

Economic Cost of Illness among Workers Employed in Informal Sector: A Comparison of Outpatient and Inpatient Care

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Health status of the people in the country is an important flag-post of evaluate the success of the state policy and health of the individual impacts the growth of the nation in a very material sense. Keeping this in mind, the present paper examined the economic cost of illness among the informal sector for both the outpatient care and inpatient care. The present study is based on primary data. For the analysis of data along-with the descriptive statistics t-test has been applied. The analysis of data revealed that health care expenditure was higher in private hospitals compared to public hospitals for inpatient care and outpatient care both. The average out of pocket health care expenditure was ₹ 213.10 in public hospitals and ₹ 350.46 in private hospitals for outpatient care. However mean health expenditure for inpatient care was ₹1534.50 in public hospitals and ₹3329.75 in private hospitals. Therefore, the respondents managed their healthcare expenses from current salary, selling household assets, borrowing from friends, past saving, borrowing from neighbors and mortgage of assets. With weighted average score it was found that the consequences of healthcare expenditure from private hospitals and inpatient care were more severe than public hospitals and outpatient care. Need of the hour is to design a low cost health insurance to safe the household from the adverse consequences.

Keywords: Private Hospitals, Public Hospitals, Inpatient Care, Outpatient Care, Copying Mechanism.

Introduction

Human resource is the real wealth of nation. An increase in national income does not always lead to human welfare (Randall et al., 2000). Economic development coupled with human development should be the primary goal of a nation. It is strongly felt that public expenditure on health needs to be increased (Sunder & Sharma, 2002). On one hand the country is gripped with communicable and non-communicable diseases resulting of changing of life styles, while on the other hand health care costs are escalating making access to quality health care difficult (Pathak, 2011). Therefore all developmental and poverty alleviation efforts must necessarily focus on health issues also. Along with education, health remains the most important focus area for a country to make progress. Healthcare, in fact, is one of the basic needs of humanity and it has been there in some form or the other ever since the dawn of civilization (Nagpal, 2014). However, 90 percent of the families the families earn their livelihood from informal sector and it contributes to two-fifths to GDP (Gumber & Kulkarni, 2000). A large number of workers in informal sector are poor, illiterate, and vulnerable. They live and work under unhygienic conditions and even do not get health care benefits, paid leave for illness, maternity benefits, old age pension and other health related benefits (Ghosh & Mondal, 2011). One of the major insecurities of these workers and their families is the frequent incidence of illness and need for medical care and hospitalization (Ghosh, 2010). They have low and irregular income and the lower an individual earns the worse will be their health. Sickness creates dual burden on them. One way they have to make healthcare expenditure on the other way they have to sacrifice income (Yojana, 2014). High out of pocket health expenditure can lead to a tremendous burden on poor household and indebtedness, sometimes resulting in selling and mortgage of household asset to pay for healthcare expenditure (Sunder & Sharma, 2002). Due to adverse consequences of healthcare expenditure on household, they mostly avoid to seek care unless it is absolutely necessary. The health insurance is one way of providing protection to poor households against the risk of healthcare spending (Swarup, 2008). It involves prepayment and facilities risk pooling. The inclusion of poor and informal sector workers in these mechanisms appears to be a challenge. But the enrolment of health insurance enrolment at the right time will help them to save a lot of expenditure

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and fortune in the future for their families. Therefore, governmental agencies need to play more active role in facilitating the health insurance coverage to population, particularly to below poverty line (**Shijith & Shekar, 2011**).

Thereby, the present study compared the economic cost of illness among the private and public hospitals for the outpatient care and inpatient care. Section II, highlighted the review done on the economic cost of illness, its nature and implications on the household. In section III, research methodology had been explained. Interpretation and analysis of data was made in section IV and finally Section V, concludes the whole discussion along with policy implications.

Review of Literature

Paulin et. al. (1995) identified that partially insured people had less expenditure on health care than the fully insured because fully insured people spent half of their income on health care and the uninsured had very less expenditure on health care. **Hwang et al. (1996)** examined OOP expenditure by person with and without chronic condition and they found that OOP expenditure rises as number of chronic conditions rises. Gross et.al (1999) found that lower income elderly people have more OOP expenditure than those who were enrolled in Medicaid. Gumber (2000) found that burden of OOP expenditure was high in the informal sector because most of them were illiterate and poor. **Ray et al. (2002)** found that upper and middle income groups had higher expenditure than the lower income groups. The basic reason found that high and middle income avail health facilities from private hospitals and lower income availed from public hospitals. **Bridevaux (2004)** compared the out of pocket healthcare expenditure of five health therapies massage therapy, spiritual healing, herbal therapy, nutritional advice and acupuncture and it was found that found that highest average of out of payment was associated with nutritional therapies. Garry and **Schoeni (2005)** examined out of pocket expenditure before and after widowhood and found that it was higher after widowhood. **Rugar & Kim (2007)** identified out of pocket expenditure health care expenditure and it was found that out of pocket expenditure burden ratio using household comparable income in the republic of Korea. They found that lesser income Korean had highest out of pocket expenditure as compared with higher salary groups and lesser income. **Joglekar (2008)** found that household with more number of children and elderly person had more OOP expenditure on health care and also identified it was it was less in urban areas compared to rural areas. The education and insurance also helps to mitigate the OOP on health. Hopkins (2010) compared the low, middle and high income countries on the basis of health and GDP. The result of the study showed that the country with better or high GDP growth had higher health expenditure. They also found that low income countries spent low on health care services than the middle and high income countries of their total. **Lorenz (2010)** examined out of pocket expenditure private health care expenditure of household of Pakistan in context of NHA (national health accounts). They took national income as a key factor and compare it with private health expenditure and they identified that as national income increases percentage of out of pocket expenditure decreases and in low income countries this share is high because there are no national and private insurances schemes. Mohanty et al. (2010) indicated that monthly per capita spending increases with economic status, age, type of illness, type of facility, household size, place of residence, region, and gender of the elderly member in the household. Mondal (2010) considered three variables inpatient, outpatient and chronic disease and compared the out of pocket health care expenditure. The shows that household expenditure on inpatient care is more than the outpatient care and also the rich people spend higher than poor on health expenditure. Alatinga & Fielmua (2011) identified that with rise in income out of pocket healthcare expenditure rises. Bhojani et. al. (2012) conducted a study in Bangalore, and found that out of pocket expenditure payment derived people into poverty. Kumar et. al. (2012) compared public and private hospital and found that OOP spending was high in private hospitals as related to the public. Mohanty & Srivastava (2012) identified out of pocket expenditure on delivery care in private and public health centers and they found that out of pocket expenditure on caesarean delivery is almost four times high than the normal delivery. Ye et. al. (2013) conducted found that out of pocket expenditure declined with the enrollment of the health insurance.

Research Methodology

The present research was descriptive in nature. It was conducted on the private and public hospitals of Jalandhar. Jalandhar was chosen in the study, as the city has the largest number of hospitals in India. For the collection of data, a structured questionnaire had been prepared. Primary data has been collected from the private and public hospitals in Jalandhar. The hospitals were selected by using random sampling. The study consists of 200 workers employed in informal sector. Further, 100 respondents were selected from private hospitals and 100 from the public hospitals. Convenient sampling technique

has been used for the selection of respondents. For the analysis of the data, weighted average score, t-test, mean and percentage have been used. For checking the normality of data Kolmogorov-Smirnov was used, which supported the validity of applying t-test for the present analysis. Analysis was carried out with SPSS 16.0.

Analysis and Interpretation

The analyses of the economic cost of illness have been given in terms of outpatient care and inpatient care from the public hospitals and private hospitals. The present section includes the results of the survey:

(a) Profile of Respondents

Table 1 exhibits the demographic profile of the respondents. It was found that most of the respondents were from the age group from 20-40 years followed by 40-60 years, 60 years and above and below 20 years respectively. However, 66 percent of the respondents were married, 24 percent were unmarried, 6 percent were widowed, and 3 percent respondents were divorced. Majority of them were illiterate followed by primary education and senior secondary. Occupation-wise analysis shows that an equal number of respondents were selected from domestic workers, construction workers, vendors, and shopkeepers.

Table 1 : Profile of the Respondents

Characteristics	Frequency	Percentage
Age (years)		
Below 20	17	8.5
20 - 40	81	40.5
40 - 60	65	32.5
60 and Above	37	18.5
Marital status		
Married	132	66.0
Unmarried	49	24.5
Widowed	12	6.0
Divorced	7	3.5
Household Size		
Up to 3	15	7.5
3-5	63	31.5
5-7	57	28.5
7-9	35	17.5
9 and Above	30	15.0
Education		
Illiterate	100	50.0
Primary	70	35.0
Secondary	30	15.0
Occupation		
Domestic Workers	50	25.0
Construction Workers	50	25.0
Vendors	50	25.0
Shopkeepers	50	25.0
Monthly Income (Rs.)		
Below 10,000	80	40.0
10,000 - 20,000	70	35.0

20,000 - 30,000	25	12.5
30,000 and Above	25	12.5

Source: Author's Calculation Based on Primary Data

(a) Economic Cost of Outpatient Care: A Comparison of Public and Private Hospitals

The table 2 compared the nature of illness across the public and private hospitals. It was found that that majority of the population had diabetes, high blood pressure, food poisoning, fever, heart attack etc. in the public hospitals. As far as the private hospitals were concerned majority of the respondent suffer from fever, high blood pressure followed by stomach ache, TB, diabetes, weakness etc.

Table 2 - Economic Cost of Outpatient Care: A Comparison of Public and Private Hospitals

Illness*	Public hospital (In %)	Private hospital (In %)
Diabetes	23	10
Loss motion	4	2
Fever	6	16
Heart attack	6	6
Cold	0	2
High blood pressure	16	14
Asthma	2	13
Stomach ache	4	12
Cough	2	6
Liver problem	0	2
Joint pain	4	0
Food poisoning	8	0
Eye check up	2	0
Accident	6	10
Average Cost of Treatment (in ₹)	Public Hospital (Frequency)	Private Hospital(Frequency)
Mean Expenditure (in ₹)	213.10	350.46

Source: Author's Calculation Based on Primary Data

Table 3 reveals that the value of 't' is -4.078 which was found to be significant at 1 percent. The results indicate a significant difference of economic cost of illness in public and private hospitals for outpatient care. However, comparative study of mean health expenditure indicates an average burden of ₹ 213.10 in public hospitals and ₹ 350.46 in private hospitals.

Table: 3 - Difference in Economic Cost of Illness of Public and Private Hospitals

Variable	N	Mean	S.D.	S.D.	S.D.	S.D.
Public	50	213.10	97.71	-4.078	0.000*	Significant
Private	50	350.46	109.07			

Source: Author's Calculation Based on Primary Data

Note: Significant at 1%

Table 4 reveals the socio-economic implications of economic cost of illness for the outpatient care. From the above table it was vivid that those who obtained treatment from public hospitals for outpatient care stated that there was a stop social obligation /function (WAS=3.68) due to out of pocket healthcare expenditure followed by reduced food consumption (WAS=3.46), spend from past savings (WAS=3.18), stop medical treatment of any other member in the family (WAS=3.12), decrease in nonfood consumption (WAS=2.54), reduction in monthly income (WAS=2.50), borrowing from bank (WAS=1.84), sale of household assets (WAS=1.52), stop purchasing of consumer durable (WAS=1.32), stop purchasing or expansion of house (WAS=1.06). The consequences of outpatient care from private hospitals on the sampled respondents were reduced food consumption (WAS=4.12), sale of household assets (WAS=4.04), spend from past savings (WAS=3.40), reduction in monthly income (WAS=3.09), stop medical treatment of any other member in the family (WAS=2.70), decrease in nonfood consumption (WAS=2.42), stop social obligation /function (WAS=2.06), borrowing from Bank (WAS=1.98), stop purchasing or expansion of house (WAS=1.62), stop purchasing of consumer durable (WAS=1.16). From the weighted average scores it was found that the consequences from the private hospitals were more severe than public hospitals.

Table 4 - Weights and Ranks of Socio-Economic Implications of Economic Cost of Illness for Outpatient Care: A Comparison of Public and Private Hospitals : 4

S. No.	Statement*	Public Hospitals		Private Hospitals	
		Weighted Average Score (WAS)	Rank	Weighted Average Score (WAS)	Rank
1	Reduced food consumption	3.46	2	4.12	1
2	Spend from past savings	3.18	3	3.40	3
3	Borrowing from Bank	1.84	7	1.98	8
4	Stop social obligation /function	3.68	1	2.06	7
5	Decrease in nonfood consumption	2.54	5	2.42	6
6	Sale of household assets	1.52	8	4.04	2
7	Stop purchasing or expansion of house	1.06	10	1.62	9
8	Stop purchasing of consumer durable	1.32	9	1.16	10
9	Stop medical treatment of any other member in the family	3.12	4	2.70	5
10	Reduction in monthly income	2.50	6	3.09	4

Source: Author's Calculation Based on Primary Data

(b) Economic Cost of Inpatient Care : A Comparison of Public and Private Hospitals

Table 5 shows that majority of the respondent suffer from “accident” both in public and private hospitals. Thereby in the public hospitals liver problems and heart attack were most prevalent followed by cancer, TB, food poisoning, paralysis, asthma etc. As far as the private hospitals were examined most of the people suffer from diabetes and TB followed by eye operation, asthma, joint pain, liver problem, typhoid etc.

Table 5 - Economic Cost of Illness of Inpatient Care : A Comparison of Public and Private Hospitals

Illness*	Public hospital (In %)	Private hospital (In %)
TB	8	10
Diabetes	4	12
Heart attack	14	8
HIV/AIDS	2	0
High blood pressure	2	2
Asthma	6	8
Typhoid	4	6
Liver problem	14	6
Joint pain	2	8
Cancer	10	4
Stone operation	8	2
Food poisoning	2	0
Paralysis	2	2
Accident	18	22
Eye operation	4	10
Average Cost of Treatment (in ₹)	Public hospital(Frequency)	Private hospital(Frequency)
Mean Expenditure (in ₹)	1534.50	3329.75

Source: Author's Calculation Based on Primary Data

Table 6 revealed that the value of 't' is -3.989 which was found to be significant at 1 percent. The results indicate a significant difference of out of pocket health care expenditure in public and private hospitals for inpatient care. However, comparative study of mean health expenditure indicates an average burden of ₹ 1534.50 in public hospitals and ₹ 3329.75 in private hospitals.

Table 6 - Difference in Economic Cost of Illness of Public and Private Hospitals

Variable	N	Mean	S.D.	't'	p-value	Interpretation
Public	50	1534.50	1069.65	-3.989	0.000*	Significant
Private	50	3329.75	1181.17			

Source: Author's Calculation Based on Primary Data

Note: Significant at 1%

Table 7 presents implications of out of pocket healthcare expenditure on sampled households. After comparing weighted average scores, it was found that consequences of inpatient care were more serious than outpatient care. The first implication of out of pocket health care expenditure from public hospitals was reduced food consumption (WAS=4.02) followed by borrowing from Bank (WAS=3.98), reduction in monthly income (WAS=3.96), decrease in nonfood consumption (WAS=3.92), spend from past savings(WAS=3.88), stop social obligation /function (WAS=3.68), stop purchasing or expansion of house (WAS=3.48), sale of household assets (WAS=3.26), stop medical treatment of any other member in the family (WAS=3.20), postponed daughter marriage (WAS=3.02), stop purchasing of consumer durable (WAS=2.58). On the other hand, the first implication of out of pocket health care expenditure from public hospitals was reduced food consumption (WAS=4.44) followed by borrowing from bank (WAS=4.26), decrease in nonfood consumption (WAS=4.12), reduction in monthly income (WAS=4.10), spend from past savings (WAS=3.80), stop medical treatment of any other member in the family (WAS=3.30), stop purchasing of consumer durable (WAS=3.12), sale of household assets (WAS=2.90), postponed daughter marriage (WAS=1.96), stop purchasing or expansion of house (WAS=1.76).

Table 7 - Weights and Ranks of Socio-Economic Implications of Economic Cost of Illness for Inpatient care : A Comparison of Public and Private Hospitals

S. No.	*Statement	Public Hospitals		Private Hospitals	
		Weighted Average Score (WAS)	Rank	Weighted Average Score (WAS)	Rank
1	Reduced food consumption	4.02	1	4.44	1
2	Postponed daughter marriage	3.02	10	1.96	10
3	Spend from past savings	3.88	5	3.80	5
4	Borrowing from Bank	3.98	2	4.26	2
5	Stop social obligation /function	3.68	6	3.12	8
6	Decrease in nonfood consumption	3.92	4	4.12	3
7	Sale of household assets	3.26	8	2.90	9
8	Stop purchasing or expansion of house	3.48	7	1.76	11
9	Stop purchasing of consumer durable	2.58	11	3.12	7
10	Stop medical treatment of any other member in the family	3.20	9	3.30	6
11	Reduction in monthly income	3.96	3	4.10	4

Source: Author's Calculation Based on Primary Data

Conclusion

The households employed in informal sector did not have any social security benefit and relied heavily on their out-of-pocket expenses during an illness. Therefore, assessment of economic cost of illness is necessary to formulate appropriate policies for the informal sector. The results of the study highlighted a significant difference in public and private healthcare expenditure for the outpatient care and inpatient care. It was found that the burden of outpatient care was more in private hospitals than of the public. Findings of the study revealed that on an average out of pocket health care expenditure was ₹ 213.10 in public hospitals and ₹ 350.46 in private hospitals for outpatient care and mean health expenditure for inpatient care was ₹ 1534.50 in public hospitals and ₹ 3329.75 in private hospitals. The study identified that household not only spend a large amount of money and resources on medical care but also unable to earn during the period of illness. Very often they have to borrow funds at very high rate of interest to meet both medical expenditure and other household needs. It was not only the inpatient care but also the outpatient care which can push the household into a zone of permanent poverty. The possible consequences emerged from the study were reduced food consumption, borrowing from bank, reduction in monthly income, decrease in nonfood consumption, spend from past savings, stop social obligation /function, stop purchasing or expansion of house, sale of household assets, stop medical treatment of any other member in the family and stop purchasing of consumer durable. This adds to the health insecurities among households which survive on low wages and uncertain income opportunities. The findings of the study highlighted that illness imposed a high and regressive cost burdens on the households. However, undue healthcare burden indicates a potential for voluntary and comprehensive health insurance schemes in the study area.

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