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Public Health

journal homepage: www.elsevier.com/puhe

Short Communication

Quantifying the burden of out-of-pocket health expenditure in India

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ARTICLE INFO

Article history:
Received 12 September 2017
Received in revised form
24 January 2018
Accepted 14 February 2018

Keywords:
Household
Dimensions
Expenditure
Health

ABSTRACT

Objectives: This study aims at analyzing the dimensions of the burden of out-of-pocket (OOP) health expenditure in rural and urban India between 1999–2000 and 2011–2012.

Study design: Consumer Expenditure Survey data of the National Sample Survey for the period of 1999–2000 (55th round), 2004–2005 (61st round), and 2011–2012 (68th round) have been used in this study.

Methods: To analyze the dimension of OOP healthcare expenditure, this study has used headcount measure, which includes change in the percentage of population paying OOP health expenditure, concentration index of headcount, rank-weighted headcount, and gap measures, which includes average per capita gap (health expenditure), mean positive gap, concentration index, and rank-weighted gap for rural, urban, and all India level between 1999–2000 and 2011–2012.

Results: The authors have found that a large percentage of the population in rural and urban India is still not reporting health expenditure. There is a huge difference between per capita health expenditure in rural and urban areas during the study period. The percentage of the population that reported OOP health expenditure has increased at the bottom level, but the expenditure got more concentrated toward better-off people in both rural and urban areas of the country in this time period. It is also clear from the results that the concentration of average per capita gap (Co) in rural areas leans towards better-off people more than in urban areas.

Conclusion: This study advocates for health sector reforms to protect households from the significant burden of expenditure on critical health care.

Introduction

The common goal of health policies in every country is the promotion of health and well-being of all people to a greater possible extent within the given resource constraints.[1] Although health is affected by our physical and social environments, our genes, and educational opportunities, to a greater degree, it is also affected by our economic status and

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https://doi.org/10.1016/j.puhe.2018.02.017
0033-3506/

the medical care we receive.[2] Around the world, on one hand, millions of people are not in a position to obtain critical healthcare because they cannot afford to pay for the treatment. On the other hand, those who do seek care suffer financial catastrophe and impoverishment as a result of meeting the cost out of their pocket.[3] Sometimes this out-of-pocket (OOP) expenditure is so high that people have to cut down on necessities such as food, clothing, and the education of their children. Every year, approximately 44 million households, or more than 150 million individuals, throughout the world face catastrophic expenditure, and about 25 million households or more than 100 million individuals are pushed into poverty by the need to pay for services.[4] Catastrophic expenditure is the OPP payment which exceeds some threshold share of household expenditure[5] with the justification that households are forced to sacrifice other basic needs, sell productive assets, incur debt, or be impoverished.[6] Wagstaff and Doorslaer, 2003,[5] in a study on Vietnam, examine that health shocks are associated with a decline in consumption in particular for the uninsured and better-off households. Another series of participatory studies in Kenya, Uganda, India, and Peru also concluded that OOP healthcare expenditure is the single-most important reason for households plunging into poverty.[7] In addition, studies in Latin American countries, China, Thailand, multiple Asian countries and territories, and India have also reported substantial variation in the delivery and financing of health services which is one of the most important factors responsible for economic burden of ill health. Poor households in rural areas are more vulnerable because they spend a large percentage of their total expenditure on health care. Lack of medical facilities in rural areas forces them to go to untrained practitioners, which takes a toll on their health and medical expenditure.[8] OOP health expenditure is the major cause of household debt for families in low- and middle-income groups in India.[9] This pushes many individuals into poverty and increases health inequalities. These health inequalities are limited not just to life expectancy but also to infant mortality, mental health, physical health, and so on. In this study, the authors have analyzed the dimensions of the burden of OOP health expenditure in rural and urban India between 1999–2000 and 2011–2012.

Methodology

Total consumption expenditure plays a critical role in the analysis of the burden of healthcare expenditure. In India, consumption expenditure surveys conducted by the National Sample Survey (NSS) provide detailed information on consumption expenditure of the households. This study has used Consumer Expenditure Survey (CES) data of the NSS for the period of 1999–2000 consisting of 120,309 households (71,385 rural and 48,924 urban), 2004–2005 consisting of 124,644 households (79,299 rural and 45,346 urban), and 2011–2012 consisting of 101,662 households (59,695 rural and 41,967 urban). The method suggested by Wagstaff and van Doorslaer's (2003)[5] has been adopted, which is as follows: a household is said to have incurred catastrophic payments if T_i/x_i exceeds a specified threshold, z. The formula uses Ti as the OOP health expenditures for household i and xi as the total expenditure for household i. The head count is then given by $H = \frac{1}{N}\sum_{i=1}^{N} Ei = \mu_E$, where N is the sample size and E_i is an indicator equal to 1 if OOP payments of a household i as a proportion of its total consumption expenditure are greater than the threshold, and 0 otherwise. In the same way, we have calculated the amount of healthcare expenditure with the help of the given formula: $G = \frac{1}{N}\sum_{i=1}^{N} O_i = \mu o$. O_i is the threshold exceeding amount of the individual. Average per capita OOP health expenditure only of the OOP-reported households has also been measured, which is termed as the mean positive gap (MPG), and is equal to $\sum_{i=1}^{n} O_i / \sum_{i=1}^{n} E_i = \mu o/\mu_E$. To show whether it is poor or better-off individuals who exceed the threshold, we calculated concentration index for Ei, which we defined as C_E and calculated by using the following formula: $C_E = (p_1L_2 - p_2L_1) + (p_2L_3 - p_3L_2) + \ldots\ldots\ldots\ldots\ldots\ldots + (p_{T-1}\,L_T - p_TL_{T-1})$, where p_t is the cumulative percentage of the population ranked by economic status in group t, and L_t is the corresponding concentration curve ordinate. In the same way, we have calculated concentration index for gap (C_o) as well. To verify the results, we constructed a weighted version of the headcount with the help of the given equation: $W^E_{cat} = \mu_E(1 - C_E)$; if those who exceed the threshold tend to be poor, the concentration index C_E will be negative, and this will raise W^E_{cat} aboveμ_E. In the same way, we calculated for payment excess. We defined a concentration index for the overshoot variable, O_i, which we denoted by C_O. It is pertinent to mention here that in this study, we have analyzed the burden of health expenditure at 0% (at reporting level) threshold level because for poor people, any OOP expenditure on health care would be burdensome (catastrophic)[10] as they have to reduce expenditure on other critical minimum necessities to pay for their health care which pushes them into deep poverty.

Results

Results of the study indicate that the percentage of population reported paying OOP health expenditure has increased in rural and in urban areas from 1999–2000 to 2011–2012. But still, almost 17% of the population at rural, urban, and all India level are not reporting health expenditure according to 2011–2012 data, whereas this figure was almost 32.0% in rural, 30.0% in urban, and 31% at all India level in 1999–2000. Average monthly per capita OOP health expenditure in 1999–2000 was INR 33.03 ($ 3.24), with INR 29.6 ($ 2.90) in rural India, and INR 43.3 ($ 4.24) in urban India. In 2004–2005, it was INR 41.68 ($ 3.73), with INR 36.34 ($ 3.25) in rural India, and INR 57.42 ($ 5.14) in urban India. In 2011–2012, it has increased to INR 110.72 ($ 7.33), with INR 94.83 ($ 6.28) in rural India, and INR 150.4 ($ 9.96) in urban India by using the purchasing power parity exchange rate of US $ and INR in 1999 ($1 = 10.20 INR), 2004 ($1 = 11.17 INR), and 2011 (1$ = 15.10 INR) of Organisation for Economic Co-operation and Development (OECD) data.

Table 1 also analyzes the changes which took place over the period of 12 years (from 1999–2000 to 2011–2012) in headcount measure, which include change in the