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Public Subsidies on Health and Nutrition in Punjab: Do the Poor Benefit?

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Abstract
Pro-poor spending is one of the important objective of the government in Punjab growth strategy and Sustainable Development Goals but there is lack of information regarding the distribution health services among different population groups. Such information is important for policy makers and programme managers to develop and implement pro-poor strategies. So, by using "Benefit Incidence Analysis" technique, this study has tested the hypothesis if public spending on priority health and nutrition services are targeting the most vulnerable poor group or not? The results obtained by using MICS, DHIS, ADP data and the DISP 2.3 software show that all the government interventions are not progressive in absolute term indicating they are not well targeting the poor except immunization and school education which are found relatively progressive. To create awareness in hard areas about use of service, ensures accessibility, increase budget in budget etc are some of policy suggestions.
Keywords: Benefit Incidence Analysis, Health, Multiple Indicator Cluster Survey Nutrition, public Spending's

1. INTRODUCTION

Health and nutrition outcomes especially in poor group of people, depends both of community as well as on facility-based activities. If these services are not well supported by central levels of health institutions, as well as some centrally run health programs then it is more likely for public expenditure to benefits the rich group of the society more than the poor. Pro-poor spending is one of the important objective of the government in "Punjab Growth Strategy" vision 2018 but there is lack of information regarding the distribution of benefits of free public health services to different population groups. Such information is very necessary for program administrators and policy makers to design and implement policies and programs that could guarantee to favourably help the poor and vulnerable groups of society.

Health is considered to be one of the most important elements in the construction of human capital in the sense that the spending in health sector has direct positive impact on GDP and productivity. Statistics show that the health indicators of Punjab are poor particularly in the rural areas where poverty is highest (Statistics, 2014) Similarly, hunger and under-nutrition are also major issues that suffer more from ill health (Jose, 2005). Although, the sector has shown desirable performance in preceding years but the spending by the provincial government in nutrition sensitive sectors, especially health sectors remains insufficient and tilted toward the middle and rich income group. Poor service delivery and unaccountability in public expenditures are the additional problem faced by the health sector.

The health and nutrition problems in developing areas of Punjab and its association to socio-economic growth is a matter of influential strategies that can affect the investment decisions made by donor agencies such as the USAID, World Bank, UNICEF etc. This study has the aim to provide an evidence and analysis; whether the government policies are aligned to achieve the 2nd goal of Sustainable Development Goals (SDGs) set aside by United Nations Development Programme (UNDP) Pakistan which aims to end hunger, achieve food security and improved nutrition and promote sustainable agriculture by 2030. In fact, the current service delivery system and expenditures which provides less public/merit goods to poorest income group emerge some doubts on government understanding to the predicament of citizens. The Public programmes on nutrition by government of Punjab that are designed to target the affected population are small in dimension and coverage.

In 2015-16, the share of nutrition sensitive schemes' budget in total development budget of Punjab was only 37 billion (Punjab, 2015-16). which was about 9% of total budget. Total estimated budget for multi-sectoral nutrition interventions sector for the year 2016-17 was increased to 49 billion which still count for 9% of total budget. This study is an attempt to provide some awareness to the government to manage its resources to meet the needs of the poor. To describe the nature of the incidence of the public-sector spending on health and nutrition, following research questions / hypothesis are raised in the present study

- Is the public spending in health sector progressive in Punjab, at provincial level?
- Identify the beneficiaries from different government expenditures in health and nutrition-sensitive schemes

How the Issues are Analysed?

Targeting public spending and progressivity are the two dimensions which are evaluated in BIA. In current fiscal framework, there is growing realization of benefiting the target group. Public spending is considered a tool to focus on the welfare of the marginalized group population. This analysis aims to reveal who is the main beneficiary of public subsidy. This study incorporates four main methodological steps of BIA technique.

First step involves measuring the unit spending of providing a specific health service: which is obtained by dividing actual government expenditure on a particular intervention to the total number of beneficiaries of that service. Second step is to identify the users; household surveys have been conducted by various government organizations to get information about who use the publicly provided health service. At this step, the researchers are required to distinguish between which demographic group is using the service (poor/non-poor, rural/urban, female/male headed etc.). Third, and most important step is to aggregate the users into groups. Households are ranked according to income, usually proxies by the per capita expenditure of the household to which they belong. This common classification method sometimes ignores the factors of subsistence consumption and price disparities across regions. However, some alternative rankings based social groups, region and gender is also very common in BIA studies. In this study, the users of the service are classified according to their per capita expenditures. Fourth step is to calculate BIA by joining information about per unit cost of provided these public goods with information on the use of these goods.

LITERATURE REVIEW

The earliest examples of analyses of the benefit incidence of public spending on merit goods are studies by Gillespie in 1965 on Canada and the United States (Tiongson, 2003). The literature on BIA shows that the technique has been mostly used to evaluate the incidence of public spending in merit goods such as health and education. Some useful studies on the benefit incidence analysis are of following:

To identify the distribution of public expenditures on health and education in 56 countries (D.R.Hamidi, 2003) used BIA for the time period of 1960-2000. He revealed the practicality of BIA in two ways. First, it has found that overall health and education expenditures are not pro-poor, Benefits from primary health care and primary education are gone excessively to the middle income distributional quintile rather than to low income quintile especially in sub-Saharan Africa, HIPCs and transition economies. The targeting in these countries has found to be improved in the 1990s. Secondly, by empirical evidences, the study showed that the countries with pro-poor incidence public spending on health and education revealed good results, good human capital, good per capita GDP, good governance, and extensive sources of availability to information. For Addressing the distributional incidence of health policies in Argentina using data from "living slandered measurement survey" of 1997 and 2001 (P.Monica, 2005) especially focused on health and nutrition policies related to pregnant women and children such as neo-natal care, attended delivery, immunization and public nutritional interventions. The results witnessed that the most of the public spending were pro-poor. To measure the incidence of public expenditure on education and health care facilities in Pakistan (A.Muhammad & J.K.Faheem, 2007) used three steps "Benefit Incidence Analysis". By employing the primary data from Pakistan Social Standard Living Measures Survey (PSLM) conducted in 2004-05; they explored the inequities in the distribution of public health expenditures. The rural areas of Pakistan were less privileged in the delivery of the health care facilities. The Preventive health care interventions were found progressive in Pakistan. Overall Public health expenditures are proved to be pro-rich in Pakistan. By using the Average and Marginal BIA methodology to measure the incidence of public spending of selected social services in Nigeria (A.R.Alabi O. , 2011) indicated that the public spending is not pro-poor. The results were the evidence for the modification of the policy to make the public expenditure benefited to the poor. (C.S.Lekha, 2013) also Used BIA methodology, to define the distributional incidence of public spending in health sector at the subnational government level and found that the public spending in health sector is apparently more equitable in some states of India. The public spending in other states were found regressive. The reason of regressively in health scare was the private sector inpatient care in some states; most of the patients from rich quintile use the private inpatient services which have made the health care delivery system more equitable. Results of the BIA methodology also suggest that division of health care facilities are also mainly evident in the provision of public health care delivery system, regressively is more related to inpatient, rather than ambulatory, services. (A.R.Alabi O. &., 2014) made use of primary and secondary health care data of 360 rural households in Edo state in Nigeria which was collected through survey. To analyse the, the author used the Benefit Incidence Analysis technique. The finding showed, in ante-natal, post-natal and vaccination services, the rural poor households share 37%, 27% and 32% respectively while the rich income distributional quintile share in the described services was 38%, 32% and 33% respectively. The results indicated that the health care services in rural area of Ado state in Nigeria are not relatively pro-poor.

MATHEMATICAL FORMULATION OF BIA

The mathematical formulation of BIA would be:

$$X_j = \sum_{i=1}^{3} E_{ij} \frac{S_i}{E_i} = \sum_{i=1}^{3} \frac{E_{ij}}{E_i} S_i$$

Where

- X_J is is the total benefit incidence of public spending on a service (say nutrition) to group *j*
- E_{ij} is the number of users of service from group *j* of a particular service *i*.
- E_i is the total number of users of service *i* from all groups.
- S_i is the net spending by the government on service *i*.
- *(Si /Ei)* is the per unit subsidy of service level *i*.

The share of total benefit incidence of particular health service to group *j* is:

$$\frac{X_J}{S} = \sum_{i=1}^{3} \frac{E_{ij}}{E_i} \left[\frac{S_i}{S} \right]$$

$$x_j = \sum_{i=1}^{3} e_{ij} s_i \quad \text{or}$$

The above expression shows that BIA depends on two major elements:

- The e_{ij}'s are the shares of the demographic group in total service use. These reflect household behaviour.
- The s_i,*s* reflects the shares of public spending on different types of health service, these spending replicate the government behaviour.

Generally, public spending for health services shows a discrepancy considerably by region to region. Health services in urban areas usually attract higher spending than in rural areas. It has also been observed that the health facilities in capital city is financed more than any other urban areas These dissimilarities in public spending on health care facilities create inequalities in the distribution of benefits. But if data permit, benefit incidence involves the estimation of regional disparities in the distribution of health benefits so the estimation involves

$$x_j \equiv \sum_{k=1}^{n} \sum_{i=1}^{3} \frac{E_{ijk}}{E_i} \left(\frac{S_{ik}}{S} \right) \equiv \sum_{k=1}^{n} \sum_{i=1}^{3} e_{ijk} s_{ik}$$

In above expression, k indicates the area specified in the unit cost estimate. This share is definitely calculated by two factors: by determining the share of a group in total public spending on health at each level and in each region (e_{ijk}), and the share in each level of health care facility and region in total health spending (s_{ik}). The *e*'s reflect household decision of use of public health care facility, while the *s*'s shows the government spending on health at each level and region.

DATA SOURCES

To analyse the distribution of public spending on different income groups through BIA, three main sources of information have been used. The Multiple Indicators Cluster Survey (MICS) data gives information of household from different income groups on the consumption of public spending. District Health Information System (DHIS) reports give us the total number of beneficiaries from each public health service. Annual Development and Current Budget of Punjab gives us the information of total public spending on each service. The BIA approach combines the above mentioned three sources of information to analyse the incidence of public spending and its progressivity.

RESULTS AND DISCUSSIONS

In this study, the incidence analysis is conducted for following six health indicators in three main sectors of Punjab. Maternal and child nutrition care service improvement, especially among the poor and unreached segment of society are the key plans set aside in Multi-Sectoral Nutrition Strategy (MSNS). The health sector is accountable for achieving the desired results. The antenatal care services, attended delivery by experts and child immunization are the key indicators to reach the desired outcomes. The review of the health sector in providing these services indicates that the provision of these services at pro-poor level is not very strong (see above figures), the concentration curve for participation in antenatal care, attended delivery by doctor and immunization lies below the equality diagonal which indicates that the public spending is not progressive in absolute term. These are not targeting the lowest 20% wealth quintile group. We can say that the public spending in all these interventions are not pro-poor in absolute term. The current situation reveals that Punjab is unlikely to reach the MTDF, SDGs targets. Pro-poor spending is required to spend more on the provision of public services and merit goods for the poor segment of society given that they have lack of financial resources to access these services from private sector. Reallocation and restructuring of provision of these services is necessity of time.

In line for a strong association between safe drinking water, proper sanitation and nutrition, the WASH sector of Punjab is analysed for the provision of piped borne water and sanitation to the lowest quintile. WASH sector analysis shows that access to piped water sources in poorest 20% quintile is relatively progressive as the

concentration curve lies above the Lorenz curve (figure 7) but the sanitation still needs to endorse commitments as the distribution of resources in provision of sanitation is still uneven than income (figure 5). The education sector has also very significant contribution in improvement of malnutrition as the sector has greater potential to develop the nutritional knowledge and actions of future generation. The review of the sector in provision of school education reveals that the public subsidies on primary school education is relatively progressive (figure 6). The most beneficiaries of the public subsidies on primary education are the children belong to lowest quintile and aging 5-17

CONCLUSION

In general, the public spending on all nutrition sensitive social utilities are not pro-poor in Punjab as the social discrimination is more noticeable in spending of roads infrastructure than to spending on health and nutrition specific and sensitive interventions in different sectors. Furthermore, a mark able inequality in the provision and accessibility of these services has been found in this analysis. Only the immunization, pipe-borne water and school education is found relatively progressive. Public subsidies on school education are well-targeted to the poor which provide an evidence for the share of education budget that goes to basic education. Consequently, the more public investment in school education, the greater improvements in poorer households' education level can be achieved. The analysis is limited to find inequalities among income quintiles due to shortage of data of regional indicators; the regional inequalities are also effective in the provision of public service. The critical issue is remained the shortage of funds, without which it is not possible to attain universal health and nutrition status.

RECOMMENDATIONS FOR POLICY AND PRACTICE

In order to make social utilities pro-poor, the government can take the following initiatives.

- First of all, the government needs to generate information on the utilization of public health and nutrition programmes that have the potential to result in a more pro-poor incidence health spending and ultimately better social outcomes. A more comprehensive way may be to activate the social community of hard areas. The health sector can hire communication consultants who mobilize the social community (local school teacher, Imam Masjid, Nambardar etc.) of that particular area to influence the target population. The process of awareness should be institutionalized in the health sector.
- Although, the public-sector development budget 2016-17 for education, health and WASH has been sufficiently increased but timely releases of funds, efficient use of resources and restructuring of public spending on health and improve the availability to the poor is the need of the hour.
- The regional disparities can also be bridged by developing infrastructure of BHUs, RHCs and MNCHs for antenatal, post-natal and attended delivery through consultation with experts in less privilege and rural areas so as to increase accessibility to these services to the poor.
- To make school education pro-poor, increases in budget provisions for school must be supplemented with improved enrolment by poor household's children. The education of poor children involves some opportunity cost since he/she has to give up some earning opportunity to get education. To increase the financial incentives to urge the children to come to school apart from providing the books, stationary, uniform, shoes and school bags free of cost.
- Poor sanitation creates the circumstances for the development of infectious diseases that are linked to under nutrition. The sanitation provision to households often requires a high budget. WASH sector in Punjab is frequently under-funded, particularly in rural and less privilege areas. There is a need to increase the budget to provide proper sewerage system to the poorest and most marginalised groups
- Community resources can also be mobilised in an innovative way for the provision of better health and nutrition services. This approach may involve the intensive training and involvement of local community leaders. It can also involve the local delivery of service by local community persons that are trained for better provision of service. This approach is being practiced in India and Ghana to improve the health of poor.
- There is a need of special collective monitoring department to share knowledge about nutrition among sectors which are nutrition sensitive. Professional from each sector can be made members of this monitoring cell. Incentives must be to facilitate better coordination amongst sectors, especially where sectors are working towards common goals. Strengthening inter-sectoral coordination and creating synergy is necessary for implementation of health and nutrition interventions in a comprehensive way.
- The current health and nutrition programmes are not integrated with mainstream activities of health care. Hospitals must be provided with preventive health care service as there is close link between prevention and cure. The segregation of directorate general of health from preventive side is not appropriate. Preventive and curative staff needs to be trained to provide services in a synergistic manner.

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Table 1: Results of Benefit Incidence Analysis

PUBLIC SERVICES	PARTICIPATION RATE OF LOWEST 20% QUINTILE	PARTICIPATION RATE OF HIGHEST 20% QUINTILE	SHARE OF LOWEST 20% QUINTILE	SHARE OF HIGHEST 20% QUINTILE
ANTENATAL CARE	0.093	0.123	0.129	0.18
ATTENDED DELIVERY BY DOCTOR	0.025	0.940	0.086	0.322
IMMUNIZATION	0.261	0.206	0.260	0.205
PIPE-BORNE WATER	0.197	0.120	0.274	0.167
TOILET SEWERAGE SYSTEM	0.110	0.414	0.116	0.457
SCHOOL EDUCATION	0.635	0.450	0.228	0.161

Source: author's estimation

Figure 1; Concentration curves for use of Public Services of Antenatal care, Attended Delivery and Immunization, WASH, Sewerage system, Education