Forman Journal of Economic Studies
Vol. 12, 2016 (January–December) pp. 75-88

Households Study on Out-of-Pocket Health Expenditures in Pakistan

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Abstract

Public Health expenditure to GDP ratio has remained low in developing countries and general public has no choice but to seek healthcare from their own pocket, which has remained the dominant source of financing. In Pakistan, out of pocket expenditures are around 70% of the total health expenditures. The study analyzed the out of pocket health expenditure patterns of Pakistan historically, across provinces, rural and urban areas. Further it compares between below poverty line and above poverty line households with reference to out of pocket health expenditures to analyze the potential of catastrophic health expenditures pushing marginalized group into a poverty trap. The study found that absolute amount of health expenditure by private households and government are increasing over the time, but the health related spending shares of household incomes are declining, which should be a major policy concern. The study further shows that in rural areas lack of health facilities pushes people to spend more to buy health care privately indicating health services inequality. Finally the lack of health facilities and improper medical facilities may be a significant factor for high disease prevalence rates and health problems in these areas. This further reinforces the people to spend more even for the minimum health care, which if catastrophic can push people into poverty.

Keywords: Out of Pocket Health Care, Catastrophic Health Expenditures, Poverty

JEL classification: I12, I38, D1

1. Background

Public Health expenditure to GDP ratio has remained low in developing countries but in particular, this ratio in Pakistan has not only remained below one percent of GDP and declining over time. In 2000-01, government allocated 0.72% of GDP for health sector and it was further reduced

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to just 0.23% and 0.35% in 2010-11 and 2012-13, respectively.[2] Whereas studies have shown that public health expenditure to GDP is 2-3% on average for low income countries and 8-9% for high income countries (Musgrove P. et.al. 2002). On the other hand, public has no choice but to seek healthcare from their own pocket, which has remained the dominant source of finance (Muhammad and Syed, 2012). In Pakistan during the year 2007-08, around two third of the expenditure on healthcare was financed by households' Out of Pocket (OOP) expenditures, 23.67% was financed by different tiers of the government and remaining percentage of the expenditure were financed by private corporations /companies, social security fund, health insurance, local NGOs and official donor agencies etc.[3] Pakistan's annual per capita income is $1,368,[4] but annual per capita health expenditure is just $35 based on the revised National Health Accounts methodology.[5]

The share of OOP health expenditure out of the total household income is an important indicator in health financing research (Lavado R. et al., 2013 and Xu K. et al., 2009). In many countries, this figure is used to derive the national level estimates of health accounts (Lavado R. et al., 2013).[6] Within low income countries, the average variation in this share is from 20% to 80%, and this share drops sharply for high income countries. However, the absolute expenditure increases with income (Musgrove et al., 2002).

Table 1 presented a description of health financing in Pakistan. Out of nine possible sources of financing three pertains to governments i.e. federal, Provincial and district governments. The share of these three is around 22-23% in the two reference years. Major share of health financing is OOP health expenditures (67% in 2005-06 and 66% in 2007-08). Local NGOs and Official Donor agencies also provide a considerable share of health financing (8% in 2005-06 and 2007-08).

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[2] Pakistan Economic Survey 2012-13, Ministry of Finance, Government of Pakistan, Islamabad.

[3] National Health Accounts 2007-08," Pakistan Bureau of Statistics, Government of Pakistan, Islamabad, 2009, National Health Accounts 2009-10," Pakistan Bureau of Statistics, Government of Pakistan, Islamabad, 2010.

[4] Pakistan Economic Survey 2012-13, Ministry of Finance, Government of Pakistan, Islamabad.

[5] National Health Accounts 2007-08," Pakistan Bureau of Statistics, Government of Pakistan, Islamabad, 2009

[6] General statistical procedures used to construct WHO health expenditure database," World Health Organization, Geneva, 2012 and Guide to producing national health accounts with special application to low income and middle income Countries," World Health Organization, Geneva, 2003

Table 1: Distribution of Health Expenditure (Million Rupees)

	2005-06	Percentage	2007-08	Percentage
Federal Government	23,816	9.2	27,664	8.29
Provincial Government	19,007	7.4	27,757	8.32
District Government	14,215	5.5	23,547	7.06
Social Security Funds	2,839	1.1	3,259	0.98
Autonomous Bodies/Corporation	1,450	0.6	1,725	0.52
Private Health Insurance	285	0.1	523	0.16
OOP Health Expenditure	177,010	68.6	220,508	66.09
Local NGOs	15,919	6.2	19,023	5.70
Official Donor Agencies	3,565	1.4	9,626	2.89
Total	258,106	100.0	333,632	100.00

Source: National Health Accounts 2009-10, Pakistan Bureau of Statistics

People access to health care services from OOP payments is dependent on different socio-economic characteristics of the individuals and households. The role of socio-economic, demographic and environmental factors is well documented in health financing and determinants of health seeking behavior literature (Muhammad and Syed, 2012, and Marmot et al., 2008). Such arguments are drawn from the seminal work of Michael Grossman on health demand and production (Grossman, 1972). Meeting public demand of healthcare has remained a great challenge for governments, especially for tertiary healthcare.[7] Due to unmet demand by governments, people may opt for less costly healthcare facilities like traditional or sub optimal care, or even forgo healthcare (Goudge et al., 2009).

1.2. Objectives of the Study

In Pakistan little research is found on healthcare financing and among those which exist, the focus is remained on government's healthcare financing

[7] The World Health Report – Health systems financing: The path to universal coverage 2010," The World Health Organization, Geneva, 2010

(Siddiqui et.al., 1995; Akram and Khan, 2007). One study is available on OOP health financing but limited to one period of the survey (Muhammad and Syed, 2012). Further, we could not find any study that has analyzed the historical patterns of OOP expenditures in Pakistan. This study fills this gap by analyzing OOP expenditure patterns by pooling six national representative surveys. The present study analyzed the OOP health expenditures patterns for Pakistan historically, across provinces, rural and urban areas. Further it compares between below poverty line and above poverty line households with reference to OOP health expenditures to analyze the potential of catastrophic health expenditures pushing marginalized group into a poverty trap. This could help to formulate an effective health policy across provinces. Specifically the study has the following objectives:

i) To estimate nationally representative OOP health expenditures for Pakistan
ii) Estimate OOP health expenditures over time and across regions in Pakistan
iii) Analyze OOP health expenditures with respect to vulnerable groups in Pakistan

The study uses primary data. Section 2 describes the data and methodology, Section 3 provides the results and discussion of the findings and finally Section 4 concludes.

2. Data and Methodology

2.1 Methodology and Sample Characteristics

We pooled six nationally representative household surveys "Household Income Expenditure Survey (HIES)", specifically for 1998-99, 2001-02, 2004-05, 2005-06, 2007-08 and 2010-11. The surveys cover all four provinces of the country. Each survey is represented by around 15,000 households and total sample is 91,404 households. The surveys collect data on various social and living standards measurement indicators. The sampling technique used for the surveys is multi-stage and also provides sampling weights for national representation. The OOP health expenditure is reported in the consumption module of consumable goods and services. The expenditure data is based on household level.

In first three surveys, health expenditures data is collected against four categories, i.e., 1) Purchase of medicines, equipment supplies etc., 2) Medical fees paid to doctors, Hakeem (traditional healer) etc. outside hospital including

medicines, 3) Hospitalization including doctors' fees, laboratory tests, X-ray charges etc., and 4) Dental/Optical care and all other expenses on healthcare not classified elsewhere. Whereas, in the last three survey, the later three categories were lumped into one. The study has added all health expenditures into one category as total household health expenditure. Due to such aggregation, we found very little missing values in the data series, which is only 0.25%.

The surveys have used one year as respondent recall period. The longer recall period usually underestimates the actual expenditure (National Health Accounts 2007-08). Keeping this underpinning in mind, Pakistan Bureau of Statistics has collected a separate survey on OOP health expenditures with 10 different health expenditures in which the recall period is fortnightly and found 43% higher estimates than its usual survey of one year recall period. Such finding is also consistent with Lu et al., (2009) that household reports higher health expenditure when more questions are asked, whereas the influence of the recall period is unclear {Lavado et.al. (2013), Ranna-Eliya R. and L. Loren (2010), Philippine National Health Accounts (PNHA) (2012)}.

2.2. Statistical Analysis

Since the data is survey based, the first step for estimation of total household health expenditure is to apply given survey weights to the actual reported expenditures. In second step, the estimated expenditures were raised to the ratio of weighted household size to projected population in rural and urban area for each province because the sampling frame does not include all the households.

3. Descriptive Analysis

This study estimated the nationally representative estimates of OOP health expenditure from 1998-99 to 2010-11. Such time series data is not reported even by official statistics of Pakistan except for 2005-06 and 2007-08. Secondly the study has analyzed the pattern of average OOP expenditures and shares of OOP health expenditure out of income across different provinces, urban rural regions and between groups below and above poverty line.

We found an increasing trend in the total and per capita OOP health expenditure over these years. The total health expenditure by household was Rs 67.7 billion during 1998-99 which increased to Rs 169.8 billion ($2.12 billion) during the year 2010-11.[8] The average per capita health expenditure by

[8] Equal weights are given for the family members while calculating the per capita expenditures.

households during the year 2010-11 was Rs. 1,003($12.5). Against this private spending, the per capita government spending remained at Rs. 325($4) during the same year. There is also a marked difference of OOP health expenditures across provinces. The highest per capita OOP expenditure was incurred by the households of Khyber Pakhtoonkhawa (KP) province (Rs.33,464) and least for Balochistan Province (Rs.4,186). Such findings are confirmed by Muhammad and Syed (2012). Contrary to increasing total OOP health spending, the share of health expenditure out of the household income is decreasing.

Table 2: Total OOP Health Expenditure (Million Rupees)

	1998-99	**2001-02**	**2004-05**	**2005-06**	**2007-08**	**2010-11**
Punjab	40,411	37,519	53,089	72,175	74,470	101,244
Sindh	16,486	19,040	19,831	23,164	24,809	30,366
KPK	8,880	9,900	15,259	21,230	23,011	33,464
Balochistan	2,162	2,224	3,381	2,744	3,266	4,186
Pakistan	67,702	69,060	91,620	119,491	126,018	169,877

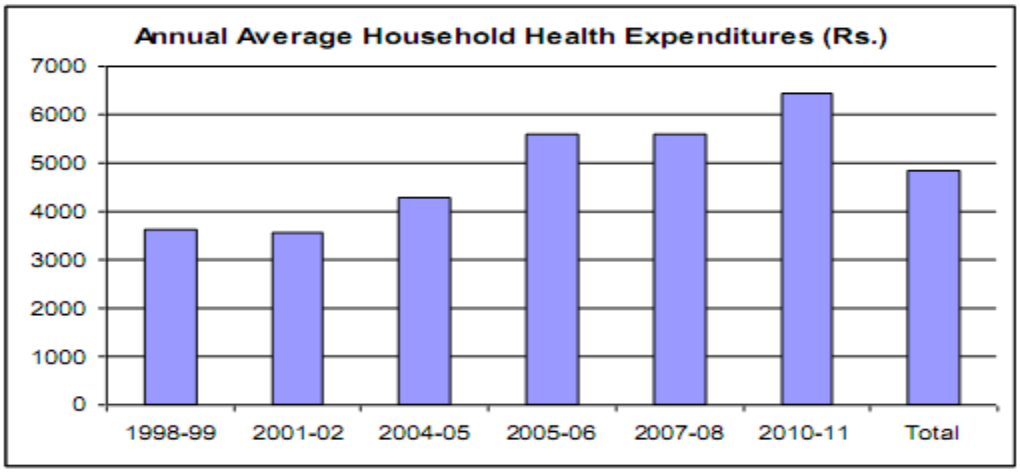
Table 3: Per Capita OOP and Government Health Expenditure (Rupees)

	1998-99	**2001-02**	**2004-05**	**2005-06**	**2007-08**	**2010-11**
Punjab	544	471	624	830	822	1,054
Sindh	526	568	553	632	645	736
KPK	497	518	747	1,016	1,054	1,438
Balochistan	322	310	440	349	396	473
Pakistan	520	495	615	784	792	1,003
Government Spending	170	207	268	328	464	325
Share of OOP	75.41	70.56	69.61	70.50	63.07	75.50

It shows that the rise in total spending on health does not offset its declining share. It implies that the dollar amount spent as OOP health expenditure increases but not quite proportionately as income has increased.

The average annual health expenditure and income for total sample were Rs. 4,847 and Rs. 176,552 with standard errors of mean being 97.67 and 1695.23, respectively for the whole sample. The figure 3.1 shows that Annual Average Household Health expenditures are rising over time and have almost doubled during the sample period start. The last bar of the graph shows the overall average which turns out to be close to Rs. 5000 as annual average household health expenditures.

Figure 3.1: Annual Average Household Health Expenditures (Rs.)



There are regional differences in OOP health expenditure shares. The Figure 3.2 below shows that rural share is higher than that of urban, whereas the pattern of health expenditure share out of the income, within provinces, are similar to that of total expenditure (Figure 3.3). The share of health expenditures are declining. The share of expenditure on health has declined almost three times in the last used survey period (2010-11) as compared to the first survey used (1998-99). This is the same for expenditure shares in Rural and Urban. But the striking picture which emerges is that the rural population which has relatively larger vulnerable groups has to spend more OOP on health related expenses as compared to Urban. This means any catastrophic expenditure can shift these groups into poverty.

The share of expenditure on health across provinces shows the same picture as of national. However horizontally speaking the share of expenditures in KP province is higher as compared to other provinces.

Punjab is the second highest, whereas Sindh is third and Balochistan is the lowest in terms of OOP health expenditures share out of household incomes.[9] A household on average in KP province spends almost three times higher as compared to Balochistan.

Figure 3.2: Share of OOP Health Expenditure to Income by Region

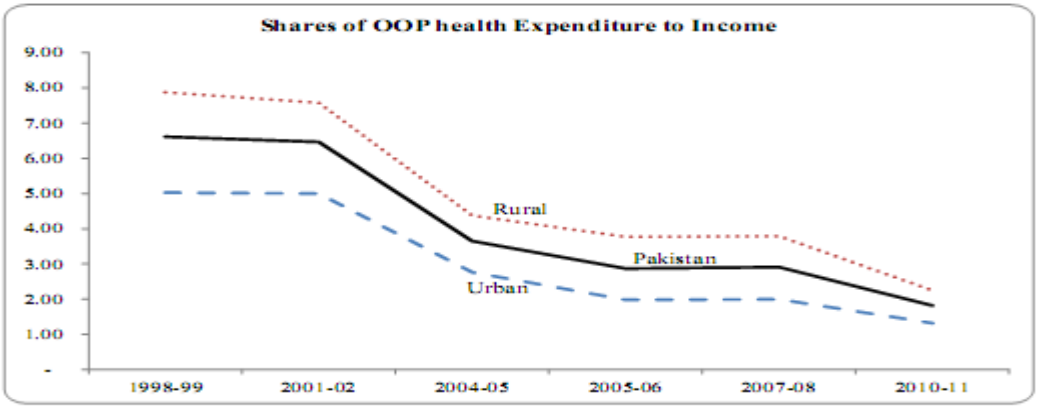
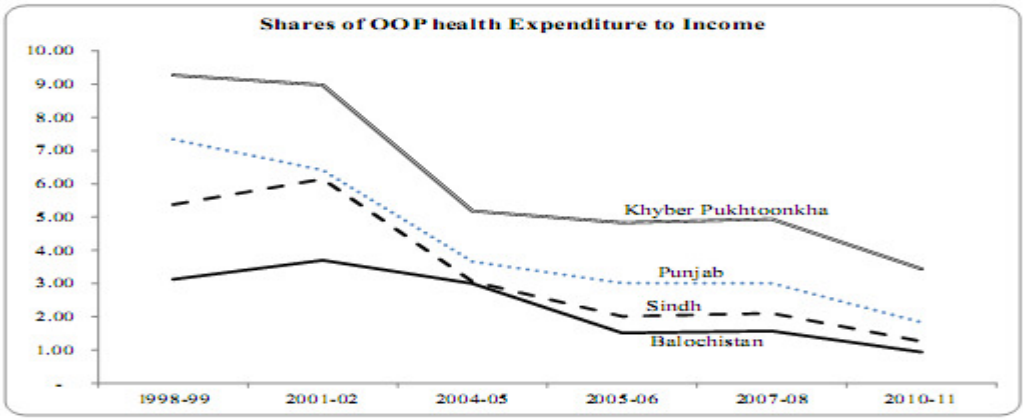


Figure 3.3: Share of OOP Health Expenditure to Income by Province



Since this analysis is on average basis we have further grouped these with respect to those who are above and below a threshold level identified for poverty to get a clearer picture. Table 3 provides the weighted average annual OOP health expenditures below and above the poverty line to present a clearer picture. First if we look at the difference in OOP health expenditures between

[9] Ideally these shares should be calculated using the total reported consumption expenditures at the household level, but since our focus is to see it in the context of poverty so we have done this analysis using the Health Expenditures as a share of total household income.

these groups then it appears that there is a marked difference in the OOP health expenditures for both the groups in the initial sample period (1998-99). Both Rural and Urban based households below poverty line OOP health expenditures are less than half of what the above poverty line group was spending. However over time the difference has reduced between both the Rural and Urban regions and between groups.

If we compare the OOP health expenditures across provinces for persons below and above poverty line then it appears that KP households have been spending more than all other provinces for OOP health expenditures whether in Rural or Urban area. One of the reasons could be low government spending in health sector for KP as mentioned in table 3.2. Secondly this may also identify the incidence of catastrophic health expenditures are more in KP province. On the other hand Balochistan is the province which has the least expenditures in all categories. Even the individuals which are above poverty line in Balochistan spend less than the households living below poverty line in other provinces.

Although we could not find any evidence for higher rural share within country specific studies but cross country results show that on average in low income countries OOP share is higher than richer countries (Musgrove P. et al., 2002).

Household survey data usually do not report sources of financing the health expenditures, but health needs often push households into selling their assets or borrow cash (Musgrove P. et al., 2002). This is particularly more relevant for developing countries, where about half of all the households cannot afford a medical emergency out of current income or savings {for references please see P. Musgrove et.al. (2002) and India's future health system: issues and options, The World Bank (2001)}. Similar evidence comes from other countries such as in northern Viet Nam in 1995, where around 40% of the households had to borrow money, or sell livestock to meet the medical emergency {Please see India's future health system: issues and options, The World Bank (2001), Ensor I. and P. San, (1996)}. However this issue needs further analysis in case of Pakistan. As catastrophic health expenditures can push vulnerable groups to poverty without the presence of effective social safety nets.

The results of the study show that the total and per capita OOP by households and government health expenditures are increasing. This indicates better realization of importance for health by both government and households.

Contrary to this, government's health expenditure to GDP ratio is less than one percent and it remained volatile in the period of analysis. Furthermore, this ratio is decreasing during the sample period. Similarly, the health expenditure share, out of the household income, is also decreasing. Such findings suggest more health awareness is required for private households and government.

From the health policy perspective, geographical differences of OOP expenditure are important. The results show the KP province has the highest OOP health expenditure and such results are consistent with earlier research also (Muhammad M. and A. Syed, 2012). This could be due to higher literacy rate and income among the inhabitants and better economic situation as compared to other provinces {Muhammad M. and A. Syed (2012), National Health Accounts 2007-08}. Secondly the province has more rural share and is lacking with publicly provided health facility. Corroborating these results, it can be inferred that KP households have altered their choice to spend more on health as compared to other provinces. Further the provincial differences are also consistent with the above argument that those provinces where there are better indictors of literacy and income coupled with lack of health facilities, are spending more on healthcare expenditures. The last argument is also observed in urban-rural differences. The residents of urban locales spent less on health expenditure as compared to rural areas in Pakistan. Our findings are consistent with Rous J. and D. Hotchkiss, (2003) and in contradiction with Muhammad and Syed, (2012). This shows that in rural areas lack of health facilities pushes the people to spend more to buy health care privately. The lack of health facilities and improper medical facilities may be a factor for high disease prevalence rates and health problems. This further reinforces the people to spend more even for the minimum health care.

Table 3.3: Weighted Average Annual OOP Health Expenditure Across Poverty Line (in rupees)													
		1998-99		2001-02		2004-05		2005-06		2007-08		2010-11	
		Below	Above	Below	Above	Below	Above	Below	Above	Below	Above	Below	Above
Punjab	Rural	3,213	9,540	2,987	5,296	3,571	7,829	4,967	6,235	5,192	5,233	5,280	7,363
	Urban	3,197	10,273	3,155	5,149	3,542	5,930	4,404	6,535	5,558	5,376	5,213	7,606
	Total	3,209	10,086	3,033	5,189	3,563	6,757	4,846	6,390	5,276	5,306	5,268	7,466
Sindh	Rural	3,312	7,818	3,810	4,755	3,168	3,948	3,929	5,217	4,319	4,559	4,267	5,211
	Urban	3,411	4,893	4,131	9,767	3,583	5,690	4,715	4,632	4,939	4,505	4,162	4,832
	Total	3,353	5,499	3,933	9,111	3,311	5,390	4,195	4,758	4,519	4,517	4,242	4,954
KPK	Rural	3,542	10,554	3,837	5,405	5,190	10,878	7,215	10,537	8,565	7,860	9,485	11,652
	Urban	5,029	8,638	4,599	6,082	6,010	8,075	5,894	14,226	8,410	7,772	8,607	10,766
	Total	3,748	9,391	3,945	5,845	5,303	9,749	7,044	11,563	8,543	7,833	9,380	11,445
Balochistan	Rural	2,181	5,142	2,208	1,827	2,804	5,320	2,437	3,007	2,527	3,302	2,990	3,284
	Urban	3,142	4,410	3,212	2,220	3,075	3,862	2,926	2,907	3,024	4,477	3,323	4,152
	Total	2,291	4,996	2,370	1,982	2,848	4,620	2,513	2,969	2,630	3,786	3,046	3,502
Pakistan	Rural	3,216	8,423	3,240	4,893	3,686	7,562	5,009	6,540	5,434	5,372	5,734	7,312
	Urban	3,390	7,813	3,558	7,693	3,706	5,897	4,575	5,985	5,511	5,107	5,236	6,577
	Total	3,263	7,980	3,328	7,086	3,691	6,513	4,911	6,221	5,452	5,221	5,644	6,971

4. Conclusion

The study analyzed the OOP health expenditure patterns of Pakistan historically, across provinces, rural and urban areas and between below poverty line and above poverty line households. The study has pooled six nationally representative household surveys "Household Income Expenditure Survey (HIES)" for 1998-99, 2001-02, 2004-05, 2005-06, 2007-08 and 2010-11. The study found that absolute amount of health expenditure by households and government are increasing over the time, but spending shares out of income are declining, which should be major policy concern. The more rural health expenditure should also be policy dimension as most rural household already living under the absolute poverty and such expenditures will push them into further poverty trap. Although this urban- rural gap is narrowing down over the time but on other side average expenditure is also decreasing. Further disparity among the provinces is also another policy attention. These findings demand a holistic health policy analysis and formulation in Pakistan.

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