Muslims and 2(00.4%) were Sindhi (Figure.3), 289(72.3%) belonged to nuclear family and least 33(08.3%) belonged to joint family (Figure.4), 162(40.5%) were predominantly belonged to lower middle class and least i.e. 14(03.5%) were belonged to upper class as per Modified Kuppuswami Socioeconomic Classification -20197 (Figure.5), majority were married i.e. 1142(56.8%) (Table-1).

Table-2 showed the distribution of households on the basis of having out-of-pocket expenditure. Out of the total 400 households, 357(89.2%) households had out-of-pocket expenditure and 43(10.8%) didn't have any type of out-of-pocket expenditure.

C. Magnitude of out-of pocket expenditure (OOP) with respect to various modes per year among households {in rupees ( )}:- (Table-3)

Table-3.

Type of Expenditure	Modes of OOP Expenditure	Mean (₹)	Std. Deviation
Direct expenditure	OPD expenditure	155.33	15.65
	IPD expenditure	159.45	18.09
	Medication , investigations & others	1641.48	305.75
Total Direct expenditure		1956.26	339.49
Indirect expenditure	Wedges loss, travelling, accommodation, food	173.93	30.35
Total Expenditure		2130.19	369.84

Table-3 shows various modes of out-of pocket expenditure per year among households with respect to mean and std. deviation in direct expenditure, indirect expenditure and total expenditure. In direct expenditure mean and std. deviation of out-of pocket expenditure was 1956.26 ± 339.49, for indirect expenditure it was 173.93 ± 30.35, for total expenditure it was 2130.19 ± 369.84.

D. Determinants of out-of pocket expenditure (OOP) among households:-

Table.4: Distribution of households availing type of hospital/health facility:-

Type Of Hospital/Health Facility	No. of Households (n)	Percent (%)
Government	263	65.8
Private	35	08.6
Both Government & Private	89	22.3
Locally available health care	13	03.3
Total	400	100.0

Table.4 shows the distribution of households under study according to type of hospital/health facility they used to avail health care. Out of the total 400 households, majority of households i.e. 263(65.8%) used government hospital/health facility and least i.e. 13(03.3%) used locally available hospital/health facility.

Table.5: Distribution of households according to number of days of hospitalization per admission in one year:-

Number of Days of Hospitalization	No. of Household Members	Percent (%)
0-3	305	76.25
4-7	69	17.25
>7	26	6.50
Total	**400**	**100**

Table.5 shows the distribution of households according to number of days of hospitalization per admission in one year. Out of the total 400 households, majority of households i.e. 305(76.25%) were hospitalized for 0-3 days per admission in one year and least i.e. 26(6.5%) were hospitalized for >7 days per admission in one year.

Table.6: Distribution of household members according to Chronic diseases:-

Chronic Disease	No. of Household Members (n)	Percent (%)
Yes	393	19.6
No	1616	80.4
Total	2009	100.0

Table.6 shows the distribution of household members according to chronic diseases. Out of the total 2009 household members, 393(19.6%) had chronic diseases and 1616(80.4%) didn't had any chronic disease.

E. Comparison of total out of pocket (OOP) expenditure according to chronic Diseases in household members {Table.7}:-

Chronic Diseases (n=2009)	Total OOP Expenditure		
	Mean	Std. Deviation	
Yes (393)	2876.11	470.390	P=0.001
No (1616)	1254.54	154.933	df =1

Table.7 showed household members with chronic diseases were less but their health care expenditure on chronic diseases was more therefore they paid large amount from out-of-pocket. Mean total OOP expenditure of household per year with Chronic diseases (2876.11 ± 470.390) in household members was significantly more than household members without Chronic diseases (1254.54 ± 154.933) $p<0.05$.

DISCUSSION

This study showed various modes of out-of-pocket expenditure per year among households in rupees with respect to mean ± std. deviation in terms with OPD expenditure, IPD expenditure, expenditure on medication-investigations and others, direct expenditure, indirect expenditure and total expenditure. In OPD expenditure mean and std. deviation of out-of pocket expenditure was 155.33 ₹ ± 15.65. Similarly for IPD expenditure these are 159.45 ₹ ± 18.09, for medication-investigations and others these were 1641.48 ₹ ± 305.75, for direct expenditure these were 1956.26 ₹ ± 339.49, for indirect expenditure these were 173.93 ± 30.35, for total expenditure it was 2130.19 ₹ ± 369.84 as **per table-3.**

Bera T, et al (2018)[3] observed annual health expenditure of the community was 1,576/family. Archana R, et al (2014)[4] mean per visit expenditure for hospitalization were Rs.1340 ± 1192.9. Khushboo S, et al (2015)[1] observed average OOP expenditure on medical treatment was Rs. 8771.28 ± 1056.43. Preeti T, et al (2015)[9] mean Out of Pocket Expenditure on Health Care among the Households of Urban Area in Dakshina, Kannada was found to be Rs. 948.36. Husain S, et al (2015)[10] mentioned that the proportion of income spent on health care was 6.22%.

As per Table-4, distribution of households according to hospital/health facility availed by household, 263(65.8%) using Government Hospital/Health Facility, 35(08.6%) using Private Hospital/Health Facility, 89(22.3%) using both Government & Private Hospital/Health Facility and 13(03.3%) using locally available Hospital/Health Facility. Majority of households i.e. 263(65.8%) were used Government Hospital/Health Facility and least i.e. 13(03.3%) were used locally available Hospital/Health Facility.

Archana R, et al (2014)[4] mentioned in their study that 75.7% of study population was using public facility for health care, Preeti T, et al (2018)[9] most of the study population i.e. 44.47% was using public facility, Ministry of Health & Quality of Life. Household Out-of-

Pocket Expenditure on Health (Survey Report) (2015)[11] also mentioned that most of the study population used public sector for health care and Gupt A, et al (2016)[12] also mentioned that 90.4% of study population used public facility.

In Table-5, 305(76.25%) were hospitalized for 0-3 days per admission in one year and least i.e. 26(6.5%) were hospitalized for >7 days per admission in one year.

Issac A, et al (2016)[13] mentioned in their study that duration of stay (days) in mean (S.D) as 2.1 (1.7).

In this study Out of the total 2009 household members, 393(19.6%) had chronic diseases and 1616(80.4%) didn't had any chronic disease as showed in Table-6.

In this study household members with chronic diseases were less but their health care expenditure on chronic diseases such as diabetes, hypertension, asthma, arthritis, tuberculosis etc. was more therefore they paid large amount from out-of-pocket so mean total OOP expenditure of household per year with Chronic diseases (2876.11 ± 470.390) in household members was significantly more than household members without Chronic diseases (1254.54 ± 154.933) $p<0.05$ as showed in Table-7.

Archana R, et al (2014)[4] mentioned in their study that the mean per visit expenditure for chronic diseases was INR 135.7 ± 196.2, Geremew M, et al (2015)[14] in their study mentioned that household who have at least one member with chronic illness where 6.04 times more likely to spend for their household health care than those who did not have chronic illness, Preeti T, et al (2018)[9] showed that mean out of pocket expenditure per house during 3 months among the study population was INR 800.50 ± 898.51 for chronic diseases, Mohamed FAB, et al (2019)[15] revealed that presence of chronic disease were also associated with higher OOP health spending.

CONCLUSION

Magnitude of household out-of pocket expenditure per year in rupees with respect to mean and std. deviation in terms with total expenditure was 2130.19 ± 369.84. Mean total OOP expenditure of household with chronic diseases in household members was significantly more than household members without chronic diseases.

RECOMMENDATIONS

1. We recommend that reallocation of health spending by national and state governments according to the changing health needs of the population.

2. More research is needed to study out-of-pocket health care expenditure with associated factors and impact due to out-of-pocket expenditure.

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