

## Examining the Factors Affecting Household Expenditure on Health in Odisha: A Case Study in Sambalpur City

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### ABSTRACT

*In the present study expenditure on health is an important issue that attract the attention of public, policy makers and the government. Developed countries spend more on health care in comparison to developing and less developed economies. Health has been taken as both consumer and capital goods. In this paper we have made an attempt to find the various determinants of health expenditure. The study has been made by taking only the primary data, in the study area to find out the determinants of health expenditure and its effect. The study shows various factors that determine the health care expenditure, such as income of the households, age of the respondents, doctors' fee, expenses on medicines, bed charges, health insurance, educational qualification and the family size are the most important factors. The study also found that people in this region prefer government hospitals than the private health care facilities because for low cost. It is also found from the study that the people have more faith on modern methods of treatment than traditional methods of treatment. It also found that in the present year the government of Odisha made a more than 20 hospital with thousands of beds, which is first time in the country due to the COVID19 pandemic. This paper includes literature review, objectives, methodology and significance of the study, the hypothesis, findings and its conclusion.*

**Keywords:** Health, Health care facilities, Government hospital, Private hospital, Health Expenditure

**JEL Classification Codes:** I12, I13, I14, I15

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### I. INTRODUCTION

In our country people demand health and to produce it, they demand for medical care. So, the demand for health care is derived demand. Each one of us desire to



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have good health to participate in work and leisure. The number of factors that determine expenditure on health, which includes as income of the households, age of the people, doctors' fee, expenses on medicines, bed charges, health insurance, educational qualification and the family size are the most important factors. Other factors also include social class, work environment, employment status, income, housing conditions, education, diet and lifestyle.

One of the basic needs of the households is a health care. The complexity of the factors determining the health care of a population tends to believe that real expenditures on health care are characterized by a great diversity, as well as a sense of health is socially diverse phenomenon.

People demand health and to produce it, they demand medical care. So the demand for health care is derived demand. Each one of us desire to have good health to participate in work and leisure. There are number of factors that determine health, among which medical care is one. Other factors include social class, work environment, employment status, income, housing conditions, education, diet, lifestyle, and so forth. The consumption of these goods make the consumer feels better. Health is also considered as capital goods. As a consumer good it makes the consumer feel better and happy. As an investment good it increases the productivity capacity and also the man hours available to the consumer which ultimately could be used for productive purposes.

Through the way of the present study it was observed that in the study area people are making expenditure based on their determinants such as income of HHs, doctor's fee, travelling charges, expenses on medicine, bed charges, diagnostic expenses and food accommodation etc. They mostly depend on government hospitals, but there are not sufficient doctors and other cleaning staff, medicines and also testing tools. The study therefore also presents a picture of the status of organized and unorganized health care systems in Sambalpur city.

## II. REVIEW OF LITERATURE

This chapter is based on some existing literature which has been done on Household Expenditure on Health: A study on Sambalpur city. The review again shows the out of pocket expenditure on health. This chapter also reviews various factors affecting expenditure on health.

Bhatia J. C. And Cleland J.(2001) has a study on Health-care seeking and expenditure by young Indian mothers in the public and private sectors, with objective that to examine the relationships between socioeconomic and other characteristics of women and health expenditures are explored. The method was used as the cross-sectional survey which was conducted during 1993 in a sub-district of Karnataka State.

George Gotsadze, et. al.(2009) has study on Household catastrophic health expenditure: evidence from Georgia and its policy implications with the objective to quantify extent of catastrophic household health expenditures, determine factors influencing it and estimate Fairness in Financial Contribution (FFC) index in Georgia. The research is based on the nationally representative Health Care

Utilization and Expenditure survey conducted during May-June 2007, prior to preparing for new phase of implementation for the health care financing reforms.

Rout H. S.(2010) has worked on Gender and Household Health Expenditure in Odisha, India. Data is collected from primary sources. Here it is found that Household health expenditure is defined as the direct out-of-pocket health spending by households on medical goods and services and maintenance of good health.

Panda S. and Panda A. K. (2012) made a study on “out of pocket expenses & spending pattern on various aspects of health services in Odisha”. the objective of the study is to know the out of pocket expenses of the rural population of Odisha incurred in a year including hospitalization & non-hospitalization of cases & the pattern of spending in terms of expenditure on drugs, transportation, consultation fees, accommodation, food, etc. the study is totally based on primary data.

Pal R.(2012) has study on Measuring incidence of catastrophic out-of-pocket health expenditure: with application to India with the objective that to examine the determinants of Catastrophic out-of-pocket health expenditure in India. By using of method Engel curve and Dataset used for the present paper is from the All-India household 'Consumer Expenditure Survey' conducted by the National Sample Survey Organisation (NSSO) during July, 2004 to June, 2005.

Patra S.K. et. Al.(2013) Has a study on An evaluation of the National Rural Health Mission In Odisha with the objectives to know how the state government capital expenditure and revenue expenditure have influenced the birth rate, death rate and infant mortality rate.

Batra A. Et. Al. (2014) has a study on Does determination drive gender differences in health expenditure on adults: Evidence from Cancer Patients in rural India. Data is used from primary sources in rural Odisha.

Mohanty A.(2014) has a study on The Trend of Health Expenditure in India and Odisha and Its Relationship with Health Status. Here secondary data has been used. India, especially Odisha has a long way to go in providing basic health care to the people.

Priya, A., & Srinivasan, R. (2015). Has made a study on A study on customer awareness towards health insurance with special reference to Coimbatore city. The study revealed that the public must be educated through intensive campaigns, similar to Life and general insurance. Though some corporations and Governments have taken up the initiative to provide health insurance to employees, in Tamil Nadu government has brought up low-premium health insurance for the benefit of the poor as a welcome measure.

Mishra S (2016). Has made a study on “out of pocket expenditure on surgical & non-surgical conditions”. The objective of the study is to estimate the OOPE for various hospitalization conditions at the secondary level of care in Odisha & find out various financial coping mechanisms adopted by the patients, the study is based on primary data. The primary survey was done in the secondary care hospitals in the two districts of Odisha using a semi-structured interview schedule. Data were collected from 284 subjects (212 males & 72 females) in 2014 on the socio-economic status & ooep on multiple diseases condition.



Mishra S. and et. al.(2017) has worked on Treatment-seeking and out-of-pocket expenditure on childhood illness in a migrant tribal community in Bhubaneswar, Odisha State, India. With the objective that to examine treatment-seeking behavior and out-of-pocket (OOP) expenditure on the treatment of childhood illnesses, with a focus on gender in a migrant tribal community in Bhubaneswar, eastern India.

Sahu K.S. and Bharati B.(2017) has made a study on “out of pocket health expenditure & sources of financing for delivery, postpartum & neonatal health in urban slums of Bhubaneswar, Odisha”. The objective of the study is to explore the OOP, sources of funding & experience of catastrophic expenditure for health care related to delivery, postpartum & neonatal morbidity. The study is based on primary data in which a community based cross sectional survey was conducted among a sample of 240 recently delivered women from the slums of Bhubaneswar, Odisha.

Jacob, A. (2018). has made a study on customer perception towards health insurance in Ranny Thaluk. The research found that most of the questionnaire respondents are graduates. The major source of awareness is friends /relatives/colleagues with 176 points. All the respondents are aware of coverage, claim procedure, withdrawal procedure, and consequence of non-payment but not about tax benefits. The major reason for choosing a particular health insurance company is the easy accessibility of linked hospitals. It is concluded from the study that the most important factor considered by the respondents before taking health insurance is to cover risk with 187 points 36% of respondents are satisfied.

Dr. Agasty M.P. and Rout B (2018) has a study on Determinants of Health Care Expenditure in Odisha, Problems and Prospects. .The study has been made by taking the help of both primary and secondary data in the study area to find out the determinants that affect the health care expenditure. The study shows there are number of factors that determine the health care expenditure. Among these determinants, income, age of the respondents, health insurance, educational qualification and the family size are the most important factors. We also find from our study, the people in this region prefer government hospitals than the private health care facilities because for lower cost. It is also found from the study that the people have more faith on modern methods of treatment than traditional methods of treatment.

Patra A.K. and Sahu S.P. (2021) has a study on An Exploratory Analysis of Public Health Care Expenditure in Odisha. Study reveals that total health expenditure as percentage of GSDP is hovering around one per cent. Expenditure on Urban Health Service has been increasing, on the contrary, expenditure on Rural Health Service has declined and expenditure on ‘Medical Education & Training’ remains constant. ‘Allopathic System of Medicine’ soaks up to 75 per cent of expenditure on ‘Medical & Public Health’.

### **Research Gap**

The researchers have gone through some previous studies to know the depth of the studies that have taken place in various parts of the country. There is need for study in the area of household health expenditure as their needs will be known and

with right access to health facility, the most underprivileged will have economic power and be part of economic mainstream. The availability of affordable health facility can become less of a privilege and more of a right, if steps are taken in needed area.

### III. OBJECTIVES

- To analyse the determinants of households' expenditure on health of the study area
- To determine the trend and pattern of health sector in the study area
- To examine the average households' expenditure on health
- To study the availability of health care facilities of the study area
- To measure the out of pocket expenditure on health

### IV. DATA AND METHODS

The study is based on primary data with simple random sampling. The data is collected from the Sambalpur city. The study has been conducted with primary data to know the status of health expenditure. The sample size is 100 HHs of Sambalpur city. After collecting the data, it has been analyzed through the SPSS programmer. Data has been presented through the graphical and tabular manner with the variables like income of HHs, doctor's fee, travelling charges, expenses on medicine, bed charges, diagnostic expenses and food accommodation.

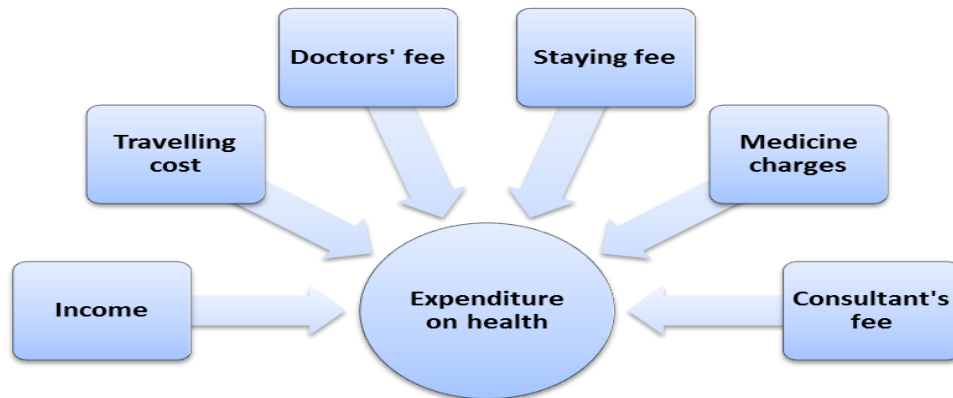
The scope of this study is intentionally kept limited to 100 households of Sambalpur city to develop an insight understanding of the problem of the study area. The data was obtained through the scheduled questionnaire with personal interview. Simple random sampling method has been used to solicit the data from sample households. Sample data are homogenized to develop the normal coherence of data.

In present study the data is analyzed through the various statistical tools like multiple regression model; tests of multicollinearity; tests of normality like Kolmogorov-Smirnov test, Shapiro-Wilk test, etc.

### V. ANALYSIS

In Odisha most of the people having expenditure on health, with the help of the various determinants consisting of income of HHs, doctor's fee, travelling charges, expenses on medicine, bed charges, diagnostic expenses and food accommodation and many more (Figure-1). People try make expenditure on health and stay healthy in their day to day life, because health is wealth. With these determinants propensity is to make expenditure on health. Staying healthy is very much important in the human life.



**Figure-1: Determinants of Households' Expenditure on Health in Odisha**

Source: Field survey by researchers

Based on objectives of the study, the following hypotheses have been outlined:

$H_0$ : There is no relationship between household expenditure on health and its determinants.

$H_1$ : There is a relationship between household expenditure on health and its determinants.

In the data analysis, it shows the status of health expenditure of the study area. The status of health expenditure, the data has been analyzed through the scientific methods to find out the cause and effect relationship of health expenditure and its determinants. It also analyses in what contest determinants are responsible for out of pocket expenditure and health care facilities through government hospitals.

In this study the multicollinearity test was conducted to show how linearly determinants are related among themselves. The data is analyzed through the SPSS to find out the result. Thus, the above table explains that there is no multicollinearity problem between the independent variables as the value of Variance Inflation Factor (VIF) is less than 10. It means each determinant is independent (Table-1).

**Table-1: Test of Multicollinearity**

Independent variables	Tolerance	VIF
Travel charges	0.729	1.372
Staying in hospital	0.446	2.244
Medicine charges	0.248	4.035
Consultant fee	0.391	2.555
Income of the HH	0.253	3.958
Dependent variable: Expenditure on health		

Source: Field survey by researchers

Table-2 shows the test of normality through Kolmogorov-Smirnov test as well as Shapiro-Wilk test. The statistical hypotheses test which explained in the above table that all the S-K statistic value of independent variables lies between 0.05-1, it means the null hypotheses is rejected and the alternative hypotheses is accepted. The data is normally distributed in the model.

**Table-2: Test of Normality**

Independent variables	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Travelling Charges	0.269	100	0	0.719	100	0
Staying charges	0.42	100	0	0.148	100	0
Medicine chargrs	0.351	100	0	0.419	100	0
Consultant fee	0.332	100	0	0.404	100	0
Income of HH	0.209	100	0	0.722	100	0

Source: Field survey by researchers

The regression model used in the present study is:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + U_i$$

Where,

Y: Expenditure on Health

A: Constant over the period of time

X1: Travelling Charges

X2: Staying Charges

X3: Medicine Charges

X4: Consultant's Fee

X5: Income of HH

U<sub>i</sub>: Residuals

**Table-3: Multiple Regression**

Variables	Coefficients	t values	Significance
Constant	126.787	0.326	0.745
Travelling Charges	1.026	9.589	0
Staying Charges	1.963	16.346	0
Medicine Charges	0.459	6.003	0
Consultant Fee	0.934	7.665	0
Income of HH	0.013	1.977	0.051
R Square: 0.963			
Adjusted R Square: 0.961			

Source: Field survey by researchers



Table-3 summarizes the results of the above multiple regression model. It is observed that all the determinants such as travelling charges, staying charges, medicine charges, consultation charges and income of the household, have a significant impact on the people's expenditure on health. The above table shows that there is size of land holding and average interest rates are significant and all other variables are insignificant. Overall these variables explain a significant portion of the variation in the health expenditure.

### Discussion

The present study tries to analyze the dynamics of health expenditure because of the availability of both public and private health care centres. Rural people with very low income group people take the advantages of public health care facilities and some medium and high income group people mostly used private health care benefits. Though some difficulties and time consuming problem are found in public health centre, still low income group take this advantage. Thus, government should try to minimise these problems like lack sufficient doctors and other staffs, so that everyone can chose the public health care facilities. In this circumstances the study found that, a very small increase in the budget for the health, the country will made a very high good health outcome in macro sense.

### VI. CONCLUSION

This study concludes that the rural households are making expenditure on health from both public and private sectors. In public sector no proper facilities are found like lack of sufficient doctors, staffs, lack of availability of medicines in government hospitals, on the other side all facilities are available in private sectors, but because of the financial constraints low income group are unable to afford private health care facilities. So, it is very much important to look up for the low income group people and provide proper facilities in public health sectors, so that each and every person can have a good health, which have a very good impact on the economy of the nation.

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