PUBLIC AND PRIVATE EXPENDITURE ON EDUCATIONAL AND MEDICAL FACILITIES AND THEIR IMPACT ON POVERTY AND HEALTH STATUS IN CONTEXT OF CHANGING ROLE OF THE STATE

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CERTIFICATE

This is to certify that the dissertation thesis titled Public and Private Expenditure on Educational and Medical Facilities and their impact on poverty and health status in context of changing role of the state submitted by Mr/Ms. Ratna Anjan Jena ..... in partial fulfillment of the requirements for award of degree of ~~M.Phil~~ M.Tech/ Ph.D of Jawaharlal Nehru University, New Delhi. has not been previously submitted in part or in full for any other degree of this university or any other university institution.

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Dedicated to my Parents Late Ramendranath and Nilima Sengupta

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As I write this acknowledgement, I look back years of struggle and hopelessness which were no doubt necessary ingredients for strengthening my will power to complete this study that I had undertaken. This thesis is the sum of my dedication to this work. Despite many obstacles that I faced on many fronts, I determined to give my time and energy to my research work. The first and foremost, I would like to thank my initial superviser Prof. Amitabha Kundu whose insights provided me useful directions to navigate this project. My heartfelt thanks are due to Prof. Amaresh Dubey, who has willingly considered me as his student and given full guidance for the finalisation of this study. Without his guidance and unbridled enthusiasm in reviewing my work, it would not have been possible to complete this study.

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The responsibility for any errors and short comings in what appears in print is, however, entirely mine and I am alone to be held responsible for it.

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Ratna Anjan Jena

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ABBREVIATIONS

AIDS	Acquired immunodeficiency syndrome
AISHE	All India Survey on Higher Education
ANMs	Auxiliary Nurse Midwifery
ASER	Annual Status of Education report
ASHA	Accredited Social Health Activists
AWC	AanganWadi Workers
AYUSH	Ayurveda, Yoga, Unani, Siddha and Homeopathy
BBBP	Beti Bachao Beti Padhao
CAB	Clinical, anthropometric, and biochemical testing
CABE	Central Advisory Board of Education
CAG	Comptroller and Auditor General
CAGR	Compound Annual Growth Rate
CAPI	Computer Assisted Personal Interviewing
CEHAT	Centre For Enquiry Into Health and Allied Themes
CGHE	Current Government Health Expenditure
CHC	Community Health Centres
CHE	Current Health Expenditure
DEVAW	Declaration on the Elimination of Violence Against Women
DHS	Demographic health survey
DISE	District Information System for Education
DLHS	District Level Household Survey
DPEP	District Primary Education Programme
GHE	Government Health Expenditure
GNP	Gross National Product
GPI	Gender Parity Index
GSDP	Gross State Domestic Product
HCR	Head Count Ratio
HDR	Human Development Report
HIV	Human immunodeficiency virus
HMIS	Health Management Information Systems

HNP	Health Nutrition and Population
ICDS	Integrated Child Development Scheme
ICMR	Indian Council of Medical research
ICPHC	International Conference on Primary Health Care
ICRW	International Center for Research on Women
ICSSR	Indian Council of Social Science Research
IMR	Infant Mortality Rate
IPFS	Indian Public Finance Statistics
IPHS	Indian Public Health Standards
IRDP	Integrated Rural Development Programme
JSY	Janani Suraksha Yojana
LMIC	Low and middle-income countries
MCH	Maternal and Child Health
MDG	Millennium Development Goals
MDG	Millennium Development goals
MoF	Ministry of Finance
MoHFW	Ministry of Health and Family Welfare
MoSPI	Ministry of Statistics and Programme Implementation
MMR	Maternal Mortality Ratio
MPCE	Monthly Per Capita Consumption Expenditure
MPI	Multidimensional Poverty Index
NAS	National Accounts Statistics
NCMH	National Centre for Mental Health
NFHS	National Family health survey
NHA	National Health Accounts
NHM	National Health Mission
NHP	National Health Policy
NNM	National Nutrition Mission
NPE	National Policy on Education
NPP	National Population Policy
NREP	National Rural Employment Programme

NRHM	National Rural Health Mission
NUHM	National Urban Health Mission
NYK	Nehru Yuva Kendras
OOPE	Out of pocket Expenditure
PFCEH	Private final consumption expenditure onHealth
PFCEE	Private final consumption expenditure' on education
PHC	Public Health Care
PHS	Public Health Services
PPP	Public-private partnership
PTR	Pupil Teacher Ratio
RCH	Repoductive Child Health
RMSA	Rashtriya Madhyamik Shiksha Abhiyan
RSBY	Rashtriya Swyastha Bima Yojana
RTE	Right to Education Act
RUSA	Rashtriya Uchchatar Shiksha Abhiyan
SAP	Structural Adjustment Policies
SC	Sub-Centres
SDG	Sustainable Development Goals
SSA	Sarva Shiksha Abhiyan
U5MR	Under-5 Mortality Rate
UEE	Universal Elementary Education
UHC	Universal Health Coverage
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WDR	World Development Report
WHO	World health organisation

CHAPTER 1

INTRODUCTION

1.1. Background of the study

Poverty is perhaps the worst calamity of human civilization and is a global phenomenon. Sufferings and the painful experience that a section of human race undergoes through poverty and related deprivations continue to haunt economic analysts and policy planners even today. Poverty in any society is associated with the denial of minimum of goods and services needed for bare human existence as a result of a certain structure of socio-economic institution. Poverty amidst plenty, alarming inequality in income and opportunities, lack of access to health and education, pose serious threats for the survival of humanity.

Poverty, a global phenomenon, is a constant state of condition for a huge number of people around the world[1] and basically means not having access to appropriate choices and opportunities, thus a direct blow to human dignity. Further, it assails individual capabilities to participate in society which invites a host of other insecurities like powerlessness, violence and exclusion[2].Moreover, living in marginalized environments with no access to education, health care, clean water and sanitation[3], the poorest people succumb to hunger, malnutrition and diseases.[4]. It is difficult to exactly enlist the causes of poverty because there are many factors leading to impoverished conditions. Some of the causes are improper government policies, exploitation by affluent people, lack of individual responsibility or the combination of these mentioned and other factors.

The conceptual grasp of poverty has formulated different measures of poverty in the past in concrete statistical terms to design the policies and programs targeting those who were made visible through the poverty measures. One of such important measures is the Head Count Ratio (HCR) that expresses only income poverty (proxy expenditure). It is defined as the number of people below a certain level of income (expenditure), which is termed as poverty line, articulated

[1] Shah, A. (2010), Causes of poverty. Global Issues. http://www.globalissues.org/issue/2/causes-of-poverty.
[2] Quoted in the Report of the Independent Expert on Human Rights and Extreme Poverty (E/CN.4/1999/48),
[3] "Indicators of Poverty and Hunger", Expert Group Meeting on Youth Development Indicators, United Nations Headquarters, New York, December,2005.
[4] Causes of Poverty, Global Development Research Center, available at https://www.gdrc.org/sustdev/causes-poverty.html on

by the monthly per capita consumption expenditure, adequate only to procure a basic necessities and minimum level of calories.The concept of the poverty line in terms of income is interpreted as referring to a very minimum level of calories for the people to live, so that they do not die out of hunger, but not adequate to lead a human life with dignity [5].

However, the above concept of defining poverty through HCR is one- dimensional. The UNDP (1996)[6] had commented, that human development goes beyond the aspect of "income poverty" and encompasses many other dimensions to make it more comprehensive. In 1997, the conceptualization of 'human poverty' was developed as denial of choices and opportunities for living a "tolerable life" by the UNDP. Poverty has been defined by Amartya Sen as the absence of the capability to lead a full life. It constitutes many things which cannot be measured simply by the notion of consumption expenditure (Total Consumption Expenditure). Poverty is also the deprivation of non-income dimensions like health and education, opportunities that are the basic public necessities, which enhance human capabilities to lead a tolerable life. In this sense, the deprivation of health and educational constitutes an integral part of human poverty. Attempts to quantify the incidence of poverty therefore, naturally presuppose the study of level and pattern of individuals' consumption as well as their access to provisions (especially health and education) being extended by the state and its subsidiary institutions.

1.2. The Review of Literature

There is no dearth of literature for assessing the level and change in poverty in our country. The "economic aspects of poverty" covers the lack of fulfillment of material needs constituting food, clothing, shelter, or safe drinking water etc. The "social aspects of poverty" directs us towards the lack of social needs, such as access to healthcare, education, information, social capital or political power [7, 8, 9]. The lack of these needs constitutes a condition, when a person is unable to have a basic standard of living.

[5] Introduction to Poverty Manual, World Bank Institute, August, 2005.
[6] Human Development Report 1996. United Nations Development Programme (UNDP).
[7] A Glossary for Social Epidemiology, World Health Organization. March 2002.
[8] Ferragina, E, Tomlinson, Mark, and Walker, Robert (2016). Poverty and Participation in Twenty-First Century Multicultural Britain, Social Policy and Society, October, 2017.
[9] Stephen McKinney, The relationship of child poverty to school education, Nov, 2014, Research Article, available at https://doi.org/10.1177/1365480214553742.

1.2.1. The Multi-Facets of Poverty in India: An Outline

The measurement of poverty in India is basically done constructing a threshold level of consumption (proxy income), called poverty line which is only adequate to have a minimum level of calorie. The recent state specific poverty lines have been calculated as suggested by the Tendulkar Committee (2009) [10] by the erstwhile Planning Commission for the estimation of incidence of poverty in different years. This method of estimation incorporates the per capita expenditure on consumption basket, items, which includes expenditures on housing, clothing, education, health, fuel, sanitation, safe drinking water and others apart from food. Not only Tendulkar committee, other committees such as N.C Saxena, Arjun Sengupta, Rangarajan, have also estimated the incidence of poverty. The international organizations like World Bank and Asian Development Bank also have their own estimates of poverty levels in India[11,12].. Poverty is extensively spread all over India — by using the international poverty line of US $ 1.25 per day (PPP) it has been estimated by the World Bank that around 11.8 per cent of Indian population were below the poverty line in 2014.The rural poverty ratio based on the Tendulkar methodology was estimated to be around 30.9 per cent and the total number of poor was 250 million in 2011-12[13], which is still quite high in absolute terms. The World Bank in 2014 has estimated the number of poor in India in 2011-12 as 148 million as compared to 396 million in 2004-05.

The poverty has been defined by Amartya Sen[14] as the absence of the capability to lead a full life and loss of various opportunities like education, health, good job, etc.. Deprivation of opportunities like education and access to health services etc. which enhance human capabilities to lead a sustainable life, is the leading cause of poverty. It is therefore, not possible to capture the incidence of poverty only on the axis of expenditure (measured in terms of Total Consumption Expenditure), as it is a complex phenomenon with multiple dimensions in it. The deprivation of basic non-income dimensions like health and education, can push an individual into poverty.

[10] Expert Group to Review the Methodology for Estimation of Poverty, Chaired by Prof. Suresh D. Tendulkar, 2009.
[11] Understanding Poverty, World Bank, available at http://www.worldbank.org/en/understanding-poverty
[12] Understanding Poverty in India, Asian Development Bank, January 2011.
[13] Press Release, Estimates of Poverty, 2011-12, Government of India, Planning Commision, July, 2013.
[14] Poor, Relatively Speaking, Oxford Economic Papers, New Series, Vol. 35, No. 2 (Jul., 1983), pp. 153-169.

1.2.2 Health and Education: Two Pillars of Human Development

Individual good health and education are the major components for the development of human capital. The positive impact of education and health on the economic development of a country is far-reaching, and, therefore improving education and health of people need to be a goal in itself for the development of the country's economy, and a better quality of life. Health and education are perhaps the most crucial dimension of human well-being; no matter whether we consider it as the basic necessity for human development or that of human resource (capital) development. The enhancement of people's choices being the prime concern of human development and it would allow them to have a long life with good health, to have education and they should be able to enjoy a decent standard of living (UNDP HDR, 1997). There exists interconnectivity between these three dimensions, as success in one area is increasingly co-dependent on the other areas (UNDP, 1997). While good health is of intrinsic value to the "doing" and "being" of an individual, a healthy educated population favourably located in the stages of demographic transition can work wonders for the economy.

India Human Development Report, 2011[15], highlighted the importance of health in human life stating that a healthy body makes one feel confident and highly immune to diseases. It is an integral part of overall human development and empowerment. The concept of empowerment can be derived from freedom that an individual has access to: freedom to work, taking a flight away from poverty, hunger and malnutrition and having a healthy lifestyle (Sen, 1999)[16]. Good health automatically reciprocates in the form of increased capacity to work and has substantive effects on labour force participation, productivity and wages (Currieet al., 1999)[17]. Inequalities in health often translate into inequalities in other dimensions of welfare (WDR 2006)[18].

Nelson Mandela had stated that, there is no other powerful weapon than education which only can be used to bring changes in the world. Education has long been recognized as the basic element for individual development as well as preparation for participation in the country's economic development. Globally, the topic of investment in health and education is gaining importance as both of these aspects make the labour force healthier. The World Development Report (WDR,

[15] Sustainability and Equity: A Better Future for All, UNDP.
[16] Development as Freedom, published by Alfred A. Knopf.
[17] Health, Insurance and the Labor Market, in Handbook of Labor Economics, Vol 3, Part C. p. 3309-3416, 1999.
[18] Equity and Development, World Development Report, 2006.

2013)[19] has observed that the provision of only two key services, that is health and education can help creating the right kind of jobs, which in turn will make the inclusive growth progress, thus improving standards of living in India.

1.2.3 Health and Poverty; the Critical Link

Whether poverty leads to ill-health or that the poor health is a precursor of poverty has been an ongoing debate among researchers across the globe. Though various research evidences subscribe to both the arguments, the fact remains that poverty and ill-health almost always co-exist and inextricably linked, and they cannot be studied in isolation. The medical officer of Barry[20], E. Ivon Davies, in regard to tuberculosis, observed, "Poverty with its attendant hardships -- poor food, bad housing, overcrowding, overwork and worry – diminishes resistance to disease; while prosperity which buys good food, rest, change of air and scene, choice of occupation and diversion decreases the chance of infection, increase the resistance and avoids contact with the infection". His comments also hold good for the explanation of the connection between poverty and ill health, as the deprived strata in our society, suffer ill health as a result of living in a poorer environment.

The fact that Disease and ill health cause suffering and death, but, also have a significant cost cannot be denied. In most of the societies disease not only creates Out-of-Pocket expenditures for patients and their families (Uplekar et al. 2001)[21], undermines income generation, and, as a consequence future economic welfare (Gertler and Gruber 2002)[22] is jeopardized. Under the stress and anxiety of disease some people have no choice but to pay the fees demanded by health providers even if they can't afford. Poor Households are generally willing to trade future welfare of all its members to get health care services for only one of them, perceived as essential for survival.

Health is a fundamental human right, and it is the responsibility of the governments to provide health care to all people in equal proportions. Ill health disproportionately afflicts the poor not having any insurance and they are mostly "unreached" by the existing health care services. The highest numbers of hospitalisation cases have been reported for infectious diseases, which are mostly prevalent with the poor (NSS 71st round)[23]. Poverty being the both a cause and a

[19] World Development Report 2013: Jobs, World Bank Group.
[20] Reports of Medical Officer of Health, RMOH (1938), p.69 Barry, South Glamorgan, UK
[21] Private Practitioners and Public Health: Weak Links in Tuberculosis Control, The Lancet, 358, issue 9285, pp 912-16
[22] Insuring Consumption against Illness. American economic review, *92*(1), 51-70, 2002.
[23] Social Consumption: Health, the 71st Round, January-June, 2014, NSS KI (71/25.0),

consequence of ill health contributes to the spread of disease undermining the effectiveness of health care services.

Health is an economic asset, which leads to overall human development and reduction of poverty[24]. The Working Group set up by the erstwhile Planning Commission on Public Health Services (including Water and Sanitation) for the Eleventh Five Year Plan[25] reviewed the existing scenario of Public Health Services in urban and rural areas and stated that despite significant achievement in the health sector, there still remains a lot to be done, and focused attention needs to be given developing infrastructure making the health care services accessible. Being a signatory to Alma Ata Declaration during the International Conference on Primary Health Care (ICPHC) 1978[26], primary health care is essential for 'preventive, curative and rehabilitative services' and it is an issue of human rights concern; primary health care facilities must be rendered free to the citizens[27].

1.2.4. Poverty; An Obstacle for Access to Healthcare Services

Dearth of finance is a major cause of ill health for the poor and due to this lack they cannot access healthcare services whenever it is required. The poor are unable to access to health care service due to their poverty which puts as a barrier, and this condition brings a large amount of Out-of-Pocket health expenditures, which has catastrophic effects. Sometimes, the poor people do not even report (Table 1.1) their illness as they fear loss of their work and the spending involved if treatment is required.

Table 1.1
Number (Per 1000) of Persons Reporting Ailment during Last 15 Days in 2014

	Rural			Urban		
Ailment	short duration	chronic	any	short duration	chronic	any
Male	44	36	80	45	56	101
Female	54	45	99	56	79	135
all	49	40	89	51	67	118

Source: NSS Report No. 574, Health in India, p-24
Note: Ailments for long-duration (30 days or more) are referred as chronic ailments with a 15-day reference period, rest are short-duration ailments.

[24] OECD and WHO (2003), Poverty and Health, Geneva, World Health Organization.
[25] Report of the Working Group on Public Health Services (including Water & Sanitation) for the Eleventh Five-Year Plan (2007-2012). Available at http://planningcommission.nic.in/aboutus/committee/wrkgrp11/wg11_rphfw1.pdf.
[26] The Declaration of Alma-Ata was adopted at the International Conference on Primary Health Care (PHC), Almaty (formerly Alma-Ata), Kazakhstan, September 1978.
[27] Guruswamy, M, and Abraham, R. J. (2006). Redefining poverty: A New Poverty Line for a New India. Economic and Political Weekly, 2534-2541. Vol. 41, Issue No. 25, Jun, 2006.

It has been shown by the NSS 71st round (India - Social Consumption : Health, Jan - June 2014) that the reason for treatment without medical advice was mostly due to "financial constraint" and "no medical facility available in the neighbourhood". It can therefore, be categorically emphasized that there is lack of access to the required services either due to geography or financial barriers.

Access to health care acts as a key not only in improving the general health status of a nation's population but enhances the overall standard of living of people in a country. It is because of its public good nature that the provision of health services becomes the onus of the Government, and, market forces have relatively little role to play. Undoubtedly, the role of Governments in regulating health services is of particular importance as a large percentage of the population of our country lives under poverty and cannot afford to make huge out of pocket payments to seek health services (Rao and Choudhury, 2012)[28].

1.2.5. The Public and Private Expenditure on Health

In the health sector, the public and private health delivery systems function simultaneously and therefore, analysis of investment on health in terms of public and private expenditure has been an important topic of research and discussion in recent times. The table 1.2 below gives some of the major indicators of health financing.

Table 1.2
The Key Health Financing (HF) Indicators: 2014-15

	(HF) Indicators	in %
1	GHE as a share of GDP	1.1
2	GHE as a share of Total Public(Gen. Govt.) Expenditure(GGE)	3.9
3	GHE: Per Capita (Rs)	111
4	Rev. Health Expenditure out of GHE	77.2
5	Centre's Health Expenditure out of GHE	37.0
6	State's Health Expenditure out of GHE	63.0
7	Government based Voluntary Health Insurance as a share of GHE	3.3
8	Household Health Expenditure (incl. insurance) as a share of THE	66.3
9	OOPE as a share of THE	62.6

Source: NHA Estimates for India 2014-15. MoHFW p-11

The inadequacy of Government (center + state) Health care expenditure in India is quite observable as 1.15% of GDP in 2014-15. In the same year the Total Health Expenditure (THE) was at 3.89%

[28] Health Care Financing Reforms in India, National Institute of Public Finance and Policy. 2012.

of GDP, which reduced from 4.2% in 2004-05 as was estimated in the National Health Accounts of 2004-05. The share of Government's health expenditure (GHE) was 29 per cent only and that of OOPE was 62.6 per cent, quite high.

As per Berki (1986)[29] exorbitant Out-of-Pocket expenditures on health can create dents in the quality of living and can push households into chronic poverty levels. It creates troughs in consumption of basic necessities and pushes the low income households into cycles of indebtedness (Ghosh (2011)[30], Van Doorslaer et al. (2007) [31]). Also, due to non-affordability of health expenditures, households report to come up with coping strategies wherein they 'curtail current consumption' on non-health care goods and services to finance the health care. Flores (2008)[32] attempted to study how the households finance their health expenditure through savings, borrowings and sale of assets and likewise are sidelined into economic poverty. It has assisted in identifying the vulnerable households that were exposed to 'hidden poverty and transient poverty' (Gupta and Joe, 2013)[33] due to their healthcare expenditure. In both cases, the enormous spending on health led the households to fluctuate across the poverty line.

Research studies by Birnbaum (1978)[34], Wagstaff and Van Doorslaer (2003)[35] define the threshold level of expenditure as a part of income that decides whether it classifies as catastrophic or not. The World Bank has estimated that around 62 per cent of total healthcare expenditures in 2014[36] was Out-of-Pocket expenditure, which remained the main source of funding. Dependence of the Indians on the private healthcare system is extremely high and as per the NCMH report in 2005[37], about 90% of healthcare expenditures in economically backward states of Bihar and Uttar Pradesh are met out of pocket spending. The impact of health expenditure on poverty levels have been exemplified by individual studies undertaken by Peters et al. in 2002[38] and Garg and Karan in

[29] A Look at Catastrophic Medical Expenses and The Poor, Health Affairs, 5(4), 138-145, 1986.
[30] Catastrophic Payments and Impoverishment Due to Out-of-Pocket Health Spending, Economic and Political Weekly, vol. 46, issue no.47, 63-70, 2011.
[31]. Catastrophic Payments for Health Care in Asia, Health Economics, 16(11), 1159-1184, 2007.
[32] Coping with Health-Care Costs: Implications for The Measurement of Catastrophic Expenditures and Poverty, Health Economics. Issue 12, p. 1393 -1412, 2008.
[33] Refining Estimates of Catastrophic Healthcare Expenditure: An Application in the Indian Context, International Journal of Health Care, Finance and Economy. 13, P. 157-172, 2013.
[34] Catastrophic Illness Expense: Implications for National Health Policy in The United States, 1978.
[35] Catastrophe and Impoverishment in Paying for Health Care: With Applications to Vietnam 1993–1998. Health Economics, 12(11), 921-933, 2003.
[36] Ravi, s., Ahluwalia, R., and Bergkvist, S. (2016), Health and Morbidity in India (2004-2014), Brookings India Research Paper No. 092016.
[37] Report of the National Commission on Macroeconomics and Health (2005), Ministry of Health and Family Welfare, GoI.
[38] Better Health System for India's Poor: Findings, Analysis and Options, Human Development Network, Health, Nutrition and Population Series (Washington DC: World Bank), 2002.

2009[39] where they pointed out the importance of an integrated public health care along with universal social health insurance system. Gupta and Joe, 2013 and Mohanti et al (2011)[40] studied how treatment seeking behaviour among rural households makes them travel to big cities and thus incur additional costs in transportation and accommodation in urban areas.

The private sector has slowly grown in its magnitude in health care which includes construction of hospitals and allied services, equipment manufacturing, medical education, manufacturing and sale of medicines due to the state's disinvestment policy (Rao et al. 2005)[41]. The study by Selvaraj and Karan, 2009[42]. shows that the cost of outpatient treatment in private health care system is 1.5 times more expensive than in public medical facilities. They have used NSS data and computed that about 3.6% of population of India has been pushed below the poverty line due to outpatient expenditures in 2004.

According to the National Commission on Macroeconomics and Health, the private sector contributes 71 % of the health budget; households alone spending 69% in 2004, around 3.3% of GDP. The effect of illness on welfare has now been considered to be an important issue (Commission on Macroeconomics and Health 2001; WHO[43]; Wagstaff 2002a[44],b[45]), and the uneven distribution of Health expenditure does exist among households and regions. Poor people become helpless before the private providers due to non-availability and accessibility of public health services to pay a huge amount for the fees requested by them (Russell 1996[46]). The payments for health care services made by the poor (Uplekar 2000[47],Meessen et al. 2003[48]), can

[39] Reducing Out-of-Pocket Expenditures to Reduce Poverty: A Disaggregated Analysis at RuralUrban and State Level in India, Health Policy and Planning, 24: 116-28, 2009

[40] Out-of-Pocket Expenditure on Health Care among Elderly and Non-Elderly Households in India, Social Indicators Research, 115 (3), 1137–1157, 2013.

[41] Delivery of Health Services in Private Sector, Background Papers, Financing and Delivery of Healthcare Services in India, NCMH, Ministry of Health and Family Welfare, Government of India, pp 88-110, 2005.

[42] Deepening Health Insecurity in India: Evidence from National Sample Surveys Since 1980s. Economic and Political Weekly, 55-60, 2009.

[43] Investing in Health for EconomicDevelopment. Report of the Commission on Macroeconomicsand Health. WHO, Geneva, pp. 1–201, 2001.

[44] Poverty and Health Sector Inequalities, Bulletinof the World Health Organization 97-105, 2002.

[45] (b), Reflections on and Alternatives to WHO's Fairness of financial Contribution Index, Health Economics 11,103–115, 2002.

[46] Ability to Pay for Health Care: Concepts and Evidence. Health Policy and Planning 11, 219–237, 1996.

[47] Private Health Care, Social Science and Medicine 51, 897–904, 2000.

[48] Iatrogenic Poverty, Tropical Medicine and International Health 8,581–584, 2003.

become catastrophic health expenditure (Kawabata et al. 2002[49]; Ranson 2002[50]; Pradhan and Prescott 2002)[51].

The article by Indrani Gupta and Arup Mitra in Development Policy Review, 2004[52], analyzed the state level data showing the nexus between poverty and health and has also tried to analyze a complex relationship between health and other non-health consumption goods and the amount spent on medical care. It is implied that higher growth enables the system to generate better health outcomes. which will also lead to lower poverty and will accompany an improved investment in education and growth-promoting areas like industry.

It has also been shown in different research studies that, in urban India there exists a rich-poor divide in terms of utilization of expenditure on health care services. However, it is argued through the Benefit Incidence (Mahal et al 2001[53]) analysis that, it is the rich who benefits from public spending more than the poor. The poor uses the public health care services facilities more intensely, whereas, the overall utilization of resources is higher among the rich.

1.2.6. Education and Poverty; Loss of opportunity

Human poverty is directly linked to poverty of education. In the context of seeing poverty as lack of opportunities, deprivation of education contributes to the human poverty. The main factor responsible for income poverty is the lack or poverty of education, and again, the income poverty prevents people to get minimum of education. And, it forces children to be out of schools for various reasons, thus denies the opportunity of participating in schooling. Therefore, both at macro and micro (household) levels there truly exists mutually reinforcing relationship between income poverty and education poverty. At macro level, a country's progress cannot improve if the masses are less educated and their output cannot be increased substantially as they remain in at low standards of living. At the micro level, the individuals or households having less education or illiterate cannot become more productive, and they have to join such occupations where the

[49] Preventing Impoverishment through Protection against Catastrophic Health Expenditure, Bulletin of the World Health Organization 80, 612, 2002.
[50] Reduction of Catastrophic Health Care Expen-Ditures By A Community-Based Health Insurance Scheme in Gujarat, India: Current Experiences And Challenges, Bulletin of the World Health Organization 80, 613–621, 2002.
[51] Social risk management optionsfor medical care in Indonesia. Health Economics 11, 431–446, 2002
[52] Economic Growth, Health and Poverty: An Exploratory Study for India, Development policy review, *22*(2), 193-206, 2004.
[53] Poor and Health Service Use in India, Washington DC, Health Nutrition and Population (HNP), The World Bank, 2001.

earnings are very less. Thus this situation reinforces them to live in poverty and have low standard of living[54].

There is no denial that education has been treated as as an instrument in the approach of human development but we should also draw our attention to the fact that education in itself is a development. This approach goes one step beyond "means to an end" logic and claims that lack of education is just not a mere cause of poverty, but poverty in itself. Today there is no denial that education remains one of the key means to escape poverty, while poverty remains the biggest hindrance to education.

Economists and research scholars have argued that education as qualification can bring ensured monetary benefits and non-monetary benefits in terms of improved health conditions (Cutler et al., 2010)[55], long life (Lleras-Muney, 2005)[56], incidence of low crimes (Lochner and Moretti, 2004)[57], having a higher life-satisfaction (Oeropoulos and Salvanes, 2011)[58]and engagement in social activities (Milligan et al. 2004[59]), etc.. Failing to acquire specific skill and competence may lead to less income and consequences having long term effect for an individual, as it will be detrimental in facilitating their income and general well-being.

Although there has been an increase in access to education but the poor are still unable to avail the opportunity due to direct cost attached to education, even when it is provided "free". Hence there is a discrepancy between free education and its actual efficacy, as there are several other costs like transportation, uniforms and other supplies. The situation gets worse when households have more than one children. Often girls are denied of their schooling while the boys are enrolled. As poor enrolled children grow older, their expenditure also become greater, thus increases the chances of abandoning schools. Furthermore, this triggers perpetuation of the poverty cycle. Dropping out of school implies reduction of potential of the child impacting the income earning capabilities; further, affecting overall productivity, quality of life and receptivity to change. Hence, reduction of poverty and education have a very straight forward relationship between them.

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[54] Botezat, A. (2016), Education Pverty, NESET II http://nesetweb.eu/wp- ntent/uploads/2016/02/AHQ5_Edu-Poverty.pdf
[55] Understanding differences in health behaviors by education, Journal of Health Economics, 29(1), 1–28, 2010.
[56] The Relationship Between Education and Adult Mortality in The United States, Review of Economic Studies, 72(1), 189–221, 2005.
[57] The Effect of Education on Crime: Evidence from Prison Inmates, Arrests, and Self-Reports, American Economic Review, 94(1), 155–189, 2004.
[58] Priceless: The Non pecuniary Benefits of Schooling, Journal of Economic Perspective 25(1), 159-184, 2011.
[59] Does Education Improve Citizenship? Evidence from the United States and the United Kingdom, Journal of Public Economics, 88(9), 1667– 1695, 2004.

The access to education also means to look for the possible changes in social environment (Becker, 1993)[60], in order to bring the necessary change in the economic domain.There are disparities in education in India in terms of quality teaching, educational attainment across spatial, social, economic, gender and ethnic lines. The Primary education for all was also one of the MDGs[61]. Primary education is extremely crucial not because it is a Fundamental Right of children but it plays a significant role in poverty reduction (Jimenez, 1995[62]; Lipton and Ravallion, 1995[63]). It has now well researched that poor parents are interested in educating their children (Narayan, 2000b[64]). The children of poor households have limited access to a reasonable standard of education. However, deprivation of education also is affected by other related influences made by international, national, community, household and individual (Rose and Dyer, 2008)[65].

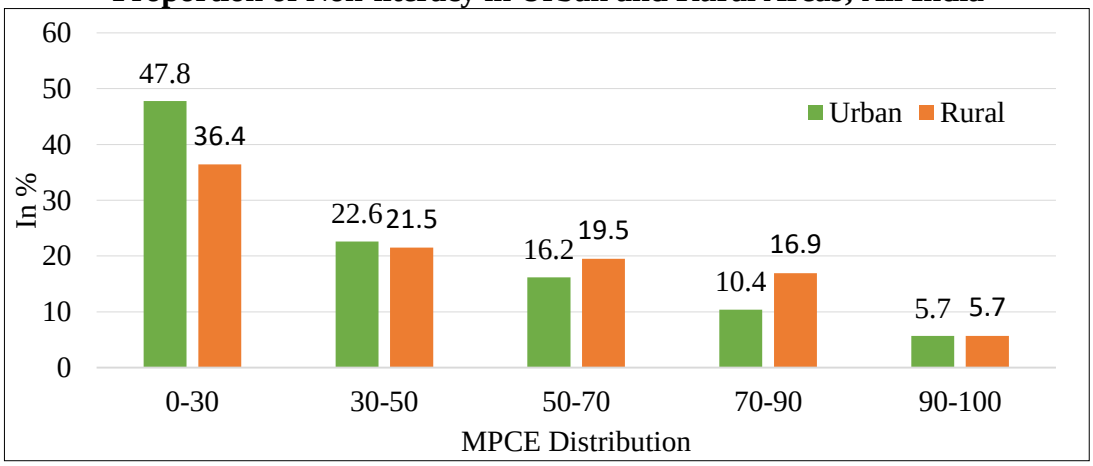
The above reasons argue for generating evidences related to the economics of education and identifying and generalizing linkages between education and deprivation as well as poverty.

1.2.7. Non-Literacy is More amongst the Poor:

The periodic surveys conducted by the National Sample Survey Organization (NSSO) on educational attainment in its various rounds, conclusively show that (Box 1.1) the poor people are in the down ladders in receiving educational opportunities, when analyzed disaggregated in terms of deciles of population (with respect to Monthly Per Capita Consumption Expenditure i.e., MPCE). In a country where education has been granted a Fundamental Right, the discrepancies are severe. Non-literacy is higher among poor people both in the rural and urban areas; urban incidence is more compared with the rural counterpart (Box 1.1).

[60] Human capital. A Theoretical and Empirical Analysis, with Special Reference to Education, Third Edition, University of Chicaago Press,1993.
[61] MDGs accessed at http://www.mdgmonitor.org/mdg-2-achieve-universal-primary-education/.
[62] Human and Physical Infrastructure: Public Investment and Pricing Policies In Developing Countries, Handbook Of Development Economics, *3*, 2773-2843, 1995.
[63] Poverty and Policy, Handbook of Development Economics, *3*, 2551-2657, 1995.
[64] Voices of the Poor: Can Anyone Hear Us?, World Bank Series, 2000b
[65] Chronic Poverty and Education: A Review of Literature. Working paper no. 131, University of Leeds, 2008.

Box 1.1
Proportion of Non-literacy in Urban and Rural Areas; All India



Source: Education in India, NSS 71st Round, Report No. 575

1.2.8. The Public and Private Education Expenditure

Education is considered as an important integral part of development planning, as a large numbers of people do not have any education, many of them being economically poor (Tilak, 2009)[66]. Government investment therefore, has a very significant contribution to make education an engine for social and economic development. However, public education expenditure as a percentage of GDP has almost remained stagnant at around 3 % over two decades. Lower share of govt. expenditure on education makes public education less available (especially to the poor) and of poor quality; whereas quality and affordable education provided through government can be the catalyst to pull households out of poverty cycle.

The need to spend huge amounts by the households on education has been a very important constraint in the participation of the low income groups in education (Tilak, 2002a). Individuals attending educational institutions incur expenditure in the form of payment of course fees (including tuition fee, examination fees etc.), purchase of books, stationaries and uniforms, expenses on conveyance, private coaching, etc., which are referred to as private expenditure on education in the NSS surveys.

[66] Household Expenditure on Education and Implications for Redefining the Poverty Line in India, Planning Commission of India, 2009.

Available researches have also shown that the need to spend huge amounts by the households on education has been a very important constraint in the participation of the low income groups in education (Tilak, 2002a). Though the 86th amendment to the Constitution promises to provide elementary education free to all, but, given the changing development paradigms, the changing economic reform policies and the overall socio economic conditions, where private education has been expanding at a rapid rate, many feel that the households will have to continue to spend huge amounts on education.

1.3. Poverty, Health and Education; Interlinkages

Poverty is much more than deprivation of income and under development of a country is partly due to the poor health of the public (Cole and Neumeier, 2006)[67] and partly due to lack of education. In India, often, the poorest, and the marginalized persons situated in remote areas, are unable to avail the health care services and education because of lack of accessibility, and higher opportunity cost attached to it. The highest number of poor people do live in India as per the World Bank Report (2016))[68]. One in every five Indians is poor while 80% of them live in rural areas. It has also been stated that only 6 per cent and 3.97 per cent of their income on health and education respectively are spent by the poor.

The UN Millennium Project in 2005 recognized the need for big investment push by states for development in terms of health and education outcomes. However, the fundamental problem of our country is that of addressing poverty in a multidimensional way.

Education and poverty are inseparably linked. Further, literacy is linked to good health. Researches have shown that literate women are able to read about health related information during pregnancies which no doubt reduces prenatal and maternal mortality and are better able to take care of their children. Deprivation of quality education, especially among girls, makes them susceptible to many communicable diseases, which further pulls families into poverty due to extra expenses on medical care. Lack of proper education also makes individuals unaware of importance of nutrients needed for healthy development of children.

[67] The Impact of Poor Health on Total Factor Productivity, The Journal of Development Studies, 42(6), 918-938, 2006.
[68] World Bank Report (2016), Digital Dividends; http://www.worldbank.org/en/about/annual-report-2015/annual-report1

1.4. The context of the study

The health and education outcome indicators in a country reveal how the public education and health delivery system are performing and the status of its human capital in terms of good health and efficiency (education). The levels of education, poverty and nutrition (related to good health) in India is much below the required levels in comparison to many countries. The severe deprivations regarding health, education and living standards that are faced by any person at the same time have been captured by the Multi-dimensional poverty index for the year 2015-16 estimated by the UN. It is revealed by the index that India fares worse than all its BRICs partners, and also, worse than all its neighbours. The UNDP has estimated the multidimensional poverty index a value of 0.28 for India (Table 1.3).

Table 1.3

Multidimensional Poverty Index (MPI): Few Developing Countries

	MPI Value		
Afghanistan	0.29	Kenya	0.17
Bangladesh	0.19	Maldives	0.01
Bhutan	0.13	Mexico	0.02
Brazil	0.01	Nepal	0.12
China	0.02	Pakistan	0.24
India	0.28	Somalia	0.50
Indonesia	0.02	South Africa	0.04

Source: HDR, 2016, Human Development for Everyone, UNDP, Table 6, pp 218-219

1.40 In the Human Development Report 2016, India's infant mortality rate during the year 2015 has been estimated 38 deaths per 1,000 live births. This rate is very high, if compared with that of the other BRICS nations and also some of our neighbouring countries. A key reason for India's high infant mortality rate is malnutrition, having the second-highest rate of stunting among children below the age of five, around 48% of children. According to NFHS-4 twenty-one percent of children under age five years are wasted (too thin for their height), which is a sign of acute undernutrition, while 36 percent of children under age five years are underweight. Two percent of children are overweight.

Over the decades, India has made improvement in the performance of education, but much more is still there to be done. . The Adult Literacy rate (15+ Age Group) has shown an upward trend for

both males and females, and overall it has been estimated as 70.5 per cent for the year 2014, as per the NSS 71st (the Social Consumption: Education) round of findings

1.5. Role of State; Changing Scenarios

Historically, the two principles guided the country's commitment for the development of health and education. The first one was that State would have to bear the responsibility for provision of health care and education; the second (after independence) one was to provide free medical care for not merely to those who are unable to pay, but for all. Also, free education to children up to age 14 would be provided by the state.

The above principles in the health sector resulted in the consequence of not giving adequate priority to the provision of public health delivery. Almost no investment was made in safe water and sanitation neglecting the key role of personal hygiene in good health. These all culminated in the persistence of diseases like Cholera, diarrhea etc. In education sector state could not perform the role of provider at least for free elementary education. The other result was that the country could not realize substantially the goals of NHP 1983, due to compressed public expenditure in this sector and inadequacies of organized structures in place. Public investment in the education sector was very low. A very important another consequence was that the country could not develop an integrated plural system of medicine and governments' failure to regulate the private sector for delivering health care services by assigning practical roles to them and for imparting public duties by private professionals. Private sector was allowed to play in every level of education.

Health status and education outcome are not only the measurement of indicators but also how well it incorporates mutual solidarity and traditions which are generally not taken into account by planners and professionals. This requires lot of resilience. State's strategic directional role can enrich such resilience for the good health and education of all its citizens in accordance with the Constitutional mandate. Within such a framework the state can think of engaging the private sector as an additional instrument or in other words, a partner to shared efforts towards public health and education outcomes. The public role of the heterogeneous private sector must br strengthened by the regulation and direction of state, so that health care and education become available, affordable and of quality. The states have definite roles to control the private sectors to bring the desired outcomes in these two crucial sectors of human capital. But mushrooming of privatization playing

with the health and education of the population of our country need to be looked into in its total nitty-gritty by the planners and policy makers, to take corrective actions in this regard.

1.6. The Sustainable Development Goals(SDGs): Poverty, Health and Education

India, though was not fully successful in accomplishing its targets for the MDGs, became a signatory to the UN's 2030 Agenda for Sustainable Development, needs to make its own strategy for accomplishing the SDGs which are aimed to transform our world by 2030. Each goal has specific national targets to be achieved by 2030; health and education being the fundamental to every one of the 17 SDGs.

The Sustainable Development Goals has bold commitment in its Goal 1*: "to End poverty in all its forms everywhere*, by 2030", which is one of the greatest challenges facing the humanity. Though between 1990 and 2015 there has been a drop in the number of people living in extreme poverty by more than half, but too many are still not having the minimum basic human needs and continuing their day to day struggle for it. Worldwide, the number of people, who are still living on less than US $1.25 a day is more than 800. The rapid economic growth after the economic reforms in 1991 has lifted millions of people out of poverty in India; though the progress has been uneven. The government has initiated several large-scale anti-poverty programmes, the effect of which is still awaited to be seen o on the ground.

India has made significant improvements for various health indicators, thus making it possible to achieve SDG-3, which commits, "*Ensure healthy lives and promote well-being for all at all ages"* The policies in health in India has the focus on providing essential health care services to all the population having a greater emphasis on the poor, marginalized and the vulnerable. The National Health Policy, 2017 has envisaged increasing public expenditure on health and has targeted for universalizing primary health care, with significant reductions in infant and under-5 mortalities, prevention of premature deaths due to non-communicable diseases.

The 2030 Agenda of SDGs also has specified Quality Education as one of important 17 Global Goals. The Goal 4 talks about ensuring inclusive and quality education for all and promoting lifelong learning. India has achieved a significant improvement in universalising primary education, having progress for the girls in the enrolment and completion rates in both primary and elementary school. The New National Education Policy is completely aligned with Sustainable Development Goal 4. The inclusive education in India talks about the realization of universal

primary education for all including all regions, genders, religions irrespective of socio-economic situations. However, our focus should be directed to impart 'quality' education and to 'maintain it'; the two other important components of the goal.

1.7. Research Problems

Several scholars have pointed out that the erstwhile Planning Commission's estimates of poverty do not conform to the definition of poverty line, which was postulated by the Task Force. For the year 1973-74, the poverty line as defined by the Task Force was per capita average expenditure sufficient for procuring per capita per diem intake of 2400 K cal in rural areas and 2100 kcal in urban areas of the country. This average expenditure not only conformed to the required calorie norms but also included minimum non-food expenditure comprising of minimum health care, education expenditure, transport, shelter etc. The state was supposed to take the responsibility of providing minimum health care and education especially at the primary level for all. After wards the poverty lines were updated using state-specific consumer price indices of agricultural labourers for rural areas and consumer price indices for industrial workers in the urban areas keeping the assumption that provision of health care and education are the responsibility of the States.

But over the years, the role of state which was supposed to provide the health care services and minimum educational facilities to the poor, has changed. The out of pocket expenditure for the health care services and education facilities for the people at the poverty line expenditure class are also increasing. Therefore, the reduction in consumption expenditure on the other non-food items by people may have a close link with the increasing out of pocket expenditure (Private expenditure) on health and education.

Though the educational level in terms of literacy has gone up, still, the policy focus and public intervention in provisioning of educational services has not been given the attention it deserves. Even after several decades of planned effort in this sector nearly one-third of population or close to 300 million persons in the age group 7 years and above are illiterate. The literacy rates for the SC and ST population are much lower than the rest of the population. There is also rural urban variation in the literacy rates, along with inter-State variations

From the Report of the[69] Macroeconomics and Health, it is well observed that the levels of l Government expenditure on Health was inadequate and has led to increased private expenditure.

[69] Background Papers; Financing and Delivery of Health Care Services,NCMH, Ministry of Health and Family Welfare, 2005.

Even in poorer states where per capita consumption expenditure was already very low there were high levels of private expenditure on health. Further, there exists extreme divide between rural and urban public spending on health. Generally, the higher per capita health expenditure is observable in the urban areas than that of rural areas, in most of the States; Assam, Punjab, and Rajasthan having the exception.

Some features which are evident from the Report is that the richer States with higher per capita spending generally tend to have lower infant mortality rates (IMRs), and some other health indicators like antenatal care and safe deliveries, and better nutrition indicators, but it is not necessary that they have higher per capita health expenditure – rather, some of them have among the lowest per capita expenditure on health, such as Gujarat and Haryana. Conversely, relatively low per capita income is seen in Rajasthan, whereas, government health spending on per capita is relatively higher. Also, the coverage of immunization for polio and diphtheria has worsened[70], which could be the direct effect of reduced government expenditure, which, in turn, has reduced the spread of, and access to vaccination among the general populations, and particularly in the rural areas. So, it can be observed that the poor have not received the focused attention that they require in case of education and health care services. Government policies and programmes in these two sectors need to be closely examined.

Also, the health outcomes are a function of a wide variety of factors – economic, social, cultural, geographical and environmental, as well as on health sector interventions. Econometric evidence shows that most cross-states variance in outcomes is explained by per capita income (poverty level) difference, and that public expenditure has limited explanatory power. Some public health programmes have been quite successful, for example immunization, but these have been low cost, minor, elements in health budgets, and so have not influenced greatly the aggregate picture of the effectiveness of public expenditure. So, it will be worthwhile to see if there exists any close relationship between the status of education, health outcomes, level of poverty and public and private expenditure on education and health. Also the health and educational expenditure if measured for poor and non- poor will give a wide difference in the health and education indicators in a varied way.

[70] Background Papers; Burden of Disease in India, NCMH, 2005.

1.8. Research Questions

The emerging issues that arise from the literature review could be categorized as follows;

i. Poverty and ill health are intertwined and health outcome is affected by poverty.

ii. Lack of Education is the cause of poverty.

iii. There are close association between poverty, ill health and education.

iv. In India the Public spending on health out of Total Public spending is amongst the lowest whereas the private spending on health is one of the highest in the world.

v. The State's role for providing educational and medical facilities has changed.

vi. Inadequacies in the benefits of health care services puts severe burden on the resources of poor people.

vii. There are regional disparities in the availability of health services.

viii. The urban poor and slum dwellers may strain civic amenities and do not respond adequately to their health needs.

ix. Households in India spend about five to six percent of their consumption expenditure on health.

x. Education reduces mortality, but many states have failed to implement targeted education and health care.

xi. Public expenditure and education facilities are not adequate to impart quality education to all the children.

xii. Education outcomes are still not impressive.

xiii. Poverty is both a cause and an effect of insufficient access to completion of quality education.

xiv. Whether the states have similar pattern of expenditure on health and education and how they are related to the increase/decrease of health and education outcomes in a particular state.

xv. What is the trend of Private Consumer Expenditure of Health, Education, food and non-food items in response to the withdrawal of the State's support?

xvi. The official estimates of poverty and for that matter setting the poverty line in India have not explicitly included out-of-packet payments for healthcare and expenditure on education.

xvii. Whether there is any close relation existing between the private expenditure of education, health, and level of poverty.

xviii. What could be the impoverishing effect of households due to out of pocket health and education expenditure.

xix. Whether the inequality is growing in respect of private expenditure on health and education?

1.9. Objectives of The Study:

The objectives of the study are as follows:

1) To look into the various plans, programmes and policy initiatives of the Government in respect of education and medical facilities.

- Explanation: The role of health and education in facilitating development of human capital and making economic and social progress is well recognized and the importance of access to affordable, quality and reliable health care services and health and education facilities cannot be under estimated.

2) To analyse the resources of Government at the Central and the State level in terms of public expenditure in respect of health and education as compared to GDP at macro level and as compared to State's overall expenditure at the micro level.

- Explanation: The Government resources are the most influential intervention in providing health care services and the education facilities for the large number of people at an affordable cost.

3) Measuring the private expenditure on health and education by poor and non-poor households

- Explanation: The analysis will give us an idea about the inequality in health and educational spending of the households and whether the concentration of poverty is among the people with low level of education and health.

4) To look into the trends in educational progress at the national and state level making special comparisons of the poor and non-poor, over a period of time.

- Explanation: This will provide the pace of education in the country at the lower level.

5) Studying the educational and health status of the population of the country in general and poor and non-poor in particular.

- Explanation: This will provide insight into the country's performance in the field of education and health sector and the nexus between low status of health, education and poverty.

6) To differentiate between the better and low performing states in respect of health, educational public and private expenditures, outcomes and level of poverty.

- Explanation: The role of states or the state's intervention to pursue the egalitarian objective of fulfilling in facilitating development of human capital and making economic and social progress is well recognized and the importance of access to affordable and reliable health services and health care facilities cannot be under estimated. This analysis will provide an insight into the regional disparities in terms of expenditure, outcomes and level of living. Attempts will be made to find out Composite indices for health Status and education for better performing and low performing states.

7) To investigate the impact of private health and education expenditure on poverty.

- Explanation: This will give us an idea as to what would be the extent of poverty, if the people have to incur expenditures on health care and education services from their own pocket and the number of people are then pushed into poverty by spending on these services.

1.10. Hypotheses

Based on the review of the literature, the following hypothese are proposed.

H1. States' Health Expenditure depends on States' income. Expenditure to receipt Ratio and urban population.

H2. There is association between Health Outcomes and Public Health Facilities.

H3. Education Facilities and Education Outcomes are highly related.

H4. The extent of poverty would increase due to Out-of-Pocket Health and education expenditure.

H5. The inequality in monthly per capita education and health expenditure across states does exist.

The above hypotheses have been dealt in different chapters of this study. The hypothesis one has been dealt in chapter three, the hypothesis two has been dealt in chapter four, the hypothesis three has been dealt in chapter six, the hypotheses four and five have been dealt in chapter seven. The next section presents briefly the chapterisation Plan.

1.11. Organizing the Chapters

The study has been organized in seven chapters including this introduction chapter which provided a background, and exhaustive survey of the existing literature pertaining to the broad perspective of health, education and poverty, and interlinkages between them. This chapter also sets the context of the study in the back drop of changing scenario of the role of States in provisioning the two merit goods of human capital, that is health and education. We have reviewed the literature in full length and put forth the research problems and research questions. Then we have explained the

objective of the study and the hypotheses that would be taken up in various chapters. The Chapter 2 discusses about the various sources of data and the methodology that have been used in this study.

In Chapter 3, we have discussed about the health policies that have undergone changes over the years and how more and more privatization has come up in various aspects of health care delivery. Then in the course of the study we have seen the trend and growth of Public Health Expenditure of the Centre and States in its various components. We have adopted the methodology of Panel Regression analysis to see if there is any significant relationship between State Governments' Health Expenditure out of Total Expenditure with the parameters, State's Income, Receipt, Expenditure to Receipt Ratio and, Proportion of Urban population. The Principal Component Analysis has been attempted for ranking 20 major states on their Health Expenditure, at two time points, the year 2004-05 and 2014-15 in order to understand the pattern of Health Expenditure of these states over the decade. For Private Expenditure on health we have extensively used the Household Consumer Expenditure Surveys of 61st and 68th round and analyzed the unit record data to see the health expenditure of poor and non-poor people. In the following chapter, Chapter 4, we set out to see the existing public health facilities available in the country and the performance of public health system in terms of mainly four health outcomes, Infant Mortality Rate, Under Five Mortality Rate, Maternal Mortality Rate Immunization of Children. We have used Step Regression method to see whether health outcome (we have taken only one i.e. IMR) depends on the availability of health facilities.

The Chapter 5, we have reviewed the education policies and have seen the public education expenditure in its various components. For private education expenditure, we have analyzed the National Accounts Data and the unit record data of the Household Consumer Expenditure Surveys of 61st and 68th Round to find out the trend of education expenditure of the poor and non-poor people. In the following Chapter 6, we have discussed about the existing education facilities and education outcomes in the country. Four outcomes, namely, Total Enrollment in Schools, Gross Enrollment Ratio Drop-Out-Rate and Literacy Rate have been discussed. We have adopted the methodology of simple regression, but have taken four models to see the association between education outcomes (we have taken Dropout Rates of Primary and Upper Primary) and various education facilities.

The Chapter 7 has discussed the impact of Out-of-Pocket health and education expenditure on the impoverishment of the people. For calculation of this we have adjusted the existing poverty lines of 2004-05 and 2011-12 as estimated by the erstwhile Planning Commission based on the Tendulkar methodology. This chapter has detailed the extent of inequalities that are existing with respect to private health and education expenditure among the States.

It is to be mentioned here that for the Chapters from 3 to 7 all the longer tables and all the figures related to the chapters have been presented in the end of the concerned chapter. It is also to mention that that the state of Jammu and Kashmir, wherever reported represents the undivided state of Jammu and Kashmir.

The concluding chapter that is Chapter 8, summarizes the different findings from the analyses, attempted in the study and has given concluding remarks with policy recommendations.

CHAPTER 2

DATA SOURCES AND METHODOLOGY

2.1. Introduction

In this chapter we will discuss about the sources of data and the methodologies used for analysis of the research questions. In our study, only the secondary data available in the public domain have been utilsed. The various Government Reports, RBI Bulletins and NSS survey results of various rounds have been consulted. The large scale NSS survey of household consumer expenditure have given information on the total household consumption expenditure and out of pocket exoenditure for healthcare and education per head per month. The out of pocket payment for health care is defined as medical institutional and medical non-institutional expenditure incurred by an individual. Other occasional survey reports on Health and education have also been used. We have also taken data from various other sources, especially SRS (RGI), NFHS, etc. and some international reports. We have used the statistical methodology of regression analysis, principal component analysis, unit record data analysis from NSS surveys to estimate the consumption and poverty level and GINI Coefficients to measure the levels of inequality. This chapter is divided into two parts. Part one discusses about the various data sources used and the variables of interest and part two discusses the methodology used for analysing the data to deal with the research questions.

2.2. Data Sources

The data will be used from the various Government Reports, RBI Bulletins, NSS survey results of various rounds. of household expenditure that recorded out of pocket payments for healthcare, education and total household consumption, exclusive survey on health and education and various reports from international organisations, like WHO, UNDP etc.

2.2.1. Public (Centre and State) Expenditure on Health and Education

The Public expenditure data for the Centre and State government are available in the publication "Indian Public Finance Statistics" brought out by the Ministry of Finance. From these reports we have used information on Public Expenditure, both for Union Government and States as a whole,

on various heads. These are mainly Development, Capital, Revenue Expenditure on Health and Education, including Total Government Expenditure. These publications provide in a very comprehensive way the fund availability and expenditure of the Central and State Governments in a finanancial year. We have used these reports for the years from 2003-04 to 2017-18.

In our study, the Central Government and the Government of Union Territories (UTs), without legislatures have been treated as 'Centre'. The State Governments and the Governments of Union Territories with legislature have been treated as 'State'. From 1993-94 onward Delhi, has been treated as States. Also the expenditure on Medical and public health and water supply and sanitation has been taken as Health Expenditure as there is no bifurcation available separately.. The public expenditure on Education has been taken from the head education art and culture.

2.2.2. Data on State Wise Expenditure on Health and Education

The Reserve Bank of India (RBI) publishes the "State Finances: A Study of Budgets" annually wherein it gives the analyses of the fiscal position of state governments. This is available on the RBI's website (www.rbi.org.in). Generally, these Reports are based on the state's final budgets, touching upon the dynamics of budget estimates (BE) for the recent year with respect to the actual and revised outcomes for the past two years. The Reports generally put in place state-wise facts on fiscal parameters, that have social implications for the states and also elaborately analyses their capital and social expenditure.

2.2.3. Data on GDP and Private Final Consumption Expenditure

The Central Statistical Office (CSO) of Ministry of Statistics and Programme implementation estimates the Gross Domestic Product (GDP) for the country. The GDP gives the estimate of the total value (in monetary terms) of all the final goods and services produced in a country, over a specific period of time. The GDP figure is somewhat shows the economic health of a country and is used worldwide as an economic indicator. It is obtained by adding the private consumption, gross investment in the economy, government investment, government spending and net foreign trade (the difference between exports and imports).

The Central Statistics Office (CSO) adopted the international methodology since 2015 and has started calculating GDP at market price not at factor cost. The base year of GDP up to 2011-12, was 2004-05 that was again changed to 2011-12. The recent estimates are on the base year 2911-

12. The base year actually enables the inter-year comparisons and allows to have an isea about the changes in purchasing power. The CSO also calculates the Gross State Domestic product representing the income of the states.

The Central Statistical Office (CSO), in its National Accounts Statistics(NAS), estimates periodically the Private Final Consumption expenditure(PFCE) on Education (PFCEE), medical care and health services (PFCEH). and other food and non-food items based on NSS data. with a little bit difference in definition. However, the composition of the expenditure on medical care and health services, and education has not been given in details by the NAS In its definition, the PFCEH also takes into account the expenditure of non-profit private institutions along with household expenditure on health, and PFCEE also takes into account the expenditure of private education institution.

2.2.4. Data on Out-of-Pocket Expenditure on Health and Education

The NSSO conducts regularly the consumer expenditure surveys (HCE) as a part of its thin round and quinquennial rounds. The thin rounds consist of small samples, whereas the quinquennial rounds consist of large samples Each round is conducted normally in a year's duration. We have mainly used data from two large scale sample survey rounds namely 61st (July 2004-June 2005) and 68th (July 2011 - June 2012) round. These surveys are conducted across the country and gives estimates of monthly per capita consumption expenditure (MPCE) for household consumption of goods and services for each State and Union Territory separately for rural and urban areas. It gives in its unit record data the breakup of household wise consumption of food and non-food items for a particular reference period. Generally, for the food items consumed the recalled period is the last 30 days, and for some of the components of non-food items it is for the last 365 days. That means that the 'reference period' is the specific period during which the household incurs expenditure on household consumption goods and services. The average MPCE is provided as a summary indicator of level of living of any sub-population of the country in any region. The out of pocket payment for health care is defined as medical institutional and medical non-institutional expenditure incurred by an individual and out-of-pocket expenditure on education is the expenditure incurred by a person for getting education.

2.2.5. Data on sources of Health Care Financing

The critical instrument that influences health outcomes in a country is Financing health care. National Health Accounts (NHA) captures the overall movement of finances in the existing health system and also provides information that are relevant for better designing and effective health policies making. It provides a matrix on the sources and uses of funds for health and also effectively traces mobilization and management of resources and the amount of payment made by the Government, private players and households for the health care. The first NHA for India was developed for the financial year 2001–02, the second in the series, was prepared for the financial year 2004–05, the third and the latest estimates were prepared for the financial year 2014-15. The NHAs estimates the health expenditures for India and along with also provides key financial indicators. The policy makers do take notice of the resource allocation on health and accordingly improve government spending on health, making efforts to make healthcare services more affordable, so that there would be reduction in the out-of-pocket expenditure on health by the people at large.

2.2.6. Data on Health and Education Outcomes

Various reports have been used to collect and compile data for health and education outcomes. For health outcomes we have used Rural Health Statistics, DLHS and HMIS data of Ministry of Health and Family Welfare etc. The reorts of UDISE, ASER and SES (Selected Educational Statistics) of the Ministry of Human Resource and Development have been consulted for data on education outcomes.

2.2.7. Data on Incidence of Poverty

The nodal agency for estimating the incidence of poverty is the NITI Aayog. erstwhile Planning Commission. In the past it has estimated the incidence of poverty by calculating Poverty Lines and Head Count Ratios on the basis of the data thrown by Large Scale Sample Surveys of Household Consumer Expenditure, periodiocally conducted by the NSSO, MoSPI. The various expert groups recommended the methodology for estimation of poverty. The Planning Commission followed these methodologies rom time to time for estimating the incidence of poverty. The latest methodology that has been adopted by the Planning Commission was recommended by the Expert Group constituted under the Chairmanship of Prof. Suresh D. Tendulkar. The Group calculted the new poverty lines and poverty ratios for 2004-05, and accepting these estimates in 2011, the Planning Commission following its methodology brought out the latest estimates of incidence of

poverty in terms of poverty lines and poverty ratios for 2011-12, the data for which was available from the large scale household consumer expenditure survey of 68th round.

2.3. Methods

The study mainly uses quantitative methodology to study the objectives The following methods that have been used in different chapters are mainly, Simple Regression, Step Regression, Panel Regression, Principal Component Analysis, Gini Co-efficient and Unit Record Analysis of NSS Consumer Expenditure Surveys.

2.3.1. Linear Regression Analysis

The relationship between two or more variables can be statistically determined by the methods of linear regression. There can be two or more independent variables, called explanatory variables and one dependent or response variable. The dependent variable is continuous data while the independent variable can take other data forms as well. Basically the Linear regression defines the relationship between the two variables by a straight line. In its simplest form in statistical language it can be expressed as

$$y_j = b_0 + b_i x_j + e_j$$

Where y is the dependent variables, x is the independent variable, b_0 is the y intercept, b_i is the slope, and e is the error term. The set of independent variables included in the model is denoted by x_j . The regression plane intersects the *Y* axis at the point of intercept, *b0*. the slopes of the regression are the b_i s. The net effect the i^{th} variable on the dependent variable is represented by each regression coefficient, keeping the remaining *X's* in the equation as constanst. The last part of the regression consists of error term (e) which can be defined as

$$e_j = y_i - \hat{y}_j$$

We have used simple linear regression model in Chapter 6 to study the association of education facilities with as education outcome namely Drop-out-rate. We have used the Drop-out-rate as dependent variable and Percentage of Schools having primary classrooms, Percentage of schools having girls's toilet facilities, Percentage of students receiving textbooks as incentives as independent variables separately in three models, and in the fourth model we have taken all the three independent variables together as in the following multivariate regression model.

$$y_j = b_0 + b_1x1_j + b_2x2_j + b_3x3_j + e_j$$

2.3.2. Stepwise Regression Models

This technique is based on choosing the independent variables in the subset models of multivariate regression analysis. Hence, the selection of independent variables can be based on (a) Forward selection, (b) Backward elimination and (c), Stepwise regression. The huge statistical exercises often are done by statistical packages such as STATA or SPSS).

Procedure of F orward Selection:

In the procedure of this model, it is first assumed that there does not exist any independent variable except the intercept. The the variable are added one by one into the model. The forward selection procedure consists of the following steps. Let us

1. consider only one variable at a time in the model except for intercept.
2. calculate the simple correlations of $x'_i s(\mathrm{i} = 1, 2, \ldots, \mathrm{k})$ with y.
3. choose x_i which has the largest correlation coefficients with y.
4. suppose, x_i is the independent variable that has the highest coefficients with y. Since F-statistics is given by the following formula. So, the x_i produces the largest value of F_0.

$$F_0 = \frac{n-k}{k-1} * \frac{R^2}{1-R^2}$$

5. select a prescribed value of F_0, say F_{IN}.
6. If $F > F_{IN}$ $(F - to - enter)$, we accept x_i and so, x_i enters into the model.
7. Then the effect of x_i is adjusted on y and the partial correlation is computed between remaining independent variables and y.
8. Then the independent variable is selected which has the highest partial correlation coefficients among the remaining variables. In other words, if $F > F_{IN}$ (for x_2, then it enters the model.
9. These steps would be repeated for all the variables.
10. Such selection is continued as long as either at a particular step, the partial F – statistic does not exceed F_{IN} or when the least explanatory variable is added to the model.

Procedure of Backward Elimination:

In difference to the procedure of forward selection, the procedure of backward elimination starts with all independent variables and deletes one variable at a time until a suitable model is found. This procedure has the following steps.

1. All k explanatory variables are kept in the model.
2. The partial F – statistic is estimated for each independent variable of the model.
3. A preselected value $F < F_{OUT}$ $(F - to - remove)$ is chosen.
4. The variable with smallest F-statistic, if $F < F_{OUT}$, is selected excluding the concerned variable from the model.
5. Hence, the model will now have K-1 independent variables.
6. t the procedure is repeated for until the smallest F-statistic exceeds F_{OUT} .

Procedure of Stepwise regression:

The stepwise regression procedure takes into account both the procedure of the forward selection and the backward elimination in a combined way. The following steps are involved in the procedure.

1. Keep all k explanatory variables in the model previously.
2. Add a new variable and regress it via their partial F – statistics.
3. An independent variable that was added at an earlier step may now become insignificant due to its relationship with currently present explanatory variables in the model.
4. If partial F -statistic for an explanatory variable is smaller than F_{OUT} , this variable is deleted from the model.

Stepwise needs two cut-off values of F-statistics, F_{IN} and F_{OUT} . Also, $F_{IN} = F_{OUT}$ and $F_{IN} > F_{OUT}$ are considered for the selection or deletion of variables. The variable with $F_{IN} > F_{OUT}$ makes difficulty in the selection or deletion of a variable.

In Chapter four we have taken the dependent variable as the IMR (The Health Outcome) and added the dependent variables i) No. of doctors per PHCs, ii) No. of Nursing Staff per PHCs and CHCs, iii) Percent of Pregnant women who are Anemic one by one to see the association between the health facilities and anemia with the level of Infant Mortality Rate.

2.3.3. Panel Data Regression: The Random Effect Model

The longitudinal data are specified as panel data. Sometimes cross-sectional time series data without any explicit time component is also treated as Panel data in some disciplines. The panel regression model is a statistical metho which analyses two-dimensional (cross sectional and longitudinal) panel data collected over time and over the same individuals by running a regression over these two dimensions. It may be noted that the variables may not be constant across the entities and time.

In the Panel Data Analysis two models namely, the fixed effects and random effects are generally used, both having specific advantages and disadvantages (Clark and Linzer, 2015). The application of fixed-effects model produces unbiased estimates of the coefficients but the sample wise variability of these estimates could be very high. The bias in estimates of the coefficients are introduced through the application of the random-effects model, but the variance of these estimates are constrained. However, the objective comparison is possible on the quality of inference about co-efficients on the basis of the data set.

The random-effects model, or the variance components model, helps in regulating for the constant unobserved heterogeneity over time and when there is no correlation between it and the independent variables, whereas, the fixed effect model starts with the assumption that the individual-specific effect and the independent variables are correlated.

If the assumptions of the random effect model are applied, it would give more efficient results than the fixed effects. The statistical specification of the model can be shown as follows.

$$y_{it} = a_0 + a_1 x_{it} + v_i + e_{it}$$

Here, v_i being the unobservable component is assumed as the component of the error varying between groups but not within groups and $e_{it}$is the error varying within groups and time.

Hausman test: This method is applied to test the null hypotheses that the estimates obtained by the Random effect model are more efficient and consistent than that obtained by the fixed effect model, and tests the statistical significance of the difference between the estimates of the co-efficients with the Chi^2 statistics. However, it is not necessary to apply the Hausman test, to chose between rRandom effect or Fixed Effect model. However, the size of the data set (both number of units and number of observations per unit) and the correlaton betwen the covariate and unit effects and the variation within the units (independent and dependent variables) are to be considered as more

important (Clark and Linzer, 2015). Therefore, one needs to be more cautious while selecting between the two models, the fixed effectand the random effects.

2.3.4. Principal Component Analysis (PCA)

The Principal Components Analysis, or PCA is data analysis tool, in many ways forms the basis for multivariate data analysis. It is usually used for reduction of the dimension (number of variables) of a large number of variables, which are interrelated keeping as much as possible the information and variance of the variables. Through the application of PCA, extraction of the most important information from the data table is carried out. The size of the data set is then compressed by keeping only the important information. The next is to simplify the description of the data set and then the variables along with their structure are analyzed.

The new variables that are computed through PCA are called principal components. These principal components are constructed as the linear combinations of the original variables. The largest possible variance is found in the computed first principal component. Orthogonal to the first component is the second principal component and it has the largest possible inertia. The other princpal components are calculated likewise. The new variables for observations with the calculated values are called factor scores. The geometic interpretation of these factor scores is that they are the projections of the observations onto the principal components.

The PCA Approach in brief involves, the following steps:

- to standardize the data'
- to obtain the principal components or Eigen vectors. The Eigen values are computed from the covariance matrix or correlation matrix
- to sort the eigen values in descending order and to choose the k eigenvectors that correspond to the k largest eigenvalues where k is the number of dimensions of the new feature subspace ($k \leq d$).
- to construct the projection matrix W from the selected k eigenvectors.

Further, to obtain a k-dimensional feature subspace Y by transforming the original dataset X via W. Therefore, it can be sai that the characteristics of this data analysis through PCA are dimension reduction, principal factors, and non-inverse transformation.

In our Principal Component Analysis (PCA) method in Chapter 3 to rank the states for their performance in health expenditure and to have an idea about the different patterns of the health

expenditure amongst the states, we have developed scores for each state as a linear composite index of three variables, namely, i) Government Health Expenditure as a percentage of Gross State Domestic Product (GSDP)' ii) Government Health Expenditure per capita, iii) Ratio of expenditure on medical and family welfare over total expenditure of the State. This is represented by:

$$SCOREj = W1X1j + W2X2j + W3X3j$$

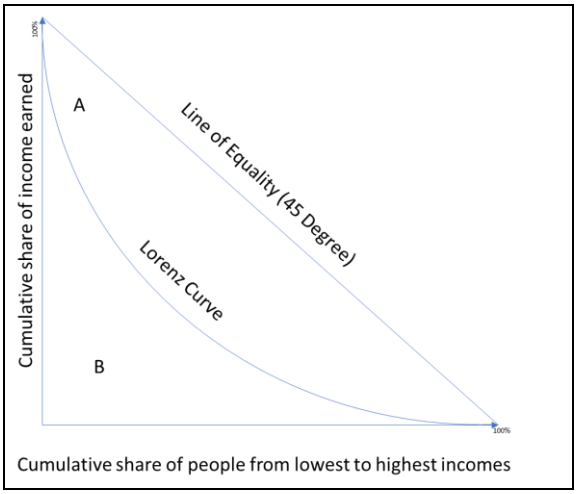
SCOREj refers to the score for j^{th} state. X_{ij} refers to the standardized value of the i^{th} parameter for the j^{th} state and W_i is the corresponding weight of the parameter. These weights have been calculated using PCA method. Firstly, each indicator is standardized. Pairwise correlation coefficient of indicators of Health Expenditure is calculated and arranged in a matrix form. After that calculation of weights have been done by finding out the correlation matrix between the variables.

2.3.5. Gini Coefficient

One of the most commonly used measure of inequality is Gini coefficient, generally defined in terms of the Lorenz curve. This inequality index is used to measure the deviation in an economy in the distribution of wealth or income. The Lorenz Curve gives the income of all the people in a country plotted taking he cumulative share of income earned in the y axis and the cumulative percentage of people in the x axis. The Gini index is then estimated by the ratio of the area between the two curves (Lorenz curve and 45-degree line) to the area beneath the 45-degree line.

Box 2.1

Gini Coefficient: Graphical Representation



The 45-degree line signifies perfect equality of incomes The Gini index can be calculated using the following specifications.

$$Gini\ Coefficient = \frac{A}{A+B}$$

If 'n' is the total number of persons, and, 'x_i' is the wealth or income (proxy expenditure) of the i^{th} person, then 'G', the Gini coefficient is estimated by the following formula.

$$\begin{aligned} G &= \frac{\sum_{i=1}^{n}\sum_{j=1}^{n}|x_i - x_j|}{2\sum_{i=1}^{n}\sum_{j=1}^{n}x_j} \\ &= \frac{\sum_{i=1}^{n}\sum_{j=1}^{n}|x_i - x_j|}{2n\sum_{i=1}^{n}x_i} \\ &= \frac{\sum_{i=1}^{n}\sum_{j=1}^{n}|x_i - x_j|}{2n^2 x_i} \end{aligned}$$

More unequal distribution of income or wealth is represented by higher Gini coefficient. This index has the advantage that even if the size of the population distribution is not the same, it can compare between the two populations' income distribution directly.

In the Chapter 7 we have calculated the GINI co-efficient for health and education expenditure across states and have tried to visualize the inequality that exists across states for two time periods namely. 2004-05 and 2011-12.

Appendix

2A. The NSS on Health and Education

Information on health and education are being collected by the NSSO in its vatrious occasional rounds. These surveys were conducted in July 1995-June 1996 (the 52nd Round), January-June 2004 (the 60 thround) and recently in January-June, 2014 (the 71st Round). From the various surveys on health, information was generated on health services, morbidity and health care, the problems of aged persons etc. The 71st Round survey on health called Social Consumption: Health is the principal source of valuable information on the health sector in its various aspects of health services, health facilities and expenditure. The 71st Round survey on education caleed "Social Consumption: Education" is the primary source of valuable information in the education sector in its various aspects like education outcomes, access to education facilities, encourgement received by the students in terms of various incentives and expenditure incurred on various items., etc.

While the budget documents give the information on Governments' expenditure, but these surveys give information on expenditure incurred by an individual for accessing health and education facilities, that has a special significance in the contemporary context. This will help the policy makers to formulate policy decisions ina right direction.

2B. The Census on Population Projection

In India, the population Census is conducted by the Registrar General and Census Commissioner, under the Union Home Ministry every ten years. The Census provides reliable and detaile information on size, distribution and composition of population of the country and also the distribution of material wealth which are very important to make policy decision by the government in every socio-economic aspectis. It also reflects the truth and facts about the country's population in respect of their socio-economic status, health. education, habitation, religion, culture, language etc. The Office of RGI also brings population projections for future years on the basis of the recent Census. On the basis of the Census 2011, it has brought out the estimate of projected population up to the year 2036. The population projection is a scientific attempt to have an overview of the future population scenario, on the basis of past data and certain assumptions and applying them on the relevant models.

2C. The NFHS-4

The Ministry of Health and Family Welfare carries out large-scale NFHS (National Family Health Survey) by engaging the IIPS, Mumbai, as the nodal agency. It is conducted on the representative household samples in the districts of all the states and in multi-round manner. The NFHSs have provided crucial and reliable information on the implementation of various flagship programmes as articulated in the National Health Policy havin the objective of improving reproductive and child health and making the country's health care delivery system more efficient.

The NFHS-4 provides the estimates of maternal and child health indicators, fertility, mortality, family planning, child nutrition etc., domestic violence, etc. at the state and national level.

2D. The Government Reports

We have used various Government Reports for our study and reference has been given to these reports whenever we used them in the chapters. Some of them however, is presented below**:**

Analysis of Budgeted Expenditure on Education: This publication is brought out annually by the Department of Education, Ministry of Human Resource Development, providing information on the Budget alolocation for the development of education in the Union Ministries and the State/UT governments. Basically it analyse the expenditure on education in its various components incurred by the Departments other than the Department of Education in respect of Centrally Sponsored and other Schemes.

Selected Educational Statistics; This annual Publication brings out statistical data on important educational indicators at various levels on different parameters. The Department of Higher Education, Ministry of Human Resource Development publishes the information. The numerical and financial data in respect of School and Higher Education, and information on important parameters of education outcomes are available in this publication.

U-DISE: The U-DISE is the digital portal pertaining to all the information on the education sector and the largest EMIS in the country. The U-DISE data are extensivel used by the government for monitoring and formulating policies.

ASER Centre, Pratham Foundation (New Delhi) established in 2008 as a specialized, independent unit conducts a large scale household survey annually outside the government to measure the enrolment of children in the age group of 6-14 years and their reading and arithmetic levels. It

works within the Pratham network and their survey has become a very significant important input for the government to take policy decisions in the right direction.

Rural Health Statistics(RHS): Based on the received information from the States/UTs, the Ministry of Health and Family Welfare brings out a regular Annual Publication ,the Rural Health Statistics, disseminating information on rural health care delivery system. The detailed data on human resources facilities, health infrastructure, training etc. for rural areas are available in RHS. provides detailed data on rural health infrastructure. Information are also available on Doctors, paramedical, status of building of District and Sub-District hospitals.

The HMIS (Health Management Information System) portal- The National Health Mission of the Ministry of Health and Family Welfare (MoHFW) has started a digital initiative to provides reliable and real-time data of the Health services that are provided through the network of health facility centres spread across the country, both in rural and urban areas, thus making the health care facilities efficient. The IHIP (Integrated Health Information Platform) thus developed is an essential part of India's National Digital Health Plan. The use of latest digital technology in tjis platform will make available the real time information making the health system more accountable, which has been stated by the National Health Policy 2017 a goal. Statewise information, including the districts and blocks level, on the status of the health services, infrastructure facilities, human resources are available in this portal

The District Level Health Survey (DLHS) is a Rapid Household Surveys (RHS) conducted across the country to collect information on the implementation of health services related to mother, child and reproductive health initiatives at the district level. The most salient feature of this survey is to gather information on utilization of services and the perceived quality of these services. It is conducted under the auspices of MoHFW and IIPS as the national nodal agency, covering every district of the country. However, after DLHS-4 (2012-13), the survey has been discontinued.

2E. The Human Development Report: HDR

The UNDP (United Nations Development Programme) brought out the first HDR in the year 1990. It considered people-centric approach as it tries to enhance the process of development by broadening people's choices. The Human Development Index (HDI), has been constructed as a composite index, developed by the UNDP, prvides an indicative measure of human development in terms of having a a long and healthy life, knowledge and decent standard of living. The life

expectancy at birth measures the dimension of health; the adult (above 25 years of age) education and expected years of schooling for children measure the dimension of education; and the gross national income per capita measures the dimension of standard of living.

The UNDP is now using the same household survey datae to stimate the Multidimensional Poverty Index (MPI), which expresses the multiple deprivations at the household and individual level in terms of health, education and standard of living. It is a complement to the various measures of income poverty and reflects the picture of povertyin a comprehensive manner.

CHAPTER 3

HEALTH POLICIES AND HEALTH EXPENDITURE IN INDIA

3.1. Introduction

Amartya Sen has emphatically clarified that poverty leads to an intolerable waste. He puts it as, "poverty is not just a lack of money,it is not having the capability to realize one's full potential as a human being"[71].

Health is a condition of wellbeing and is the most crucial aspect of Human Capital, a multi-dimensional entity. World Health Organization (WHO) has defined, "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity**"**. For economic development and empowerment, it acts as one of the key elements. The importance of healthcare in improving a nation's wealth can not be denied which in turn promotes economic growth. A healthy life and longevity as an important indicator shows the direction of human development. Poor health can have a direct negative effect on the opportunities of an individual, such as his/her earning capacity, performance in school, cognitive abilities etc. Also, lack of good health may make an individual slip into entitlement failure which again may translate into inequalities in other dimension of welfare (WDR 2006)[72]. Sustenance of good health in an individual, at every point of time, is thus crucial.

It is an un-deniable fact the economic growth is an important driver for ensuring well-being and fulfillment of basic necessities of the population of a country[73]. The higher economic growth leads to having higher income for the people, making them healthier as with the wealth they can command better goods and services for promotion of health. Therefore, health can be treated as an oucome of the growth process. It is a form of human capital, which is also a valuable input into the growth process. There is no doubt that wealth leads to health, hence, health is also an output of wealth. Therefore, a favourable policy environment is required so that the population remains healthy and can bring prosperity in the country.

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[71] Amartya Sen, Development as Freedom (New York, (1999).
[72] World Development Report 2006, Equity and Development, The World Bank.
[73] Ramalingaswami, V., Jonsson, U., and Rohde, J. (1996), Commentary, The Asian Enigma: The Progress of Nations, New York, United877 States Children's Fund.

The objectives of the State policies have always been to provide basic needs so as to expand human capabilities of its citizens. As the economic growth improves the supply conditions of basic human needs, the policy focus was mainly given to, achieving the accelerated economic growth as an immediate necessity. However, certain policy measures are required to be formulated to accelerate the potential impact of economic growth so that general wellbeing of the population can be ensured, Human capital directly depends upon quality health condition of human resource.

The architects of Indian Constitution realized the importance of providing quality health care services to all citizens of the country and made provisions for the same which have been revised from time-to-time to cater to the needs of our developing nation. The Article 38 of the Indian Constitution states that, State has the liability to secure a social order for the promotion of welfare of the people and it is its primary duty to make improvements of public health (further under Article 47). Therefore, States have a definite role to provide quality and accessible health care services to the people through public health care expenditure.

The private spending actually dominates the healthcare expenditure in India resulting in Out-of-pocket (OOP) expenditure, thus affecting present labour productivity ands ocial welfare. As reported by the National Commission on Macroeconomics and Health that private sector contributes seventy-one per cent of the health budget, households alone spending sixty-nine per cent in the year 2004-05. Households spent around 3.3%, of the GDP at current market prices other private spending on health formed 2% of the total health budget in the same year. We need to improve the public health expenditure for the population as it would benefit in having better economic outcomes at the national and individual level.

3.2. Background:

In an address in 2001[74], to the World Health Assembly, the then UN Secretary General Kofi Annan emphatically expressed that, in the developing countries , poverty is the principal enemy of health. The obvious association between poverty and illness may sometimes be a complex one, having little access to healthcare services, less education, scarce supply of nutritious foods, fewer employment opportunities etc. can affect health. The WHO in a study (Poverty and Health)

[74] Available at https://www.un.org/press/en/2001/sgsm7808.doc.htm.

estimated that in the world the number of people who live in extreme poverty (less than one dollar per day), is approximately 1.2 billion and due to povery, the output is their ill-health.

The poor, quite simply, are sicker than the non-poor, even if a country is quite affluent (Farmer 1999)[75]. It has been documented by different literatures worldwide that public health spending plays an essential role for fighting with major diseases. This also reduce poverty addressing huge out-of-pocket health expenditures thus making overall economic progress of a country. Fogel[76] in his work observed, "the increased amount of calories available for work over the past 200 years must have made a non-trivial contribution to the growth rate of the per capita income of countries such as France and Great Britain." He estimated that nutrition contributed 30 percent to the UK per capita growth This is the most celebrated account as it postulates a critical understanding that, if population is overall healthy then it can prove itself to be a great driver of economic growth. Robert Barro[77] has also shown that life expectancy determines subsequent economic growth and both of them are significantly correlated. He used post-World War II data to show that an increase of 10 percent in life expectancy could really give rise to the economic growth by 0.4 percent per annum.

The study on poverty and health by Bidani and Ravallion[78] (1997) reveals the vulnerability that poor section of population face. Life expectancy for poor is 9 years lesser than that of non-poor and there is 50 % more chances of child death before one year of age, born in the poor households. Theimportance of public health expenditure for the poor people of the society has been reiterated in this paper. The World Bank in its participatory poverty study known as 'Voices of the Poor' has revealed that poor health and illness are sources of poverty and destitution throughout the world. The study, 'Voices of the Poor', was conducted in fifty countries. The analysis of the study was compiled in its first volume, "can anyone hear us?". The World Bank specifically commissioned the second volume, "crying out for change"[79], to gather poor people's view covering around 20,000 poor people in 23 countries. It has come out from the findings that individual becomes poor due to large health care costs.

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[78] Decomposing Social Indicators Using Distributional Data. Journal of Econometrics, 77(1), 125-139,1997.
[79] Crying out for Change: Voices of the Poor (Vol. 2). World Bank Publications, 2000

Evidences show that the hazardous consequences of healthcare costs upon household's well-being (Asfaw& von Braun, 2004[80]; Barrett, Reardon, and Webb, 2001[81]; Deolalikar, 2002[82]; Fabricant, Kamara, & Mills 1999[83]; Krishna, 2004[84]; Krishna et al., 2006[85]; Strauss & Thomas, 1998[86]; Xu et al., 2003[87]). This isn't a reality for poor and developing countries only, but also for certain developed nations. It has been observed that medical cost is one of the major reason for personal insolvencies in the USA (Himmelstein, Warren, Thorne, and Woolhandler, 2005)[88]. Therefore, it is necessary that public expenditure on health should be directed to provide accessibility to medical care in a manner, so as to reduce the vulnerability of poor section.\

3.3. Rationale:

The development policy framework of India after independence has cleary emphasized that the government should have proactive role for providing merit goods like health and education to its citizens. An elaborate structure of public health care system was envisaged and the government made its efforts to create infrastructure witin a vsry short period after independence. The situation changed dramatically during the 1990s, when reforms took the centre stage and there was a continued squeeze on expenditure related to health, both at the level of centre as well as states, and the private players were encouraged to invest in the health sector.

Though the focus of the State policy has always been on welfare of the population and poverty alleviation, the States however could not provide health care services judiciously to all. The literature has perceived the role of the State from two significant standpoints, namely, visualizing the state as a developmental catalyst inducing entrepreneurial capabilities, and, as the interventionist from the point of the developmental initiatives. The logic of State intervention in providing health facilities comes out of the concern that the access to the minimum health care

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[84] Escaping Poverty and Becoming Poor: Who Gains, Who Loses, and Why? World Development, 32(1), 121–136, 2004.
[85] Fixing the Hole in the Bucket: Household Poverty Dynamics in Forty Communities of the Peruvian Andes. Development and Change, 37(5), 997–1021. 2006.
[86] Health, Nutrition and Economic Development, Journal of Economic Literature, 36, 766–817, 1998.
[87] Household Catastrophic Health Expenditure: A Multi-Country Analysis. The Lancet, (July 12), 111–117, 2003.
[88] Illness and Injury as Contributors to Bankruptcy (2/2/2005). Health Affairs, 24(2), 570, 2005.

facilities are not denied to the poor and the most deserving groups and regions. The states therefore have an important role in making the public health care affordable.

The literatures suggest that the illness can create immense economic stress as it leads to loss of major portion of income, leading to entry into or exacerbation of poverty due to high out of pocket expenditure on treatment. Therefore, there is a huge importance of public provisioning of quality and, affordable and reliable health care services so that non-poor is also prevented from entering into poverty; and the suffering of the poor, more vulnerable to episode of illness, can be reduced. There has been a consistent demand for increasing the affordability and accessibility to health care.

Given the importance of this social sector, it would be therefore worthwhile to visualize different plans, policies and programmes that have been undertaken by the Government of India in the field of health and its expenditure. As it has already been mentioned that the principles of healthcare for the masses at large have been enshrined in the Constitution of India; the State policy is also guided by the leitmotif of affordable health services to those, most in need. The overall structures of public health services that we inherited after independence were defective in many ways and since then there have been great improvements in these fields through the active role of the government and the steps that have been taken in different time periods. In the above context, a critical review of health policies is required to see the changes in government perspective with respect to the Government's expenditure on health.

3.4. Health Policies at Different Time Periods

Generally, health has been conceived as an end product of the growth process. As wealth leads to health, and vice versa, a favourable policy environment is required so that the population remain healthy and thus can bring prosperity for the country. India's health system consists of three sectors – public - private and informal. The informal network of care providers operating in unregulated environment has no control over the service providers. Hence the quality of the service and the manner is compromised. Even though a vast health infrastructure has been built up in India since independence, there are wide disparities in access. Also, it gets further worsened by the poor functioning of the public health system. Several stages are there in the development of health policies right from independence

3.4.1. The Years 1950 to 1966

In the initial phase after Independence, health care measure was primarily States' subjects, and health care policies were based on the recommendations of the Bhore Commission Report (1946), which envisaged that state would take care of the welfare needs of the people and provide health services, helping the poorest and deprived. It recommended the public health care investment should to be 5% of GDP, though it was very low in comparison to other countries.

After assessing the existing Public Health Care system, the Mudaliar Committee formed in 1961, stressed the importance of Public Health Centres and their improvement; the Family Planning must become the focus as national progress was greatly hindered by the growing population and there was a need to control population, which became the priority of Public Health Care System.

3.4.2. The Years 1967 to 1990

This period saw an increase in the budget allocations for Health Sector focusing on developing strong and effective Primary Healthcare Centres to prevent and eradicate communicable diseases (Small Pox, Malaria, and TB), and to promote Family Planning and maternal health. For early childhood care and development, the Integrated Child Development Scheme (ICDS) was launched in 1975. The scheme started with the objective to reduce the malnutrition of children by improving their nutritional and health status by providing them hot cooked meal. It also targeted lactating and pregnant mothers, having the objective of reducing the incidence of mortality, morbidity, malnutrition by enhancing the capability of mothers to look after the children in a manner, so that the normal health and the nutritional needs of the children are ensured.

The Alma Ata declaration of 'Health for All by 2000' in 1978 became a turning point in healthcare trajectory of India when it became a signatory to the declaration. Building infrastructure, community involvement and universal primary health care to all sections of the society providing all-round facilities were the main focus. To achieve the objective of Health for All by 2000, the Govrernment of India formulated the National Health Policy, in 1983. It recognized that due to inadequate resources and manpower, state could not by itself provide adequate and efficient health services to the population. In this regard, the Private sector had to get involved. After the Policy, more funds were pumped into the health sector which also had positive results.

3.4.3. The Years 1991 to 2013

The opening up of the economy in 1991, and letting private investments drive growth had reflection in the health initiatives also, when the private players were provided more incentives to increase the investment. In the government policies health and population control were two major priority areas. However, there were persistent gaps in manpower and infrastructure; poor referral services; increasing dual burden of communicable and non-communicable diseases and escalating costs of health care.

The National Health Policy 2002 aimed to rectify the problems of the previous plans by providing acceptable standards of health and wellness to the population and clearly demarcated the role of public and private healthcare sectors where primary healthcare was to be handled by the state and the tertiary by the private sector.

The inclusive growth in the health sector was aimed through the introduction of *Sarva Swasthya Abhiyaan and National Urban Health Mission* (NUHM), and with a separate *National Rural Health Mission*(NRHM). The NUHM focused on providing medical facilities to those most vulnerable in the urban area- especially the slum dwellers. The Sarva Swathya Abhiyan aimed for inclusive growth focusing on neglected groups and regions. The village-based "Accredited Social Health Activists" (ASHA) acted as a link between the health centres and the villagers engaged for the NRHM covering all the rural areas, an effort to ensure effective healthcare to the poor and vulnerables across the country. Innovative Programmess like Janani Suraksha Yojana, Janani Shishu Surakhsa Karyakram, Community Based Monitoring, and Village Health Sanitation Committee also started.

3.4.5. The Year 2014 Onwards

The Government continued to work focusing on creating a Universal Health Coverage in the country by reinforcing Rashtriya Swathya Bima Yojana, making financial inclusion a reality. As a part of the Essential Health Package, a wide number of prescription drugs and medicines are to be given free of cost, achieving inclusive growth and providing access for all kinds of medical services to all. An overarching National Health Mission (NHM) was launched with National Urban Health Mission (NUHM)and National Rural Health Mission (NRHM) as Sub-missions under it.

The programme *Mission Indradhanush* launched in 2014 is to accelerate full immunization process for children below the age of two years, and the lactating women, as the the coverage of the earlier Universal Immunisation program launched in 1985, stagnated to only 1 % during the last five years.

The new *National Health Policy (NHP-2017),* a response to the changed scenarios of the country has treated health to be the fundamental right of every citizen. It envisages the increase of public health expenditure to 2.5 percent of GDP, the Centre providing 40 percent (1 percent of GDP). The states' health expenditure should be increased up to 8 % of their annual budget to increase health infrastructure, ensuring availability of paramedics and doctors in high priority districts by 2020, as per Indian Public Health Standard (IPHS) norms.

The *National Nutrition Mission (NNM),* established in December, 2017, is an attempt to reduce malnutrition in India among the children of 0-6 years' age, pregnant women and lactating mothers. The Mission will create synergy and linking of the entire relevant schemes with strong convergence. As there is a great linkage between sanitation and health, government has come up with the social campaigns like Swachh Bharat Abhiyan (SBA) and making India *free of open defecation* that can yield better result in the field of public health. The National Campaign of SBA started from October 2014 to end open defecation by 2019, and to keep the habitat and its environment clean by making the campaign as Jan Andolan.

A new initiative, *Ayushman Bharat,* launched in September, 2018, a centrally sponsored sceme comprises of two major components, namely Health and Wellness Centres (HWCs) and Pradhan Mantri Jan Arogya Yojna (PMJAY). HWC will deliver comprehensive health care services making it responsive, accessible and equitable keeping people and communities at the center of the health care delivery system, By 2022, nearly 1.5 lakh Health and Wellness Centres will be created by transforming Sub-Centres and Primary Health Centres to provide comprehensive and quality primary health care close to the community, with the ensurance of the principles of equity, affordability and universality.

3.5. Health Expenditure

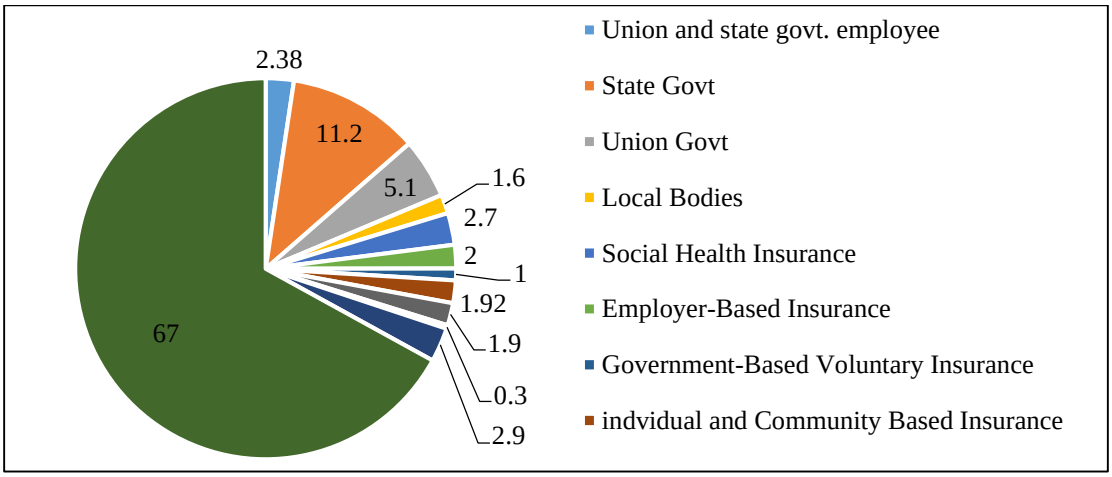
The definition of total health expenditure, as the expenditures, which has the primary purpose to maintain, improve and restore health for nation and individuals in a definite period of time, has been espoused by the World Health Organization (WHO).This expenditure includes spending on

all the health care services including preventive and curative, disease control and implementation of various health programmes, administration of health services, medical education, training and research and capital investment for health purposes without including provision of water and sanitation.

3.5.1. Health Care Financing

The Health care financing in our country has the following sources: i) the public sector comprising of Central, State and Local Governments, in addition to several public sector units, ii) the private sector encompassing mainly households, non-profit sector, insurances etc. and iii) external financing through grants and loans.

Box 3.1
Source of Funds (Per Cent) in India for Total Health Expenditure: 2014-15



Source: NHA Estimates for india 2014-15. MoHFW. p-12

The National Health Accounts (NHA) [89] has provided its latest estimated of the Out-of-Pocket expenditure (i.e private expenditure) for the year 2014-15 on health in the country. It has been found to be very high at 67% of the total health expenditure. State governments invest nearly twice for its citizens as compared to that of the Centre. Very small proportion is sourced from insurance. The local bodies spend only 1.6% of the total xpenditure, showing the ineffective decentralization of health services to the local bodies of our country. In the year 2004-05 the Total

[89] National Health Accounts Estimates for India 2014-15 Report. MioHFW, Government of India. https://mohfw.gov.in/sites/default/files/National%20Health%20Accounts%20Estimates%20Report%202014-15.pdf

Health Expenditure (THE) was estimated as Rs. 133,776 crores; in the year 2008-09, it was Rs. 2,197,76 crores and in the year 2014-15, the same was estimated as Rs.4,83,259 crores in current prices. In absolute terms the expenditure on health has been increasing but it has stagnated as a share of GDP. The distribution of THE can be seen in Table 3.1.

Table 3.1
Total Health Expenditure

Total Health Expenditure as % of Total Expenditure								
Expenditure	2001-02	2004-05	2005–06	2006–07	2007–08	2008–09	2013-14	2014-15
Public	20.3	19.7	22.7	23.8	25.1	26.7	28.6	29
Private	77.4	78.1	75.9	74.9	73.5	71.6	71.1	70.3
External Support	2.3	2.3	1.4	1.3	1.4	1.7	0.3	0.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Health Expenditure as % of GDP								
Public	0.94	0.84	0.96	0.98	1.03	1.10	1.14	1.10
Private	3.58	3.32	3.21	3.08	3.02	2.96	2,84	2.61
External Support	0.11	0.10	0.06	0.05	0.06	0.07	0.02	0.19
Total	4.63	4.25	4.23	4.12	4.11	4.13	4.00	3.90

Source: Various NHAs, MoHFW

3.5.2. International Scenario

The WHO data shows that by and large the public health expenditure of India has been around one per cent of its GDP for few last decades (Figure 3.1, pg-76), very low in comparison to the developed and many developing countries. It is also consistently lower than that of the neighbouring South Asian economies like China, Sri Lanka, and Nepal. The estimate of public health expenditure by WHO has put India's expenditure at 1.4 per cent of GDP, quite low than the estimate of the world average at 5.98 % of GDP.

Comparison of the per cent expenditure on Health out of total expenditure by governments as per WHO's estimate shows that India still spends less than that of many major countries. Even the world average of health expenditure is 15.8 per cent (Figure 3.2. pg-76) of total public expenditure and that of India is only 5.1 percent of total public expenditure. This ratio is more than double for few neighboring countries like Nepal and Sri Lanka.

3.6. Public Health Expenditure

The Public Health Expenditure consisted of Plan and Non Plan expenditure of State Funds till 20012-17 when the 12th Five Year Plan ended. It is also measured through the Revenue and Capital Expenditure. However, health spending is a clear merit because large positive externalities are associated with it. The direct health benefits are generated through lower prevalence of morbidity through the manifest externalities of ensuring clean, safe water; and immunization for children and pregnant women; or providing accessability for treatment of a communicable disease etc. Government's intervention is essential for direct public provisioning of such services, or, in the form of price subsidies to boost or restore balance in the consumption of health care services, and, making provision for positive externalities, especially to the poor. For the welfare of the society sufficient resources are needed to be directed for the production of such goods or services.

3.6.1. Plan Health Expenditure

The often quoted data till the year 2017 on public expenditure on health is from the Plan Outlays or Plan Expenditures[90]. These are the provision in the budget allocation that is incurred during the Plan Period on implementation of various projects and programmes. Any Expenditure other than Plan Expenditure, which is incurred on routine functioning of the Governmentis called Non-Plan Expenditure.The major amount of the public health expenditure in respect of the Centre and State is in the Non-Plan sector. From the Table 3.2 it is observed that while in absolute term the "Plan Health Expenditure" has been increasing gradually but the per cent share of health outlays/investment in the Total Plan Outlays has been decreasing steadily from the 4th Plan (1969-74) to the Eighth FYP (1992-97).

The share of Family Planning programme increased from 0.1 percentage point to 1.83 percentage point in the Tenth Plan (Table 3.2, pg-67). The Central Sector Schemes constituting 58.9% of total health expenditure in the Tenth Plan (2002-07), got reduced to 43.5% and, there was an increase from 41.1% to 56.5% of Centrally Sponsored Schemes in the Eleventh Plan (2007-12). clearly giving emphasis on vertical programmes, rather than overall improvement in the health care delivery services. The family welfare programmes was merged with the developmental

[90] In the budget 2017-18, the differences between Plan and Non-Plan has been abolished

expenditure in the Eleventh Plan. The 12th FYP raised the outlay for health to Rs. 2,78,595 Cr., the highest ever in the history of Plan Outlay since independence.

3.6.2. Government's Total Health Expenditure: Centre and States

The Public or Government expenditure in the health sector consists of all the government expenditure on health and family welfare, at the Central and State level as both the governments spend in the form of capital and revenue expenditure. In 2015-16, at current prices.the total government health expenditure taking Centre and State together was Rs. 1,93,643 crores. This expenditure grew by 9.58 per cent over that of the previous year. The public health expenditure was Rs. 1,60,189 crores at constant (2011-12) prices. It grew by 13.89 per cent CAGR from 1990-91 to 2015-16 at current prices (Table 3.3).

Table 3.3

Public Health Expenditure

Year	Health exp. at current price	Health exp at constant price	Average growth rate of health exp (in absolute terms)	Average growth rate of health exp (in real terms)
1990-91	7496	19000		
1995-96	14280	22184	13.76	3.15
2000-01	27187	31912	7.18	3.67
2001-02	28440	32358	4.61	1.40
2002-03	29420	32270	3.45	-0.27
2003-04	32919	34798	11.89	7.84
2004-05	37702	37702	14.53	8.34
2005-06	45486	43642	20.65	15.76
2006-07	53058	47838	16.65	9.62
2007-08	60755	51666	14.51	8.00
2008-09	72153	56577	18.76	9.50
2009-10	89039	65823	23.40	16.34
2010-11	102038	69235	14.60	5.18
2011-12	112519	70361	10.27	1.63
2011-12*	112519	112519	10.27	
2012-13*	127885	118484	13.66	5.30
2013-14*	142290	124150	11.26	4.78
2014-15 (R.E.)*	176712	149212	24.19	20.19
2015-16 (B.E.)*	193643	160189	9.58	7.36
CAGR			13.89#	

Source: Various Indian Public Finance Statistics, MoF

Note: from 1990-91 to 2011-12 in 2004-05 prices and from 2011-12 to 2015-16 in 2011-12 prices. * At 2011-12 prices ; # CAGR over 1990-91 up to 2015-16

3.6.3. Centre and State Share of Health Expenditure in Total Health Expenditure

It is very interesting to note that there has been continuous increase in the Centre's share in Total Health Expenditure(THE). In the year 1990-91, it was 18.23 per cent, which increased up to 32.49 per cent in 2010-11 (shown in Table 3.4, pg-68). During the same period that is from 1990-91 to 2010-11, the state's share has decresed from 81.77 per cent to 67.51 per cent. However, the Centre's share in THE after 2011-12 statrted decreasing from 31.15 per cent to 14.54 in 2015-16 and accordingly, the state's share increased up to 85.4 per cent.

Total public health expenditure of Centre and state taken together, as a percentage of total public expenditure has also stagnated at around 4-5% from last two decades, with Centre's share being only 1.7% and states' share 7.61 per cent to 7.67 per cent during 2014-15 and 2015-16. From the pattern of Health Expenditure, it can be concluded that health is not a priority sector for the Centre and the State Governments.

3.6.4. Health Expenditure in terms of Capital and Revenue Expenditure

Government's total expenditure on health, water supply and sanitation and family welfare as analyzed above, in terms of Plan and Total expenditure by Centre and state do not exactly give the idea whether Government's expenditure has created any assets (like establishment of new hospitals, path labs, etc.) and infrastructure. The Capital Expenditure gives an idea about how much productive assets have been created, and, the Revenue Expenditure gives an idea about the routine spending for giving salaries to doctors, staff, other paramedical employees etc. required for proper functioning and carrying out operations for the public health care system.The huge public health care system takes more than 75% of government's total health expenditure for its maintenance, as revenue expenditure was as high as 91.56 % during the year 1990-91; much consideration was not given for creating assets and infrastructure as capital expenditure was as low as 8.44%.

Over the years the Centre's Capital Expenditure as a share of Total Health Expenditure is showing an increasing trend, and it became 22.69% in the year 2014-15. The states' share in the total revenue was around 82.9% and that for capital was 97.02 %during 2015-16. From the Figures 3.3 and 3.4 (pg-77) the pattern of capital and revenue expenditure can be seen separately for Centre and State. The Centre has spent a very small proportion on Capital expenditure on health. The State contributes the larger anount for the public health expenditure and its contribution has been

steadily increasing. The States' Revenue expenditure was at 1.24 lakh crores and Capital expenditure stood at Rs. 36 thousand Crores, in 2015-16.

3.7. Contribution of Total Health Expenditure in GDP

Comparison of the shares of Development and Total Health Expenditure in GDP gives a fairly well indication about the trend of health expenditure, as one of the sub head that comes under the Development expenditure is Health expenditure. The decrease of Development expenditure as a share in GDP from 13.9 per cent in 1990-91 to 11.3 per cent in 1995-96, has provided an impact in the Health expenditure also. As a share of GDP, the Health expenditure decreased from 1.41 per cent in 1990-91 to 1.28 per cent in 1995-96. The highest contribution of health expenditure in GDP was seen in the year 2014-15. The Table 3.6 below gives a vivid picture of these aspects.

Table 3.6
Contribution of Total Health Expenditure in GDP

	Health exp. as % of GDP			Development. exp. as % of GDP		
Year	Total	Center	State	Total	Centre	State
1990-91	1.41	0.29	1.12	13.9	6.5	7.4
1995-96	1.28	0.27	1.01	11.3	4.3	7
1996-97	1.24	0.25	0.99	11	4.1	7
1997-98	1.31	0.26	1.05	11.3	4.3	7
1998-99	1.37	0.29	1.08	11.4	4.3	7.1
1999-00	1.37	0.32	1.05	11.8	4.5	7.2
2000-01	1.36	0.31	1.05	11.8	4.6	7.2
2001-02	1.31	0.32	0.99	11.7	4.7	7
2002-03	1.26	0.33	0.93	11.6	5	6.6
2003-04	1.25	0.33	0.92	12.5	5.1	7.4
2004-05	1.27	0.34	0.93	11.5	4.8	6.7
2005-06	1.34	0.35	0.99	12.3	5.2	7.2
2006-07	1.34	0.34	1	13.1	5.5	7.6
2007-08	1.33	0.39	0.94	13.6	6.6	6.9
2008-09	1.36	0.41	0.96	14.5	7.2	7.3
2009-10	1.46	0.47	0.99	14.5	6.8	7.8
2010-11	1.41	0.48	0.93	14.7	7.2	7.4
2011-12*	1.29	0.42	0.87	13.8	6.6	7.1
2012-13*	1.29	0.41	0.88	13.8	6.1	7.8
2013-14*	1.27	0.37	0.9	13.2	5.7	7.5
2014-15 (R.E.)*	1.42	0.24	1.18	14.5	5.1	9.4
2015-16 (B.E.)*	1.41	0.22	1.18	14.1	4.4	9.6

Source: Indian Public Finance Statistics 2015-16, MoF
Note: from 1990-91 to 2011-12 in 2004-05 prices and from 2011-12 to 2015-16 in 2011-12 prices.
* At 2011-12 prices ; # CAGR over 1990-91 up to 2015-16

The share of public health expenditure in GDP was 0.22% in 1950-51(not in table) and this share was around 1.05% in the 1980s (not in table). Thereafter, it has started stagnating right from 1990-91 for two decades till 2015-16 at around 1 to 1.4 per cent of GDP.

3.8. Public Expenditure on Health: Per capita

Per capita expenditure on health shows the amount spent on a person on an average. We have calculated per capita health expenditure by dividing the annual health expenditure by the government for a particular period divided by the total population of that period. Here we have taken reference from projected population estimated by the Census Commissioner of India.

3.8.1. National Scenario

In the year 2015-16, the annual per capita annual public health expenditure was around Rs 1498 at current price and around Rs.1240 at constant prices (Figure 3.5, pg-78). This expenditure has grown at

Table 3.7
Changes in Per Capita Public Expenditure on Health

Year	Change in per capita Health Expenditure at:	
	Constant prices	Current prices
1990-91		
1995-96	1.10	11.49
1996-97	2.75	10.75
1997-98	8.46	15.64
1998-99	9.01	17.79
1999-00	5.94	9.22
2000-01	1.76	5.20
2001-02	-0.42	2.73
2002-03	-1.78	1.88
2003-04	6.19	10.19
2004-05	6.67	12.76
2005-06	14.04	18.85
2006-07	8.06	15.00
2007-08	6.49	12.91
2008-09	8.00	17.12
2009-10	14.76	21.73
2010-11	3.68	12.96
2011-12	-0.24	8.25
2012-13*	3.14	11.32
2013-14*	3.42	9.82
2014-15 (R.E.)*	18.63	22.58
2015-16 (B.E.)*	5.96	8.16

Source: Various Indian Public Finance Statistics and Census Population Projections
Note: * at 2011-12 prices

5.33 per cent (CAGR) from 1990-91 to 2015-16 at constant prices. In absolute term the public expenditure on health per capita has been increasing; the largest annual increase was in the year 2014-15, around 18.63 per cent, whereas the lowest growth was in the year 2011-12 (Table 3.7 abpve).

3.8.2. Per Capita Health Expenditure by State Governments:

Analysis of Per capita annual expenditure on health by the State government shows that (in Figure 3.6, pg-78)) the states, Jammu and Kashmir spends highest amount, about Rupees 2.4 thousand per capita. Assam has the highest spending, about 6.1 percent of state's aggregate expenditure on public health, but per capita PHE is quite low. Haryana and Bihar spend less than 4 per cent of their aggregate expenditure on public health. UP spends the least, about Rs. 190 per capita. West Bengal, Madhya Pradesh and Bihar are spending less that Rs. 700 per capita. Haryana, Punjab, Kerala, Maharashtra, Gujarat and Chhattisgarh spend more than thousand rupees per head. Delhi spends the highest around Rs. 2.3 thousand followed by Jammu and Kashmir, Rs. 2.2 thousand annually per capita.

A state is considered to be a better performing state if its expenditure on Health facilities is comparatively greater than than that of other states, as it will raise the standard of living as people will spend less on health and it will reduce the out-of-pocket expenditure. The state wise Health expenditure out of Total State Government Expenditure can be seen in Figure 3.7(pg-79).

In the year 2013-14, the average health expenditure as a share of total government expenditure was approximately 5 per cent for the country. Among the major Indian states, Jammu and Kashmir and Rajasthan had the highest (5.6%) while Bihar had the lowest expenditure share (3.8%) during 2014. Over decade from 2004 to 2014, the expenditure share on health in states' total expenditure has increased substantially; Gujarat and Rajasthan spending more.

3.9. Panel Data Analysis

An analysis of the factors influencing changes in the percent of State Governments' Health Expenditure out of Total Expenditure has been attempted by taking State's Income, Receipt, Expenditure to Receipt Ratio and, Proportion of Urban population as parameters. Income level of State may positively influence expenditure on health; similar association is assumed with government receipts. Higher level of urbanization may also force government for allocating and spending funds for the health sector. A panel data regression for eighteen major states was applied

to analyse the association of above mentioned factors with the share of Public Health Expenditure out of total Government Expenditure. Summary statistics for the parameters and the outcome variable are given in the Annexure II for the year 2004 and 2014.

Random effect model has been chosen for the panel regression, the result is shown in Table 3.8, pg-70. The panel data analysis shows states' per capita GSDP and receipts are significantly associated with higher percent of health expenditure, implying that states that have higher level of revenue and higher per capita income tend to spend larger proportion of total expenditure on health. Urbanisation and expenditure to receipt ratio were insignificant in determining governments' share on health out of total expenditure. Here we accept our null hypothesis H! except for urbnisation.

3.10. Principal Component Analysis

We have applied the method of the Principal component analysis for ranking 20 major states in respect of their Health Expenditure, at two time points, the year 2004-05 and 2014-15. To understand the differences among the pattern of Health Expenditure over the decade, three state level indicators namely, i) Government Health Expenditure as a percentage of Gross State Domestic Product (GSDP)[91]; ii) Government Health Expenditure per capita[92], iii) Ratio of expenditure on medical and family welfare over total expenditure of the state[93], were brought together to rank the major Indian states using principal component analysis. The rank of the major states with their scores and contribution of each parameter for the year 2004-05 and 2014-15 is presented in the Table 3.9, pg-70. Telangana is included in the analysis of 2014-15. We get very interesting picture after ranking the states.

The state government's expenditure on health as a percentage of GSDP in Jammu and Kashmir was the highest in 2004-05, and also, the share of medical and family welfare expenditure over total public expenditure was the highest among all the states. Therefore, Jammu and Kashmir got the highest rank in the year 2004-05. Haryana was the lowest performing state ranking the last among the 20 states with the overall score of 18.54, having the contribution of two parameters quite low among all the states during the year 2004-05, though per capita government health expenditure being not the lowest.

[91] GSDP from MoSPI, and Govt. Health Expenditure from National Health Accounts.
[92] Per capita Health Expenditure is Author's estimated calculation from Census data of 2001 and 2011 and using health expenditure estimates from National Health Accounts
[93] State Finances: A Study of Budgets of 2015-16, Reserve Bank Of India

Himachal Pradesh, Jammu & Kashmir, Uttarakhand, Rajasthan and Kerala are holding the top five rank as shown in Figure 3.8, pg-79. Health expenditure in these states is higher relative to other states in India. The lowest five rank holder states are Haryana, Bihar, Jharkhand, Telangana and Andhra Pradesh where health expenditure of government is lower than that of other states.

3.11. Private Expenditure 0n Health

Diseases not only create Out-of-Pocket (OOP) expenditures for patients and their families (Uplekar et al. 2001[94]), but also undermines income generation, and, as a consequence, future economic welfare (Gertler & Gruber 2002[95]) is jeopardized. However, the effect of illness on welfare has not been considered to be an important issue (Commission on Macroeconomics and Health 2001[96]; WHO 2001[97]; Wagstaff 2002a,b[98],[99]). The aggregate data on expenditure on health, (such as national average, per capita etc.), are distributed very unevenly among regions and households. This unevenness does not address the impact on individual households that carry the highest burden, thus unable to throw any light on their expenditures. Households accept to trade future welfare of all its members against access to health care for one of them, perceived as essential for survival (Russell 1996)[100]. Also they do not have any other option but to incur debts, sell off productive assets, or sacrifice investment in future productivity (Whitehead et al. 2001)[101]. And this kind of emergent private payments on health care can easily become catastrophic health expenditure especially when the public health care system is unreachable and of not any quality, and, poor people feel it necessary to make use of private services (Uplekar 2000[102]; Meessen et al. 2003)[103]. It is evident that financial burden of households in meeting their health is substantial and the consequences of such huge private health expenditure is very averse to the people at large, especially the poor; at the time of illness they spend more on health, reducing food and non-food consumption and the situation becomes much worse, if the patient is the breadwinner.

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[94] Private Practitioners and Public Health, Weak Links in Tuberculosis Control, The Lancet, 358(9285), 912-916.
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[96] Investing in Health for Economic Development. Report of the Commission on Macroeconomics and Health
[97] The World Health Report 2000. Health Systems: Improving Performance, WHO, Geneva.
[98] Poverty and health sector inequalities. Bulletin of the World Health Organization 80, 97–105.
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[100] Ability to Pay for Health Care: Concepts and Evidence, Health Policy and Planning 11, 219–237.
[101] Equity and health Sector Reforms: Can Low-Income Countries Escape the Medical Poverty Trap? Lancet 358, 833–836.
[102] Private health care. Social Science and Medicine 51, 897–904.
[103] Iatrogenic poverty. Tropical Medicine and International Health 8, 581–584.

There do not exists reasonably reliable information on Private Health Expenditure from official sources, however, the two main types of database which record household expenditures on health in India are firstly from the NAS's[104] 'Private Final Consumption Expenditure' on medical care and health services (PFCEH) and other food and non-food items, estimated periodically by Central Statistical Office (CSO); and secondly from the NSS household consumer expenditure surveys. Also, the NSSO occasionally has conducted surveys concentrating on health and morbidity, as in the 42nd round (1986-87), 52nd round (1995-96)[105], 60th round (2004)[106] and recent 71st round (2014)[107]. These surveys surveys offer nuanced information on expenditures made by households on different components of medical and non- medical treatments, overall household expenditure on health etc. Given the advantages of the national surveys conducted by the NSSO, the analysis in this chapter has been confined to private expenditure on health from the NAS data and the NSS reports.

3.11.1 International scenario

The share of Out of Pocket expenditure(OOP) on health in the total health expenditure for India is 62.4% during 2014, as per estimate of WHO. If this is compared with the neighbouring countries, then India (Figure 3.9) stands at the 2nd highest position, more than that of Sri Lanka (42.1%), Nepal (47.7%) and Pakistan (56.3%). Other developing countries like China, Brazil and Mexico have performed better than India. Thailand has been an out-performer with comparatively low out of pocket expenditure and shown a sharp reduction in the share over two decades. The developed countries spend almost around 70 percent (in Figure 3.10) in health expenditure out of total public expenditureis. However, the USA is spending less than 50 per cent, but, in the year 2014 the Out-of Pocket expenditure was 11 percent only. It can be emphasized that India is way behind universal health care, as the quantum of private health expenditure as a proportion to total health expenditure is very large.

3.12. Private Final Consumption Expenditure on Health (PFCEH)

The 'private final consumption expenditure' in the domestic market on medical care and health services (PFCEH) are being estimated by the CSO in its National Accounts Statistics (NAS) at

[104] National Accounts Statistics 2017, Ministry of Statistics & Programme Implementation.
[105] Morbidity and Treatment of Ailments NSS 52nd Round July 1995 – June 1996.
[106] Morbidity, Health Care and the Condition of the Aged, NSS 60 th round (January – June 2004).
[107] Social Cosumption: Health, NSS 71st Round (January – June 2014).

current and constant prices. Theses estimates are national in coverage and time-series comparisons can be made. The Table 3.10 (pg-71) gives the percentage of private expenditure on health (PFCEH) as a share of GDP. This percentage was 2.37 at constant (2011-12) price and 2.51 at current price for the yer 2015-16.

The household expenditure on health in India is quite huge, according to the NAS estimates. In 2015-16, it was Rs.342.9 thousand crores at current prices rising from Rs. 299.8 thousand crores in 2014-15. The trend in constant prices gives a comparison in increase of private health care expenditure over years. The private health care expenditure was Rs. 269.2 thousand crores in current price in the year 2015-16. It increased from 3.69 per cent in 2011-12 to 4.32 per cent in constant price. This poignantly reflects that there has been an increase in burden of health expenditure on the citizen of India. During the period from 2005-06 to 2011-12, the PFCEH to total private consumption expenditure declined, which may be due to the implementation of the National Rural Health Mission, launched during 2005, actually implemented from the year 2006.

3.12.1. PFCEH: Per capita

The trend in the per capita private health expenditure and changes/growth over years at constant prices in India can be seen in the Table 3.10 (pg-71-72). The annual per capita private health expenditure from the year 1990-91 to 1993-94 remained in the range of Rs.360 to Rs.365. In 1994-95 the expenditure became Rs. 395.growing by 9.2 per cent. In the beginning of this decade India saw a major change in its economic policy - the economy progressed towards liberalization, privatization and globalization. After the year 1994-95 the growth rate of per capita private health expenditure kept on fluctuating from as high as 39.74 % to as low as 4.0 %, as shown in Table 3.11 (pg-73.

The per capita private health expenditure exceeded Rs. 1000 in the year 2006-07, stood at Rs. 1032.9 at current price and at Rs.1007.2 at constant price (base 2004-05). The rate of growth from 2005-06 was in the range of 3 percent to 7 percent with the exception of the year 2014-15 (13.06 %). There are two estimates for the year 2011-12 as there is a change in National Accounting System. The per capita health expenditure stood at Rs 2098.8 at constant price (base 2011-12) and at 2672.9 at current price in the year 2015-16.

3.13. Out of Pocket Health Expenditure of Households

In India, the health expenditure is largely dominated by private spending, which amounts to a scenario showing inadequacy of public funds and health care needs. It is seen from the Figure 3.11(pg- 81) that in rural areas, the percentages of institutional medical expenditure though show some increasing trend over years with some fluctuations had remained low. In the year 1993-94 the share of institutional medical expenditure out of total medical expenditure was around 16.5 per cent rising to 31.96 per cent in the year 2011-12. The situation illustrates the fact that the immediate focus of the governments needs to be directed towards making available, affordable and accessible institutional services meant for the rural population.

The per capita monthly medical institutional expenditure for urban region is consistently higher than that of the rural regions across years (Figure 3.12, pg-81)). The percent of per capita medical institutional expenditure out of total medical expenditure was 34.3 percent in the year 2011-12 (NSS-68th Round). The higher share of institutional expenditure in urban areas in comparison with rural area indicates better accessibility to health care services. High level of household expenditure on non-institution medical expenditure in urban areas also point out to the fact that households take recourse to such institutions very often, and, there is limited accessibility with regard to health facilities, though public health facilities are supposed to be better in urban India.

The share of medical expenditure out of the total monthly consumption expenditure of households in urban and rural India over various rounds of NSS depict the increasing trend, and this share is more in rural areas (Figure 3.13, pg-82), showing he burden of health care on households. The 68th round of NSS (year 2011-12) reveals the share of medical expenditure out to total household expenditure to be at 7.4 per cent for rural and 6.1 per cent for urban India. It is assumed that with increase in diagnostic technology and rising level of income, the expenditure on medical care would increase. However, the household health expenditure is sizeable, reflecting the 'compulsion' of the households to spend on health, due to the inadequacy of government expenditure.

In the rural areas there is continuous increase in the share of medical expenditure out of total household consumption expenditure in comparison to that of urban areas. This shows the gaps that rural India faces in delivery of health services as household have to spend a larger proportion of their income (proxy total expenditure) for getting health care services. In addition to this, rural

India is also characterized by larger proportion of spending on non-institutional sources. Therefore, it is very imperative that the policy focus should be made in such a manner that the institutional health care services will be in the reach of the rural population thereby reducing the burden of health care services.

3.14. Burden of Health Care Expenditure

To analyse the burden of private health care expenditure on the households, we have considered the unit record data of two NSS household consuer expenditure surveys namely 61st (2004-05) and 68th (2011-12) rounds. To calculate the expenditure of poor people we have taken the poverty lines as estimated by the erstwhile Planning Commision according to the Tendulkar Committee methodology for the years 2004-05 and 2011-12.

3.14.1. National Scenario:

The two Figures 3.14 (pg-82) and 3.15 (pg-83) show the total percentage of medical expenditure out of total consumption expenditure between 61st (2004-05) and 68th(2011-12) round of NSSO survey. They reveal that the burden of health expenditure placed upon households is exceptionally high in our country. This reflects the inadequate public health service delivery in terms of quantity and quality.

There has been a reduction in institutional medical expenditure out of total consumption expenditure among poor in rural areas. The non-institutional medical expenditure percent has however increased for all class including the poor in the rural areas in the year 2011-12. In the urban areas there is a rise in share of medical institutional and non-institutional expenditure for all classes. The share for poor has fallen for institutional expenditure whereas for non-institutional expenditure, the shares have increased. This is a cause of concern for Indian public health system.

3.14.2. State Scenario

The state-wise share of medical expenditure out of total consumption expenditu during the year 2004-05 (61st round) shows that (as in Figure 3.16 and 3.17), Kerala has the highest for both poor and Non-poor persons in rural areas followed by Uttar Pradesh; Assam having the lowest. In the year 2004-05 this percentage was the highest for urban poor, non-poor and all class in Andhra Pradesh and the lowest in Jammu & Kashmir. An average Indian urban poor usually spends 4.3% of total consumption expenditure on medical care. This percentage is more or less same for non-

poor and all class urban population in all the states; however, dispersion is more among urban poor category across states.

The percentage of Medical Expenditure out of total consumption expenditure in all categories for rural areas as revealed by 68th round of NSS (2011-12), shows that (Figure 3.18, pg-84) this ratio was the highest in Kerala for rural poor, whereas it is the highest for rural non-poor in Punjab. Assam still accounts for lowest level of expenditure in medical care out of total expenditure for all class, poor as well as non-poor. An average Indian rural poor would spend 4.4 percent. The Government's effort should be to formulate more effective policies to outreach population of rural regions of India.

The urban poor and non-poor both spent a high percentage of total consumption on medical care in Kerala in 2011-12. The medical expenditure in Kerala in 2004-05, was not very high but it accounted for the highest expenditure both by poor and non-poor; reflecting that the burden of medical expenditure has increased in Kerala over the years. In Uttarakhand, an urban poor was spending 2.4 percent of total consumption expenditure on medical care in 2004-05 that got raised to 3.8% in 2011-12 showing a significant increase in burden of urban poor on health care services. The average expenditure of an individual in urban areas is 4.2 percent in medical care out of total consumption expenditure. The Figure 3.19 (pg-85) shows that medical expenditure in many states in India fall below the national average,

3.15. Monthly Per Capita Private Medical Expenditure

For finding out the category wise medical expenditure we have used the unit record data of NSS 61st and 68th rounds of surveys of household consumer expenditure.

3.15.1. National Scenario

The analyseses so far reveals that urban households spend less percentage of non-food expenditure on medical care as compared to rural households in both rounds of NSS survey, showing that there is inadequate public expenditure in rural areas in medical care facilities. The following Tables 3.12 and 3.13 below give the analyses of category-wise Per Capita Medical Expenditure. The average per capita per month expenditure on medical in rural areas was Rs. 94.8 and in urban areas Rs. 150.5 in 2011-12. There has been increasing trend over the years in the share of household health expenditure out of non-food and total consumption expenditure.

Table 3.12
Category-wise Medical Expenditure – Rural

Rural	Average Expenditure		% Medical Exp. out of Tot. Consumption Exp.		% Medical Exp. out of Tot. Non-food Exp.	
Category	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12
V. Poor *(< 3/4 of PL)*	10.3	20.5	3.4	3.7	8.4	8.6
Mod Poor *(3/4 PL to PL)*	18.5	35.1	4.4	4.6	10.4	10.5
Poor *(<PL)*	14.5	30.2	4.0	4.4	9.6	10.0
Non Poor *(>PL)*	56.7	122.3	7.3	7.9	14.7	14.9
Lower Non-Poor *(PL-1.5*PL)*	33.4	55.6	5.7	5.3	13.0	11.5
Upper Non-poor *(1.5*PL -2*PL)*	57.4	95.2	7.2	6.6	15.0	13.2
Higher Non-poor *(>2*PL)*	126.9	261.6	9.4	10.5	16.4	17.6
All Class	36.4	94.8	6.3	7.4	13.4	14.3

Source: From Unit Data of NSS 61st and 68th Round of Surveys on Household Consumer Expenditure

Table 3.13
Category-wise Medical Expenditure – Urban

Urban	Average Expenditure		% Medical Exp out of Tot. Consumption Exp.		% Medical Exp. out of Tot. Non-food Exp.	
Category	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12
V. Poor *(< 3/4 of PL)*	15.0	26.4	3.8	3.9	8.7	8.5
Mod Poor *(3/4 PL to PL)*	25.4	41.1	4.6	4.3	9.9	9.1
Poor *(<PL)*	20.5	36.2	4.3	4.2	9.4	9.0
Non Poor *(>PL)*	73.3	179.3	5.3	6.2	8.7	9.7
Lower Non-Poor *(PL - 1.5*PL)*	38.5	64.1	4.9	4.9	9.5	9.6
Upper Non-poor *(1.5*PL - 2*PL)*	56.1	101.9	5.2	5.5	9.1	10.0
Higher Non-poor *(>2*PL)*	115.1	266.3	5.5	6.6	8.3	9.7
All Class	57.4	150.5	5.2	6.1	8.7	9.7

Source: From Unit Data of NSS 61st and 68th Round of Surveys on Household Consumer Expenditure

The 'very poor' class spends about 3.7 per cent in rural areas and 3,9 per cent in urban areas per capita per month, showing a substantial share of medical expenditure out of total non-food and

total consumption expenditure. Aaverage expenditure on medical in rural areas constitute larger percent of total expenditure and non-food expenditure; 7.4% and 14.3% respectively, than that in urban areas; 6.1% and 9.7 % respectively in 2011-12.

There is not much of a difference between proportions of expenditure on medical care among rural and urban poor; however, the difference is high between the non-poor. The very poor class spends about 8.6% in rural areas and 8.5% in urban areas of their non-food expenditure which is quite substantial, if compared to that of an average Indian either in rural or urban areas.

3.15.2. State Scenario:

A huge state-level variation do exist in the pattern of per ca[ita monthly health expenditure. The Table 3.14 (pg-74) shows the category wise per capita monthly medical expenditure as per the 61st and 68th rounds of NSS for the year 2004-05 and 2011-12 respectively for rural areas. On an average a rural Indian spent about Rs. 95 on medical per month whereas a poor in rural India spent about Rs. 30 per month and a non-poor spent Rs. 122 per month during 2011-12. Poor in the state of Andhra Pradesh, Tamil Nadu, Uttarakhand and Rajasthan were spending less than the country average in 2004-05, but spent more than the country average in 2011-12.

The Table 3.15 9 (pg-75) shows the category wise per capita monthly medical expenditure according to the 68th round of NSS for the year 2011-12 in urban areas. On medical care, in urban region during 2011-12, an individual on an average spent Rs. 150.5 per month, the urban poor spent Rs. 36.2 and non-poor spent Rs. 179.3 during the same year. The average medical expenditure of poor in states of Assam, Haryana, Jammu & Kashmir, Jharkhand, Karnataka, Madhya Pradesh, Orissa and Tamilnadu was lower than the national average in 2004-05 but spent more than country's average in 2011-12. The Non-poor in many states spends less than the country's average in terms of per capita per month medical expenditure.

It has also been shown by the 61st Round NSS that the 'doctor's fee' constitute quite a high expenditure on health care in all most all the state; it was more in Chhattisgarh, Gujrat, Jharkhand, Maharashtra and Tamil Nadu in rural areas; approximately 20 % more than that of other expenditure. However, in urban areas of Assam and Jharkhand diagnostic test and other expenditure contributed to more than 35% of the total expenditure.

3.16. Concluding Remarks

The framers of constitution realized that the primary duty of the State should be devoted towards welfare of people which includes the level of nutrition, standards of living and also to work for the betterment of public health, as Nation's development can only be ensured through human resource investment and the importance of a healthy population in the country cannot be denied. The NPH 1983 favoured for privatization of curative care and this brought rapid expansion of private players in the health sector. The updated health policy in 2002, after a gap of 19 years, set goals to eradicate polio by 2005, achieve zero level of growth of HIV/AIDS by 2007, reduce IMR to 30 per 1000 live births by 2010, increase government expenditure on health care to 2% of GDP by 2010 etc. The RSBY in 2008 tried to tackle high Out of Pocket expenditure, especially of the rural poor, providing cashless health insurance for hospitalization in public as well as private hospitals, but was not successfully implemented. The National Health Policy (NHP) of 2017 has viewed health as right of each citizen of India, and aims at providing healthcare in an "assured manner" to all, setting the target for public expenditure on health to be 2.5 percent of GDP from the current 1.4%, that is still less than 5 % of GDP, which was suggested by the Bhore Committee in 1946.

The suggestion of Bhore Committee during 1946 to invest 5% of GDP for public health could not even thought of by the Government till today. There has not been significant increase in Public Expenditure on Health in India as per cent of GDP, that remained around 1.2 to 1.4 per cent over years, though the Total Public Expenditure to GDP has somewhat increased in last two years. The states' health expenditure is constantly increasing, but comparatively the contribution made by the Centre to the total public health expenditure has been declining. There has been a fall in share of capital expenditure on public health in last two years. Capital expenditure is important to cater to the needs of infrastructure, machineries and other physical assets for increasing accessibility to public health services. Additionally, it is important to bridge the gaps between the public health expenditure of states. Moreover, as India has endorsed the SDGs, we will have to raise its health expenditure in the coming years, so that we would be able to achieve the targets within the stipulated time frame.

It is understandable that we have to spend on health, alongwith this, we also have to make resources available for affordable housing, planned urban development, pollution control, road safety etc that are social determinants of health. The public health should be treated as a fundamental right

of the citizens and considering the challenges on the health front, the Indian government needs to commit itself for achieving the public health goals by allocating enough budget in the future years which will also help to achieve the SDGs within the specified time period.

The inappropriate public spending on health has been one of the unfortunate features of Indian development. The WHO annual average estimate of the health care expenditure is $75 per capita in India and the most of it is contributed by the private spending of households. According to the World Bank, in India Private Health expenditure, as % of GDP has been at 3.28 % in 2014. It has been observed that around 72 percent of households in rural areas and 79 percent of households in urban areas are in constant use of private healthcare services, despite the fact that the cost of such services being quite substantial in comparison to the public health care service delivery in our country. The private players in this important sector tend to focus on profit maximization and are hardly concerned with public health goals, adversely affecting labour productivity and social welfare, thus deterring the future growth and development prospects. The Government intervention is therefore essential to boost or restore balance in the consumption of healthcare services as India has very low public expenditure on health.

Given the scale of health issues in India, expenditure on health has to increase to a larger GDP ratio. The New Health Policy 2017 has kept the provision of increasing the public health expenditure. It is hoped that through the NHP 2017 and the central flagship scheme "Ayushman Bharat for a new India 2022", our country will be able to move towards achieving universal health care.

TABLES AND FIGURES

Tables:

Table 3.2
Total Plan Outlays/Investment and Plan Health Expenditure

S. No.	Period	Total Plan Investment Outlay	Health	Family Welfare	AYUSH[1]	Health Sector Total Rs. (%)
1	First Plan(1951-56) (Actual)	1960	65.2 (3.3)	0.1 (0.1)	-	65.3 (3.4)
2	Second Plan(1956-61) (Actual)	4672	140.8 (3)	5 (0.1)	-	145.8 (3.1)
3	Third Plan(1961-66)	8576.5	225.9 (2.6)	24.9 (0.3)	-	250.8 (2.9)
4	Annual Plans(1966-69) (Actual)	6625.4	140.2 (2.1)	70.4 (1.1)	-	210.6 (3.2)
5	Fourth Plan(1969-74) (Actual)	15778.8	335.5(2.1)	278 (1.8)	-	613.5 (3.9)
6	Fifth Plan(1974-79) (Actual)	39426.2	760.8(1.9)	491.8(1.2)	-	1252.6 (3.1)
7	Annual Plan (1979 - 80) (Actual)	12176.5	223.1(1.8)	118.5 (1.0)	-	341.6 (2.8)
8	Sixth Plan(1980-85) (Actual)	109291.7	2025.2(1.8)	1387 (1.3)	-	3412.2 (3.1)
9	Seventh Plan(1985-90) (Actual)	218729.6	3688.6(1.7)	3120.8 (1.4)	-	6809.4 (3.1)
10	Annual Plan(1990-91)	61518.1	960.9(1.6)	784.9 (1.3)	-	1745.8 (2.9)
11	Annual Plan(1991-92) (Actual)	65855.8	1042.2(1.6)	856.6 (1.3)	-	1898.8 (2.9)
12	Eighth Plan(1992-97) (Actual)	485457 @	7494.2(1.7)	6500 (1.5)	108(0.02)	14102.2 (3.2) #
13	Ninth Plan(1997-02) (Actual)	859200 @	19818.4(2.31)	15120.2 (1.76)	266.35(0.03)	35204.95 (4.09)#
14	Tenth Plan(2002-07) (Outlays)	1484131.3	31020.3(2.09)	27125 (1.83)	775(0.05)	58920.3 (3.97)
15	Eleventh Plan(2007-12) (Outlays)	2156571	136147.0[$] (6.31)		3988(0.18)	140135 (6.05)
16	Twelfth Plan (2012-17) (Outlays)	4333739	268551		10044	278595 (6.42)

Source: NITI Aayog, Deptt.ISM&H (now AYUSH) was created during 8th Plan Period. Figures in brackets indicate percentage to total plan investment outlay;
Note: Deptt. of Health & Family welfare merged from 2005 and Rs. 136,147.00 crores include Rs. 4496.08. crores for newly created Health Research Department during 2008-09; @actuals; #outlays

Table 3.4
Health Expenditure out of Total Public Expenditure

Year	% Share in total Health Exp.		% Growth				Total Health Exp. as % of Total Expenditure		
			Center		State				
	% Cenre	% State	Const Prices	Curr Prices	Const Prices	Curr Prices	Total %	Centre %	State %
1990-91	18.23	81.77					4.83	1.51	8.39
1995-96	18.95	81.05	4.07	14.77	3.08	13.68	4.87	1.74	7.91
1996-97	18.05	81.95	-1.61	6.05	4.47	12.60	4.95	1.66	7.92
1997-98	18.31	81.69	11.44	18.82	9.47	16.71	5.09	1.84	8.12
1998-99	19.11	80.89	16.35	25.72	10.41	19.30	5.11	1.91	8.21
1999-00	20.78	79.22	18.75	22.43	6.95	10.27	4.91	2.03	7.65
2000-01	20.86	79.14	3.02	6.50	2.53	5.99	4.92	2	7.73
2001-02	22.13	77.87	8.22	11.65	0.36	3.54	4.63	2.01	7.2
2002-03	23.4	76.6	6.34	10.31	-1.08	2.60	4.45	2.1	6.96
2003-04	23.85	76.15	8.72	12.81	6.03	10.02	4.32	2.41	6.45
2004-05	24.3	75.7	9.75	16.02	7.09	13.21	4.57	2.5	6.75
2005-06	24.83	75.17	14.54	19.38	11.33	16.03	4.87	2.42	6.97
2006-07	24.17	75.83	5.12	11.87	8.91	15.89	4.88	2.38	6.82
2007-08	27.76	72.24	25.33	32.88	3.96	10.22	4.89	2.55	7
2008-09	28.31	71.69	10.84	20.21	7.90	17.02	4.75	2.46	6.99
2009-10	30.47	69.53	25.04	32.63	12.64	19.47	4.91	2.81	6.8
2010-11	32.49	67.51	12.00	22.03	1.99	11.11	4.85	2.93	6.63
2011-12*	31.15	68.85	-2.18	6.14	4.08	12.93	4.72	2.87	6.48
2012-13*	30.2	69.8	1.89	9.97	6.54	14.99	4.83	2.91	6.5
2013-14*	28.13	71.87	-3.31	2.67	6.86	13.47	4.82	2.7	6.59
2014-15 (R.E.)*	15.08	84.92	-31.98	-29.72	49.93	54.92	5.04	1.75	7.61
2015-16 (B.E.)*	14.54	85.46	2.36	4.48	6.89	9.10	5.10	1.74	7.67
CAGR				12.76		13.99			

Source : Various Indian Public Finance Statistics, MoF [108];
Note: from 1990-91 to 2011-12 in 2004-05 prices & from 2011-12 to 2015-16 in 2011-12 prices(*).

[108] Available at: https://dea.gov.in/indian-public-finance-statistics#

Table 3.5
Capital and Revenue Expenditure on Health

Year	Pub. Health Exp.(Cap+Rev) In Rs.Crore		% Share in Health Exp.		Annual growth in %				Share of Centre in Total		Share of State in Total	
					Revenue		Capital					
	Const prices	Curr prices	Rev.	Cap.	Const. prices	Curr prices	Const prices	Curr. prices	Rev.	Cap.	Rev.	Cap.
1990-91	19000	7496	91.56	8.44					19.37	4.28	80.63	95.72
1995-96	22184	14280	90.61	9.39	2.93	13.52	5.37	16.21	20.32	3.98	79.68	96.02
1996-97	23235	16120	90.54	9.46	4.66	12.8	5.49	13.7	19.15	6.22	80.85	93.78
1997-98	25686	19000	90.73	9.27	10.77	18.1	8.4	15.57	19.59	4.47	80.41	95.53
1998-99	28533	22806	89.51	10.49	9.59	18.42	25.68	35.8	20.58	5.14	79.42	94.86
1999-00	30781	25365	89.3	10.7	7.63	10.97	10	13.41	22.51	4.46	77.49	95.54
2000-01	31912	27187	86.17	13.83	0.03	3.42	34.06	38.59	23.65	1.41	76.35	98.59
2001-02	32358	28440	88.03	11.97	3.59	6.87	-12.26	-9.48	24.49	2.6	75.51	97.4
2002-03	32270	29420	85.78	14.22	-2.82	0.8	18.47	22.88	26.47	2.36	73.53	97.64
2003-04	34798	32919	86.39	13.61	8.6	12.69	3.22	7.1	26.76	3.09	73.24	96.91
2004-05	37702	37702	83.48	16.52	4.69	10.67	31.51	39.02	28.36	1.34	71.64	98.66
2005-06	43642	45486	84.28	15.72	16.86	21.8	10.17	14.83	28.81	1.84	71.19	98.16
2006-07	47838	53058	80.77	19.23	5.05	11.79	34.06	42.66	29.18	1.84	70.82	98.16
2007-08	51666	60755	80.78	19.22	8.02	14.53	7.92	14.42	33.87	0.18	66.13	99.82
2008-09	56577	72153	79.84	20.16	8.22	17.37	14.88	24.59	33.84	4.94	66.16	95.06
2009-10	65823	89039	83.35	16.65	21.45	28.82	-3.9	1.94	35.34	4.61	64.66	95.39
2010-11	69235	102038	86.11	13.89	8.68	18.4	-12.29	-4.44	36.36	7.12	63.64	92.88
2011-12	70361	112519	86.21	13.79	1.75	10.4	0.89	9.47	34.63	8.01	65.37	91.99
2011-12	112519	112519	86.21	13.79		10.4		9.47	34.63	8.01	65.37	91.99
2012-13	118484	127885	84.88	15.12	3.68	11.9	15.46	24.62	34.02	7.45	65.98	92.55
2013-14	124150	142290	83.7	16.3	3.32	9.71	13.01	20.01	32.25	5.94	67.75	94.06
2014-15 (RE)	149212	176712	77.31	22.69	11.02	14.72	67.26	72.83	18.23	3	81.77	97
2015-16 (BE)	160189	193643	80.64	19.36	11.97	14.29	-8.38	-6.48	17.04	2.98	82.96	97.02
CAGR						13.37		17.74				

Source: Various Indian Public Finance Statistics, MoF
Note from 1990-91 to 2011-12 in 2004-05 prices and from 2011-12 to 2015-16 in 2011-12 prices.

Table 3.8
Result of Panel Data Analysis of Factors influencing States' Health Expenditure

Public Exp on Health out of Total Govt. Exp	Coef.	P>z
NSDP Per cap (Rs. thousand) ***	0.0131	0
Receipts (Rs. Thousand Cr.) **	0.0065	0.01
Proportion of Urban Population	-0.0139	0.132
Expenditure to receipts Ratio	-0.0008	0.932
_cons	3.559129	0.001
R Sq:		
within 0.8953		
between 0.0232		
overall 0.4096		

Source: Author's Calculation

Table 3.9
Rank of the Major States with their Scores and Contribution of each Parameter for 2004-05 and 2014-15

State	2004-05				2014-15				Rank	
	Contribution of			Composite Score	Contribution of			Composite Score		
	Share of Exp on M&FW out of Total Exp	Govt health exp as percent of GSDP	Govt. health exp per capita		Share of Exp on M&FW out of total Exp	Govt. health exp as percent of GSDP	Govt health exp per capita		2004-05	2014-15
Himachal Pradesh	77.4	71.1	88.7	237.2	80.9	70.6	80.6	232.1	2	1
Jammu Kashmir	89.6	92	67.8	249.4	91	76.5	37.1	204.5	1	2
Uttarakhand	48.9	32.2	30.9	112	85.9	36.9	54	176.8	4	3
Rajasthan	40.7	24.2	15.6	80.5	91	46.6	27.5	165.1	6	4
Kerala	73.3	18.6	32.5	124.5	75.8	24.9	44.7	145.5	3	5
Gujarat	4.1	2.6	17.5	24.2	85.9	18	33.2	137.1	17	6
Uttar Pradesh	44.8	23.7	6	74.5	65.7	55.5	12	133.2	8	7
Chhattisgarh	24.4	11.7	8.6	44.7	55.6	41.8	26.5	123.9	14	8
Orissa	52.9	25.3	14.7	93	55.6	45	19.9	120.5	5	9
Tamil Nadu	20.4	10.4	20.7	51.5	45.5	16.8	33.6	95.9	11	10
Madhya Pr.	16.3	21	8.8	46.1	25.3	40.5	14.3	80.1	13	11

State	2004-05				2014-15				Rank	
	Contribution of			Composite Score	Contribution of			Composite Score		
	Share of Exp on M&FW out of Total Exp	Govt health exp as percent of GSDP	Govt. health exp per capita		Share of Exp on M&FW out of total Exp	Govt. health exp as percent of GSDP	Govt health exp per capita		2004-05	2014-15
Karnataka	12.2	17.6	23	52.8	35.4	12.5	29.7	77.6	10	12
Punjab	8.1	10.3	25.6	44.1	30.3	16.4	27.5	74.2	15	13
Assam	8.1	22.3	11.4	41.8	20.2	39.1	12.6	71.9	16	14
Maharashtra	0	1.3	18.5	19.8	25.3	0	21.2	46.5	18	15
Haryana	0	0	18.5	18.5	10.1	3.6	27.7	41.4	19	16
Bihar	16.3	35	0	51.3	0	40.2	0	40.2	12	17
Jharkhand	40.7	15.9	10.2	66.8	10.1	20.7	6.5	37.3	9	18
Telangana					15.2	0.4	19.4	35		19
Andhra Pr. (Bifurcated)					15.2	13.6	3.6	32.4		20
Andhra Pr.	20.4	38.8	16.3	75.4					7	

Source: Author's Calculation

Table 3.10
The Share of PFCEH in PFCE and its Contribution to GDP

Year	pfceh in crores		% share pfceh in pfce		% share pfceh in GDP	
	at const. price (2004-05)	at cur. price	at const. price (2004-05)	at cur. price	at const. price (2004-05)	at cur. price
1990-91	30508.33	9206.79	2.98	2.25	2.26	1.73
1991-92	31180.83	10063.67	2.98	2.14	2.28	1.64
1992-93	31729.33	10997.65	2.97	2.08	2.2	1.56
1993-94	32277.84	12241.99	2.89	2.02	2.12	1.5
1994-95	35956.49	17451.65	3.08	2.5	2.22	1.83
1995-96	40022.77	20623.72	3.23	2.57	2.3	1.84
1996-97	44392.92	23390.96	3.33	2.48	2.37	1.8
1997-98	49240.07	28751.95	3.61	2.81	2.52	1.99

Year	pfceh in crores		% share pfceh in pfce		% share pfceh in GDP	
	at const. price (2004-05)	at cur. price	at const. price (2004-05)	at cur. price	at const. price (2004-05)	at cur. price
1998-99	54634.6	40960.21	3.78	3.48	2.62	2.45
1999-00	61245.67	52843.64	3.93	4.01	2.73	2.86
2000-01	68366.14	62435.98	4.23	4.42	2.92	3.13
2001-02	78049.27	73760.37	4.61	4.81	3.16	3.4
2002-03	82173.65	78208.59	4.72	4.82	3.2	3.34
2003-04	84923.98	82889.09	4.63	4.67	3.06	3.16
2004-05	95560	95560	4.96	4.96	3.22	3.22
2005-06	103925	105244	4.97	4.87	3.19	3.1
2006-07	113008	115900	4.98	4.66	3.17	2.93
2007-08	118077	127648	4.76	4.48	3.03	2.79
2008-09	126204	140595	4.75	4.32	3.03	2.65
2009-10	137407	154872	4.82	4.16	3.04	2.54
2010-11	147851	170599	4.79	3.91	2.99	2.35
2011-12	157102	187922	4.69	3.7	3	2.25
2011-12#	181334	181334	3.69	3.69	2.08	2.08
2012-13#	198663	214348	3.84	3.82	2.16	2.16
2013-14#	216675	248829	3.9	3.84	2.21	2.22
2014-15#	248094	299838	4.2	4.15	2.35	2.41
2015-16#	269277	342945	4.3	4.32	2.37	2.51

#base year 2011-12
Source: National Accounts Statistics, MoSPI

Table 3.11
Private Health Expenditure (in Rs): Per Capita

Year	Per capita exp. in Rs.		Growth	
	Constant Price	Current Price	Constant Price	Current Price
1990-91	363.63	109.74	-0.01	6.19
1991-92	364.26	117.57	0.18	7.14
1992-93	363.87	126.12	-0.11	7.28
1993-94	361.86	137.24	-0.55	8.82
1994-95	395.13	191.78	9.19	39.74
1995-96	431.28	222.24	9.15	15.88
1996-97	469.27	247.26	8.81	11.26
1997-98	510.79	298.26	8.85	20.62
1998-99	555.8	416.69	8.81	39.71
1999-00	611.85	527.91	10.09	26.69
2000-01	670.91	612.72	9.65	16.07
2001-02	750.47	709.23	11.86	15.75
2002-03	778.16	740.61	3.69	4.42
2003-04	792.2	773.22	1.8	4.4
2004-05	877.5	877.5	10.77	13.49
2005-06	939.65	951.57	7.08	8.44
2006-07	1007.2	1032.98	7.19	8.56
2007-08	1037.58	1121.69	3.02	8.59
2008-09	1093.62	1218.33	5.4	8.62
2009-10	1174.42	1323.69	7.39	8.65
2010-11	1246.64	1438.44	6.15	8.67
2011-12	1307.01	1563.41	4.84	8.69
2011-12#	1508.6	1508.6	-	-
2012-13#	1608.61	1735.61	6.63	15.05
2013-14#	1732.01	1989.04	7.67	14.6
2014-15#	1958.12	2366.52	13.06	18.98
2015-16#	2098.81	2672.99	7.19	12.95

#base year 2011-12.
Source: National Accounts Statistics, MoSPI

Table 3.14
Average Medical Expenditure of Poor and Non-Poor at Current Prices in 2004-05 and 2011-12 in Rural Areas

Rural	Average Medical Exp. of Poor		Average Medical Exp. of Non-Poor		Average Medical Expenditure All class	
States	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12
Ker	36.3	114.7	124.4	571.0	101.8	242.9
Pun	20.8	109.5	80.3	451.4	62.8	197.7
AP	11.7	54.6	57.2	201.6	39.6	133.2
HP	20.1	53.5	71.2	178.5	56.0	106.5
Mah	17.6	52.1	76.2	175.4	44.4	124.8
Har	19.4	51.8	63.9	169.8	50.9	93.0
TN	10.4	42.0	58.3	210.7	37.3	125.4
Utk	14.4	41.7	40.6	92.6	29.4	66.5
Raj	13.2	37.7	43.5	126.5	31.0	91.2
Guj	19.0	35.8	50.8	122.2	35.3	85.2
UP	21.8	30.9	68.4	100.6	45.4	104.5
WB	13.8	28.2	59.6	97.4	39.7	93.5
Bih	8.3	24.1	22.9	45.8	13.5	53.9
MP	15.9	19.6	52.8	63.2	31.5	66.0
Kar	10.0	19.3	34.2	116.1	22.6	78.5
J&K	8.4	16.0	25.6	88.4	20.4	61.6
Jhar	7.9	15.6	29.9	32.4	17.3	36.4
Ori	11.3	14.0	42.7	46.6	21.9	59.6
AS	5.9	13.7	15.3	29.3	11.4	29.1
Chhat	12.2	13.1	56.0	45.3	28.1	49.2
All India	**14.5**	**30.2**	**56.7**	**122.3**	**36.4**	**94.8**
	Indicates State Average below India Average					

Source: Unit Data of NSS 61st and 68th Rounds of Household Consumer Survey

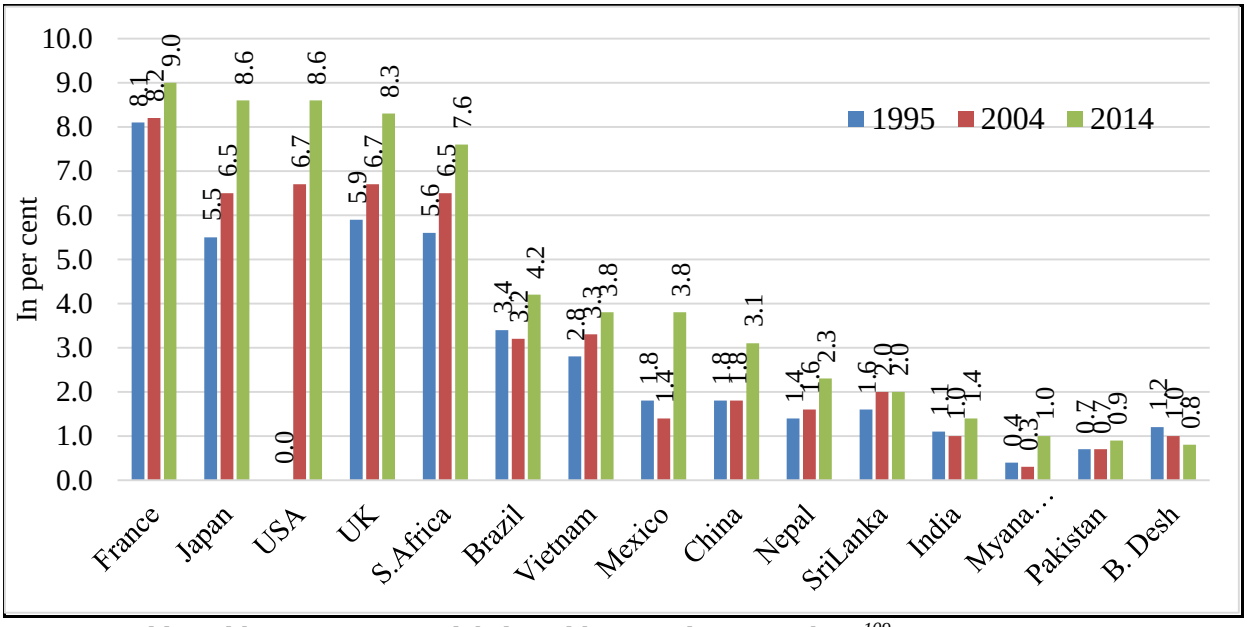
Table 3.15
Average Medical Expenditure of Poor and Non-Poor at Current Price in 2004-05 and 2011-12 in Urban Areas

Urban	Average Medical Exp. of poor		Average Medical Exp. of Non-poor		Average Medical Exp. All class	
States	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12
AP	21.9	16.5	67.9	49.2	53.8	65.9
AS	12.6	38.0	38.0	135.2	31.8	133.6
Bih	9.6	23.0	40.1	77.3	25.5	89.1
Chhat	24.2	17.7	76.2	102.3	57.6	107.4
Guj	25.7	74.3	72.9	216.9	60.3	181.1
Har	16.1	65.6	66.7	270.4	53.2	199.6
HP	46.8	34.4	71.7	220.9	69.4	151.5
J&K	11.3	71.5	33.6	288.5	31.7	199.6
Jhar	12.5	41.3	54.3	98.8	42.5	89.7
Kar	18.2	35.4	53.4	109.1	42.4	107.0
Ker	63.4	45.0	139.4	167.7	122.1	150.5
Mah	24.4	51.9	104.0	193.5	80.6	140.6
MP	13.3	52	67.2	183.8	46.9	159.4
Ori	13.9	40.2	43.5	253.8	31.4	211.4
Pun	19.1	20.5	79.8	86.8	65.5	82.7
Raj	21.4	18.1	61.3	111.0	47.7	124.8
TN	17.2	50.1	65.2	140.1	53.9	124.4
UP	22.6	71.1	68.3	379.1	51.1	269.3
Utk	13.2	29.9	45.3	133.1	34.9	134.0
WB	17.3	24.2	100.7	84.1	77.5	94.4
All India	**20.5**	**36.2**	**73.3**	**179.3**	**57.4**	**150.5**
	Indicates State Average below India Average					

Source: Unit Data of NSS 61st and 68th Rounds of Household Consumer Survey

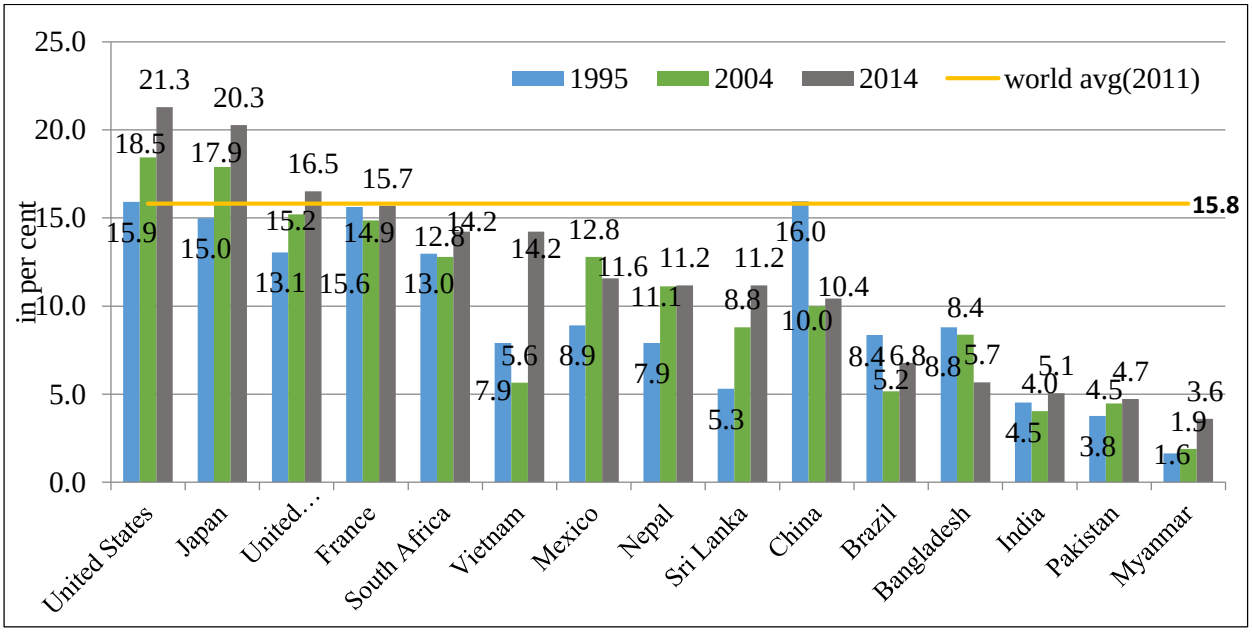
Figures:

Figure 3.1
Public Health Expenditure, as Per Cent of GDP



Source: World Health Organization, Global Health Expenditure Database[109]

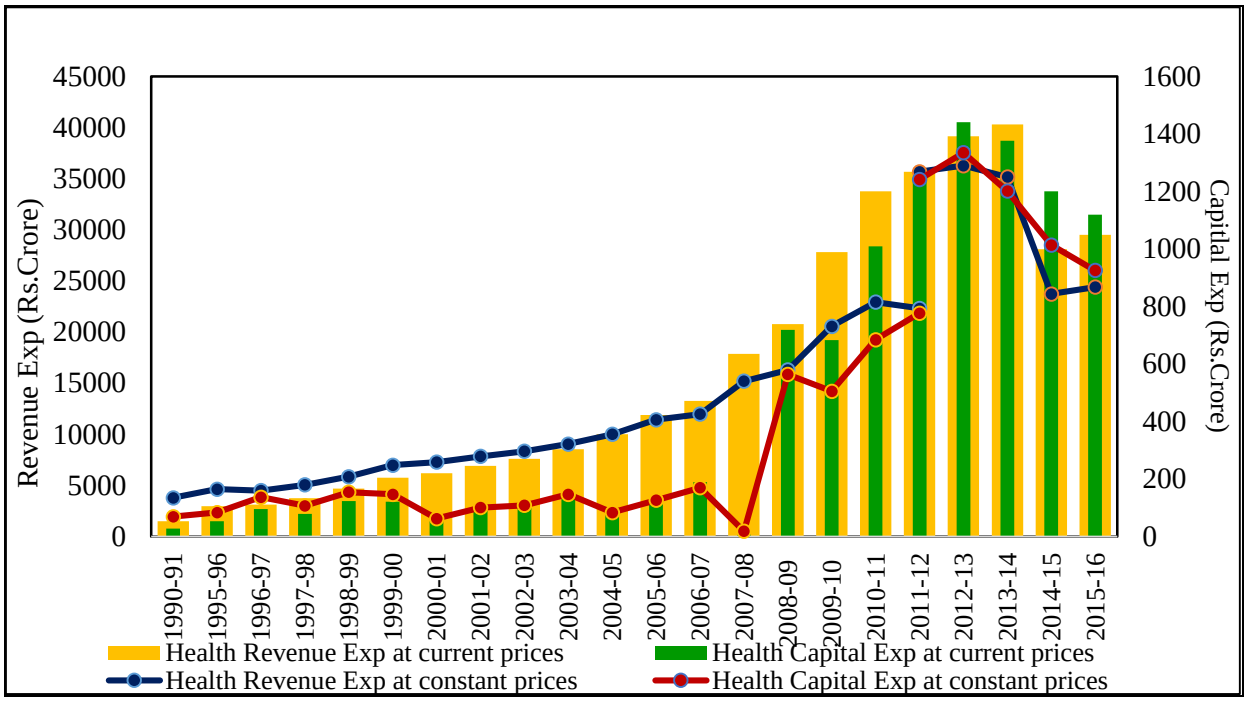
Figure 3.2
Ratio of Public Health Expenditure to Total Government Expenditure



Source: World Health Organization, Global Health Expenditure Database

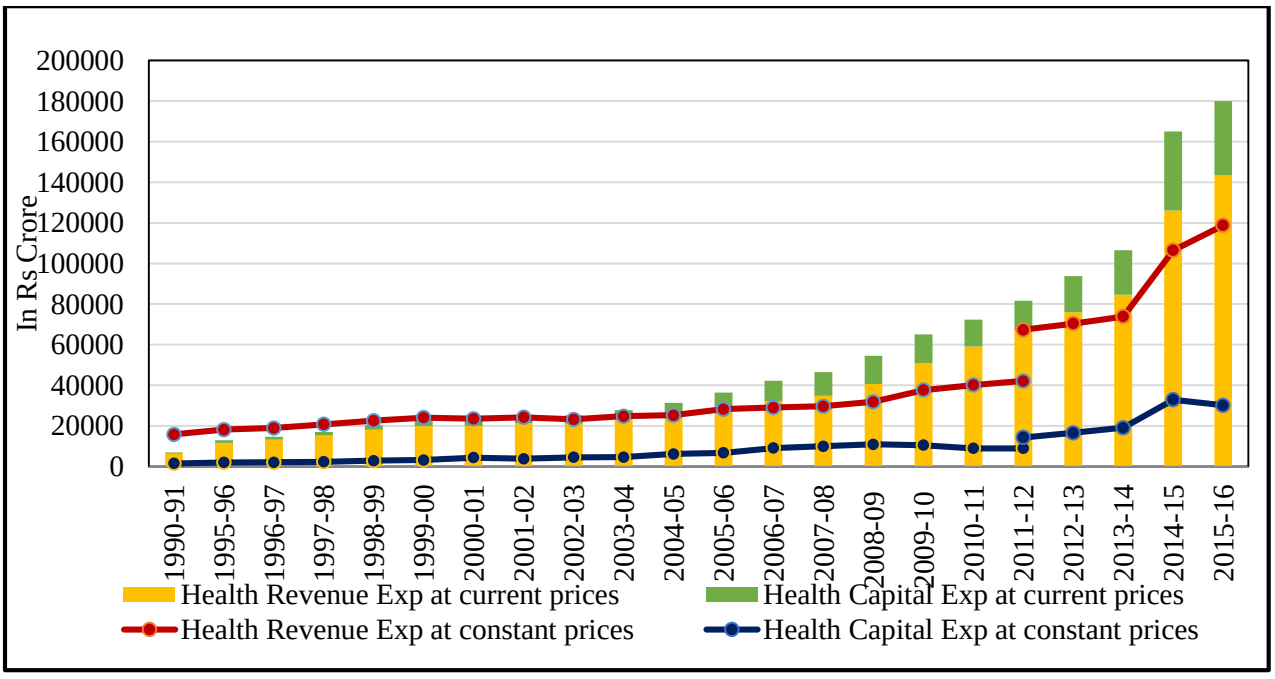
[109]World Health Organization, Global Health Expenditure database http://www.who.int/health-accounts/en/

Figure 3.3
Capital and Revenue Expenditure on Health as incurred by Centre



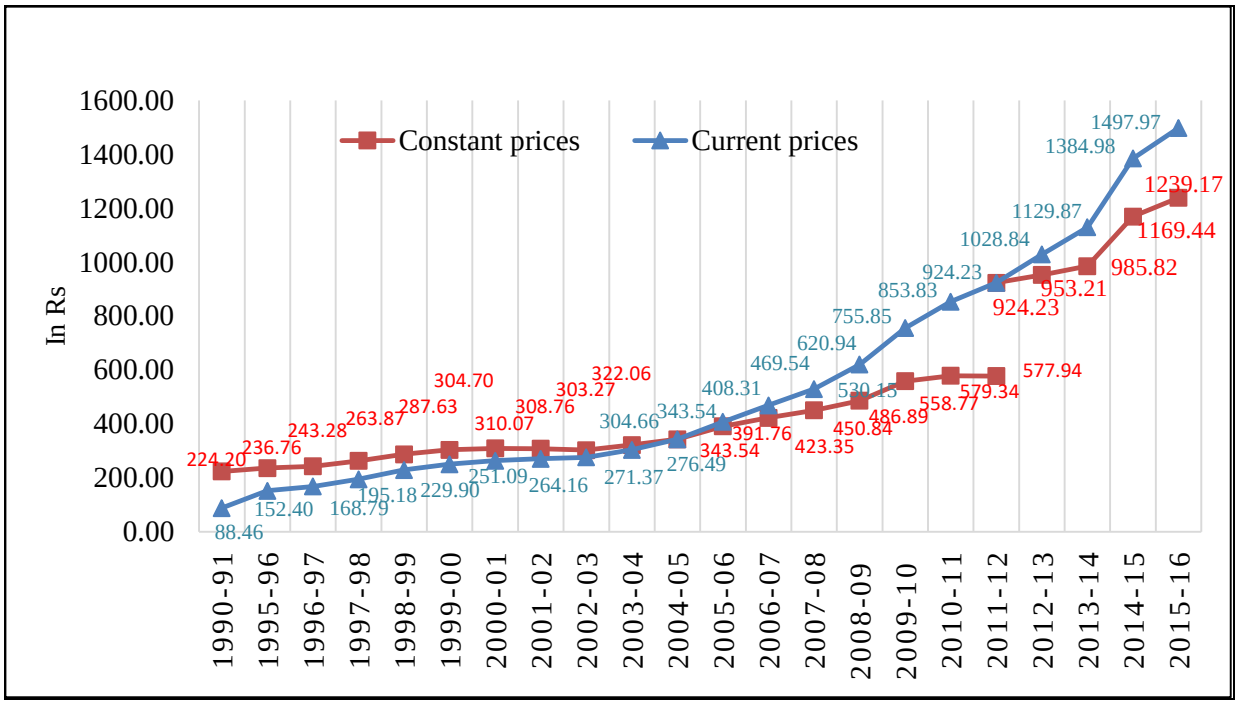
Source: Various Indian Public Finance Statistics, MoF

Figure 3.4
Capital and Revenue Expenditure on Health as incurred by States



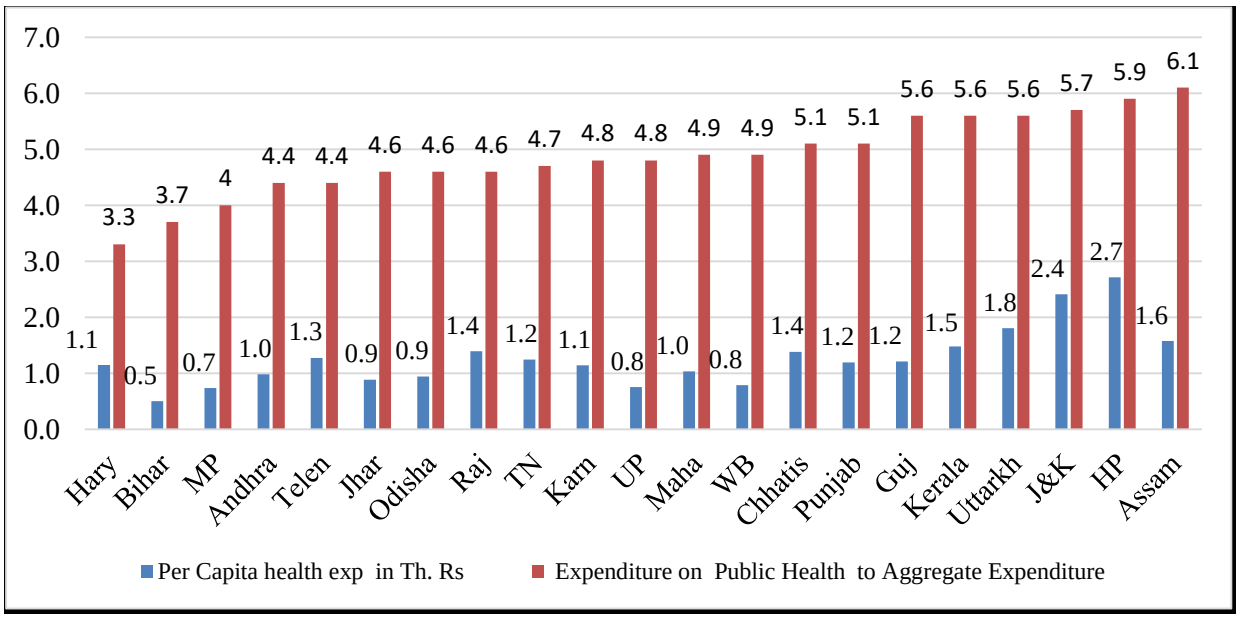
Source: Various Indian Public Finance Statistics, MoF

Figure 3.5
Per Capita Public Health Expenditure (Centre + State)



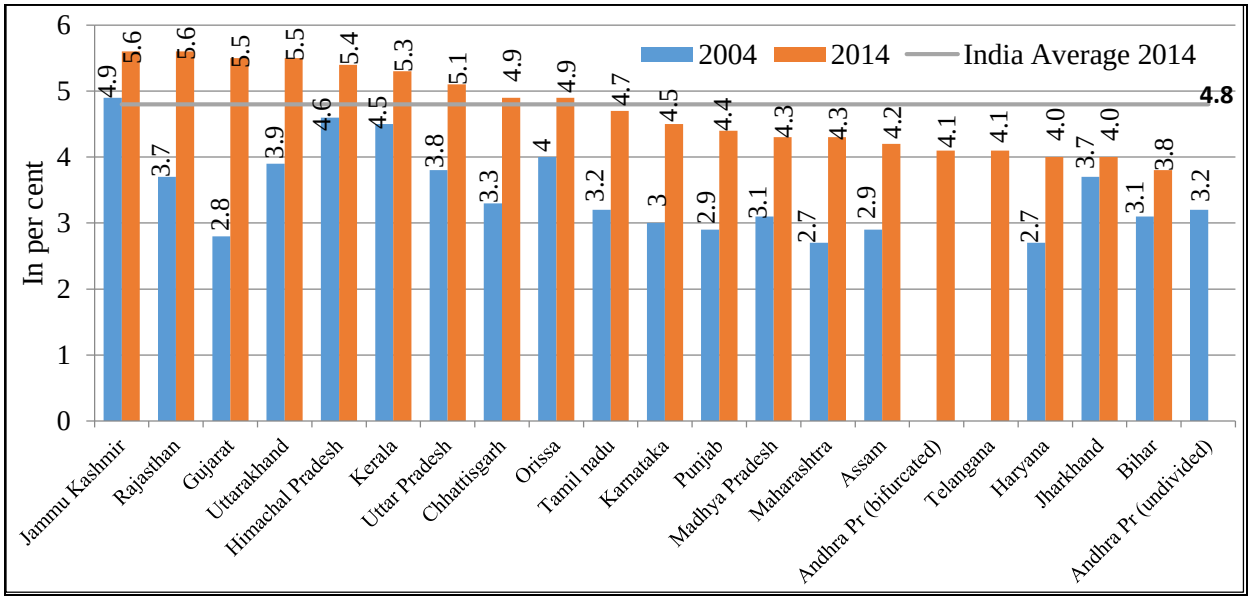
Source:Various Indian Public Finance Statistics, MoF and Census Population Projections,
Note: * 2011-12 price

Figure 3.6
Per Capita Public Health Expenditure and its Ratio to Aggregate Expenditure



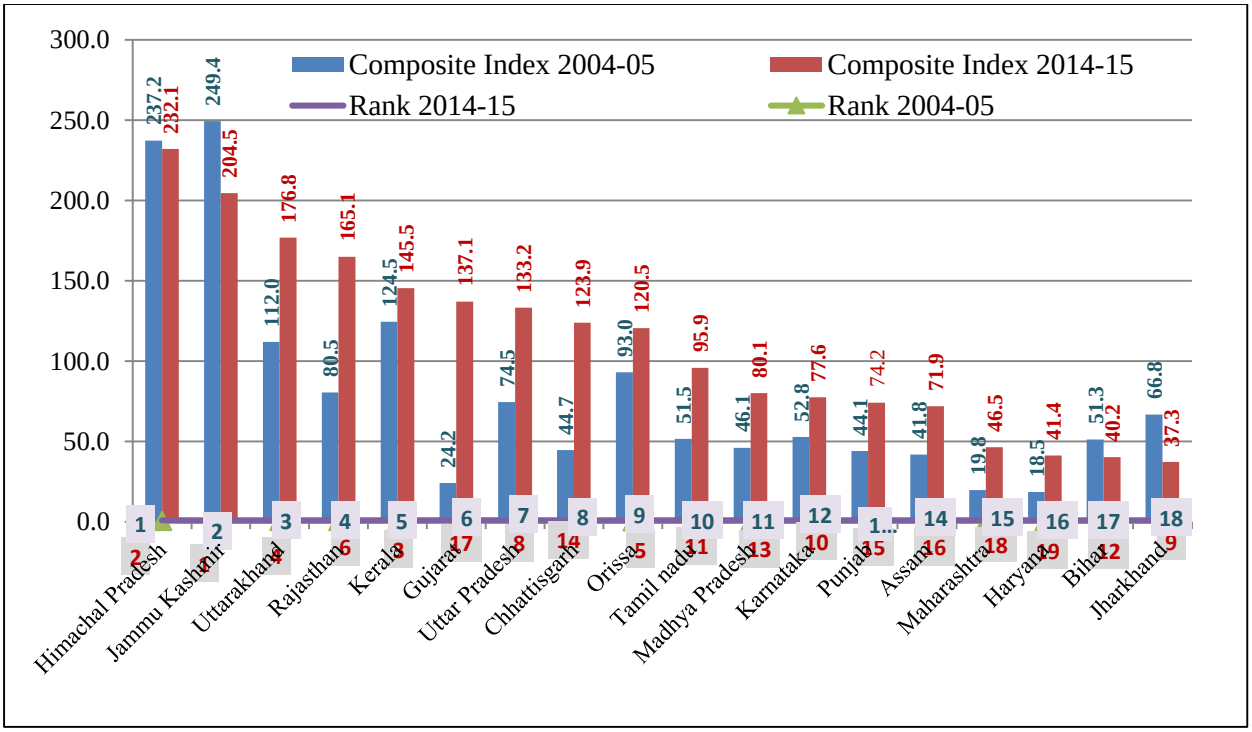
Source: State Finances: A Study of Budgets of 2016-17, RBI

Figure 3.7
Share of Public Health Expenditure out of Total Government Expenditure



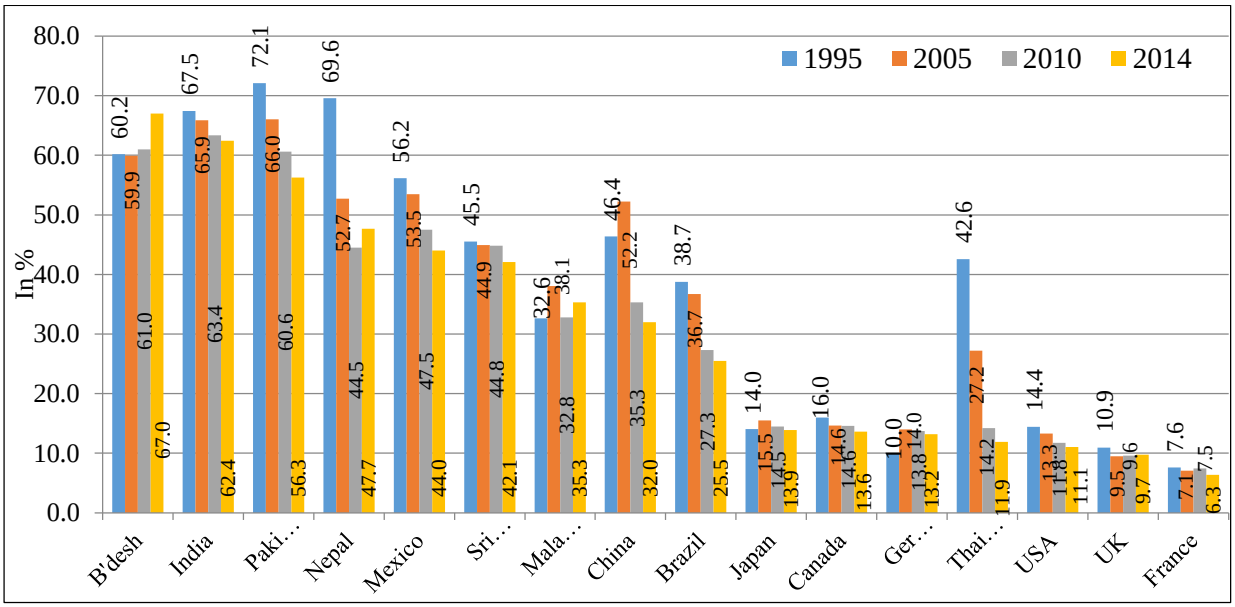
Source: State Finances: A Study of Budgets of 2016-17, RBI

Figure 3.8
Rank of the Major States of India



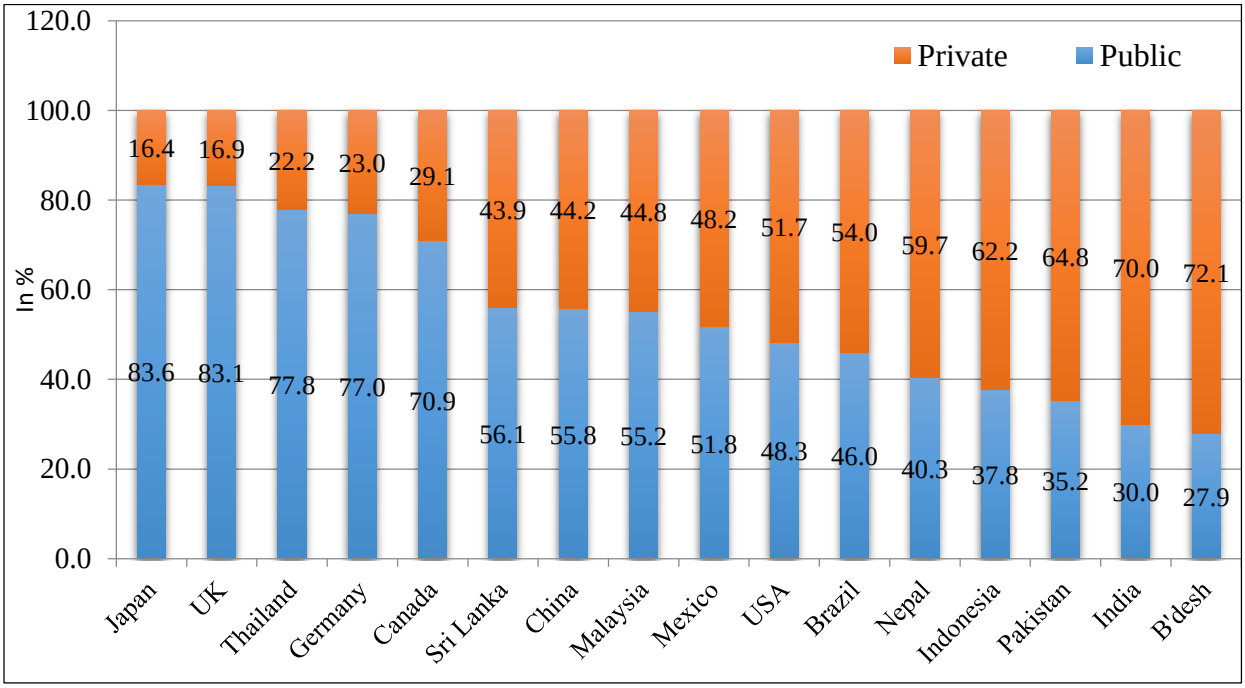
Source: Author's Calculation

Figure 3.9
Out-Of-Pocket Expenditure as a Percentage of Total Expenditure on Health



Source: Global Health Observatory Indicator, WHO[110]

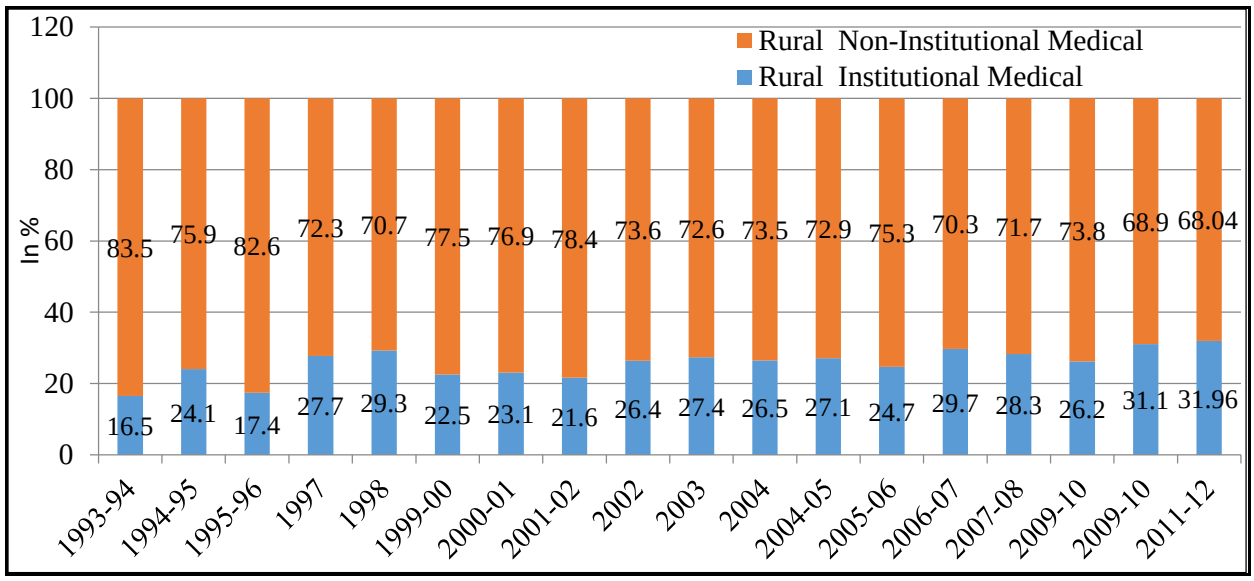
Figure 3.10
Share of Public and Private Expenditure in Total Health Expenditure



Source: World Health Organization Global Health Expenditure database (2014)[111]

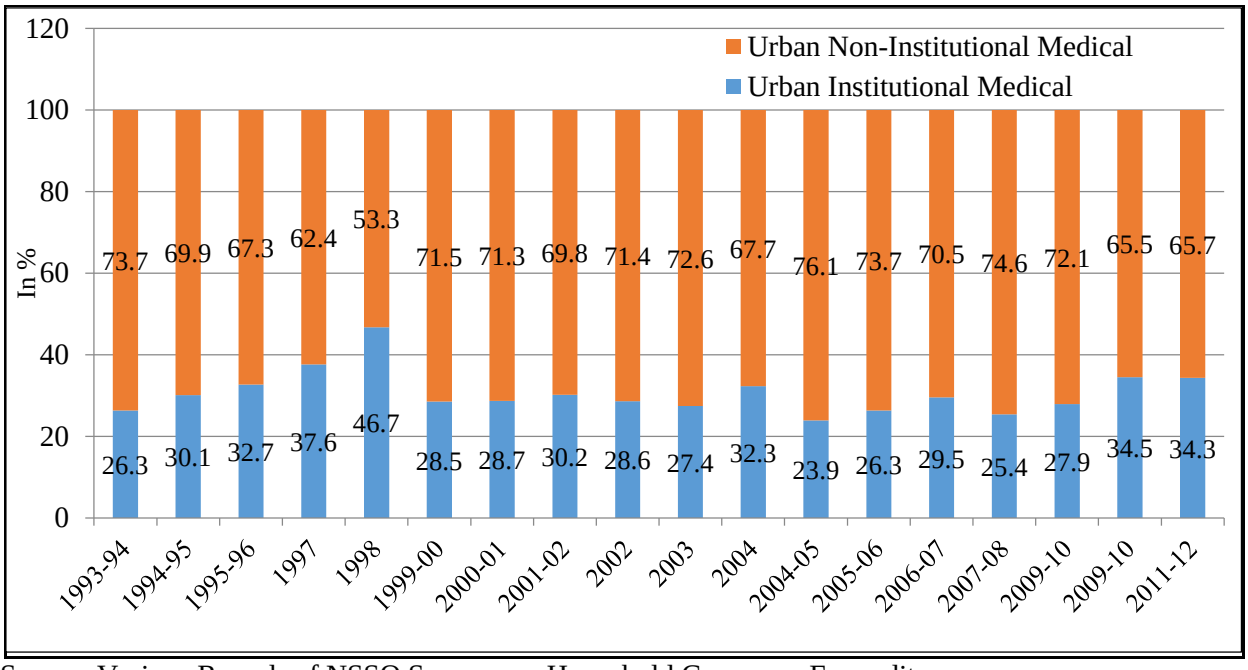
[110], http://apps.who.int/gho/data/view.main.GSWCAH41v
[111] http://apps.who.int/nha/database/Select/Indicators/en

Figure 3.11
Medical Institutional and Non-Institutional Expenditure in Rural India



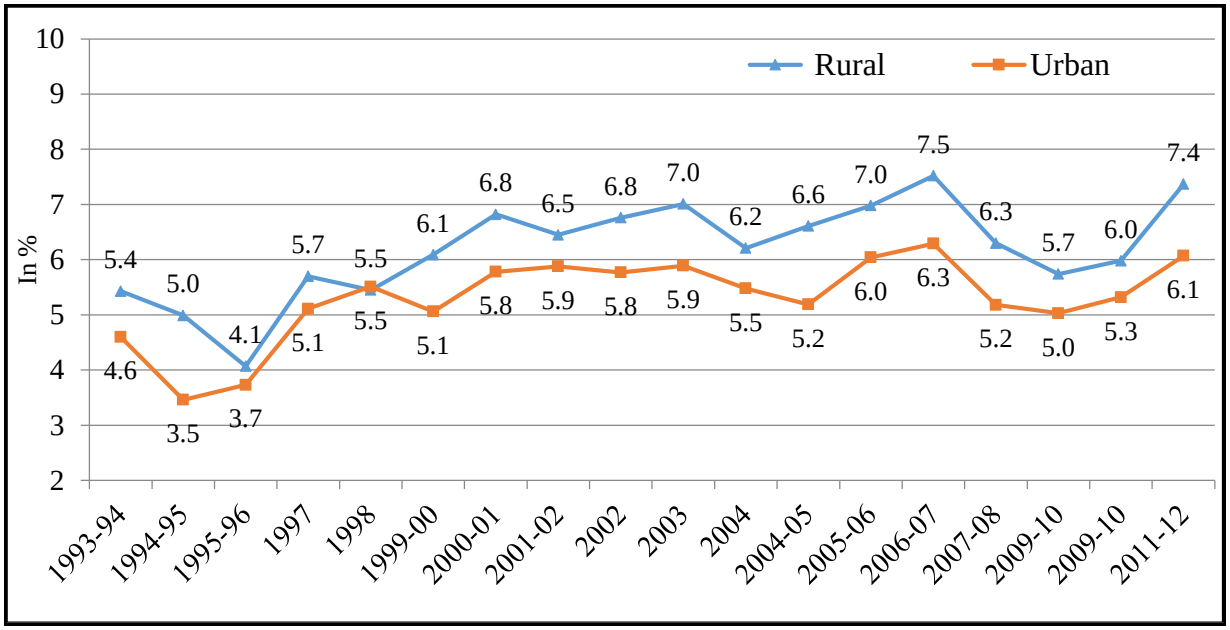
Source: Various Rounds of NSS Surveys on Household Consumer Expenditure

Figure 3.12
Medical Institutional and Non-Institutional Expenditure in Urban India



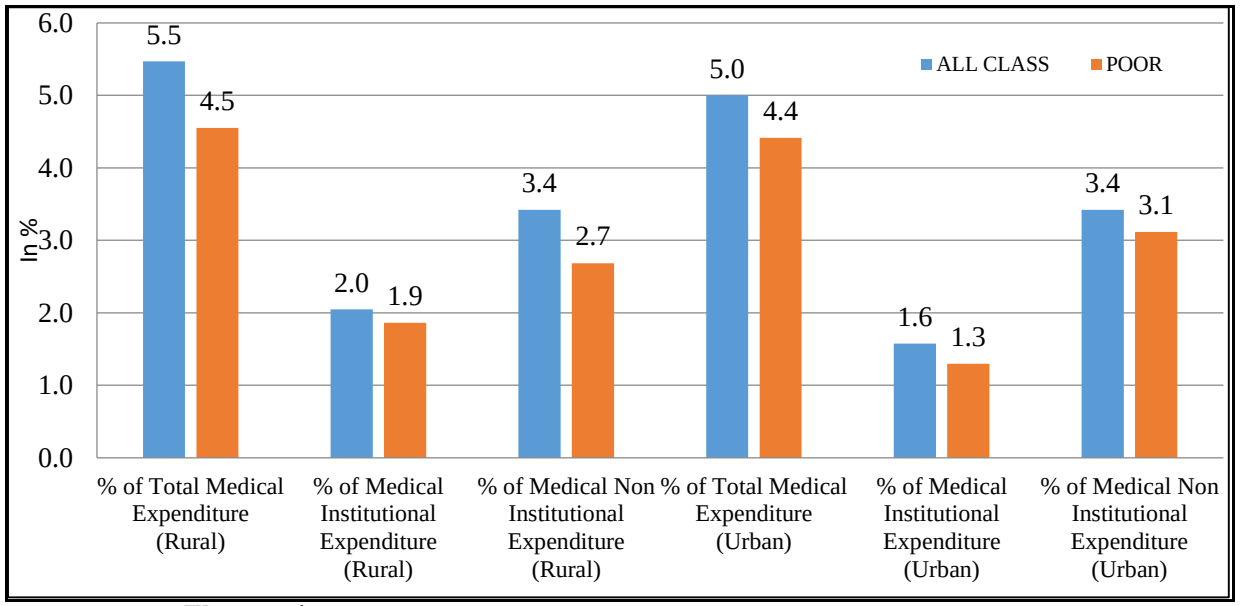
Source: Various Rounds of NSSO Surveys on Household Consumer Expenditure

Figure 3.13
Share of Out of Pocket Medical Expenditure in Total Consumption Expenditure



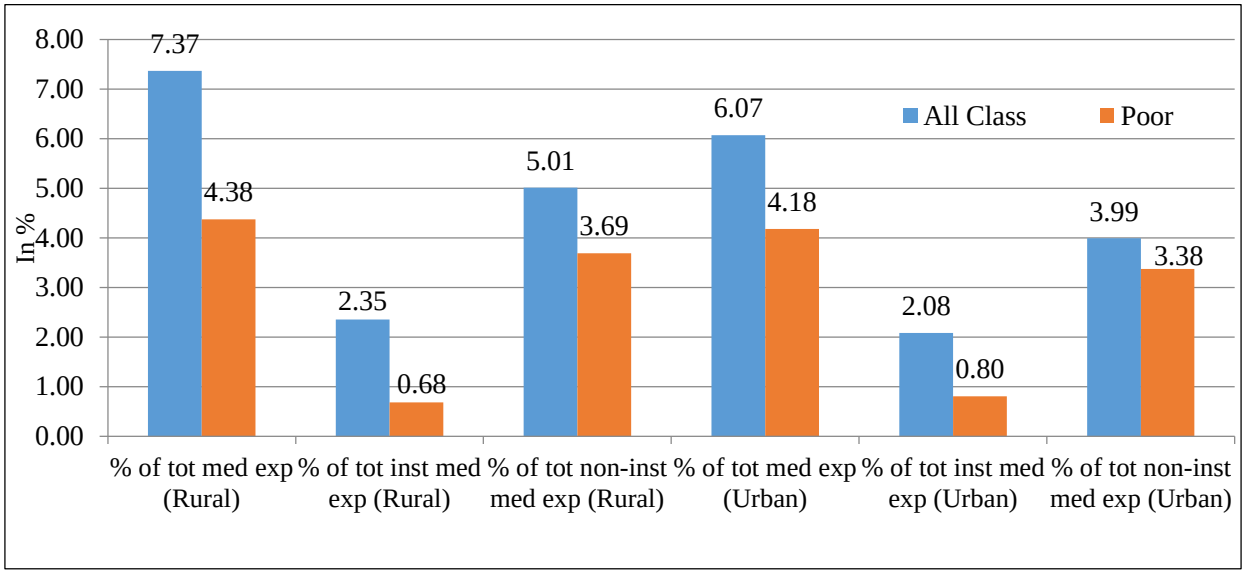
Source: Various Rounds of NSS on Household Consumer Expenditure

Figure 3.14
Percentage of Medical Expenditure out of Total Consumption Expenditure: (2004-05)



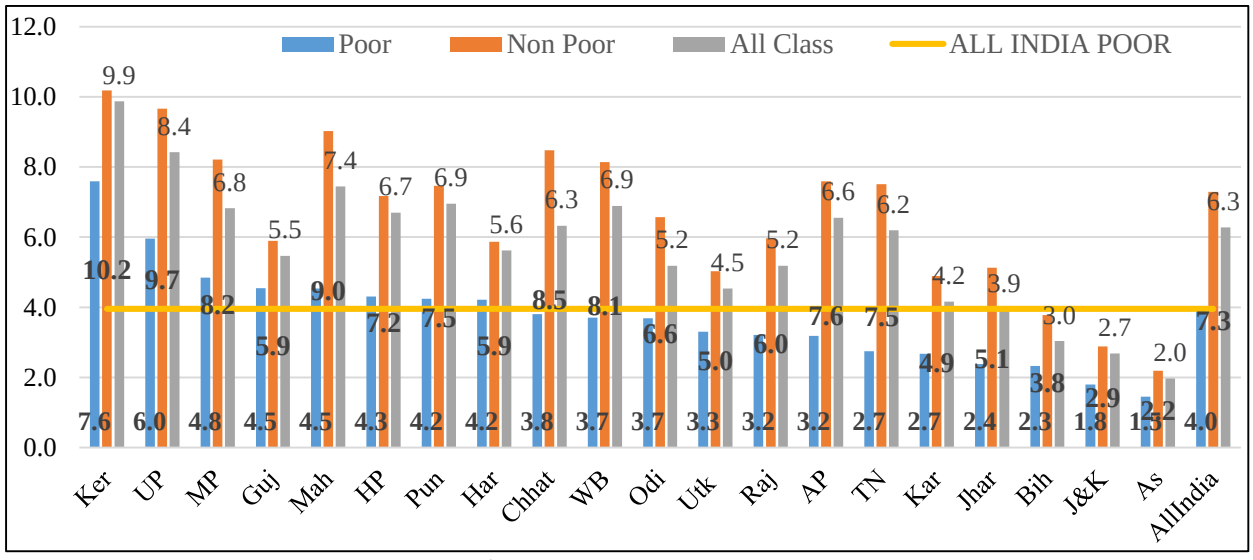
Source: NSS 61TH and 68th Rounds of HH Consumer Exenditure

Figure 3.15
Percentage of Medical Expenditure out of Total Consumption Expenditure: 2011-12



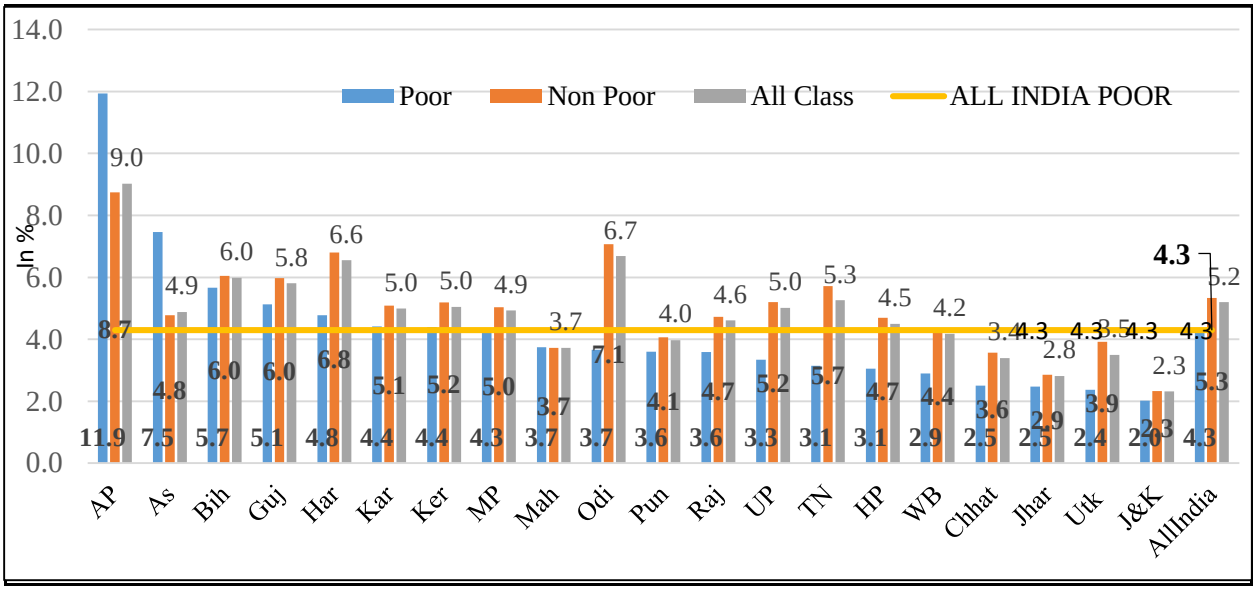
Source: NSS 68th round of HH Consumer Exenditure

Figure 3.16
Share of Medical Expenditure out of Total Consumption Expenditure in 2004-05: Rural Areas



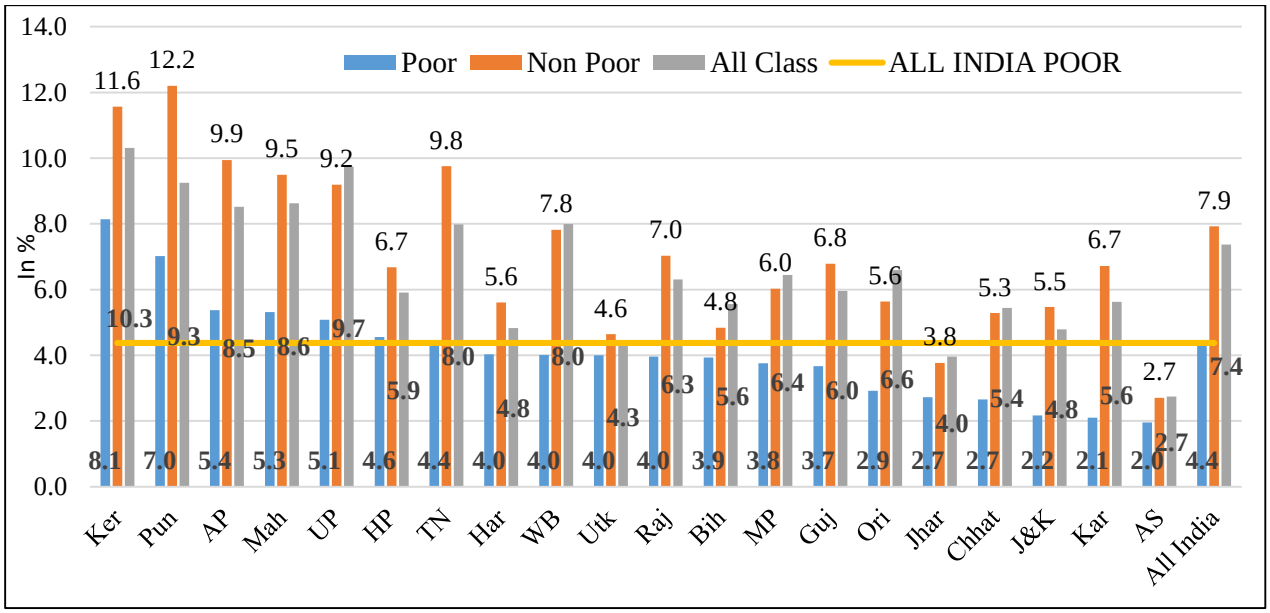
Source: Estimated from Unit Data of 61st Round of NSS HH Consumer Exenditure

Figure 3.17
Share of Medical Expenditure out of Total Consumption Expenditure in 2004-05: Urban Areas



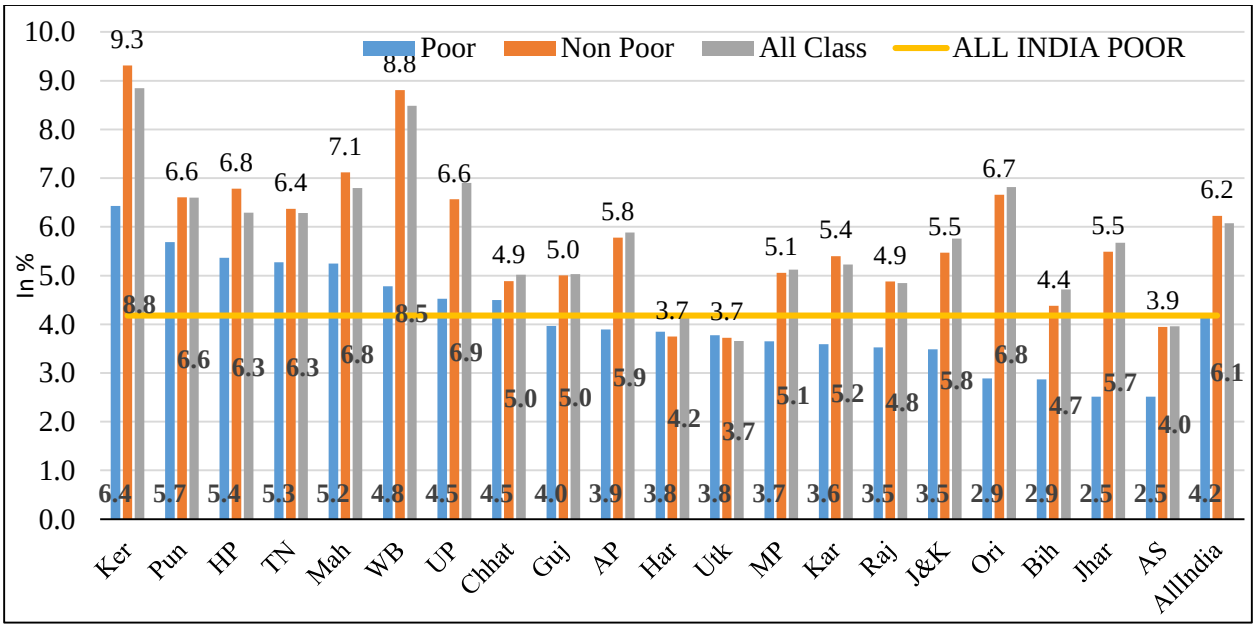
Source: Estimated from Unit Data of 61st Round of NSS HH Consumer Exenditure

Figure 3.18
Percentage of Medical Expenditure out of Total Consumption Expenditure in 2011-12: Rural Areas:



Source: Estimated from Unit Data of 68th Round of NSS HH Consumer Exenditure

Figure 3.19
Percentage of Medical Expenditure out of Total Consumption Expenditure in 2011-12: Urban Areas



Source: Estimated from Unit Data of 68th Round of NSS HH Consumer Exenditure

CHAPTER 4

HEALTH FACILITIES AND OUTCOMES IN INDIA

4.1. Introduction

There is no doubt that importance of health care facilities is unavoidable because the ultimate goal of health system is to work towards the improvement of overall health status of India's population To enhance the productivity of a country's population, it is necessary to take care of the well-being of its citizens by ensuring access to health care, as the enhancement of the economic growth of a country mainly depends on healthy population. It is stated in the the Directive Principles of State Policy under Part IV of the Constitution that one of the primary duties of the states involves working towards betterment of public health. This aim should be achieved by raising significantly the level of nutrition which will eventually aid the basic standard of living of the citizens. For the lowest socio- economic strata, public health system provides an important source of health care. Factors like the availability, accessibility of the public health centres, quality of the services offered and the availability of skilled workforce are crucial for a well operative and efficient public health system. The affordability and infrastructure along with the adequate number of health care professionals facilitate proper delivery of health care.

The structure of the health care system in India is of three tier system. This structure comprises of, Primary, Secondary and Tertiary health facilities. The primary tier focuses on rural areas, secondary at district level and the tertiary level provides sophisticated diagnostic and investigative facilities. It is important to note that primary tier focuses on rural population, constituting 68.84% of the total population of India. In rural areas, i) Sub-Centres (SC) at the lowest level, ii) Primary Health Centres (PHC) at the intermediate level and iii) Community Health Centres (CHC) are at the tertiary level in the block constitutes the three level structure of health care delivery system. The CHCs are further linked to the district hospitals serving in the urban areas. The Medical Colleges and premier public health institutions constitute the highest level public health care delivery system as they provide sophisticated health services care.

Accessibility to the health centres is one of the constraints and can even cause loss of human life at the time of emergency. Secondly, a majority of population is unable to afford the expenses due to their economic hardships, this situation enhances the importance of the affordable public health care system. Thirdly, the workforce— the public health care system should be equipped with the adequate numbers of trained staffs, as they are responsible at the end of the delivery system. The absenteeism of Doctors and staff at these centres is a pertinent issue that has been raised many a times by researches on public health care system in India, as it hampers the delivery of health care services. Finally, the quality of services offered at these centres is also a major factor, which affects the poor people, who cannot afford private hospitals with well-equipped machinery and infrastructure.

4.2. Background

For efficient delivery of public health care syste, the availability of public health professionals is a significant factor.The World Health Report 2017[112] has stated that in the year of 2008, there were 0.81 dentists per thousand populations, and 6.49 physicians and 9.96 nursing and midwife personnel per ten thousand populations in India.

The Indian Public Health Standards (IPHS) has the guidelines for each type of health centres. It is stated that around 3,000–5,000 people should be served by each Sub Centre (SC), around 20,000–30,000 people should be served by each Primary Health Centre (PHC) and around 80,000–1, 20,000 people should be served by each Community Health Centre (CHC). The IPHS also has laid the guidelines, for the staff requirements at each level; as per the norm, Sub-Centres should have two auxiliary nurse midwives (ANMs) and one male health worker. The staff of PHC must include three doctors, one AYUSH (Ayurveda, Yoga, Unani, Siddha and Homeopathy) practitioner, five staff nurses and 15 paramedical and supporting staffs. The CHC is to be staffed by six general doctors, six specialists, two AYUSH practitioners, 19 nurses and 45 paramedical and supporting staffs

The study on availability of medical workers in India (Muralidharan. K. et al[113]. 2011) finds out that the availability of each medical professional is a crucial element to assure quality health care.

[112] Available at http://www.who.int/gho/publications/world_health_statistics/2017/EN_WHS2017_TOC.pdf
[113] Is There A Doctor In The House? Medical Worker Absence in India, Harvard University http://www.hrhresourcecenter.org/node/3964.

It also argues that the budgetary allocations and recruitment of staffs is not sufficient alone to ensure a well-functioning public health care system but absenteeism of health care professionals, accessibility are major constraints in achieving a quality health care system. A research work in rural Nigeria (Stock R. 1983[114]) suggests that accessibility is the key issue in the field of public health in the third world countries. The distance that the patients have to travel to get a treatment is detrimental to the health care services utilization.

The high level expert group report in November 2011 on Universal Health Coverage (undder erstwhile Planning Commission), has stated emphatically that in India, we need to provide transportation facilities either by improving infrastructure or payment of cash for better accessibility to the hospitals. The report states that government has not taken significant steps for the crucial referral service system and inadequate public expenditure on health is one of the reasons behind this. The National Health Accounts estimates shows that 4.5% of the current health expenses in 2013–14 were spent on patient transportation alone, which is quite high in absolute terms.

4.3. Rationale

The Government of India has adopted the definition of health propounded by WHO as a state of complete physical, mental and social well-being and has also reiterated the same in the Plan Document (12th Plan). The Government of India planned to reduce the Infant Mortality Rate to to 25 per thousand live births and Maternal Mortality rate to 100 per lakh live births in its twelfth Plan by the end of 2017.

Indian health care system is still lagging behind to achieve required standards, despite the fact that health standards have been set up to be followed effectively for better delivery of health care. The economic progress has been made in our country which can be seen from the improved economic indicators over the years. However, the health indicators have not improved accordingly along with the economic growth of the country due to dismal state of Indian public health system. Various researches have revealed that good health care is either non-available or unaffordable.

Although the matter of health is a subject of a state, but the Central Government has a huge responsibility as well as plays an important role in establishing healh care system The Twelfth

[114] Distance and the Utilization of Health Facilities in Rural Nigeria. Social Science & Medicine, 17(9), 563-570.

Plan sought to strengthen the health care system by tackling the issue of affordability, accessibility and quality of health services to achieve Universal Health Care (UHC) in the country, ensuring individuals to have access to an essential range of medicines and treatment at an affordable price.

It is therefore quite relevant to examine the overall availibity of medical facities, hence in this chapter an effort has been made to closely analyse this. The state of health care system has also been illustrated using various parameters for health care facilities like number of Community health Centres, Primary Health Centre, and Sub Centres located in the various states of India.

4.4. Unequal Access to Health Care Services

Generally, the marginalized population group is exposed to risks of many health problems as they have to cope with lack of proper houses, drinking water and sanitation and various environmental odds as part of their livelihood. A very high prevalence of more frequent minor ailments like cough, fever, diarrhea (124 per 1,000 individuals) etc.has been found by Desai et al[115], among Indian population. And, the prevalence of theses diseases is quite high amongst poor and uneducated. The poor has to face financial difficulties and time loss from usual activities due to these ailments, though for a very short time as the nature of these ailments are of short term. Improved living condition reduces the prevalence of these ailments and the big cities in urban areas do generally have less of these ailments.

Because of time loss and related financial loss people sometime treat their ailment 'without medical advice' to get immediate relief. However, "financial constraints" is another main reason for which treatment is not sought for. About 58% and 68% of ailments in rural and urban areas respectively remained untreated due to financial constraints. 'No medical facility available in neighborhood' in rural areas is the next most important reason not to go for proper treatment (as in Table 4.1). From the table one can conlude that there are two major reasons for inability to access health care services. These are geographical barriers and lack of financial support which compels individuals to opt for treatment without any solid medical advice.

[115] Human Development in India. New York, Oxford University.

Table 4.1
Reasons for Treating Ailments Without Medical Advice: 2014

Reason for treatment of ailments without medical advice	Per cent (%) spells of ailments by reason for treatment without medical advice					
	Rural			Urban		
	All	Male	Female	All	Male	Female
No med. facility available in neighborhood	15.4	17.7	13.5	1.3	2	0.8
Facility of satisfactory quality not available	3.7	3.4	3.9	2.2	2.4	2.1
Facility of satisfactory quality, too expensive	6.2	8.7	3.9	5.3	3.1	7.2
Satisfactory quality involves long waiting	3.3	2.9	3.7	2.3	1	3.3
Financial constraint	57.4	55.4	59.1	68.3	75	62.8
Other	14.0	11.9	15.8	20.6	16.6	23.9
All	**100**	**100**	**100**	**100**	**100**	**100**

Source: NSS 71st Round, Health in India, Report No. 574 (71/25.0)

Unequal access to health care remains a major problematic between rural and urban areas, as urban population have a choice between public or private providers, but the rural people do not have more choices. It is however to mention here again that the Primary Health Centres (PHCs), the Community Health Centres (CHCs), hospitals, clinics, dispensaries, Mobile Medical Units (MMU) and ESI hospitals that get assistance through state and central governments and also, the lowest level of care viz. Health Sub Centre (HSC), ANM/ASHA/AWW (Auxiliary Nurse Midwifery, Accredited Social Health Activists, Aangan Wadi Workers) etc constitute the vast public health care service network in India.

The health sub-centers, generally manned by bare foot health workers, serves the purpose of a medium between community and the primary health centers (PHC). For the village community the PHCs are the first place where they can consult a medical officer. The PHCs emphasise preventive and promotive aspects of health care and are required to provide to the rural population as an integrated curative and preventive health care services. The first referral unit with infrastructure facilities for diagnosis and some specialists are the Community health centers (CHC).

Government stressed the need to provide door step health services delivery, right from 1946 as per suggestion of the Bhore Committee. But the government facilities are still not availabledue or not accessible for the majority of the population and that is the main reason why people take recourse

to seeking health care services from private providers, be it private doctors, nursing homes, private hospitals and charitable institutions etc. The Table 4.2 below shows share of health-care providers by public and private sources in treatment of ailment.

Table 4.2
Treated Ailments during Last 15 Days by Level of Care: 2014

	Percentage of spells of ailment treated				
	HSC, PHC & others*	Public hospital	Private doctor/ clinic	Private hospital	All
	Rural				
Persons	11.5	16.8	50.7	21	100
Male	10.6	15.9	52.7	20.8	100
Female	12.3	17.5	48.9	21.3	100
	Urban				
Persons	3.9	17.3	50	28.8	100
Male	3.5	17.4	48.9	30.2	100
Female	4.2	17.3	50.8	27.7	100

* includes ANM, ASHA, AWW, dispensary, CHC, MMU
Source: NSS 71st Round, Health in India, Report No. 574 (71/25.0)

The treatment from private doctors was around 50%, which was the most significant single-source of treatment in rural as well as urban areas. It is observed that on an average treatment of ailments were taken from the private sector for more than 70 % of ailments; 72 per cent in rural areas and 79 per cent in urban areas.

4.5. Inter-State Variation for treatment by Government Sources

It has been found in the NSS 71st Round that there are considerable variations among the states in the utilization of government sources for treating various ailments. The lowest utilization of public health care facilities was in rural Haryana, Bihar and Uttar Pradesh. In rural areas, high percentage use of public hospital was done in Assam (84%), followed by Odisha (76%), Rajasthan (44%) and Tamil Nadu (42%). In the urban areas, the utilization of government sources was quite high in Odisha (54%), followed by Assam (44%) and Kerala (31%), (shown in Figure 4.1 pg - 101) However, it has also been revealed that people's dependance on the government health institutions was more than that in urban areas.

4.6. Overview of Health Facilities in India

We have observed that there exists asymmetric access to public health care system in our country, but utilization and accessibility to public health facilities translate into better health outcomes for the masses. For years' Indian health policies have targeted better utilization of public health resources and have made efforts to universalize the system of public health care to reach to the last mile population.

4.6.1. Health Centres

Public health facilities play the chief role in delivering health care to masses and also face the challenges on its way to provide health care. The most needed for efficient health care delivery is well functioning infrastructure. In our country the most essential structure of health care system are Primary Health Centers (PHCs), Sub-Centres (SCs) and Community Health Centres (CHCs). Sub Centres (SCs) generally responsible for the delivery of health care services at the village or hamlet level are at the lowest rung of health care institution in the three levels of public health system working for the rural India. One Sub Centre may also serve two to three villages. Uttar Pradesh has the highest number of Sub Centres as it is the most populous state of India (Figure 4.1. pg-101). Despite having the highest number of Sub Centres in Uttar Pradesh, its use in particular was not reflected in the immunization and IMR of the state.

In the rural level, after Sub Centres, the basic structural and functional units of public health care services are the Primary Health Centre (PHC). The people from more than one village get access to the PHCs as it operates at the Panchayat level. Uttar Pradesh and Karnataka are at the top of the list (Figure 4.3, pg- 102) in the appendix). In spite of having high number of PHC in the states of Uttar Pradesh, Bihar and Rajasthan the health indicators like IMR and MMR are above the national average.

The Community Health Centres are located at the block level, and equipped with better facilities of health care to cater to the need of the villages so that the stress on the district level health care institution can be reduced. Uttar Pradesh has the highest number of PHCs and CHCs in India (Figure 4.4. pg-102) and states like Uttarakhand and Bihar have less number if compared to their population.

6.2. Basic Amenities at Sub Centres

Electrification of the Sub Centres is an important indicator showing functioning of the basic unit of public health centres. When it comes to the electricity connections, it has been revealed by the the District Level Household and Facility Survey (DLHS-4) of 2012-13 that the highest number of electrically connected subcentres are in Himachal Pradesh around 86% (the Figure 4.5, pg-103). Not having the electric connection, shows the low level of health care situation in the centres.

The Figure 4.6 (pg-103) shows the availability of water facility to the Sub Centres across various states. States like Punjab and Haryana have better connectivity of water in their Sub Centres, whereas, states like Jharkhand, Bihar, Andhra Pradesh and Telangana have the lowest percentage of Sub Centres having water facility.

It can be seen in the Figure 4.7 (pg-104) that the percentage of Sub-Centres with toilet facilities that are available in the states. Maharashtra, Haryana, Assam and Kerala have around 90% of its Sub Centres with toilet facilities. To make the health care infrastructure more efficient, we have to make the availability of functional toilets. Toilet is essential for the better functioning of the health care infrastructure.

The Figure 4.8 (pg-104) shows the percentage of Sub Centres having labor room across states of India. Kerala has labor room in all of its Sub Centres whereas many states like West Bengal, Punjab, and Tamil Nadu have a few number of Sub Centres with Labor room facility. Labor rooms are important infrastructure for improving the health indicators of Infant and Maternal Mortality rate.

4.6.3. Facilities at Government Hospitals

The number of beds available at government hospitals across the states of India is shown in the Figure 4.9, (pg-105). The highest number of beds, around 164,000 is found in Maharashtra. Other states have significantly less number of beds than that of Maharashtra.

The information about the average population served per government hospitals in the different states of India is provided by the Figure 4.10, (pg-105). Andhra Pradesh, Maharashtra and Uttar Pradesh serve more than 2 Lakh persons in each hospital on an average, whereas, the states like Rajasthan, Uttarakhand and Jammu & Kashmir have less stress on their hospitals.

Average population served per bed in a government hospital indicates the availability of beds in different states of India. The data shown by the Figure 4.11(pg-106) that Andhra Pradesh and Bihar, among the densely populated states, have high number of persons per bed, whereas Himachal Pradesh and Maharashtra have the lowest population per bed.

4.6.4. Availability of PHCs and Medical Personnel

The health care delivery in the rural areas in different states solely depend on the number of Primary Health Centres it has as most of the people in rural areas are dependent on these centres. States like West Bengal and Jharkhand (Figure 4.2, pg-106) have the lowest number of PHCs per lakh population, which shows the ailing situation of health care in these states. Himachal Pradesh and Jammu and Kashmir have around 7 and 5 PHCs per lakh population which is much higher than the most of the other states

Availability of trained doctors at PHCs is the most important requirement for better utilization of health Centres. PHCs without doctors will not serve any meaningful purpose for the public health care system as they remain as mere physical infrastructures. Availability of doctors as compared to the population is a constraint to public health care in India. The Figure 4.13 (pg-107) has given a picture of availability of doctors across states.

Every hospital requires the trained staffs including nurses whether it is a public or private one. Nurses plays a vital role in any health care system, since they are the helping hands to the doctors and also important for the management of the internal functions of the hospitals. Rajasthan and the states from southern India have adequate number of staffs (Figure 4.14, pg-107).

4.7. Accessibility to the Basic Public Health Institutions

The public health facilitie can not be utilized, if there does not exist the required level of accessibility. The Figure 4.15 (pg-108) has compared the various states on the basis of the radial distance covered by the Sub Centres, PHCs and CHCs. Jammu & Kashmir and Bihar are the states with the high radial distance covered when it comes to Community Health Centres; Madhya Pradesh and Jammu& Kashmir when it comes to Primary Health Centres and Sub Centres. On the basis of radial distance covered to access any CHC, PHC and Sub Centr, the best performing state is Kerala.

The minimum basic unit of the country's health infrastructure is Sub Centres and PHCs The Figure 4.16 (pg-108) has shown the no. of villages covered by Sub-Centres and PHCs. About 100 villages are served per PHC in Jharkhand. The lowest ranking state in terms of the burden on the Public Health Centers are Himachal Pradesh and Uttarakhand having large number of villages covered per PHCs. Availability of PHCs and Sub Centres in State of Tamil Nadu and Kerala are much better. More number of villages per PHC or SCs indicates the high burden in terms of population, also depicting the situation of physical accessibility to these health centres.

The Figure 4.17 (pg-109) has given the number of average villages that are covered per Community Health Centre. Bihar, Uttarakhand and Himachal Pradesh are the states with greater stress on their CHCs. Whereas Gujrat, Tamil Nadu and Kerala have mpre CHCs spread over in their States.

4.8. Diparities in General Hospitalization Rates

A hospitalized treatment is the treatment of an ailing person in any medical institution having provision of treating the sick as inpatients. During 2014, it was seen that around 44 per 1000 and 35 per 1000 persons were hospitalized in urban and rural areas respectively, showing substantial difference in both the areas.

.Table 4.3

Hospitalized Cases Treated according to the Type of Hospitals

Year	Rural			Urban		
	52nd (1995-96)	60th (2004)	71st (2014)	52nd (1995-96)	60th (2004)	71st (2014)
	Number of hospitalized case per 1000 persons					
All	13	23	35	20	31	44
Type of hospital	Hospitalized cases in Percentage					
Public	44	42	42	43	38	32
Private	56	58	58	57	62	68
All	100	100	100	100	100	100

Source: Various NSS Rounds

The domination of private institutions (Table 4.3 above) is visibly clear for treating the hospitalized inpatients over the years both in rural and urban areas. It has been recorded that the urban India relies more on private secotors compared to Government hospitals; this is reflected in a way that there has been a sharp decline in the use of government hopitals over the last three decades. It can

be observed that in both rural and urban areas, the main providers of inpatient health care services are the private institutions

4.9. Inter-state Variation in Hospitalized Treatment

The findings of 71st Round of NSS survey on Health in India has shown that there is a wide variation among the states in respect of the reliance on the public sector for hospitalized treatment. The smallest variation is in Maharashtra, 19 per cent and the largest variation of 89 per cent is in Assam. A high proportion of cases of hospitalized treatment from public institutions has also been reported from Orissa (81.3%) and West Bengal (77.2%) in rural areas. In case of Uttar Pradesh, Punjab, Telangana, Karnataka, Gujarat and Andhra Pradesh, the degree of reliance on private sector hospitals is quite high. This scenario is same in urban areas as well. Maharashtra, Andhra Pradesh and Telangana, show a quite high extent of dependence on private sector hospitals. The variation in treating the ailments from public sector hospitals is quite wide from 18 per cent in Haryana and Karnataka to 58 per cent in Odisha (Figure 4.18, pg-109).

4.10. Outcomes of Public Health Care System

Over the decades, India has made improvement in the health outcomes, but much more is still there to be done. The health outcomes actually reveal the state of our health care delivery system as good health outcomes are the indications of healthy people, their productivity and thus contribution to economy. We have discussed about only four important health outcomes which are yet to be improved more.

4.10.1. Infant Mortality Rate

The infant mortality has shown the sign of improvement in various states over the years. As per NFHS-4[116], the IMR for all India is 41 per thousand live births. However, many states sre still behind achieving this number as the IMRs in these states are above the national average. There are stark differences in the situation of the states. In Uttar Pradesh, IMR is as high as 64, whereas, in Kerala it is only 6 per thousand live births. It was planned during the 12th Five Year Plan (2007-12) that the country shoud achieve the target for IMR as 15 to 25 per thousand live births. This seems to be still unachievable as at present we have the national average at 41 out of 1000 (shown in Figure 4.3, pg-110) .

[116] available at http://rchiips.org/nfhs/NFHS-4Reports/India.pdf

4.10.2. Under 5 mortality rate

The declining trend for under-five mortality rate is quite observable in our country. It has come down to 50 deaths per 1,000 live births in 2015-16 from 74 deaths per 1,000 live births in 2005-06 (shown in Figure 4.4, pg-110). The lowest under-five mortality rate, being 7 deaths per 1,000 live births, has been achieved in Kerala and the highest under-five mortality rate, 78 deaths per 1,000 live births, is seen in Uttar Pradesh. In India, on an average, 20 children die before their fifth birthday. More than four-fifths (82%) of these deaths occur during infancy. In the states of Assam, Bihar, Jharkhand, Chhattisgarh, Uttar Pradesh and Madhya Pradesh, the under five mortality has been found to be much higher than that at the national level.

4.10.3. Maternal Mortality Rate

The annual number of female deaths per 100,000 live births, for any cause related to or aggravated by pregnancy or its management, is termed as the Maternal Mortality Rate (MMR). The Figure 4.21 (pg-111) has shown the maternal deaths across states of India.

The high rates of mortality of infant children and mothers are a great cause of concern for the public health care system of our country. These rates are eye opener towards the ailing situation of the country's health facilities at the primary level. All these revelations point towards one urgent need – to work towards the improvement of existing health care facilities in the country for well-being of its population.

4.10.4. Immunization of Children

Various research studies have claimed that around 3 million children have to face death each year due to vaccine preventable diseases (VPDs) (Kane, M., & Lasher, H. (2002)[117]). The children from the developing countries are the main victims of death due to not being vaccinated. In our country, Vaccines remain one of the most cost-effective public health initiatives; though it has not completed full coverage, though it is our longstanding commitment to universal coverage. Therefore, immunization of children (aged 12-23 months) is another important parameter to measure the impact of Public Health Care System. According to NFHS-4, all states in India have at least around 50 percent of its children fully immunized. And we have been able to vaccinate only 62 percent of children on an average in the country (in Figure 4.52, pg-111).

[117] Childhood Immunization. Occasional paper.

4.11. Association of Health Facilities and Health Outcomes

Public health facility is an important element for Indian public health care system, as they play a significant role for better utilization of the health care resources. The important factors are the availability and accessibility of the public health institutions, quality of the services offered and the availability of skilled workforce that supports well-functioning of Public Health System.

4.11.1. Analysis

Various indicators have been included to assess the situation of health care delivery in Indian states, their success rates in terms of public health outcomes, status of infrastructure of the rural public health care centres, availability of staffs, and coverage of public health institutions. The nature of association between public health facilities and health outcome (we have taken an important indicator i.e. Infant Mortality Rate (IMR)), has been detailed in Table 4.4 (pg-100).

It is seen that the states that have higher number of doctors in Public Health Centres (PHCs) and higher number of nursing staffs in PHCs and Community Health Centres are associated with lower levels of Infant mortality. Many studies have shown that Anemia in pregnant women cause low birth weight and can be the reason for mortality (Rahman, Md Mizanur, et al. 2016)[118]. The states with higher percent of pregnant anemic women are associated with higher rate of infant mortality. The analysis shows about 42 percent of inter-state variation in Infant Mortality Rates are explained by the availability of doctors and nursing staffs at health centres. About 54 per cent of inter-state variation in IMR is explained by anemia in pregnant women and the availability of doctors and nurses. Therefore, our hypotheses H2 is accepted and it can be concluded that access and availability of public health facilities are associated with better health outcomes.

4.12. Summing Up

The information gathered in this chapter of the study gives a detailed picture of the ailing condition of health care services in India. It is seen that an important health outcome like Infant Mortality Rate, though has reduced over the years but at the same time there exists a wide gap amongst the states of India; Uttar Pradesh, Chhattisgarh, Madhya Pradesh, Bihar and Assam have high infant mortality rates. The target IMR and MMR seem to be far from achievable at the given rates of success. Public health care outcomes, like immunization is also less than the national average in

[118] Adverse Birth and Health Outcomes in Low-and Middle-Income Countries: Systematic Review and Meta-Analysis, The American journal of clinical nutrition, 103(2), 495-504.

most of these low performing states. These states need to give more focused attention to improve their public health care systems.

It is surprisingly shocking that the state of West Bengal and Jharkhand have only one PHC serving for one l Lakh population in terms of existing health care facilities. Many states either have low strength of nursing staffs for the health centres, or miniscule number of doctors available per health centre. The accessibility in terms of the average radial distance covered by public health institutions is very low, meaning that immediate intervention is required to improve the outreach of health care institutions.

Fom this study we can draw the conclusion that we have largely inadequate health-care infrastructure to serve the majority of the population in of our country. The demand for health-care services has not been addressed by the total number of available hospitals and health-care professionals, both, public and private. Recently, it has been stated in the latest KPMG report[119], that the inadequacy of existing public health care system is not quite up to the mark to serve the huge population of our country as around 80 per cent of all doctors and 75 per cent of dispensaries serve around 28 per cent of the country's population.

The NSS syurvey (as discussed in this study) has shown that both the rural and urban people are averse to take treatment from public hospitals for various reasons, and that there are marked variations in getting treatment for hospitalized cases.

Availability of medical personnel and better quality services needed to be put in focus on improving the health care delivery system in India. The poor people for getting immediate relief from their ailing condition visit private practitioners, paying beyond their capacity ignoring the available public health units. In summation, it can be strongly articulated that while addressing the demand side issues through our policy interventions, we also need to focus more on the inefficiencies of the supply side as there persists continued inequalities in access to health care services. However, till today the Government in spite of its efforts has failed to address the health care needs of India's population, and this situation has persisted for a varied number of reasons.

[119]KPMG – OPPI report on healthcare access initiatives

TABLES AND FIGURES

Tables:

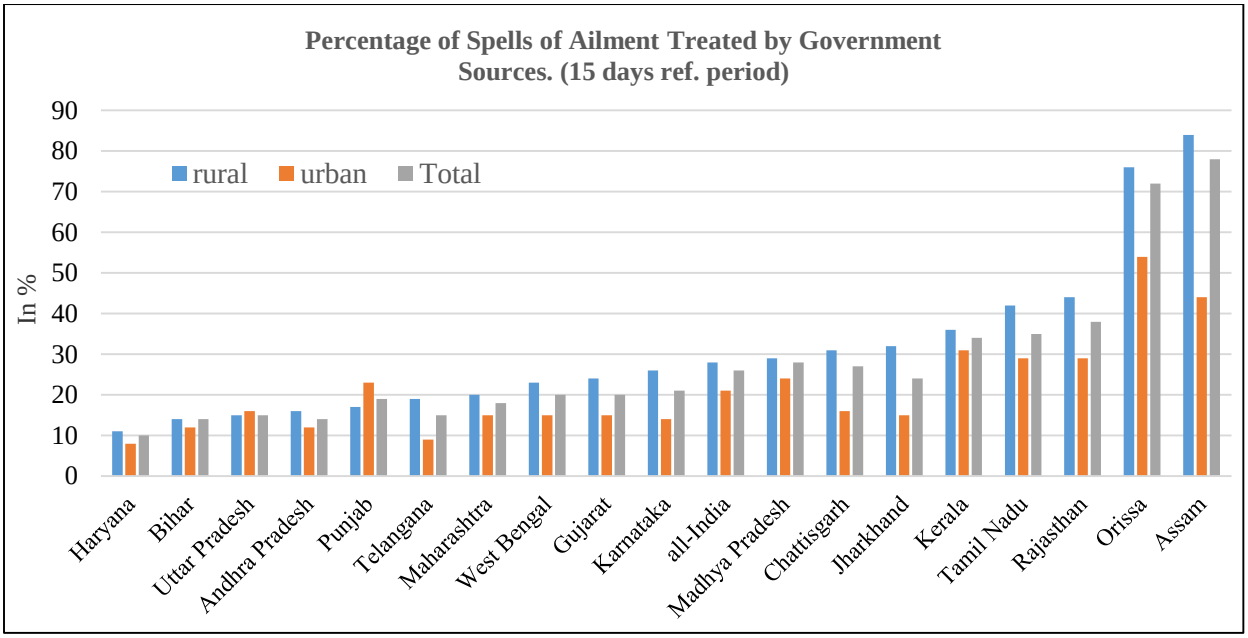
Table 4.4
Association of Health Facilities and Anemia with State Level Infant Mortality Rate

	IMR				
No. of doctors per PHCs	-20.078***	-	-	-17.843***	-17.111***
No. of Nursing Staff per PHCs and CHCs	-	-4.401**	-	-3.535**	-3.112**
Percent of Pregnant women who are Anemic	-	-	0.663***	-	0.546***
R squared	0.3006	0.1882	0.1835	0.4184	0.5405

Calculations: Cross Section Analysis (Step-wise regression)

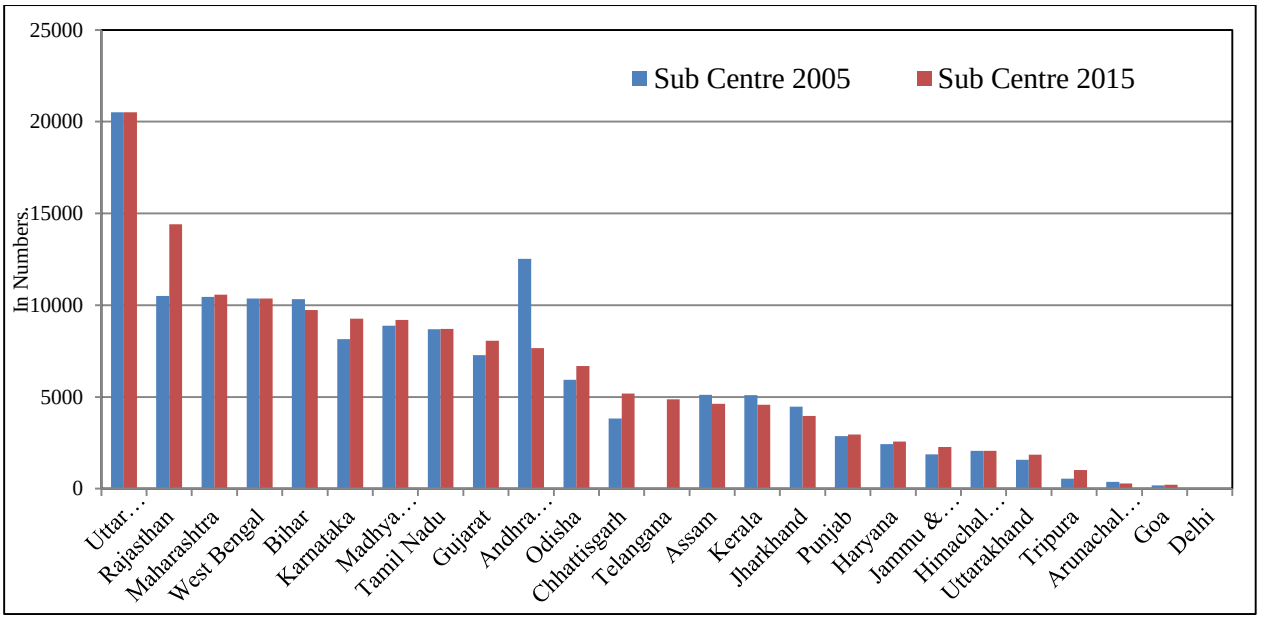
Figures:

Figure 4.1
Utilization of Public Health Care Facilities: 2014



Source: NSS 71st Round, Health in India

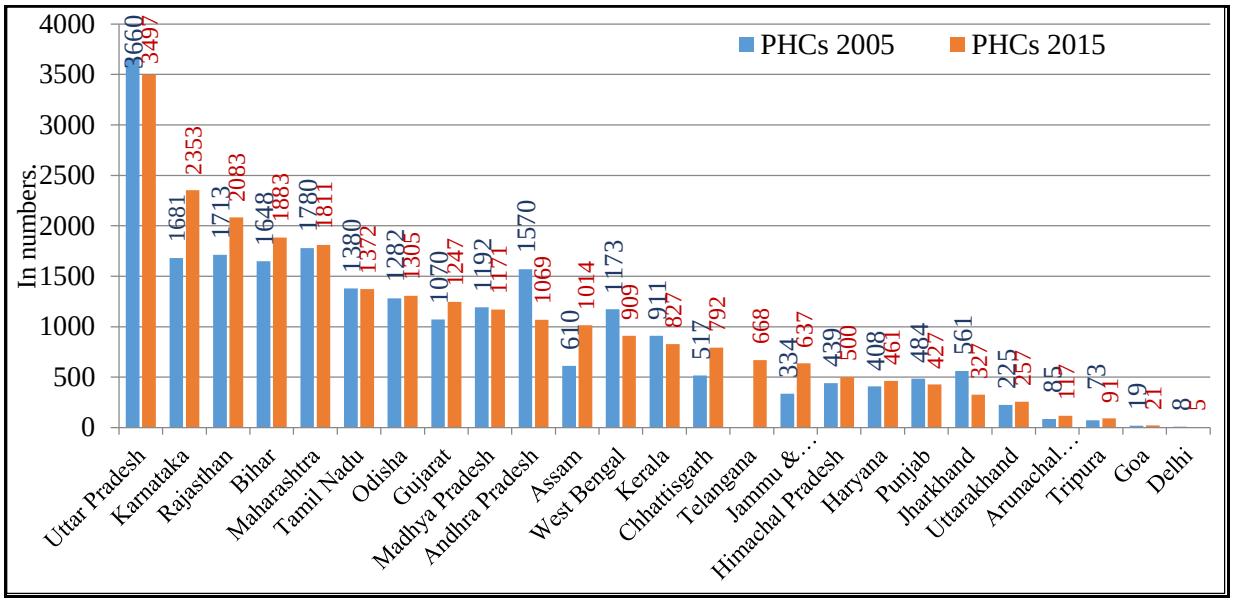
Figure 4.2
Number of Health Sub Centres: 2014-15



Source: Rural Health Statistics in India 2014-15, MoHFW[120]

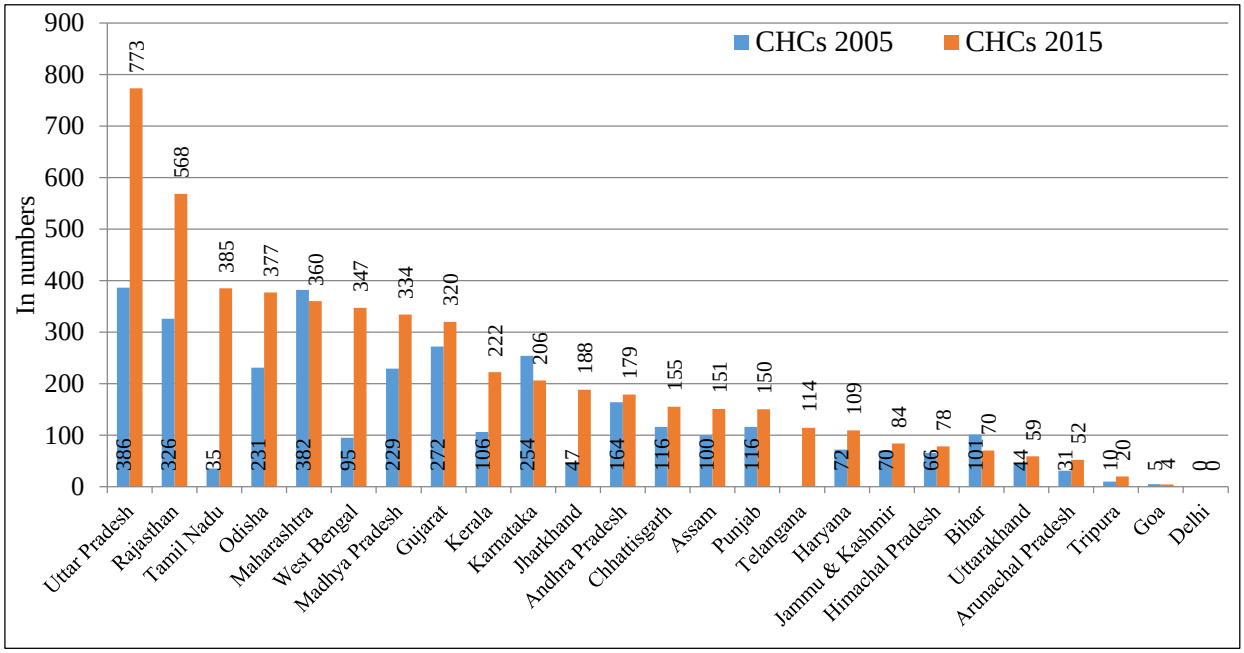
[120] http://wcd.nic.in/sites/default/files/RHS_1.pdf

Figure 4.3
Number of Primary Health Centres: 2014-15



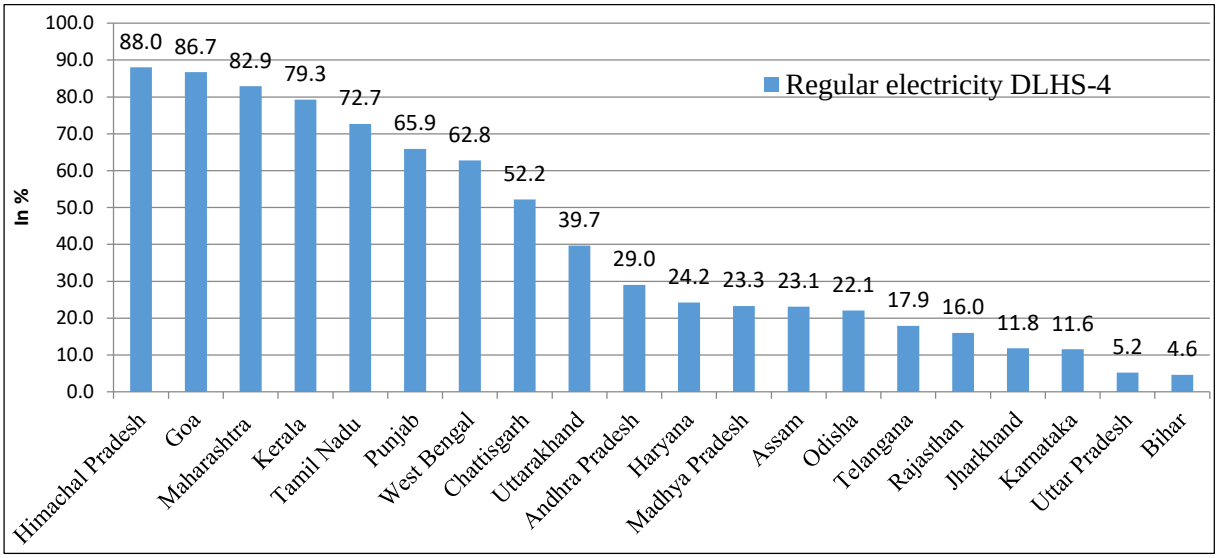
Source: Rural Health Statistics in India 2014-15, MoHFW

Figure 4.4
Number of Community Health Centres: 2014-15



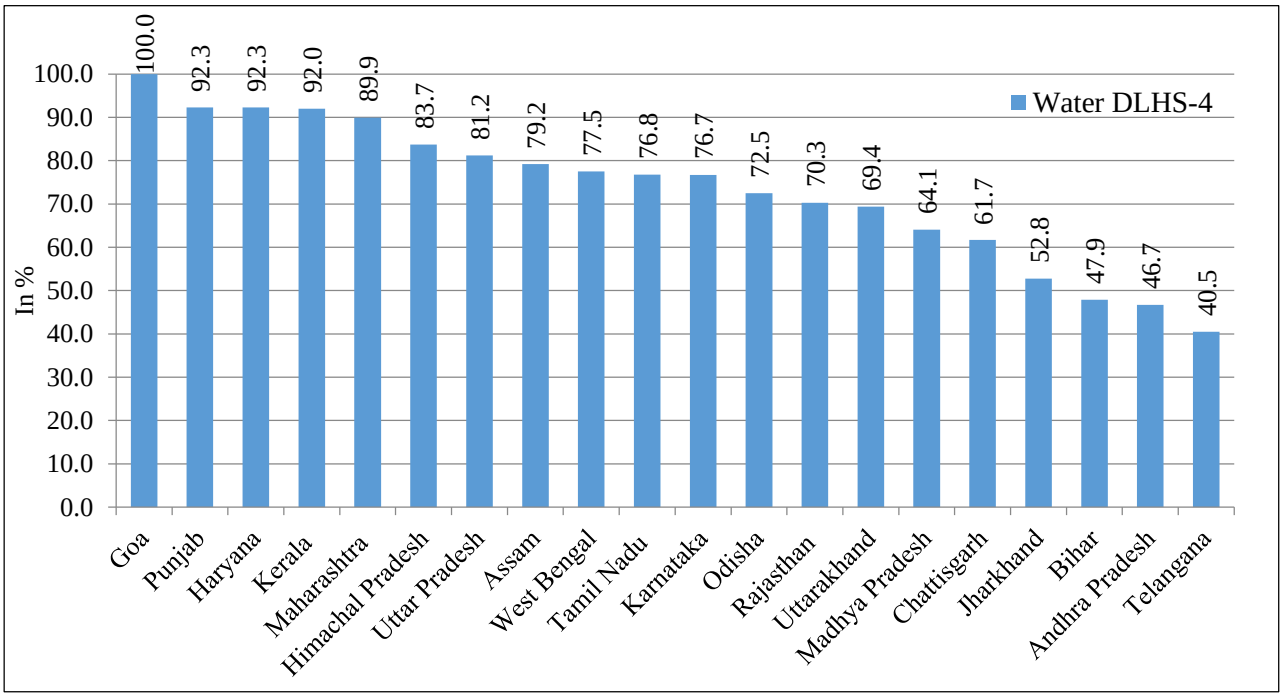
Source: Rural Health Statistics in India 2014-15, MoHFW

Figure 4.5
Sub Centres with Regular Electricity Connection: 2012-13



Source: District Level Household Survey-4 (2012-13)[121], MoHFW

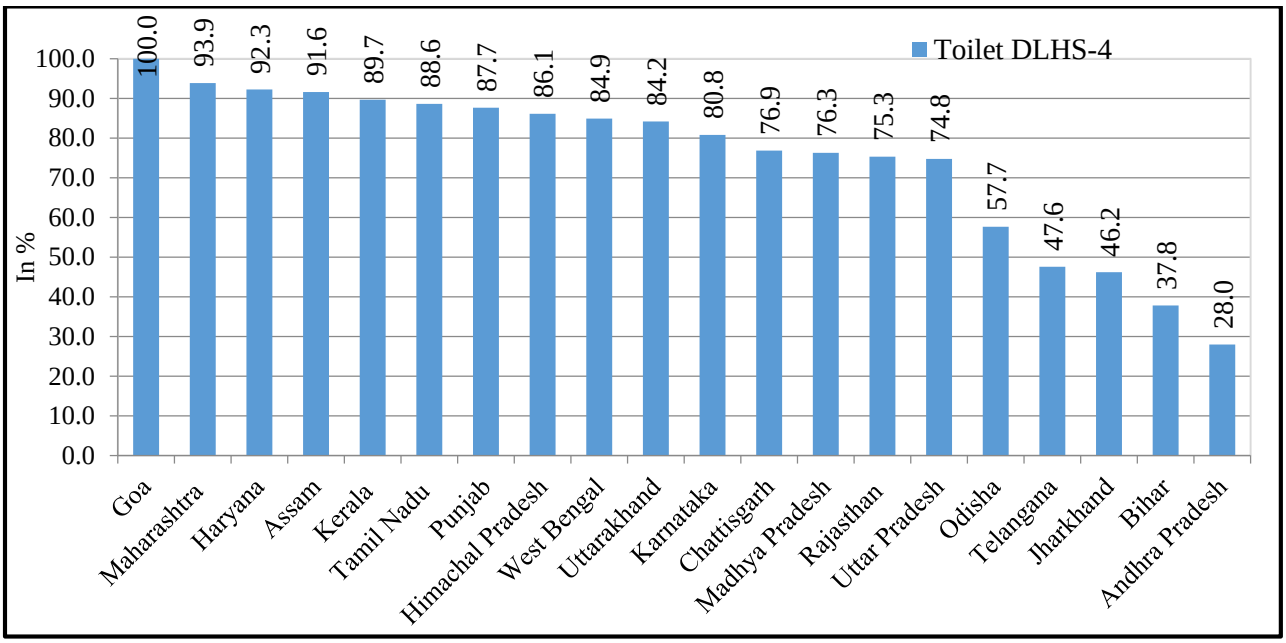
Figure 4.6
Sub Centres with Water Facility: 2012- 13



Source: District Level Household Survey-4. MoHFW

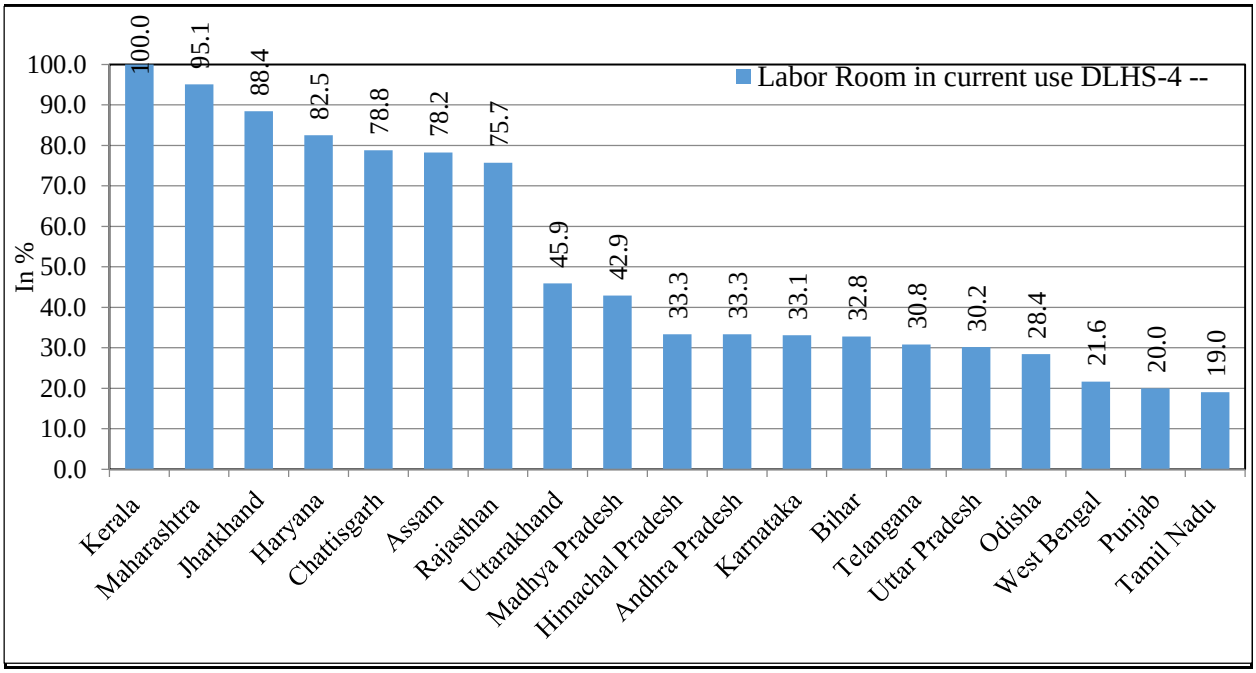
[121] http://rchiips.org/DLHS-4.html

Figure 4.7
Sub Centres with Toilet Facilities: 2012-13



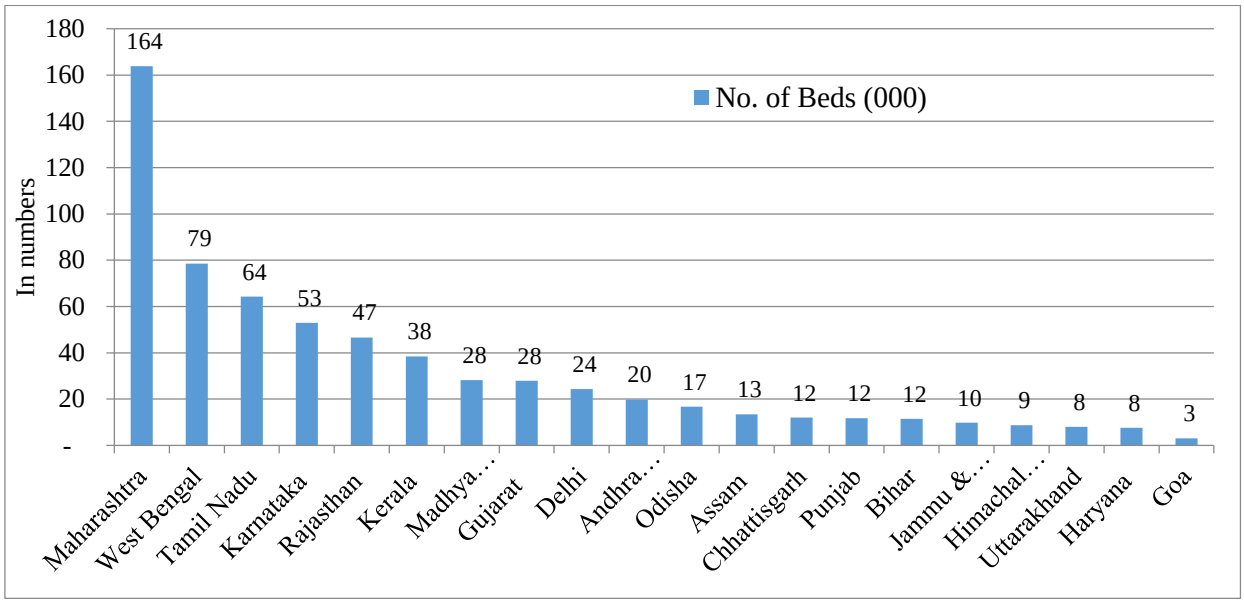
Source: District Level Household Survey-4 (2012-13), MoHFW

Figure 4.6
Sub Centres with Labor Room Facility: 2012-13



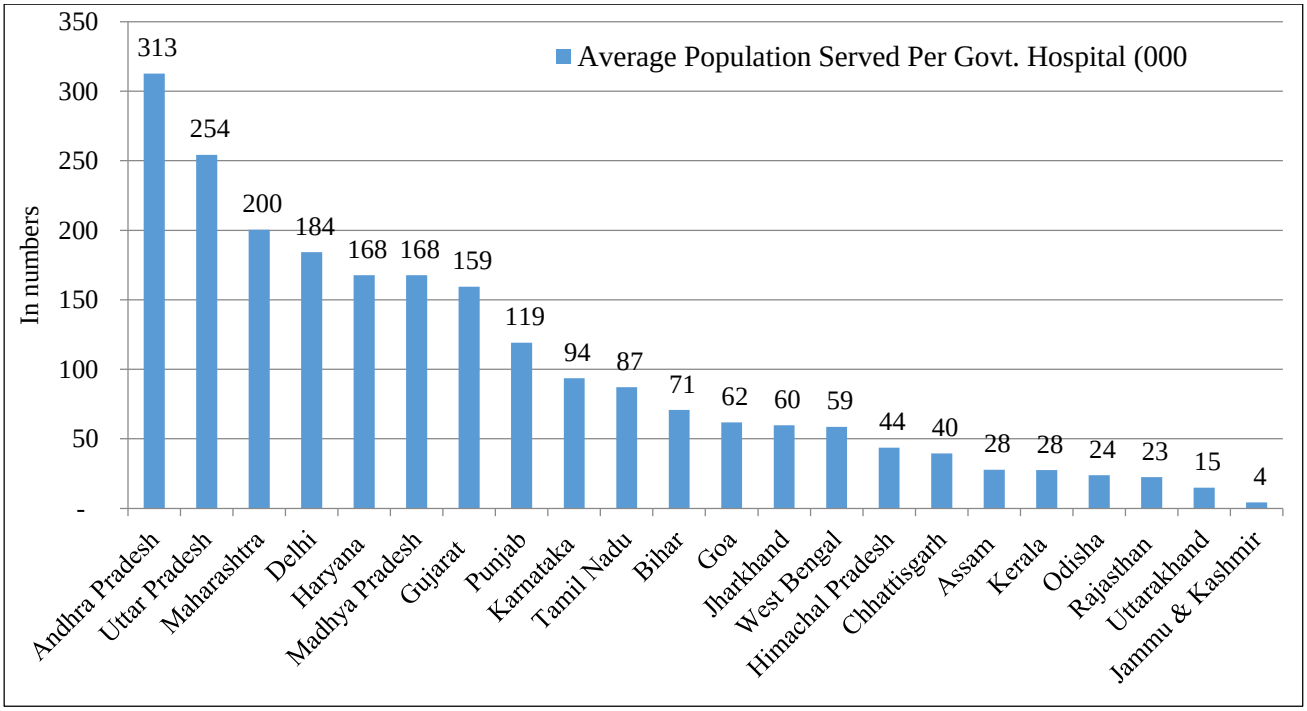
Source: District Level Household Survey-4 (2012-13). MoHFW

Figure 4.7
Beds in Goverment Hospitals (in thousands): 2012-13



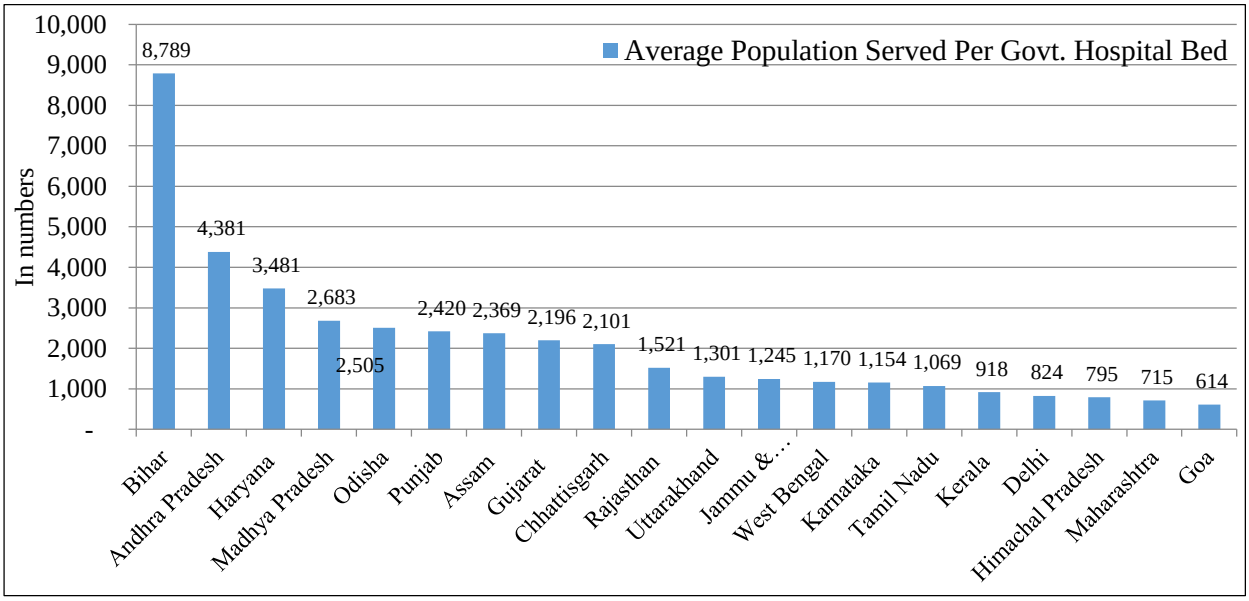
Source: District Level Household Survey-4 (2012-13), MoHFW

Figure 4.10
Average Population Served (in '000) per Government Hospital: 2012-13



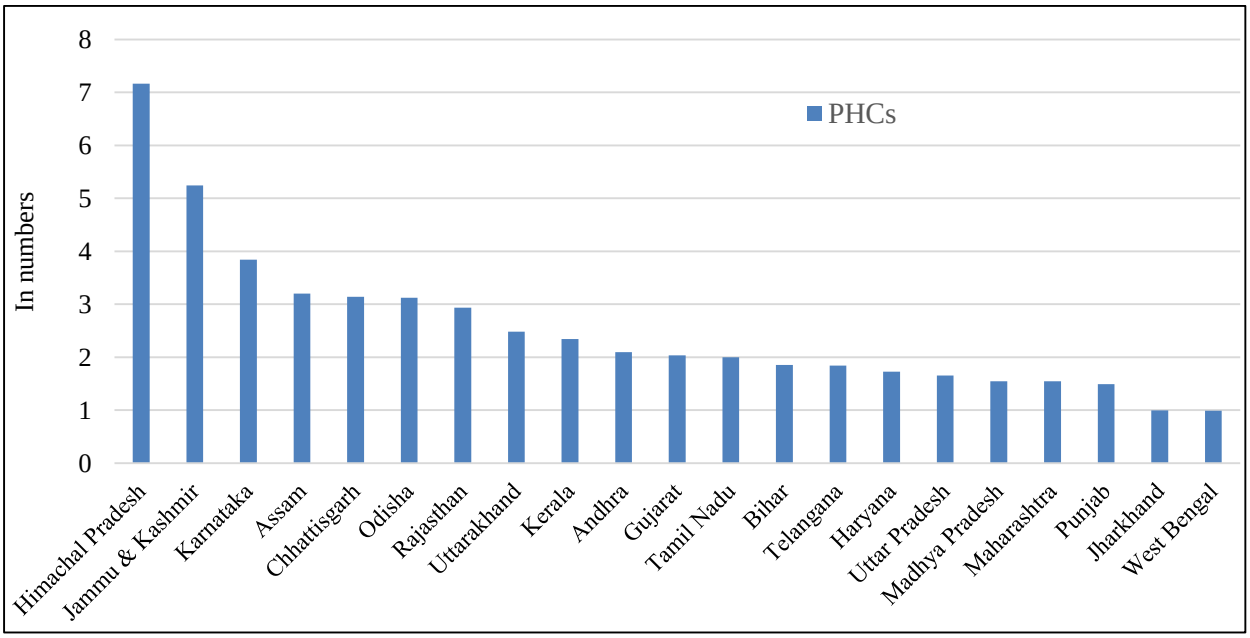
Source: District Level Household Survey-4 (2012-13), MoHFW

Figure 4.11
Average Population Served per Bed (Government Hospital): 2012-13



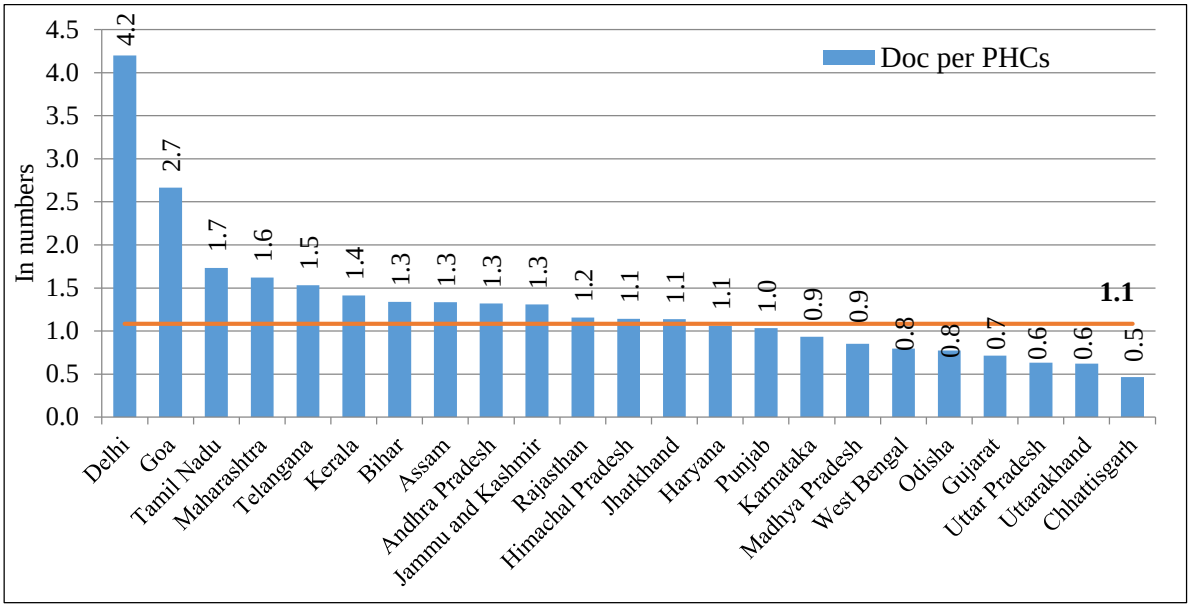
Source: District Level Household Survey-4 (2012-13), MoHFW

Figure 4.8
Number of Primary Health Centres per Lakh Population: 2014-15



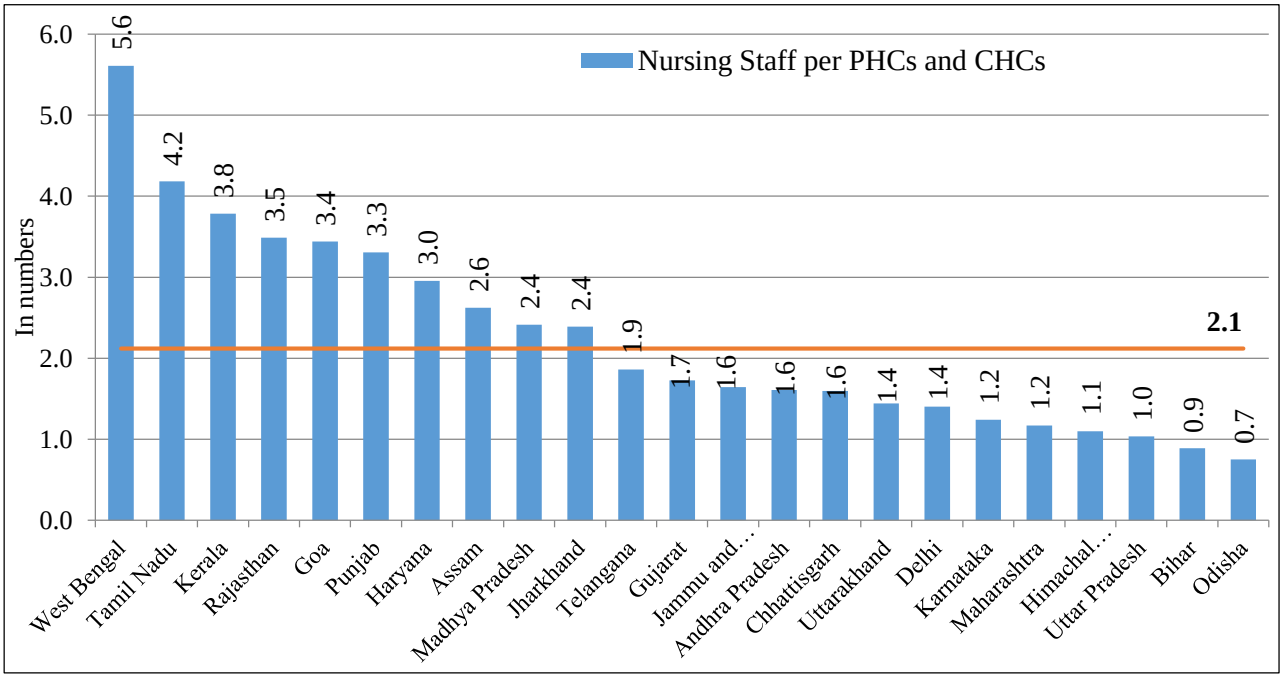
Source: Rural Health Statistics in India 2014-15, MoHFW and Census Projected population 2014

Figure 4.13
Doctors per Primary Health Centres: 2014-15



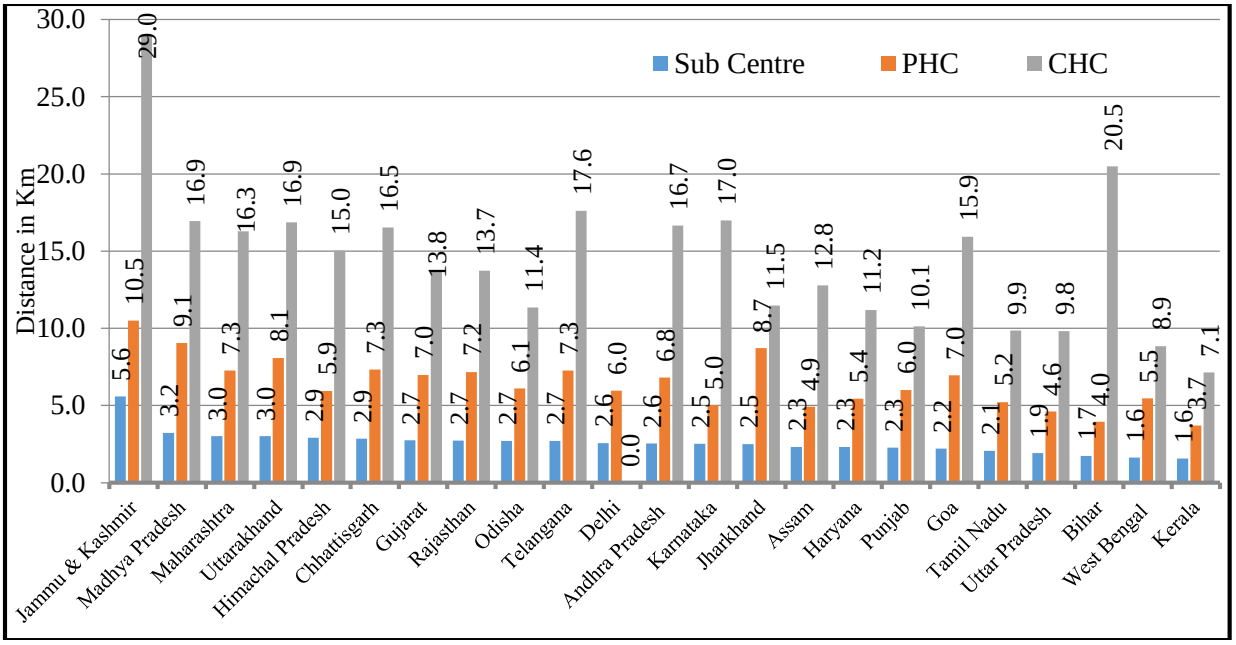
Source: Rural Health Statistics in India 2014-15, MoHFW

Figure 4.14
Nursing Staffs per Primary and Community Health Centres: 2014-15



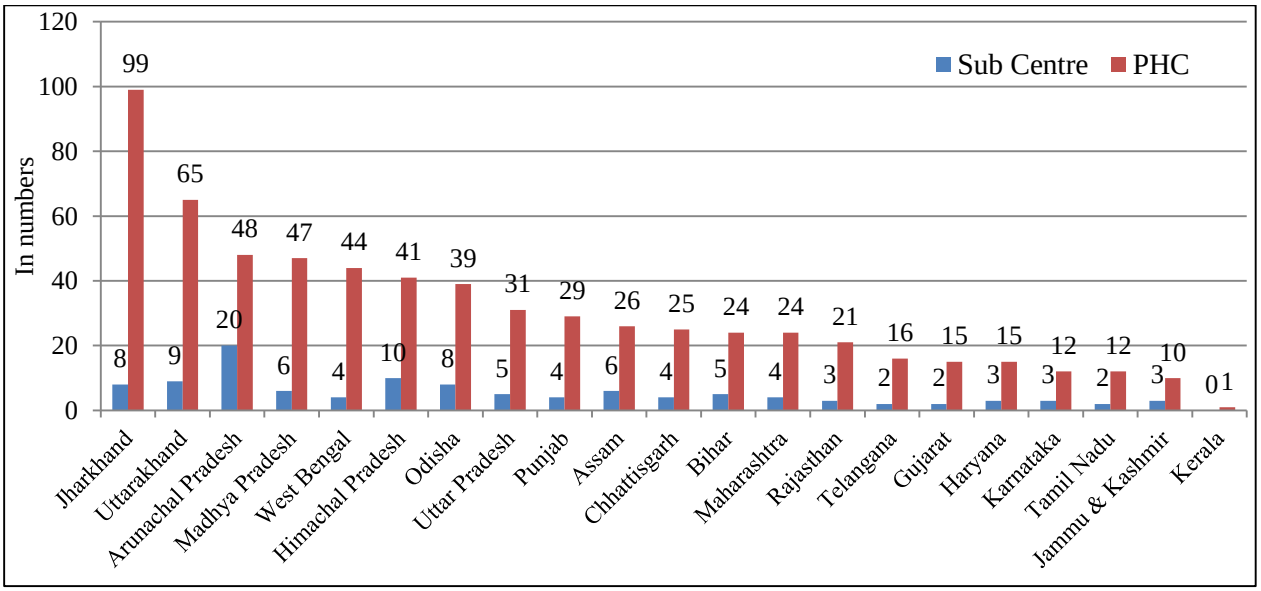
Source: Rural Health Statistics in India 2014-15, MoHFW

Figure 4.15
Average Radial Distance Covered by Public Health Institutions: 2014-15



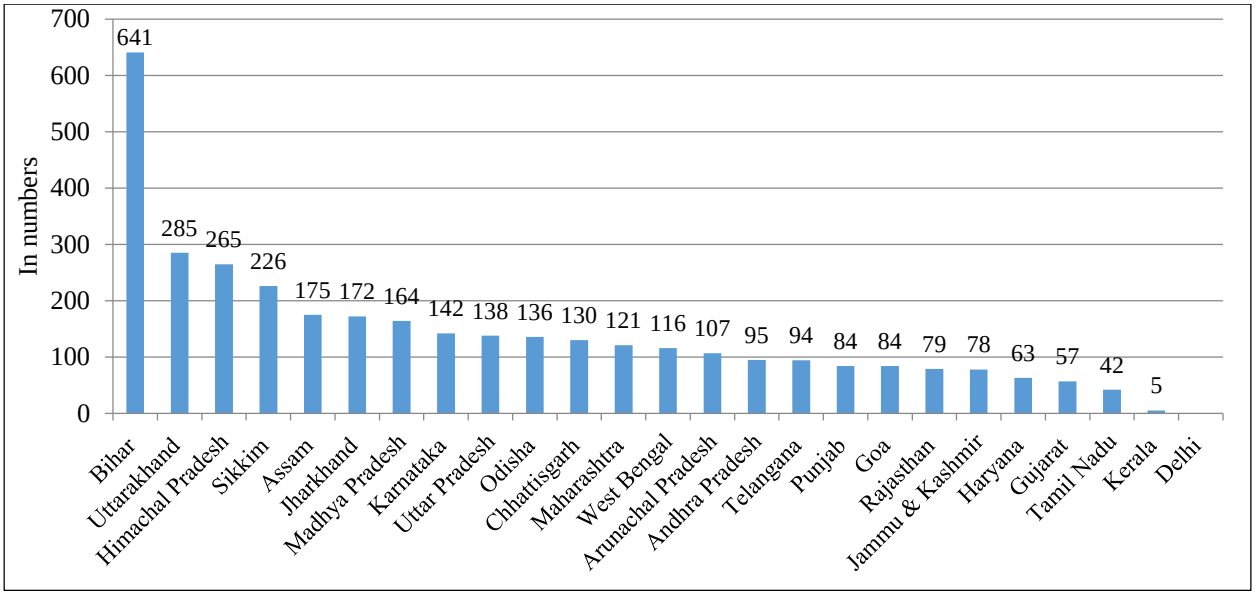
Source: Rural Health Statistics, 2014-15, MoHFW

Figure 4.16
Average Number of Villages Covered by Sub and Primary Health Centres: 2014-15



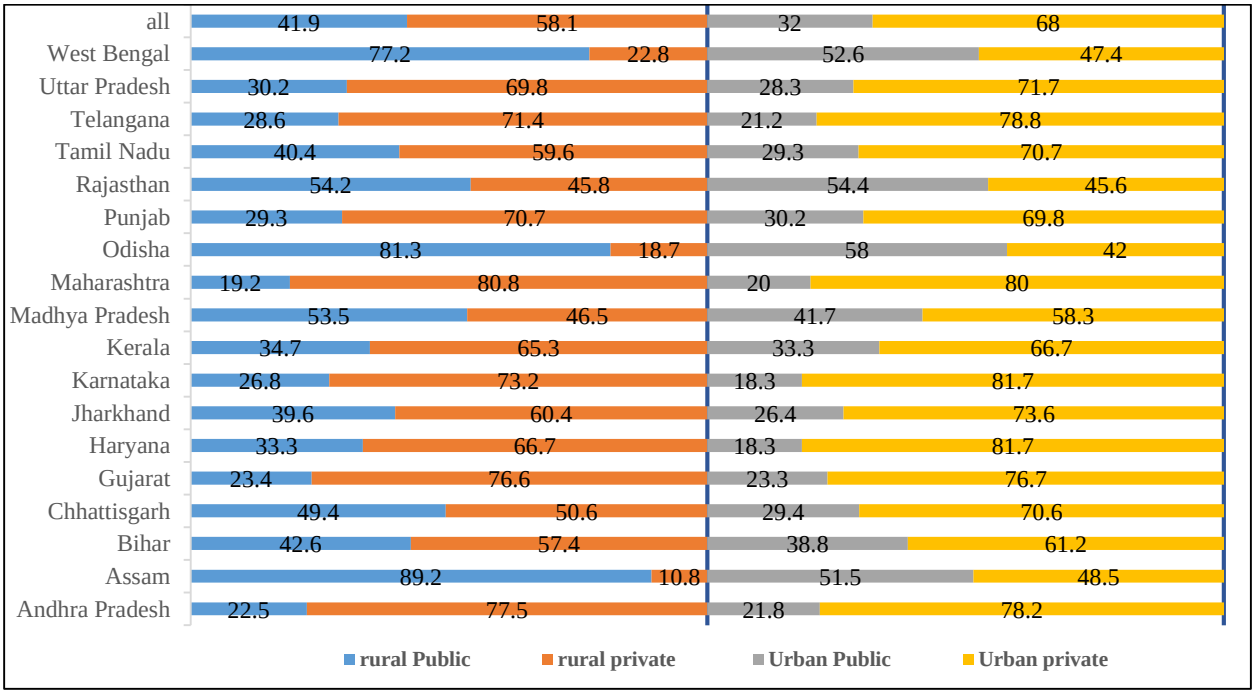
Source: Rural Health Statistics, 2014-15, MoHFW

Figure 4.17
Average Number of Villages Covered by Community Health Centres: 2014-15



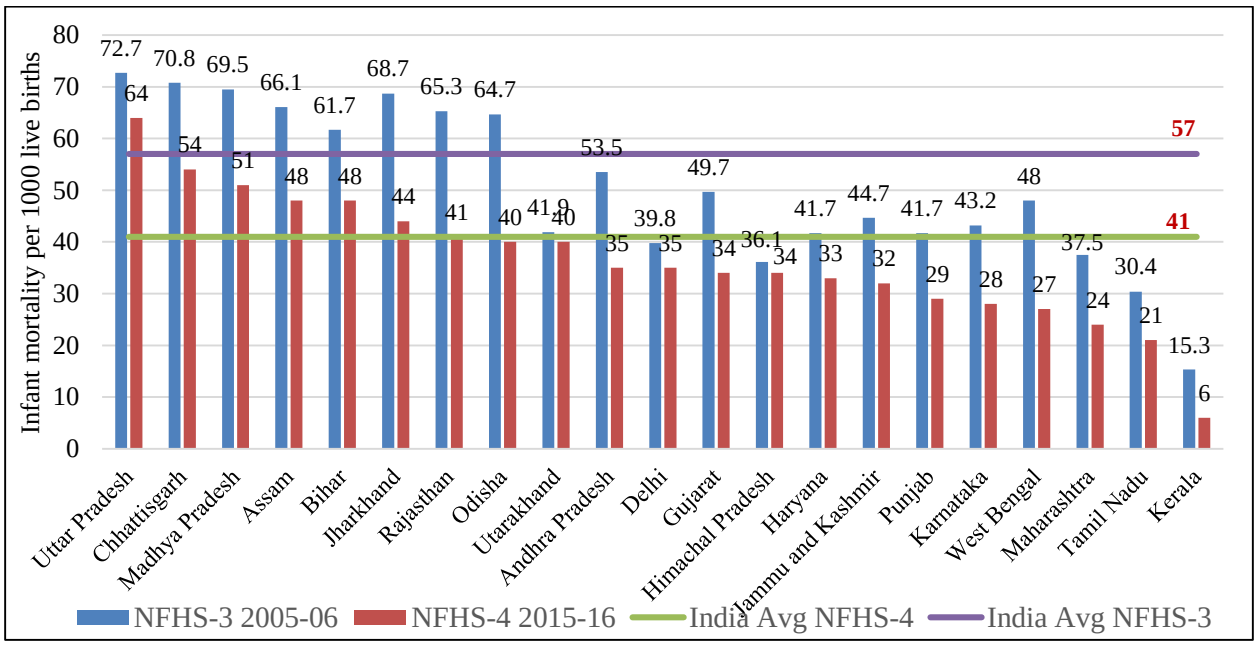
Source: Rural Health Statistics, 2014-15, MoHFW

Figure 4.18
Distribution of Cases of Hospitalized Treatment Received from Public and Private Hospitals: 2014



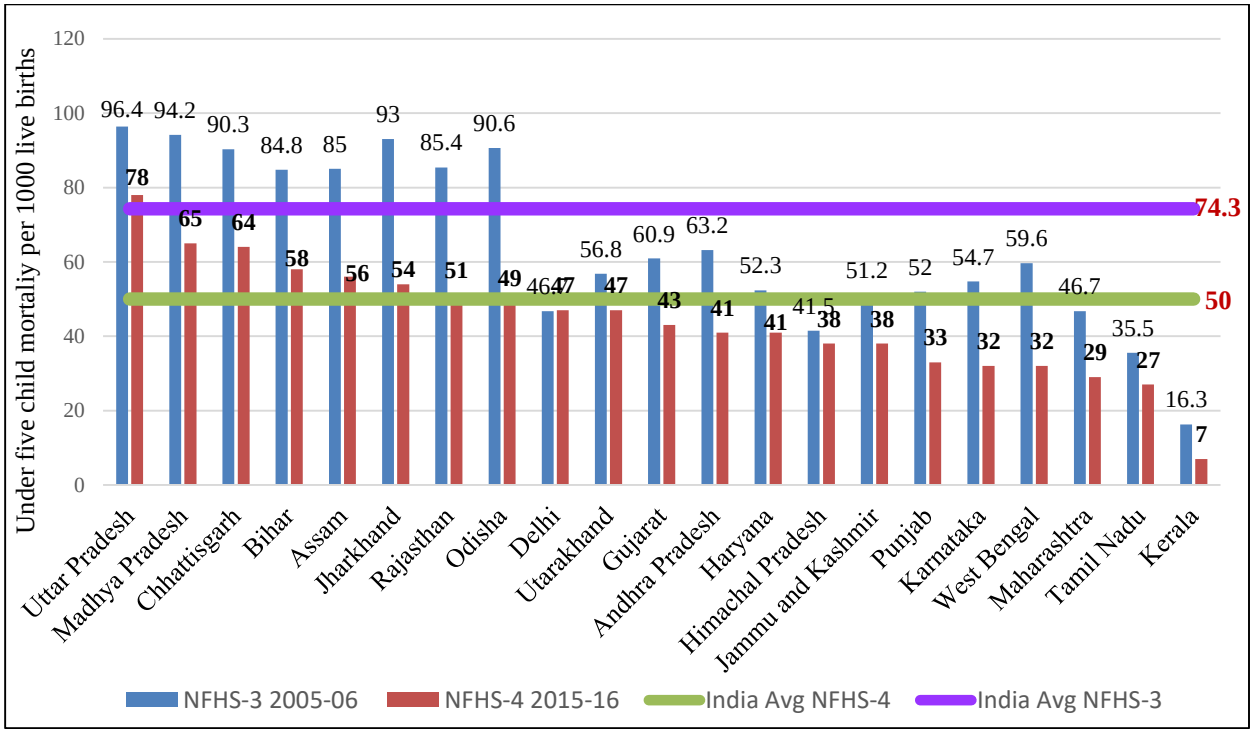
Source: NSS 71st Round, Health in India, Note: Data in Annexure

Figure 4.19
Infant Mortality Rates over the Years.



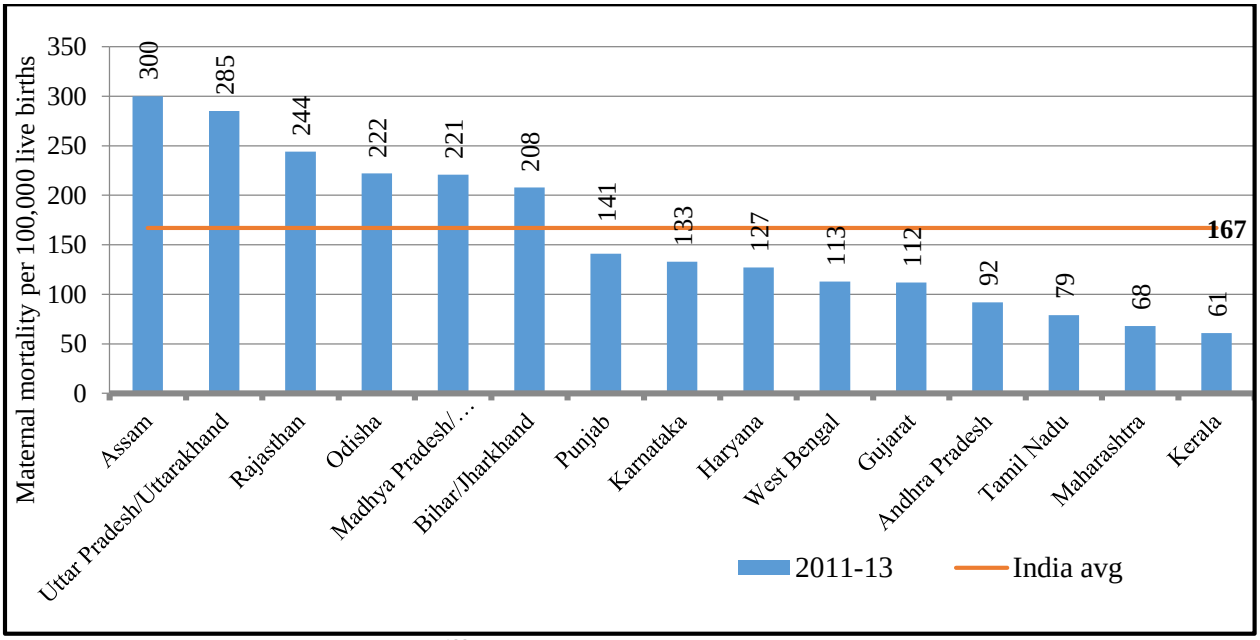
Source: Various Rounds of National Family Health Survey of India, National Reports

Figure 4.90
Under Five Mortality Rates over the Years



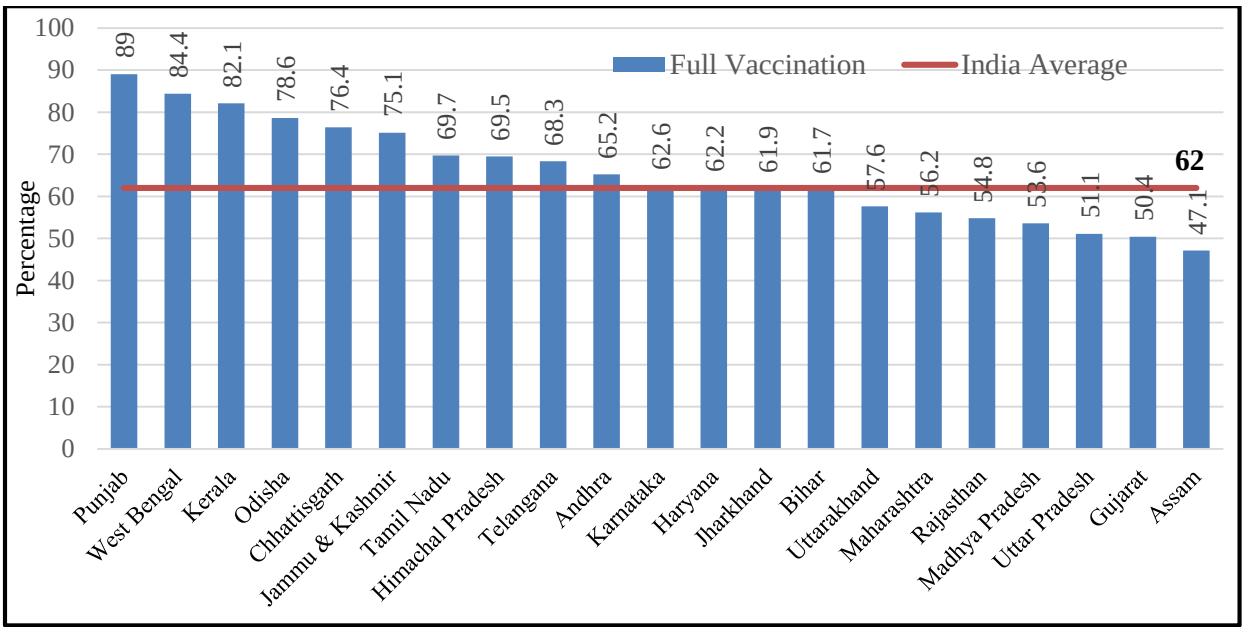
Source: Various Rounds of National Family Health Survey of India, National Reports

Figure 4.10
Maternal Mortality Rates: 2011-12



Source: SRS, 2011-13 MMR bulletin[122]

Figure 4.22
Percentage of Children Immunized (aged 12-23 Months): 2015-16



Source: National Family Health Survey (NFHS-4) (2015-16)

[127] available at http://www.censusindia.gov.in/vital_statistics/mmr_bulletin_2011-13.pdf

CHAPTER 5

EDUCATION POLICIES AND EDUCATION EXPENDITURE IN INDIA

5.1. Introduction

The principle of education for the masses at large has been preserved in the Constitution of India. For the development of human resource, education is the basic input; that is why the Government of India at the Centre formulated policies to make education free. Apart from this, provisions have also been made to impart compulsory education to children who are at the age group six to fourteen year. A better quality of life is ensured with the improvement of education as it ensures a positive and long lasting impact on the the economy by giving it a boost. Therefore, improving education is an urgent need of the country.

It may be worthwhile to mention that when the erstwhile Planning Commission started to quantify the extent of poverty, through the measurement of Head Count Ratio (HCR), but it failed to take into account the needful amount expended on education as it was hypothetically agreed that education would be provided free at least to the poor people. Not procuring a minimum level of calories due to inadequacy of incone became the measurement of poverty. The incidence of poverty thus was estimated as the number of people living below a certain consumption expenditure level (proxy income) necessary to obtain a minimum level of calories. The Expert Group, formed by the erstwhile Planning Commission in 1993 had given the recommendation of including inter alia, education needs by broadening the concept of Poverty. The World Bank in 1994 also recognized that poverty cannot be conceptualized on the problem of low income, rather multidimensional problems need to be included in the definition of poverty. Thus the concept of poverty must include the problems of lack of access to oppurtunities for development of human capital and to education.

In our country, since independence efforts were made by the Government to enhance and improve the education system, so that all children could be brought under the education net, since poverty is perpetuated through dearth of education, and poverty itself creates an obstacle to access to schooling. Therefore, access to quality education is the first and foremost requirement for

eliminating poverty. Education and poverty reduction and empowerment have direct relationship between them and they dpend on the various circumstances of a country, like political, social and locational. Education therefore gets influenced by these circumstances in which it is developed and also in turn influence the circumstances for further betterment, thus claiming special attention from policy makers and planners.

5.2. Background

The labour and education are evidently the two main assets of the poor workers that improves their productivity and earnings. Investment in education raises the human capability and thus helps in future economic growth and progress of a country. It is a known fact that many theoretical and empirical researches worldwide [123,124,125,126,127,128,129,130,131,132,133] have established the role of education in developing human capital. These researches emphasize on the nature of education as both a public and merit good, hence investment in education is much more required. The World Bank (1995)[134] Review has also documented the evidence of the effects of education on development. One of the important research done by Duraisamy's (2002)[135] has elaborated on the returns of education in India.

The income poverty makes the poor households not to invest adequately on education; thus making their physical labour less valued in the market; leading to heightened income poverty for them. It was strongly observed by the Education Commission in 1996, that "educational reconstruction" is the way ahead as it can prove to be effective in breakink this relationship between income poverty and education. Alfred Marshall (1920)[136] stated, "Knowledge is our most powerful engine of

[123] Becker, G. S. (1962), Investment in human capital: A Theoretical analysis.
[124] Mincer, Jacob (1974), Schooling, Experience, and Earnings.
[125] Acemoglu, Daron and Joshua Angrist (2000), How Large Are Human Capital Externalities? Evidence from Compulsory Laws.
[126] Barro, R. J. (1991), Economic Growth in A Cross Section of Countries, The journal of economics, 106(2), 407-443.
[127] Barro, R. J., and Lee, J. W. (1994, June), Sources of Economic Growth, in Carnegie-Rochester conference series on public policy (Vol. 40, pp. 1-46), North-Holland.
[128] Benhabib, J. and M. M. Spiegel (1994). The Role of Human Capital in Economic Development: Evidence from Aggregate Cross-Country Data. Journal of Monetary Economics, 34, 143-173.
[129] Hall, R. E., and Jones, C. I. (1999), Why Do Some Countries Produce So Much More Output Per Worker Than Others? The quarterly journal of economics, *114*(1), 83-116.
[130] Hanushek, E. A., and Kimko, D. D. (2000), Schooling, Labor-Force Quality and the Growth of Nations, American economic review, *90*(5), 1184-1208.
[131] Jorgenson, Dale and Barbera M. Fraumeni (1992), Investment in Education and US Economic Growth, Scandanavian Journal of Economics, vol. 94: S51-S70.
[132] Krueger, A. B., and Lindhal, M. (1998), Education for Growth: Why and for Whom? , mimeo.
[133] Pascharopolous, G (1994). Returns to Investment in Education: A Global Update, World Development, 22, no. 9: 325-1343.
[134] Priorities and Strategies for Education, A World Bank Review,
[135] Changes in Returns to Education in India, 1983–94: by Gender, Age-Cohort and Location.
[136] Principles of Economics, pp. 138-39.

production; it enables us to subdue Nature and force her to satisfy our wants...". He also stated that, "There are few practical problems in which the economists have a more direct interest than those relating to the principles of the expenses of the education of children"[137]. Researchers have widely accepted that the most important factor for development of a country is the expenditure on education. It is therefore, essential to invest in human capital for eliminating the poverty of education, which is the ultimate way to reduce income poverty helping raise the standard of living of the poor people and make society more knowledgeable. The pivotal role played by education for economic and social welfare of the country was emphasized by Mokshaundam Visvesvarayya[138] in 1931. He cautioned emphatically saying that the slow progress of mass education is putting the future of our economy in a grave peril. The theory of human investment revolution was initiated by Theodore Schultz (1961)[139] as an economic thought since he recognized the importance of education for development of the nations.

The value of education in development (Blaug, 1975)[140] has long been recognized in the long tradition of economics. Adam Smith[141] had stated that in a civilised and commercial society perhaps the attention of the public is more required for education of the common people than the attention of the people of some rank and fortune (Smith, Wealth of Nations, p.718).. For the education sector, Gupta et al. (2002)[142] found that an important role is played by both total public expenditure and its composition in different levels of education in determining varous education outcomes, primarily the enrolment, retention and drop out rates. However, De and Endow (2008)[143] has concluded in their research that although significant changes in education expenditure helps improving access but it doesn't aid the process of learning retention or achievments that remain without any doubt very low in less developed states

The analysis on the NAS estimate of Private Final Consumption Expenditure on Education (PFCEE) was done by Tilak (2000)[144]. Information from 52nd round of NSS was also analyzed by

[137] Progress and Politics**,** Routledge RevivalsPaperback – 22 November 2012
[138] Rural Reconstruction in India: An Outline of a Scheme, Printed at The Bangalore Press.
[139] Investment in Human Capital, The American economic review, 51(1), 1-17.
[140] Kuhn versus Lakatos, or Paradigms Versus Research Programmes in The History of Economics. History of Political Economy, 7(4), 399-433.
[141] An Inquiry into the Nature and Causes of the Wealth of Nations, Methuen.
[142] The Effectiveness of Government Spending on Education and Health Care in Developing and Transition Economies, European Journal of Political Economy, Vol. 18, Issue. 4, 717-737,
[143] Public Expenditure on Education in India: Recent Trends and Outcomes. Research Consortium on Educational Outcomes and Poverty, WP08/18.
[144] Household Expenditure on Education in India: A Preliminary Examination of the 52nd Round of the National Sample Survey, National Institute of Educational Planning and Administration.

him in his research paper titled, "Household Expenditure on Education in India". Comparison of PFCEE and the public education expenditure was also done for the years 1950-51 to 1996-97. It was found that if household per capita income is increased by one per cent, then household expenditure on education would increase by 2.1 per cent, suggesting that household income (or expenditure) levels considerably and positively influence household expenditures on education. It was also revealed that the responses of households were positive to the government expenditure on education. That is, with the increase in government expenditure, households also would like to increase their expenditure on education, thus supplementing public efforts in spending on education.

A research paper namely the "Analysis of Household Expenditure on Education", by Dr. Purnachandra Rao[145] has revealed that in both rural and urban areas it is the most expensive to acquire primary education. The 71st round survey of NSS namely Social Consumption: Education has revealed a very critical aspect that both in rural and urban areas, for attaining primary education households have to incur much more expenditure than for attaining secondary, higher secondary and higher education. The concept of free education is not really relevant in India as the poor people also have to spend for getting primary education. Dr. Rao in the above mentioned study has revealed after thorough analysis that in rural areas the provision of school incentives does not have any association with the education expenditure of households.

Various problems , be it at the individual capacities or at the socio-economic level, can be solved with education. The best example is when a female is educated, then there is reduction of fertility rate and lower maternal mortality rate; as a parent she can better look after the child's education and the health needs. The study of the United Nations Educational, Scientific and Cultural Organization (2011)[146], has found that one extra year of schooling of an individual enhances his/her earning capacity by 10%. However, the UNESCO Institute for Statistics in June 2012[147] estimated that about 67 million children were not in school in 2009, even if they were primary school-aged. Many millions children drop out from primary school without completion of their final grade. The major problems that act as a barrier to universal primary education are deep-rooted inequalities

[145] Analysis of Household Expenditure on Education, International Journal of Education and Information
[146] Education Counts: Towards The Millennium Development Goals, The UNESCO; France.
[147] Education for All, Global Monitoring Report,). Reaching Out-of-School Children Is Crucial for Development (Policy Paper 04). The UNESCO, France.

that exist in respect of wealth, income, ethnicity, gender, language and location. Even if access to education exists, but those schools can not provide enhanced quality of education, because of not having good teachers and are faced with the problem of teachers' absenteeism. It has been shown by various researches that education is very much association with child nutrition, child mortality and health.

5.3. Rationale:

India's recent growth and development has been one of the most significant and notable achievements and it is world's fourth-largest economy with more than 1.2 billion populations. The momentous changes that are unfolding, bringing in a host of new opportunities to build up a 21st-century Nation. The largest and youngest workforce in the world will be in India. Therefore, we neeed to educate these young people of our country and it should be the goal in itself as it will have positive impact on the economic development thus bringing a better quality of life.

The educational system of country not only assures the quality of masses but also determines the social and political climate of the community making people participate intelligently in the affairs of the democratic country. Quality eduction, therefore, plays a paramount role in the economic well-being of a society. It has been laid in our Constitution that education, is the concurrent responsibility of the Union and the State Governments; various Articles of the Constitution also provide for education as a Fundamental Right; thus, the State has a definite role in providing finances for delivery of primary education at ground level.

The country inherited an overall defective structure of the educational system, which was top-heavy. As a result the provisions that were available at the secondary stage was aptly proportioned to that at the primary stage, however at the university stage it was quite larger compared to the base structure that could profitably support. Also, disparities exist between different states There in terms of provision of educational facilities, expenditure etc.

The government spends substantial amount on the creation and the functioning of the educational infrastructure; but to avail these facilities individuals or households also have to incur expenditure in the form of payment of fees of different kinds, purchase of books, stationery and uniforms, spending on conveyance, private coaching, study tours, etc. Therefore, the sum total of all these

expenditures made by a student or a household on education is termed as Private Expenditure on education.

It is customary to assume that in the Indian context, private schools provide better quality of education in comparison to the government ones, since the private unaided schools compete with each other in terms of attracting students through better results and diffusion. This comparative examination between government and private unaided schools is suggestive of the fact that the government funded schools need to improve themselves in terms of quality and cost efficiency. This will further encourage private schools to improve in efficiency and quality education[148]

In the above backdrop it is quite relevant that a critical review of different plans, policies and programmes undertaken by the Government of India, to achieve education for the people in general is done, and analyses of Public and Private expenditure on education are made, as, Nation's development can only be ensured through human resource investment and the importance of educated population in a country cannot be denied.

5.4. Education Policies at different Time Periods

The Government has always made efforts to improve the education system and include all in the education net. Education being the basis for the overall development of the Nation, the Planners in the country thought that educational machinery needed to be geared in a manner that personnel of suitable quality shall be available at the required rate to the Nation for doing specific tasks which is generally used to be set through the Five Year Plans. We will discuss about the policies of the Government of India at different periods to have a right perspective on the development of the education system in our country.

5.4.1. The Years 1948 to 1968:

Soon after independence, two commissions were set up by the, the Central Advisory Board of Education (CABE) to deal with university and secondary education according to the needs of an independent India; i) *the University Education Commission in 1948*, chaired by Dr. S. Radhakrishna suggested to orient the educational system towards achieving economic independence, ii) T*he Secondary Education Commission appointed in September 1952 with Dr.*

[148] Geeta Gandhi Kingdon (1996), The Quality and Efficiency of Private and Public Education: A Case-Study of Urban India, web source:http://azimpremjifoundation.org/pdf/OBES-quality-Efficiency-education.pdf

L.S. Mudiliar as Chairman reinforcing the suggestions of Dr. Radhakrishnan, recommended putting in place the infrastructure for procuring a large technical manpower by setting up of technical schools. Establishment of multi-purpose schools was a major contribution of this Commission.The *Assessment Committee on Basic Education (1956)* stressed upon expansion and reforms in basic education.

The *Education Commission chaired* by D.S. Kothari (1964-66) had recommended, i) the usage of regional language as medium of instruction at the university stage, ii) availability of non-formal education, iii) education for the people (Elementary and Adult Education), iv) the common school system, v) 10+2+3 pattern, vi) raising of teachers' salaries. All these suggestions and recommendations were taken into account and efforts were made to put them in practice

The *National Policy on Education 1968* was formulated on the basis of the Kothari Commission's report. The recommendation of this policy was to promote inter-alia, free and compulsory education for all children up to the age of 14 years; to reduce prevalence of wastage and stagnation in the schools; to equalise educational opportunity for all; to extend educational facilities at all levels and to remove imbalances between regions and rural and urban areas.

5.4.2. The Years 1968 to 1994:

During this period the policy focus emphasized to put in place facilities for Universal Elementary Education (UEE), the pre-requisite for equality of opportunity to all. However, states, could not comply the command of Constitutional Directives within the stipulated period of ten years to provide free and compulsory education to all children below the age of fourteen years. The Integrated Child Development Service (ICDS) in 1975, dovetailed early childhood education with nutrition, health care and social welfare and to increase the retention rate. Eradication of Adult Illiteracy was linked with Integrated Rural Development Programme (IRDP) and Nehru Yuva Kendras (NYK) and the National Service Scheme (NSS).

The two important policy measures, the*National Policy on Education (NPE)* and the *Programme of Action* were formulated in 1986. It attempted to eradicate illiteracy in the age-group 15-35 years keeping the focus on the achievement of universal elementary education. Operation Black Board (OB) scheme was launched for improvement of elementary education, and in rural areas Navodaya Vidyalayas were opened for secondary level of education. The Minimum Needs Programme had the main components of universalizing elementary education to children in the age-group 6-14

years, vocationalisation of education at the senior secondary level, and, also to provide education to women belonging to socially and economically marginalised groups in rural areas. The important programme *Mahila Samakhya was* launched in 1988 to achieve the goals of the New Education Policy (1986) and the Programme of Action.

The *New Education Policy, 1986*, reviewed in 1992, provided a legible framework guiding the development of education, having many objectives to enhance gradual growth of education system in the country. But it has not been successful in achieving all of them. The main objective was to retain children in the schools at primary level and making education compulsory up to the age of 14. A centrallysponsored scheme the *District Primary Education Program* was launched in 1994, as a major initiative to revigorate the primary education system. It adopted a wholesome approach for universalization, access, retention and improvement of learning achievement to achieve the goal of universalisation of primary education. It mostly targeted to reduce disparities among social groups.

5.4.3. The Years 1995 to 2014

This period saw some of the major development in the Education Policies.The Sarva *Shiksha Abhiyan (SSA)* was launched in 2002 to achieve universalisation of elementary education in a time bound manner. Meals were to be provided along with the *Sarva Shiksha Abhiyan (SSA)* to make children attend schools and to retain them till the completion of primary level education. This strategy of convergence efforts were taken to fulfill the mandate of the 86th Amendment to the Constitution of India making free and compulsory education for children of 6-14 age group as a Fundamental Right (Right to Education, 2009). It was estimated at that time that around 205 million children in that particular age group need to achieve elementary education within a stipulated time period

To retain children in schools, the *Mid-Day Meal Scheme was* launched nationwide in 1995 that provided hot cooked meals in schools. However, through this scheme the Government also made an effort to improve the nutritional status of school-age children, as this scheme was applicable in primary and upper primary classes in government and government aided schools, local bodies. India made education a Fundamental Right of every child by enacting the Right to Education Act (RTE), 2009, which came into force from 1st April 2010. India became one of the 135 countries, which made education a Fundamental Right of every child.

Ths scheme *Rasthriya Madhyamik Shiksha Abhiyan*(RMSA), was launched in March 2009. This scheme is meant for improving secondary education in public schools through out the country, and to provide conditions for an effectivet growth, development and equity for all. In 2004, the scheme Information and Communication Technology *(ICT)* was launched as a part of RMSA. The objective of this scheme is to make the students at the secondary level skilled in ICTs and to build their capacities in such a manner that they get the relevant opportunities in the job market. The scheme *Rashtriya Uchchatar Shiksha Abhiyan (RUSA),* launched in 2013 has the objective of promoting reforms in the State Higher Education System. Also, this scheme would ensure that states do take reforms in the examinations of those institutions that provide higher education. It would also ensure that some universities get converted into world class research universities

5.4.4. The Years 2014 onwards:

A major structural shift was observed in the formulation and implementation of the education policies after 2014. The third New Educational Policy was formulated under the chairmanship of K. Kasturirangan, after more than two decades of the modified (1992) National Policy on Education 1986. The New Educational Policy (NEP) aims to meet the changing requirements of both the institutions and its beneficiaries by emphasising innovation and research and improving quality of education. It also has the objective of making India a knowledge superpower. For this, it would make an attempt to equip students with skills and impart knowledge so that it can do away with manpower shortage in academics, technology, science and industry

Beti Bachao and Beti Padhao, the flagship programme of the Government of India, aims at improving Child Sex-Ratio and Girl Child Education targeting the deep rooted patriarchal mind-set of the Indian society. The scheme Study Webs of Active-Learning for Young Aspiring Minds-SWAYAM has the objective of providing unique educational opportunity to all citizens of the country with the offer of specialized online courses by premier Institutes of India. Government of India has brought special regulation for the *Institutions of Eminence* to meet the growing demand for creation of a new category of top institutions as per the global standard in terms of quality and infrastructure. The initiative would enable regulatory framework in such a manner that ten public and ten private higher educational institutions/universities would emerge as world-class Teaching and Research institutions.

The *Model School* scheme would set up model schools for provision of quality education to talented rural children. It aimed to set up a number of (6,000 in numbers) model schools in the beginning with each block to have one school. The selected school per block will be developed as benchmark of excellence. The objectives of this scheme is to set up a good quality senior secondary school, which will be a role model school and will be setting pace in every block. The model school will try to innovate curriculum and teaching and will also be a demonstrator in school governance, infrastructure and curriculum.

The -Padhe Bharat Badhe Bharat scheme, launched on 26th August, 2014, stressed on the quality of primary education in the country so that the child attains basic level of learning in classes I and II for reading and writing language, and numerical aptitude. This scheme is now a sub-component of SSA.

5.5. Public Expenditure on Education

The National Policy on Education, 1986 envisaged primary education to adopt the "child-centred approach" for removing the disparities in educational opportunities. This approach would not only bring the removal of disparities, but also bring equality for educational opportunities. An Expert Committee in the erstwhile Planning Commission proposed an increase of education expenditure as was cited by Kothari Commission (1964). CABE Committee (2005) opined that to achieve universalisation of elementary education by 2011-12 around 1.1 percent to 1.5 percent of GDP in addition to the existing allocation was needed in elementary education, which has been persistently under-funded.

It is therefore, necessary to take a comprehensive look at the sources of finance and the trend and composition of aggregate public expenditure on education in India, as development in education depends not only on the quantum but also on the composition of education expenditure. The finance of education is mainly sourced by the public sector comprising of centre and state government expenditure, the local bodies, foreign aids and the private sector comprising of profit and non-profit organizations and maily individual households. The analysis of public expenditure on education by the Centre and the State on various heads of accounts will definitely bring into light a certain pattern and would show the gap in public spending on education.

The public expenditure on education comes under the criteria of Development Expenditure, which is a productive expenditure promoting economic growth and development. These were classified

in terms of Plan and Non-Plan expenditure up to the Twelfth Plan Period (2012-2017). The Plan expenditure shows the spending to be done in the education sector for different plans and programmes of the government indicating the direction of changes. The Non Plan expenditure required for maintaining and operating the existing education infrastructure. Another distinctive classification is Revenue and Capital expenditure. Revenue Expenditure is recurring and meant for maintaining government machinery and constitutes the bulk of the budget expenditure. Capital expenditures are meant for creating durable assets, in the education sector.

5.5.1. International Scenario

The huge amount of fund allocation for education has made the developed countries of today to achieve significantly in social and economic development. Whereas, the developing countries are lagging behind in many aspects due to inadequate government funding on education.

The World Bank has estimated that India's public expenditure on education as a perecentage of GDP is only 3.9% (Figure 5.1, pg-150). Comparison of this ratio internationally with a few countries reveal that the spending in education by our country is much lower than that of many advanced countries for example, US (5.2 per cent), Canada (5.3 per cent), UK (5.8 per cent) and many others (listed in the Figure 5.1, pg-150). Even Ghana (8.1 per cent), Finland (7.2 per cent) and Chile (4.1) etc. spends more than that of India. Some other Developing countries like Maldives (6%), Malaysia (5.9%), South Africa (6.4%) etc. also spend on education a quite high percentage of GDP. However, India spends little bit more than its neighboring countries.

5.5.2. Plan and Non-Plan Expenditure

The bulk of education expenditure in the country is from the Non-Plan account (shown in Table 5.1, pg-137), and a relatively small portion is being accounted from the Plan account. The share of Plan expenditure in the Centre has overall increased from 40.27 percent to 51.86 percent since 1991-92 to 2014-15 with lot of fluctuations; whereas, the States' share in planned expenditure has decreased from 59.73 percent to 48.14 percent for the same time period.

The Staes' Non-Plan expenditure has been hovering around 95 percent, always more than that of the Centre. A rapid increase was essential in the share of Plan expenditure for largely on expansion of education sector through introduction of new schemes, construction of new buildings, recruitment of teachers, and facilities for new enrolment and so on. A comprehensive view of the Plan and Non-Plan expenditures by the Centre and the States has been shown in the Figures 5.2

(pg-150) and 5.3(pg-151). The Centre has played a dominant role in financing Plan expenditure on education. Both the Centre and States are able to maintain consistently the same level of Non-Plan expenditure. Since 1991-92 there has not been much significant change in the share of expenditure borne by the Centre and the State.

The Plan and Non-Plan Expenditures are allocated among the seven sectors of educational levels, namely, Elementary, Secondary, Adult, University and Higher Education, Language & Development, Technical and General Education. Sector wise allocation can be seen in Table 5.2 (pg-138) and Figure 5.4 (pg-151). Though, education has become one of priority sectors of the Central and State Governments, but, all the sub-sectors of education have not received enough attention. The 1st Five Year Plan gave the priority to elementary education, the second and third Plan focused on the development of secondary education, that led afterwaeds till the Eighth Plan to a considerable share of allocations. During the Ninth and the Tenth Plan more attention was again given to Primary education following the amendment in 2002 making elementary education a justifiable Fundamental Right. The highest priority on education was given in the Eleventh and Twelfth Plan placing substantial attention for higher education. However, the majoriy of the expenditure by Centre and States is on elementary education. These expenditures have been detailed in Table 5.2(pg-138).

5.5.3. Public Expenditure on Education (Centre and State)

Earlier, the States used to take the sole responsibility for financing education, as the subject 'education' was placed in the "State List". But in 1976 with the introduction of the 42nd Constitutional Amendment, the subject education was placed in the Concurrent List making it joint responsibility of the both Central and State governments for impartment of education to its citizens. The Public Education Expenditure comprising of Central and State government expenditure on education has been detailed in the Table 5.3 (pg-139) and the Figure 5.5 (pg-152)

5.5.4. Education Expenditure and Total Public Expenditure

The education expenditure comes under the major head, Development Expenditure, of social sector expenditure. From the Table 5.4 (pg-140) it can be observe that Development Expenditure has similar growth rates over the years as that of Total Expenditure implying that government's development agenda in terms of spending had got emphasis in the similar way, but, the education expenditure has grown very slowly, at 9.25 per cent during 2015-16. The highest growth of public

education expenditure has been 18.32%, in the year 2009-10. This could be due to successful implementation of Sarva Siksha Abhiyan through the concerted effort of the Government of India during that period.

Over the years there was quite a variation in the share of Education Expenditure in Development Expenditure ranging between 20% to 29 %. In 2015-16, the ratio was only 22.95 %. Though the share of Development Expenditure in GDP increased consistently over the years, but the share of education expenditure in GDP remained extremely low at 3.23 per cent. The Table 5.4 (pg-140) and the Figure 5.6 (pg-152), give detais of the percentage share of public education expenditure in Total Government Expenditure, Development Expenditure and GDP.

Government investment in development expenditure has a very significant contribution to make education an engine for social and economic development as education is not only determined by economic factors but also social factors The Education Expenditure as a percentage of the Total Expenditure, is somewhere around 11 percent since 1990-91 to 2015-16 and its percentage to GDP has almost remained stagnant. The Total and the Development Expenditure have been increasing at a steady rate, but Education Expenditure remained more or less stagnant and did not get much importance.

5.5.5. Centre - State Share of Expenditure on Education

The Table 5.5 (pg-141) gives a brief idea of the percentage share of Education Expenditure as a share of Total Expenditure and GDP for both Centre and States. Education is mainly a state subject and hence the proportion of expenditure spent by State is quite high. The share of education expenditure that Centre bore was 12.25 per cent in 1990-91, and the same was 14.27 per cent in 2015-16. These shares were very low. But in 2008-09, it was at 24 %, which was quite reasonable. The State's share has always remained more than 80 per cent in total education expenditure except for some years from 2006-07 to 2013-14, when there was an increase in Centre's share by two or three per cent. As a percentage share of GDP, the education expenditure for the period from 1990-91 to 2015-16, the Center's share of expenditure on education was less than 1 % and that of State remained around 2 %. These shares have been detailed in Table 5.5 (pg-141) and Figures 5.7 and 5.8 (pg-153).

5.5.6. Revenue and Capital Expenditure on Education

The comparison of the trends of Government's Total Revenue and Capital expenditure on Education can really bring into light the priority and the direction of the government spending. In India, the Revenue Expenditure constituted 98% in 2011-12 and 96.1 percent in 2015-16, the major share of total Public Education Expenditure. The Capital Expenditure on education was minimal constituting only two to four per cent. In 2015-16, Government's Revenue Expenditure stood at Rs. 3,53,802 crores at constant prices (base 2011-12) and Rs. 4,27,690 crores at current prices. At current prices, it grew by 13.8 per cent CAGR between the period from 1990-91 to 2015-16.

A substantial increase in the share of Capital Expenditure on education was from 1.8% in 2011-12 to 3.9% in 2015-16. A high proportion of Revenue Expenditure suggests that the majority of the expenditure is on salaries and maintenance etc., but not to create infrastructure under the Capital Expenditure. The Figures 5.9 and 5.10 (pg-154) give testimony to this. The share of Centre and State Governments' education expenditure in total Revenue and Capital account can be observed from the Table 5.6 (pg-142) during the period from 1990-91 to 2015-16. The Centre's share in Capital Expenditure has steadily declined and came down to 1.81 per cent in the year 2015-16 and conversely the State's contribution in Capital Expenditure has increased over the years and became 98.74 % in 2015-16.

The Table 5.7 (pg-143) shows that the share of Revenue Expenditure on education to the Total Revenue Expenditure for the states has actually seen a reduction from 23 % in 1990-91 to 20 percent in 2015-16 approximately, but as a share to GDP it stagnated at 2.9 percent in both the years. This trend is different for the Centre; the Revenue Expenditure share to Total Revenue Expenditure has been on the rise from 1990-91 to 2015-16 though its share to GDP has not shown much variation. The share of Capital expenditure on education to Total Capital expenditure has actually increased from 2.29 percent in 1990-91 to 4.3 percent in 2015-16 approximately for the states, and the same for the Centre saw a reduction over the years from 5.14 per cent in 1990-91 to 1.68 in 2015-16.

5.6. Public Education Expenditure: Per Capita

The Per capita public expenditure on education is obtained by dividing the annual education expenditure by the government for a particular period by the total population of that period. The referece from the projected population estimated by the Census Commissioner, India, office of

RGI has been taken for population data for those years when Census was not done. The per capita public expenditure on education shows the average amount spent by the government on a person. We have calculated the per capita health expenditure.

5.6.1. National Scenario

The per capita public expenditure on education has significantly increased in absolute terms. The Figure 5.11(pg-155) shows the trend of the Public Expenditure Per Capita over a period of time from 1990-91 to 2015-16 for both current and constant prices. In 2015-16, the annual per capita expenditure on education was approximately Rs. 3441 at current prices and Rs. 2847 at constant prices. The same in 1990-91was approximately Rs. 205 at current prices and approximately Rs. 520 at constant prices (Figure 5.11, pg-155). There has been an increase in the Per Capita Public Expenditure but the increase is not sufficient over a period of nearly 25 years and the Total Public Expenditure on education need to be increased.

5.6.2. State Scenario:

The states have played a major role in spending on education as it has predominantly been a state subject of concern. The Table 5.8 (pg-pg-144) gives a brief overview of the ratio of expenditure on education to that of the aggregate expenditure spent in major states. Several schemes have been very helpful in increasing the expenditure share for the states but this has not been a long lasting effect as eventually, the share of expenditure on education has more or less been the same in the past decades. Arunachal Pradesh was the only state where the expenditure had increased by more than twice since 2000-01 to 2015-16. The expenditure on education over the years has remained stagnant, and it was same as 2.9 percent of GDP in 2000-01 and 2015-16, combining all states together.

5.7. Private Expenditure on Education

There is no well documented reliable information about Private education expenditure from official sources. The NSS household (HH) consumer expenditure surveys provide location wise (rural and urban) cross sectional data, and, the exclusive surveys on education, mainly 64th round (2007-08) and 71st round (2014) have given related information on education and detailed information on the rate of participation of people in education, and household expenditures by levels of education, items of expenditures and MPCE classes in various rounds. We have confined

our analyses in this chapter to both 64th and 71st round of NSS survey on educational achievement, and NSS household consumer expenditure surveys of 61st and 68th round , with respect to domestic consumption of private household only, excluding house-less population and population residing in institutions such as prisons, hospitals, etc.

The estimates of 'Private Final Consumption Expenditure' are provided by the Central Statistical Office (CSO). It has been making estimates on Education (PFCEE) in its National Accounts Statistics, without giving any details regarding the composition of the expenditure on education. In its definition, the PFCEE also takes into account the expenditure of private education institution. Given the advantages of these two sources, the focus in this study is to have a detailed analysis of the NAS and NSS data with regard to private education expenditure.

5.7.1. Private Final Consumption Expenditure on Education

The percentage share of Private Expenditure on Education (PFCEE) to Total Private Final Consumption Expenditure (PFCE) was 3.71% at constant price, for the year 2015-16, as per NAS (details in Table 5.9, pg-145). The anount of household education expenditure is quite sizeable in India and, in 2015-16, it was Rs.311.5 thousand crores at current prices. At constant prices it was Rs.232.5 thousand crores in the same year, a huge increase by 13.72% approximately from the year 2014-15. Till 2010-11 the share of PFCEE in PFCE was less than 2 percent, that increased a little above 3 percent in 2011-12, and then to 3.93 per cent in 2015-16 (details in Table 5.10, pg-146). The Per capita PFCE on education shows an increasing trend both at current and constant prices over the years implying that households are spending quite a huge amount on education from their own pockets, suggesting their willingness to pay compulsorily for getting education.

The Figure 5.12 (pg- 155) shows the trend of share of private education expenditure in total final consumption expenditure and its share in GDP since 1990-91. The share of PFCEE to GDP, was at 2.04 per cent (Figure 5.12. pg-155). A steady decline in the ratios of PFCEE to total PFCE is observed from the period 2004-05 to 2009-10, declining up to the level of 1.34 per cent during 2010-11. In the same year the share of PFCEE to GDP was at 0.81 percent.

5.8. Household Expenditure on Education

Quite a sizeable amount of expenditure is incurred by households not only from higher income groups but, also from the lower income groups to acquire education. Students have to pay huge amounts on examination and other fees, on various items at different levels not only for private institutions but also for government primary and upper primary schools in both rural and urban areas. The various NSS rounds of household consumption expenditure surveys provide detailed information on household expenditure on education. The Table 5.11 below gives focused details on it.

Table 5.11
Average Per Capita Monthly Expenditure on Education in Rural Areas (In Rs.)

Survey rounds	Year	Expenditure				% share of edu exp. In tot. exp
		education	total	education	total	
		current price		constant price		
50th	July1993-June1994	4.07	281.00	7.57	522.98	1.45
51st	July1994-June1995	5.00	309.43	8.48	524.59	2.16
52nd	July1995-June1996	7.45	382.07	11.57	593.55	2.97
53rd	Jan.-Dec.1997	11.73	486.16	16.91	700.72	2.50
54th	Jan.-June1998	9.57	494.9	12.94	669.06	1.93
55th	July1999-June2000	9.37	498.77	11.37	605.26	2.33
56th	Jan2000-June2001	11.55	531.49	13.56	623.87	2.58
57th	July2001-June2002	12.85	554.15	14.62	630.5	2.70
58th	July-Dec 02	14.33	564.7	15.72	619.41	2.93
59th	Jan-Dec. 03	16.26	558.78	17.84	612.91	2.86
60th	Jan-June 04	16.14	564.70	17.06	596.94	2.86
61st	July2004-June2005	15.00	559.00	15.00	559.00	2.68
62nd	July2005-June2006	16.98	624.53	16.29	599.22	2.72
63rd	July2006-June2007	22.16	695.16	19.98	626.77	3.19
64th	July2007-June2008	28.33	772.36	24.09	656.82	3.67
66th	July2009-June2010	40.27	953.05	29.77	704.55	4.23
68th(URP)	July 20ll June2012	39.84	1,278.94	24.91	799.75	3.12
CAGR				48.71	15.21	

Source**:** Various Rounds of Household Consumer Surveys of NSSO

Over the years, the average monthly per capita education expenditure is showing an imcreasing trend and in absolute terms it has increased from Rs. 4.07 in 1993-94 to Rs. 39.84 in 2011-12. The per cent share of education expenditure out of average per capita monthly consumption expenditure is quite high in rural areas having increased from 1.45 per cent in the year 1993-94 to 4.23 per cent during 2009-10. This reveals a burden of education expenditure on the rural people. With the increase in monthly consumer expenditure, the per capita education expenditure has also increased, leading to the interpretation that the Government's expenditure is not sufficient for providing education to the masses of rural areas. A very interesting feature can be seen is that the total monthly per capita expenditure has grown (CARG) 15.21 per cent whereas the monthly per catia expenditure on education has grown in a huge amount that is 48.71 per cent.in constant price (2004-05 price), shown in Table 5.11 above.

Table 5.12
Average Per Capita Monthly Expenditure on Education in Urban Areas (In Rs.)

Survey rounds	Year	Expenditure				% share of edu exp. In tot. exp
		education	total	education	total	
		current price		constant price		
50th	July1993-June1994	19.00	458.00	35.36	852.40	4.15
51st	July1994-June1995	20.54	508.07	34.82	861.35	4.04
52nd	July1995-June1996	34.48	599.26	53.57	930.96	5.75
53rd	Jan.-Dec.1997	38.57	645.44	55.59	930.30	5.98
54th	Jan.-June1998	34.89	684.27	47.17	925.07	5.10
55th	July1999-June2000	37.06	854.92	44.97	1037.45	4.33
56th	Jan2000-June2001	51.75	914.57	60.74	1073.53	5.66
57th	July2001-June2002	56.58	932.79	64.38	1061.31	6.07
58th	July-Dec 02	58.57	1011.97	64.24	1110.01	5.79
59th	Jan-Dec. 03	64.71	1021.89	70.98	1120.89	6.33
60th	Jan-June 04	69.10	1060.16	73.05	1120.69	6.52
61st	July2004-June2005	53.00	1052.36	53.00	1052.36	5.01
62nd	July2005-June2006	72.85	1170.6	69.9	1123.15	6.22
63rd	July2006-June2007	91.60	1312.5	82.59	1183.38	6.98
64th	July2007-June2008	104.83	1471.54	89.15	1251.41	7.12
66th	July2009-June2010	162.19	1856.01	119.9	1372.07	8.74
68th(URP)	July 20ll June2012	135.7	2399.24	84.86	1500.30	5.66
CAGR				6.97	4.44	

Source**:** Various Rounds of Household Consumer Surveys of NSSO

The per capita consumption expenditure on education has increased in absolute terms from Rs. 19 in 1993-94 to Rs. 162.19 in 2009-10 in urban areas. The percentage share of education expenditure

in total consumption expenditure has increased from 4.15 per cent in 1993-94 to 8.74 per cent in the year 2009-10. This reveals that the households are bearing the burden of education expenditure In urban ares the households are bearing the burden of education expenditure much more than that in rural areas. The trend in monthly per capita expenditure of rural and urban areas in constant prices can be seen in the Figure 5.13 (pg-156). It may be inferred that households, both in rural and urban areas have to incur expenditure on education in large extent.

5.9. Category wise Education expenditure

The analyses of category wise education expenditure out of Total Consumption Expenditure is necessary to see the direction of the burden of education expenditure on households. We have considered the two time periods namely 2004-05 and 2011-12 as revealed by the two NSS household consumer expenditure Surveys of 61st and 68th round. Here also we have considered the estimates of poverty line by the erstwhile Planning Commission according to the Tendulkar Methodology.

5.9.1. Education Expenditure of Poor and Non-Poor:

The category wise detailed analysis of education expenditure from the two rounds of NSS surveys (61st and 68th round) on household consumer expenditure gives a glimpse about the exceptionally high burden that the poor people face for imparting education to their children. The two Figures 5.14 (pg-156) and 5.15 (pg-157) give the details.

In rural areas a rise in total education expenditure out of total consumption expenditure can be seen for all classes implying that all the rural people have to face with the increasing burden of education expenditure, which is not the case for poor people in urban areas. This might be due to the availability and accessibility of educational infrastructure for poor people in urban locations. However, the above analyses give a cause of concern for Indian public education system.

5.9.2. Group wise Education Expenditure

The average per capita per month education expenditure was Rs.18.1 in rural areas and Rs.50.7 in urban areas in 2011-12; the proportions of expenditure on education out of total consumption and non-food expenditure have increased over years, from 3.1% (2004-05) to 3.9% (2011-12) in rural areas while 6.7% (2004-05) to 7.8% (2011-12) in urban areas (Table 5.13 and Table 5.14 below).

Table 5.13
Group-wise Education Expenditure: Rural

Rural	Averageedu. Expenditure in Rs.		% Education Exp. out of Tot. Consumption Exp.		% Education Exp. out of Tot. Non-food Exp.	
Group	2004-05	2011-12	2004-05	2011-12	2004-2005	2011-2012
V. Poor *(< 3/4 of PL)*	5.0	9.4	1.6	1.7	4.1	3.9
Mod Poor *(3/4 PL to PL)*	8.8	16.2	2.1	2.1	4.9	4.8
Poor *(<PL)*	6.9	13.9	1.9	2.0	4.6	4.6
Non Poor*(>PL)*	28.4	66.3	3.7	4.3	7.4	8.1
Lower Non-Poor *(PL-1.5*PL)*	15.3	28.1	2.6	2.7	5.9	5.8
Upper Non-poor *(1.5*PL -2*PL)*	28.7	50.7	3.6	3.5	7.5	7.1
Higher Non-poor *(>2*PL)*	68.4	146.2	5.1	5.9	8.9	9.8
All Class	**18.1**	**50.7**	**3.1**	**3.9**	**6.7**	**7.6**

Source**:** From Unit Data of NSS 61st and 68th Round of Surveys on Household Consumer Expenditure.

Table 5.14
Group-wise Education Expenditure: Urban

Urban	Averageedu. Expenditure in Rs.		% Education Exp. out of Tot. Consumption Exp.		% Education Exp. out of Tot. Non-food Exp.	
Group	2004-05	2011-12	2004-05	2011-12	2004-2005	2011-2012
V. Poor *(< 3/4 of PL)*	11.3	18.8	2.8	2.7	6.5	6.1
Mod Poor *(3/4 PL to PL)*	20.8	33.6	3.8	3.5	8.1	7.4
Poor *(<PL)*	16.3	28.7	3.4	3.3	7.5	7.1
Non Poor*(>PL)*	98.4	235.2	7.2	8.2	11.6	12.7
Lower Non-Poor *(PL-1.5*PL)*	38.0	59.9	4.9	4.6	9.4	9.0
Upper Non-poor *(1.5*PL -2*PL)*	71.4	112.6	6.6	6.1	11.6	11.0
HigherNon-poor *(>2*PL)*	169.3	369.5	8.1	9.1	12.2	13.4
All Class	**73.7**	**193.1**	**6.7**	**7.8**	**11.2**	**12.4**

Source**:** From Unit Data of NSS 61st and 68th Round of Surveys on Household Consumer Expenditure

The ‘very poor’ class spends in rural areas only about Rs.9.4 per capita per month and in urban areas about Rs. 18.8 per capita per month. Expenditure made on education constitutes a substantial share out of total consumption expenditure and the non-food expenditure. On an average education expenditure in urban areas - 7.8% and 12.4% respectively, constitutes larger percent of total expenditure and non-food expenditure than that in rural areas -3.9% and 7.6% respectively. There is significant difference between proportions of education expenditure among urban and rural poor.

5.10. Evidences of Education Expenditure from NSS 64th and 71st Round

The connection between monthly per capita consumer expenditure and expenditure on education has been shown the Figure 5.16 (pg-157) based on 71st round NSS survey. The higher the UMPCE, the higher is the average expenditure on education at all levels of attendance up to graduate level. However, still there exist the rural urban differentials. It is important to note here that there exist persistent inequality in the society which reflects the unequal distribution of education on the basis of accessibility and affordability (shown in details in the Figure 5.16, pg-157)).

It is observed (Figure 5.16, po=157) that there is a definite pattern of expenditure for General education, over the UMPCE classes. The primary level education has been given much importance as the extent of increase in expenditure at this level was much higher compared to that of higher level of education. Further, a substantial difference in education expenditure is observed between the top 20% and the bottom 20% across the various levels of attendance in both rural and urban areas. It should be noted that the average spending on education is higher at graduate level than higher secondary level in rural areas whereas in urban areas spending is highest at higher secondary level.

5.11. State-wise Expenditure During Current Academic Session: Per Student

The situation of different states with respect to average monthly per capita education expenditure incurred by households can be seen from the various NSS large sample survey rounds of consumer expenditure. It can be observed from the Table 5.15 (pg-147) that the per capita expenditure on education has increased over the decade in most of the states like Orissa, Assam, Bihar, Chhattisgarh, Gujarat, Jharkhand and Madhya Pradesh have per capita education expenditure lower than the National average in both rural and urban areas for the year 2011-12.

5.11.1. Education Expenditure of Poor and Non-Poor at State Level

India is a diverse country and has huge state-level variation. Statewise the per capita monthly education expenditures for the 61st (2004-05) and 68th NSS (2011-12) Rounds of NSS have been shown in the Tables 5.16 (pg-148) and 5.17 (pg-149). During 2011-12, in India, on an averagea a rural household spent about Rs.50.7 per head per month on education, whereas, the rural poor spent about Rs.13.9 and the non-poor spent Rs.66.3 per capita per month. (Table 5.16, pg-148).

During 2011-12, in urban region on an average a household spent Rs.193.09 on education per head per month, whereas the poor spent Rs. 28.68 per head per month and non-poor spent Rs.235.16 per head per month in the same year (Table 5.17, pg-149). The average education expenditure of poor in states of Gujarat, Kerala, Maharashtra and Himachal Pradesh was lower than country's average in 2004-05 but more than country's average in 2011-12. The Table 5.17(pg-149) also points to the fact that there are many states in India where per capita monthly education expenditure of Non-Poor is less than the country's average in the year 2011-12.

The share of education expenditure to total consumption expenditure in rural areas has shown an increase from 3.1% in 2004-05 to 3.9% in 2011-12; in urban areas the share increased from 6.7% 7.8% during the period from 2004-05 to 2011-12). The 'very poor' class in rural areas spent only about Rs 5.0 (1.6% out of TCE) in 2004-05 and Rs. 9.4 (1.7% out of TCE) in 2011-12. During 2004-05, in urban areas, the 'very poor' class spent Rs. 11.3 (2.8% out of TCE) and in 2011-12, they spent Rs 18.8 (2.7% out of TCE). Expenditure made on education constitutes a substantial share out of total consumption expenditure and total non-food expenditure (detailed in Table 5.17, pg-149). There is significant difference between proportions of expenditure on education among urban and rural poor.

5.11.2. Category wise Education Expenditure in States

It has been shown in the Figure 5.17 (pg-pg-18) the share of education expenditure out of total consumption expenditure for poor and non-poor for the year 2004-05 (61st round of NSS). In rural areas the percentage of education expenditure out of total consumption expenditure is 1.9 percent for poor, 3.7 percent for non-poor and 3.1 percent for all class. This ratio was the highest in rural Haryana for poor, non-poor and all class category. Chhattisgarh lies much below this average over all three categories showing that people in this states was spending on education facilities even

less than an average poor Indian. This might be due to extreme dearth of education institutions in these areas or individuals are unable to access to the institutions.

In the year 2011-12, the percentage of education expenditure out of total consumption expenditure is 2 percent for poor, 4.3 percent for non-poor and 3.9 percent for all class category. This percentage, for rural poor, was the highest in Haryana in 2011-12, as was in 2004-05. Although this share for an average Indian rural poor has increased from 1.9 percent to 2 percent but Chhattisgarh still lies below the average (Figure 5.18,pg-158).

The scenario of urban areas can be observed from the Figures 5.19 and 5.20 (pg-159). In urban areas the share of education expenditure out of total consumption expenditure was 3.4 percent for poor, 7.2 percent for non-poor and 6.7 percent for all class people in the year 2004-05. Uttarakhand has the highest percentage for the Poor.

In the year 2011-12, (Figure 5.20, pg-159) on an average an urban poor usually spends 3.3% and non-poor 8.2% of total consumption expenditure on education. This percentage, was the highest for urban poor and non-poor in Himachal Pradesh, which was not so in 2004-05, reflecting the increased burden of education expenditure. In Jammu & Kashmir and Himachal Pradesh, the poor in urban areas had to incur an increased education expenditure in 2011-12 from that of the year 2004-05. On the other hand, it had declined in case of Assam for all the three categories.

The analyses reveal that on an average, urban households spend more percentage of non-food expenditure on education as compared to rural households. This might be due to the fact that there are inadequate public education institutions existing in rural areas. Provision of the quality education, through the intervention of the Government is need of the hour so as to to reduce the burden of the poor on acquiring education.

5.12. Summary:

In summing up, Government in its continuous efforts to improve and build the educational level of its citizens has initiated various policies related to education. While there has been a significant increase in government-owned institutions for higher education over the years, private sector institutions have also recorded an alarming growth over these years. There has been a spike in the private expenditure on education due to ever growing privatization which has sadly led to deprivation of millions of aspirants from education

The uncontrolled privatisation has happened in case of higher education. Although many restrictions have been placed on generating profit, still private insitutions do not shy away from keeping the cost of education high. Therefore, a greater emphasis is needed to strengthen the supply side, to meet the growing unmet demand and provision of good quality services. This clearly stresses the fact that Government needs to implement its policies in more focused way because the lack of proper implementation actually results in increase of the burden of education expenditure on people. There is an urgent need of Government run public institutions for higher studies to address these challenges.

There is no doubt that quality eduction plays a paramount important role in the economic well-being of a society. But the the government system has faied to impart quality education, that is still a concern. The country still suffers from infrastructural gaps and lack of schools. Absenteeism, mismanagement, appointment of teachers are also frequent allegations seen in government schools. The insufficient allocation of financial resources in the education sector shows that effort of the Government for the betterment of this merit good in the country was not given priority, though education is the instrument of social and economic development. The major challenges of unemployment, inequality and poverty in India could be attributed towards a low level of public expenditure made on education. Provision of better education facilities can help the desired output towards an overall growth of the country.

Another imperative thing is to see that, various committees have brought forward the importance of expenditure on education, to be at least 6 percent to GDP, but it does not seem to be reaching this goal yet and at this rate, it would take quite a long time to achieve this. The development expenditure too has stagnated and it is time now that policies should aim towards successful implementation of the existing schemes in the whole country across rural and urban areas, towards achievement of the whole country as educated.

There is a need for investment to be made on capital account, to build infrastructure as well, since the capital expenditure on education is very minimal. The Government has been making concerted efforts to achieve the basic goal of Universalization of Elementary education (UEE) in India. Hoerver, these are not enough as we are still behind achieving this goal. For achievement of UEE we have to ensure 100 percent enrolment and increase the schooling facilities in all locations and regions so that the children are retained in the school. After achieving the hundred percent

enrolment in elementary education, the focus of attention need to be directed to make the enrolment in the secondary and higher secondary education achievable. Higher education is very important with which there would be an effective participation in the job market, leading to the holistic growth of the economy

It is customary to assume that in the Indian context, private schools provide better quality of education in comparison to the government ones, since the private unaided schools compete each other in terms of attracting students through better results and diffusion. This brings our attention to the fact that there is an urgent need to improve the quality and cost efficiency of government schools, which would directly encourage private unaided schools. We may bring efficiencies in this way helping in the improvement of quality of education.

TABLES AND FIGURES

Tables:

Table 5.1
Share of Plan and Non-Plan Expenditure on Education

Year	Plan		Non-Plan		Total	
	Centre	State	Centre	State	Centre	State
1991-92	40.27	59.73	4.65	95.35	9.14	90.86
1992-93	39.18	60.82	4.32	95.68	8.58	91.42
1993-94	39.01	60.99	4.33	95.67	8.95	91.05
1994-95	38.99	61.01	3.96	96.04	9.41	90.59
1995-96	41.17	58.83	4.29	95.71	10.52	89.48
1996-97	37.86	62.14	3.95	96.05	10.10	89.90
1997-98	46.50	53.50	3.97	96.03	11.25	88.75
1998-99	45.13	54.87	5.50	94.50	12.34	87.66
1999-00	47.32	52.68	5.64	94.36	11.97	88.03
2000-01	49.19	50.81	5.84	94.16	12.68	87.32
2001-02	51.97	48.03	4.59	95.41	12.39	87.61
2002-03	59.46	40.54	4.68	95.32	13.26	56.74
2003-04	61.44	38.56	4.60	95.40	13.93	86.07
2004-05	60.40	39.60	4.62	95.38	16.13	83.87
2005-06	62.30	37.70	4.60	95.40	18.86	81.14
2006-07	66.35	33.65	4.39	95.61	21.64	78.36
2007-08	63.92	36.08	4.57	95.43	21.35	78.65
2008-09	66.30	33.70	5.48	94.52	22.53	77.47
2009-10	61.90	38.10	6.29	93.71	21.01	78.99
2010-11	62.10	37.90	5.12	94.88	22.23	77.77
2011-12	59.61	40.39	5.13	94.87	21.69	78.31
2012-13 (RE)	52.41	47.59	4.95	95.05	22.86	77.14
2013-14 (BE)	51.86	48.14	5.65	94.35		

Source: Analysis of Budgeted Expenditure on Education, M/o HRD, Govt of India[149]

[149]Analysis of Budgeted Expenditure on Education 2012-13 to 2014-15. Government of India Ministry of Human Resource Development.

Table 5.2
Sector-wise Plan and Non-Plan Percentage of Education Expenditure

Plan Expenditure										
Sector/ Year	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12 (RE)	2012-13 (BE)
Elementary Education	22.19	28.41	34.08	37.82	37.92	35.68	33.60	38.12	37.44	39.68
Secondary Education	6.59	7.49	9.04	10.38	10.30	10.98	11.37	14.01	18.91	22.04
Adult Education	79.99	79.66	74.99	72.53	71.24	55.45	72.54	74.47	77.80	77.06
University & Higher Education	10.72	13.73	14.42	18.01	21.35	26.66	24.44	25.74	28.11	26.16
Language Development	31.54	27.36	33.28	36.02	31.88	30.15	23.72	24.57	25.00	25.89
Technical Education	30.71	34.50	40.18	42.03	40.08	52.47	50.55	52.67	56.96	61.23
General Education	23.47	25.53	25.20	27.24	29.64	35.34	30.07	37.43	46.11	45.38
Non-Plan Expenditure										
Sector/ Year	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12 (RE)	2012-13 (BE)
Elementary Education	77.81	71.59	65.92	62.18	62.08	64.32	66.40	61.88	62.56	60.32
Secondary Education	93.41	92.51	90.96	89.62	89.70	89.02	88.63	85.99	81.09	77.96
Adult Education	20.01	20.34	25.01	27.47	28.76	44.55	27.46	25.53	22.20	22.94
University & Higher Education	89.28	86.27	85.58	81.99	78.65	73.34	75.56	74.26	71.89	73.84
Language Development	68.46	72.64	66.72	63.98	68.12	69.85	76.28	75.43	75.00	74.11
Technical Education	69.29	65.50	59.82	57.97	59.92	47.53	49.45	47.33	43.04	38.77
General Education	76.53	74.47	74.80	72.76	70.36	64.66	69.93	62.57	53.89	54.62

Source: Analysis of Budgeted Expenditure on Education, M/o HRD, Govt of India

Table 5.3
Total Public Education Expenditure (Centre and State) (Rs. Crore)

Year	Education exp. at current price	Education exp at constant price (at 2004-05)	Average growth rate of exp in current prices	Average growth rate of exp in constant prices
1990-91	17378	44045		
1995-96	32350	50257	13.23	2.67
1996-97	37154	53552	14.85	6.56
1997-98	42313	57203	13.88	6.82
1998-99	52696	65930	24.54	15.26
1999-00	63174	76662	19.88	16.28
2000-01	63756	74837	0.92	-2.38
2001-02	67881	77234	6.47	3.20
2002-03	71117	78007	4.77	1.00
2003-04	76160	80509	7.09	3.21
2004-05	85717	85717	12.55	6.47
2005-06	98184	94204	14.54	9.90
2006-07	117312	105771	19.48	12.28
2007-08	126532	107604	7.86	1.73
2008-09	160275	125676	26.67	16.80
2009-10	201151	148703	25.50	18.32
2010-11	248790	168810	23.68	13.52
2011-12	283229	177110	13.84	4.92
2011-12*	283229	283229	13.84	
2012-13*	320040	296513	13.00	4.69
2013-14*	356279	310857	11.32	4.84
2014-15 (R.E.)*	398899	336822	11.96	8.35
2015-16 (B.E.)*	444845	367993	11.52	9.25
CAGR	13.85			

* At 2011-12 prices, Note: Education expenditure consisted of expenditure on education, art and culture
Source: Various Indian Public Finance Statistics, MoF.

Table 5.4
Education Expenditure as % of Total and Development Expenditure and GDP: Average Growth Rates of Centre and States.

Year	Edu exp. as % of total exp.	Edu exp. as % of Dev. exp.	Edu. exp. as % of GDP	Dev. exp. as % of GDP	Av. growth rate of total exp(const Price)	Av. growth rate of devexp(const Price)	Av growth rate of eduexp (const price)
1990-91	11.20	23.48	3.27	13.91			
1995-96	11.04	25.57	2.89	11.31	2.98	0.94	2.67
1996-97	11.41	25.83	2.85	11.05	3.07	5.48	6.56
1997-98	11.34	25.81	2.92	11.32	7.44	6.89	6.82
1998-99	11.82	27.60	3.16	11.44	10.66	7.78	15.26
1999-00	12.22	28.90	3.40	11.76	12.45	11.07	16.28
2000-01	11.55	27.00	3.19	11.80	3.29	4.47	-2.38
2001-02	11.06	26.77	3.12	11.66	7.72	4.11	3.20
2002-03	10.75	26.15	3.03	11.60	3.96	3.39	1.00
2003-04	9.98	23.17	2.90	12.52	11.10	16.47	3.21
2004-05	10.40	25.01	2.88	11.54	2.25	-1.34	6.47
2005-06	10.52	23.49	2.90	12.33	8.65	17.01	9.90
2006-07	10.80	22.60	2.97	13.13	9.37	16.69	12.28
2007-08	10.17	20.36	2.76	13.56	7.95	12.89	1.73
2008-09	10.55	20.80	3.02	14.53	12.63	14.36	16.80
2009-10	11.09	22.66	3.29	14.53	12.62	8.59	18.32
2010-11	11.82	23.37	3.43	14.68	6.51	10.07	13.52
2011-12	11.89	23.51	3.38	14.36	4.23	4.32	4.92
2011-12*	11.89	23.51	3.24	13.79			
2012-13*	12.08	23.27	3.22	13.83	3.07	5.77	4.69
2013-14*	12.06	24.08	3.17	13.17	4.98	1.30	4.84
2014-15 (R.E.)*	11.39	22.06	3.20	14.51	14.80	18.28	8.35
2015-16 (B.E.)*	11.72	22.95	3.23	14.09	6.11	5.02	9.25
CAGR					13.64	13.95	13.85

** At 2011-12 prices
Source: Various Indian Public Finance Statistics, MoF.

Table 5.5

Per Cent Share of Centre and State in Public Expenditure on Education

Year	% share in total Education exp.		% share of Education exp. in GDP		
	Centre	State	Centre	State	Total
1990-91	12.25	87.75	0.32	2.95	3.27
1995-96	11.48	88.52	0.28	2.61	2.89
1996-97	11	89	0.27	2.58	2.85
1997-98	12.17	87.83	0.32	2.6	2.92
1998-99	13.15	86.85	0.38	2.78	3.16
1999-00	12.53	87.47	0.36	3.04	3.4
2000-01	13.34	86.66	0.36	2.83	3.19
2001-02	12.99	87.01	0.35	2.77	3.12
2002-03	14.24	85.76	0.42	2.61	3.03
2003-04	14.71	85.29	0.42	2.48	2.9
2004-05	16.69	83.31	0.47	2.41	2.88
2005-06	19.08	80.92	0.5	2.4	2.9
2006-07	21.21	78.79	0.59	2.38	2.97
2007-08	22.36	77.64	0.56	2.2	2.76
2008-09	23.67	76.33	0.69	2.33	3.02
2009-10	21.12	78.88	0.67	2.62	3.29
2010-11	21.91	78.09	0.71	2.72	3.43
2011-12	21.81	78.19	0.69	2.69	3.38
2011-12*	21.18	78.82	0.65	2.59	3.24
2012-13*	21.18	78.82	0.63	2.59	3.22
2013-14*	21.34	78.66	0.61	2.56	3.17
2014-15 (R.E.)*	15.78	84.22	0.24	2.96	3.2
2015-16 (B.E.)*	14.27	85.73	0.24	2.99	3.23

Source: Various Indian Public Finance Statistics, MoF

Table 5.6
Share of Revenue and Capital on Education Expenditure

Year	Centre	State	Centre	State
	% share in Revenue		% share in Capital	
1990-91	12.26	87.74	11.76	88.24
1995-96	11.51	88.49	9.42	90.58
1996-97	11.05	88.95	8.00	92.00
1997-98	12.24	87.76	7.21	92.79
1998-99	13.25	86.75	6.03	93.97
1999-00	12.55	87.45	9.05	90.95
2000-01	13.38	86.62	8.64	91.36
2001-02	13.04	86.96	7.03	92.97
2002-03	14.29	85.71	8.62	91.38
2003-04	14.80	85.20	6.41	93.59
2004-05	16.83	83.17	5.95	94.05
2005-06	19.38	80.62	3.17	96.83
2006-07	21.64	78.36	2.02	97.98
2007-08	22.92	77.08	1.68	98.32
2008-09	24.31	75.69	1.77	98.23
2009-10	21.54	78.46	3.53	96.47
2010-11	22.37	77.63	2.36	97.64
2011-12	22.16	77.84	1.85	98.15
2012-13	21.55	78.45	2.27	97.73
2013-14	21.77	78.23	2.06	97.94
2014-15(R.E.)	16.23	83.77	1.26	98.74
2015-16(B.E.)	14.73	85.27	1.81	98.19

Source: Indian Public Finance Statistics, MoF, Various Years

Table 5.7
Share of Capital Expenditure on Education by Centre and State

Year	Centre		State		Centre		State	
	Eduexp (rev) as % of total rev exp.	Eduexp (rev) as % of GDP	'Eduexp (rev) as % of total rev exp.	Eduexp (rev) as % of GDP	Eduexp (rev) as % of total csp.exp.	Eduexp (cap) as % of GDP	Eduexp (rev) as % of total csp.exp.	Eduexp (cap) as % of GDP
1990-91	2.92	0.4	22.68	2.89	0.15	5.14	2.29	0.06
1995-96	2.68	0.33	20.47	2.57	0.13	3.08	1.89	0.04
1996-97	2.59	0.32	20.37	2.55	0.13	2.65	2.37	0.04
1997-98	2.88	0.36	20.45	2.56	0.15	1.91	1.91	0.04
1998-99	3.23	0.42	21.18	2.74	0.12	2.06	2.1	0.04
1999-00	3.23	0.43	22	3.02	0.1	2.18	1.13	0.02
2000-01	3.13	0.43	20.69	2.81	0.12	1.75	1.28	0.02
2001-02	2.97	0.41	19.56	2.75	0.1	2.06	1.63	0.03
2002-03	2.98	0.43	19.13	2.59	0.17	1.16	1.1	0.02
2003-04	3.08	0.43	17.51	2.45	1.6	0.12	1.21	0.03
2004-05	3.73	0.48	17.94	2.38	0.33	0.66	1.45	0.03
2005-06	4.34	0.56	18.26	2.35	0.1	1.66	2.07	0.05
2006-07	4.92	0.64	17.97	2.32	0.1	1.28	2.32	0.06
2007-08	4.89	0.63	18.04	2.13	0.05	2.36	2.7	0.07
2008-09	4.84	0.72	18.74	2.25	0.1	1.59	3.19	0.09
2009-10	4.72	0.7	19.72	2.55	0.16	1.76	2.72	0.07
2010-11	5.33	0.76	20.94	2.65	0.09	2.09	3.22	0.08
2011-12	5.49	0.75	20.86	2.63	0.07	1.68	2.46	0.06
2011-12*	5.49	0.72	20.86	2.53	0.07	1.61	2.46	0.06
2012-13*	5.57	0.69	20.55	2.52	0.09	1.57	2.76	0.06
2013-14*	5.7	0.69	20.45	2.49	0.09	1.56	3.17	0.07
2014-15 (R.E)*	4.65	0.55	19.66	2.86	0.09	1.49	3.59	0.1
2015-16 (B.E)*	4.45	0.49	20.21	2.86	0.13	1.68	4.25	0.12

Source: Indian Public Finance Statistics, MoF, Various Years

Table 5.8
Expenditure on Education - As Ratio to Aggregate Expenditure

State	2000-01	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16 (RE)	2016-17 (BE)
AP	13.3	11.1	10.8	9.0	9.0	10.0	12.5	13.0	12.9	13.7	12.6	15.1	15.3
Ass	25.5	20.8	20.4	20.1	18.8	16.4	22.0	20.3	20.6	22.6	24.7	20.7	21.0
Bih	23.7	19.6	19.7	17.6	18.5	18.1	16.3	17.0	20.9	18.7	17.5	18.9	15.8
Chhat	13.1	13.4	12.9	13.5	14.4	15.6	18.6	17.7	16.3	18.0	20.2	19.0	19.7
Guj	13.6	12.6	12.7	13.4	11.7	13.8	15.9	15.8	14.3	15.0	15.2	15.5	14.1
Hary	14.6	13.4	11.9	12.9	15.0	16.3	17.3	16.0	15.4	15.4	16.9	13.1	15.3
HP	17.0	14.1	14.1	15.4	16.2	16.3	17.9	17.8	17.3	17.8	17.7	18.5	19.1
J&K	11.1	9.3	10.0	9.2	10.0	11.3	12.7	12.6	12.1	13.0	12.6	13.7	13.5
Jhar	–	15.8	15.2	15.1	18.6	15.4	15.8	15.9	14.8	13.5	14.6	13.7	15.3
Kar	17.7	14.0	13.1	14.4	16.1	14.0	15.6	14.7	15.5	15.0	14.3	14.3	12.7
Ker	20.0	16.6	17.1	15.9	16.7	16.8	17.0	17.7	17.2	17.2	16.4	15.3	15.3
MP	16.3	10.2	12.4	11.1	12.8	13.0	14.2	12.4	13.2	15.4	14.8	14.5	17.0
Maha	22.3	15.7	16.4	17.2	17.0	19.1	20.8	20.2	20.7	20.5	19.2	18.6	18.2
Odi	15.9	14.7	12.8	14.3	16.9	18.2	18.3	16.4	15.5	15.0	15.5	14.1	14.7
Pun	13.2	11.3	8.9	10.3	11.3	12.2	11.7	14.8	15.3	14.2	14.3	15.1	15.1
Raj	18.8	17.2	15.6	14.6	17.9	19.0	19.1	17.8	16.1	16.3	16.7	12.4	14.9
TN	18.0	13.6	12.2	12.7	13.1	15.2	15.2	14.3	14.7	16.0	15.8	15.5	14.7
Tel											11.2	10.5	8.1
UP	16.8	15.2	14.7	14.1	13.2	13.8	16.1	17.1	17.3	16.0	15.0	14.7	16.3
Uttar	21.5	17.2	18.1	17.6	18.2	22.6	23.5	22.1	20.7	20.3	19.0	18.5	18.2
WB	17.1	13.7	15.2	15.2	13.1	17.7	19.7	19.1	18.1	17.2	17.2	14.8	16.8
All States	17.4	14.2	14.0	13.8	14.3	15.3	16.6	16.3	16.4	16.5	16.0	15.4	15.6
All States (%)to GDP)	2.8	2.2	2.2	2.2	2.3	2.4	2.5	2.5	2.5	2.5	2.6	2.9	2.9
NCT Delhi	15.1	14.9	15.1	13.3	15.8	16.3	16.3	18.0	18.3	18.1	21.2	21.2	22.8

Source: State Finances: A Study of Budgets, RBI and Budget Documents of the State Governments

Table 5.9
Private Final Consumption Expenditure on Education(PFCEE) at current and constant prices

Year	Private final Consumption expenditure on education (crores)		% share of PFCEE in PFCE		Per capita PFCE on education (in Rs.	
	At current price	At constant price (2004-05)	At current price	At constant price (2004-05)	At current price	At constant price (2004-05)
1990-91	6313	11993	1.61	1.17	75.24	142.94
1991-92	7165	11993	1.59	1.15	83.7	140.11
1991-93	7903	12074	1.56	1.13	90.63	138.46
1991-94	8890	12632	1.53	1.13	99.66	141.61
1991-95	9935	12822	1.48	1.1	109.18	140.9
1991-96	11862	13895	1.54	1.12	127.82	149.73
1991-97	14032	15045	1.55	1.13	148.33	159.04
1991-98	16906	16930	1.72	1.24	175.37	175.62
1991-99	20582	18281	1.82	1.26	209.38	185.97
1999-00	23781	20406	1.89	1.31	237.57	203.86
2000-01	30052	22473	2.21	1.39	294.92	220.54
2001-02	31582	24569	2.12	1.45	303.67	236.24
2002-03	31432	26942	1.97	1.55	297.65	255.13
2003-04	36571	29623	2.08	1.61	341.15	276.33
2004-05	32555	32555	1.7	1.69	298.94	298.94
2005-06	36762	35276	1.71	1.69	332.39	318.95
2006-07	40798	36634	1.65	1.61	363.62	326.51
2007-08	44539	37629	1.57	1.52	391.38	330.66
2008-09	48624	37639	1.49	1.42	421.35	326.16
2009-10	53088	36550	1.4	1.28	453.74	312.39
2010-11	57963	36174	1.34	1.17	488.73	305.01
2011-12#	182378	182378	3.71	3.71	1494.9	1494.9
2012-13#	211470	193725	3.77	3.74	1712.31	1568.62
2013-14#	240539	204453	3.71	3.68	1922.77	1634.32
2014-15#	273877	217242	3.79	3.68	2161.62	1714.62
2015-16#	311483	232537	3.93	3.71	2427.77	1812.45

Source: National Accounts Statistics, MoSPI

Table 5.10
Share of Private Final Consumption Expenditure in GDP at current and constant prices

Year	% Share of PFCE in GDP		% Share of PFCEF in GDP	
	At current price	At constant price (2004-05)	At current price	At constant price (2004-05)
1990-91	76.14	76.05	1.23	0.89
1991-92	76.04	76.51	1.21	0.88
1992-93	74.38	74.21	1.16	0.84
1993-94	73.40	73.35	1.12	0.83
1994-95	72.32	72.12	1.07	0.79
1995-96	71.04	71.21	1.09	0.80
1996-97	71.84	71.07	1.11	0.80
1997-98	69.99	69.68	1.21	0.87
1998-99	69.94	69.27	1.27	0.88
1999-00	70.39	69.12	1.33	0.90
2000-01	71.40	68.90	1.58	0.96
2001-02	71.31	68.36	1.51	0.99
2002-03	70.83	67.67	1.40	1.05
2003-04	69.92	66.09	1.45	1.07
2004-05	64.53	64.80	1.10	1.10
2005-06	63.51	64.24	1.08	1.08
2006-07	62.66	63.71	1.03	1.03
2007-08	62.00	63.64	0.97	0.97
2008-09	61.68	63.88	0.92	0.91
2009-10	61.66	63.28	0.87	0.81
2010-11	60.61	63.18	0.81	0.74
2011-12#	56.21	56.21	2.09	2.09
2012-13#	56.46	56.21	2.13	2.10
2013-14#	57.65	56.70	2.14	2.09
2014-15#	58.12	56.02	2.20	2.06
2015-16#	57.98	55.02	2.28	2.04

Base year 2011-12
Source: National Accounts Statistics, MoSPI

Table 5.15
Per capita average education expenditure in Rs. in rural and urban areas in constant (2004-05) prices

States	Rural			Urban		
	55th	61st	68th	55th	61st	68th
	1999-00	2004-05	2011-12	1999-00	2004-05	2011-12
Andhra Pradesh	7.04	7.7	19.17	47.28	79.49	142.16
Assam	7.15	7.96	9.07	30.14	73.01	70.47
Bihar	6.29	7.25	16.25	30.59	54.84	32.03
Chhattisgarh	0	5.95	7.27	0	59.18	44.14
Gujarat	8.77	7.47	8.92	35.4	67.51	96.47
Haryana	34.97	50.53	67.95	71.68	102.52	308.25
Himachal Pradesh	23.59	30.32	66.46	88.11	88.36	276.48
Jharkhand	0	6.54	10.64	0	75.66	72.23
Karnataka	7.31	8.29	13.59	40.88	62.81	178.51
Kerala	24.46	35.03	56.72	42.15	65.48	186.55
Madhya Pradesh	5.75	10.28	14.75	31.54	69.68	64.88
Maharashtra	10.25	10.21	23.97	47.98	74.24	183.94
Orissa	8.3	10.27	12.24	21.08	46.41	49.88
Punjab	30.02	35.96	73.06	56.39	108.31	192.13
Rajasthan	9.05	15.65	26.71	41.45	71.46	127.64
Tamil Nadu	11.35	14.18	42.98	42.29	73.87	129.23
Uttar Pradesh	12.69	18.91	26.24	42.59	62.89	81.85
Uttaranchal	0	27.22	45.5	0	83.06	131.67
West Bengal	12.83	18.12	25.99	47.75	84.32	125.94
All India	11.37	14.9	24.91	44.97	73.7	129.01

Source: NSS HH Consumer Expenditure Survey of 55th, 61st and 68th Round.

Table 5.16
Average Education Expenditure of Poor and Non-Poor at Current Price in Rural Area

Rural states	Average Education expenditure of Poor		Average Education expenditure of Non-Poor		Average Education expenditure of All Class	
	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12
AP	5.4	21.6	21.7	93.6	15.4	61.0
AS	7.7	7.5	22.0	20.7	16.0	21.0
Bih	6.0	11.2	19.3	22.3	10.8	25.8
Guj	3.9	11.1	25.6	50.7	15.1	33.9
Har	16.4	56.0	83.3	254.3	63.8	129.5
Kar	5.2	22.8	21.8	69.3	13.9	51.4
Ker	12.6	43.5	50.4	214.1	40.7	94.7
MP	5.2	5.6	16.8	25.6	10.1	26.4
Mah	5.0	13.4	21.2	71.5	12.4	47.5
Ori	4.1	4.5	21.5	17.9	10.0	22.3
Pun	15.1	51.4	64.8	332.7	50.3	133.5
Raj	6.3	18.7	20.2	94.6	14.4	64.8
UP	9.8	16.8	24.5	47.4	17.2	47.7
TN	8.2	15.3	26.7	158.3	18.6	88.6
HP	13.2	35.7	44.2	181.0	35.0	96.2
WB	8.8	20.5	32.8	53.1	22.4	48.6
Chhat	4.3	5.4	12.0	14.9	7.1	17.7
Jhar	4.6	8.3	15.2	20.4	9.1	25.6
Utk	13.6	36.7	41.0	135.4	29.4	90.1
J&K	14.6	5.4	46.3	44.7	36.8	30.3
All India	6.9	13.9	28.4	66.3	18.1	50.7

Source: Author's calculation from Unit Data of NSS 61st and 68th Round of Household Consumer Expenditure Survey

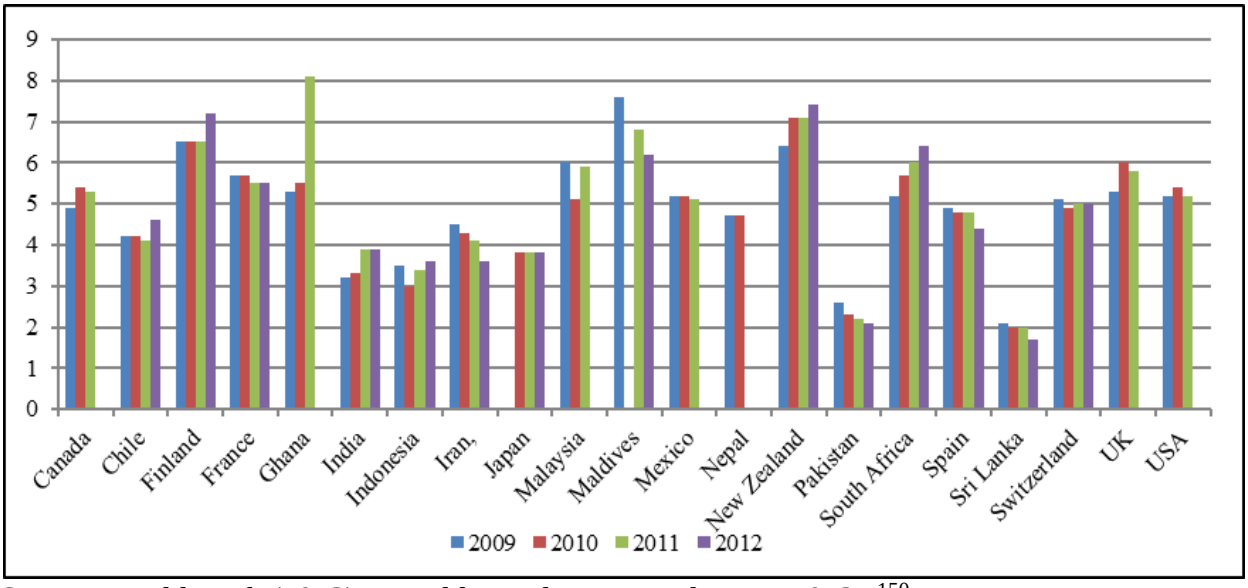
Table 5.17
Average Education Expenditure of Poor and Non-Poor at Current Price in Urban Area

URBAN	Average Education expenditure of POOR		Average Education expenditure of NON-POOR		Average Education expenditure of ALL CLASS	
states	2004-05	2011-12	2004-05	2011-12	2004-05	2011-12
AP	27.20	55.22	102.42	238.62	79.49	200.28
AS	10.54	11.68	93.15	139.77	73.01	133.38
Bih	12.33	12.78	93.82	67.11	54.84	119.77
Guj	14.32	35.50	86.82	168.49	67.51	145.22
Har	29.14	68.10	129.08	537.49	102.52	327.34
Kar	10.42	24.88	86.72	332.02	62.81	212.04
Ker	13.72	36.88	80.67	313.82	65.48	208.46
MP	14.51	16.97	102.98	126.69	69.68	152.30
Mah	10.57	35.39	100.75	320.30	74.24	225.18
Ori	7.06	14.89	73.51	93.41	46.41	110.21
Pun	30.24	62.25	132.52	333.23	108.31	254.03
Raj	17.65	42.27	99.37	222.33	71.46	227.53
UP	18.08	22.61	89.79	169.68	62.89	165.10
TN	12.24	26.01	92.95	219.48	73.87	182.72
HP	15.15	92.96	95.66	457.55	88.36	322.75
WB	15.71	27.77	110.72	233.14	84.32	193.59
Chhat	10.49	10.05	86.37	89.90	59.18	114.14
Jhar	15.70	17.40	99.19	144.60	75.66	142.27
Utk	34.16	40.85	106.37	230.78	83.06	205.02
J&K	19.08	42.35	146.76	230.45	135.81	210.80
All India	16.30	28.68	98.45	235.16	73.70	193.09

Source: Author's calculation from Unit Data of NSS 61st and 68th Round of Household Consumer Expenditure Survey

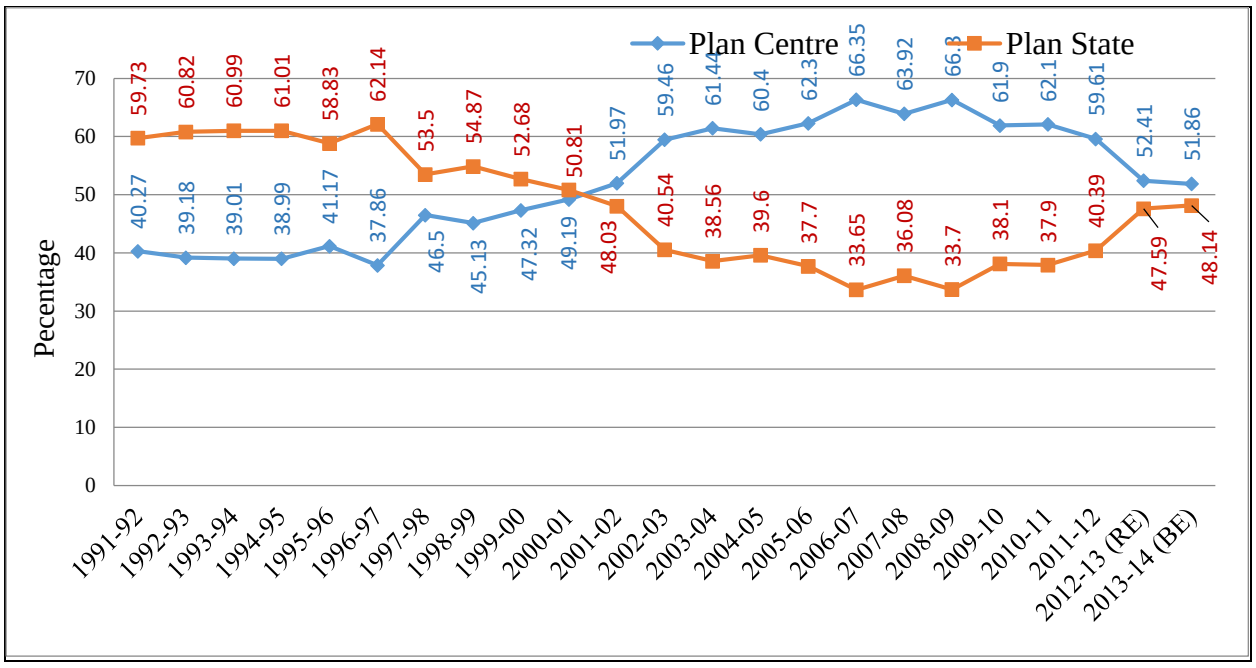
Figures:

Figure 5.1
Public Expenditure on Education as Percentage of GDP



Source: World Bank (2013). "World Development Indicators 2013."[150]

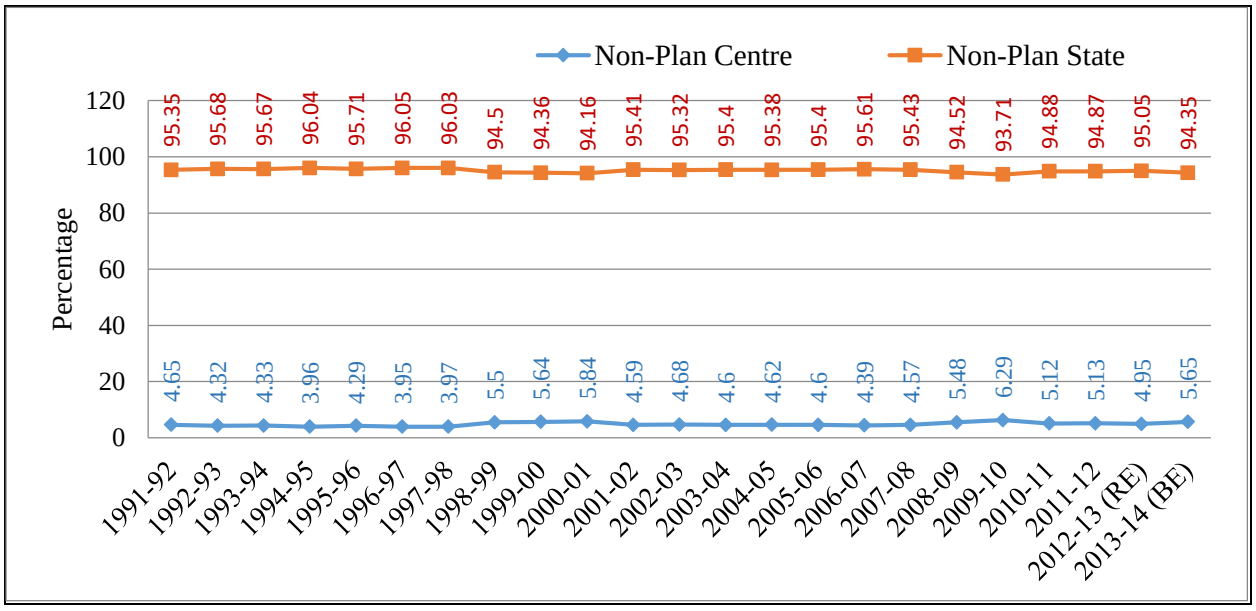
Figure 5.2
Share of Centre and State on Plan Expenditure on Education



Source: Analysis of Budgeted Expenditure on Education, M/o HRD.

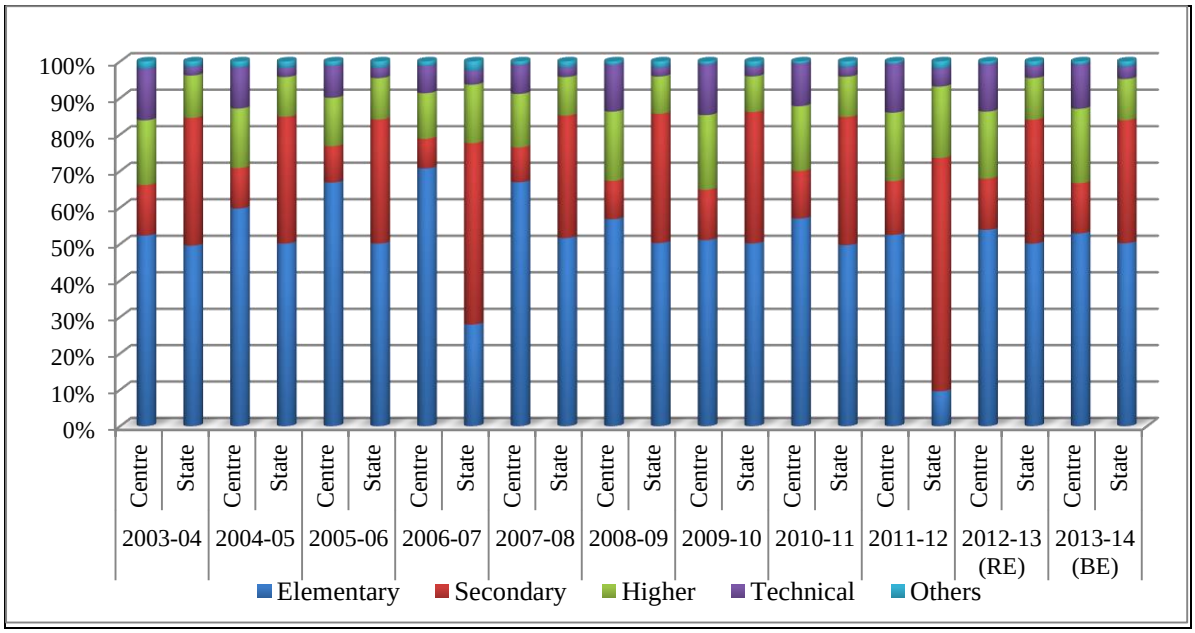
[150] http://data.worldbank.org/data-catalog/world-development-indicators

Figure 5.3
Share of Centre and State on Non- Plan Expenditure on Education



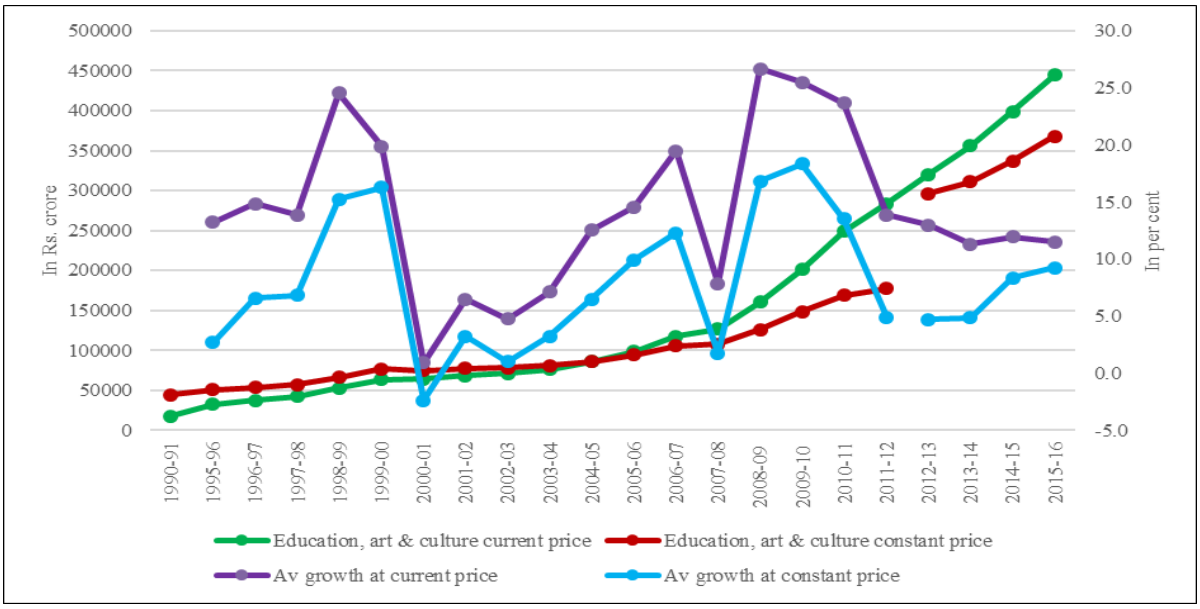
Source: Analysis of Budgeted Expenditure on Education, M/o HRD.

Figure 5.4
Share of Education Expenditure by Department of Education (Centre and States)



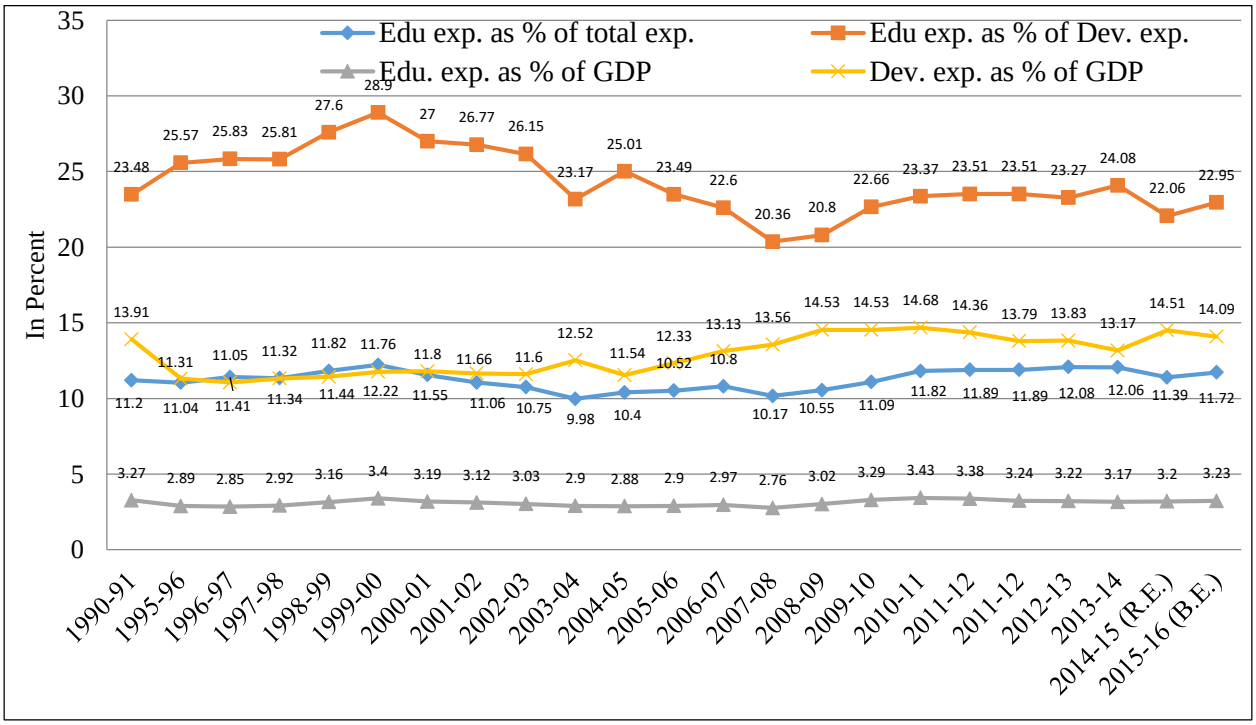
Source: Analysis of Budgeted Expenditure on Education, M/o HRD.

Figure 5.5
Trend in Public Expenditure on Education



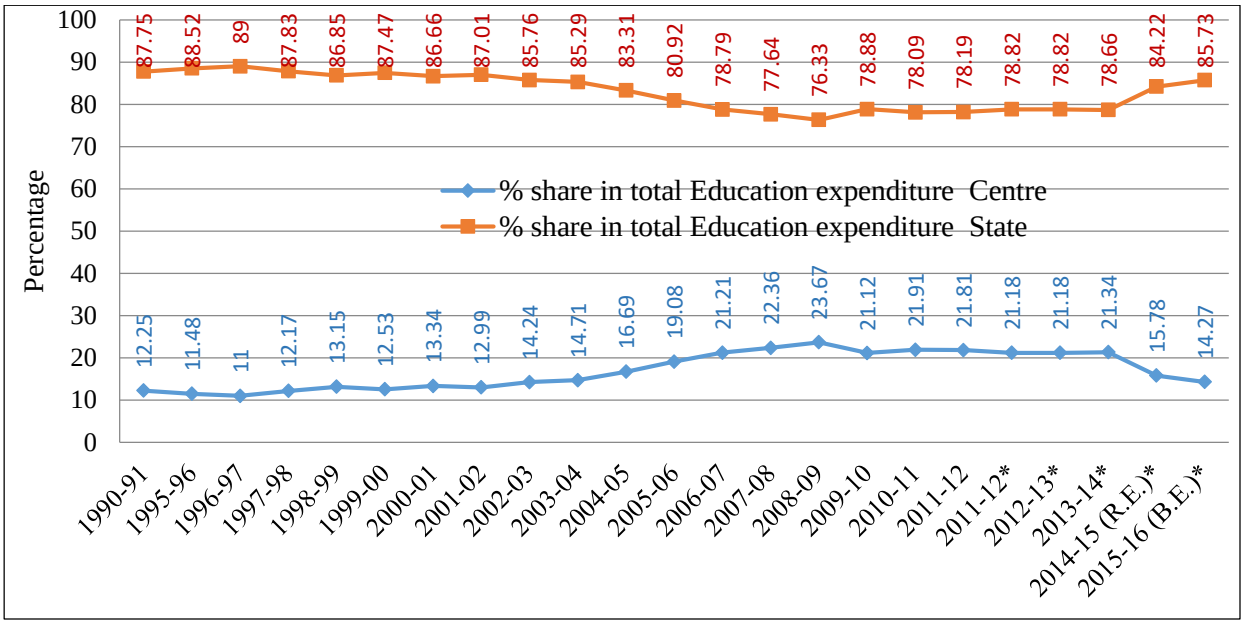
Source: Various Indian Public Finance Statistics, MoF

Figure 5.6
Share of Education Expenditure in Total and Development Expenditures and GDP (Centre and States)



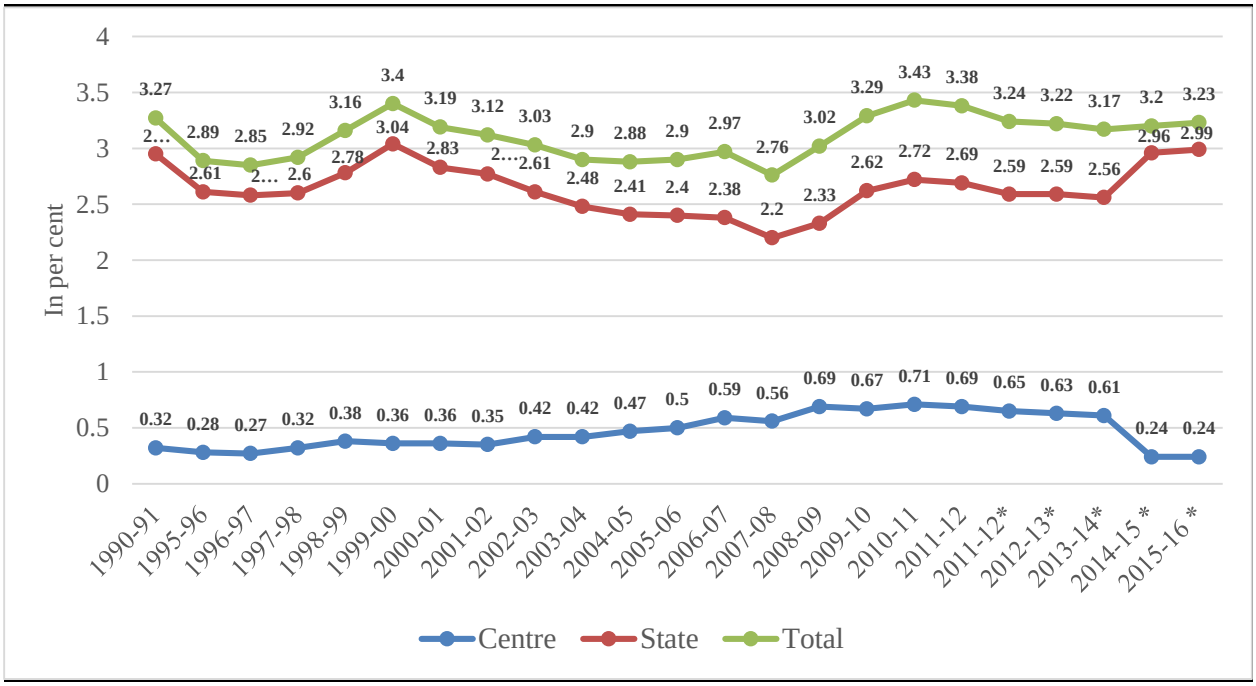
Source: Various Indian Public Finance Statistics, MoF

Figure 5.7
Share of Centre and State in Total Education Expenditure



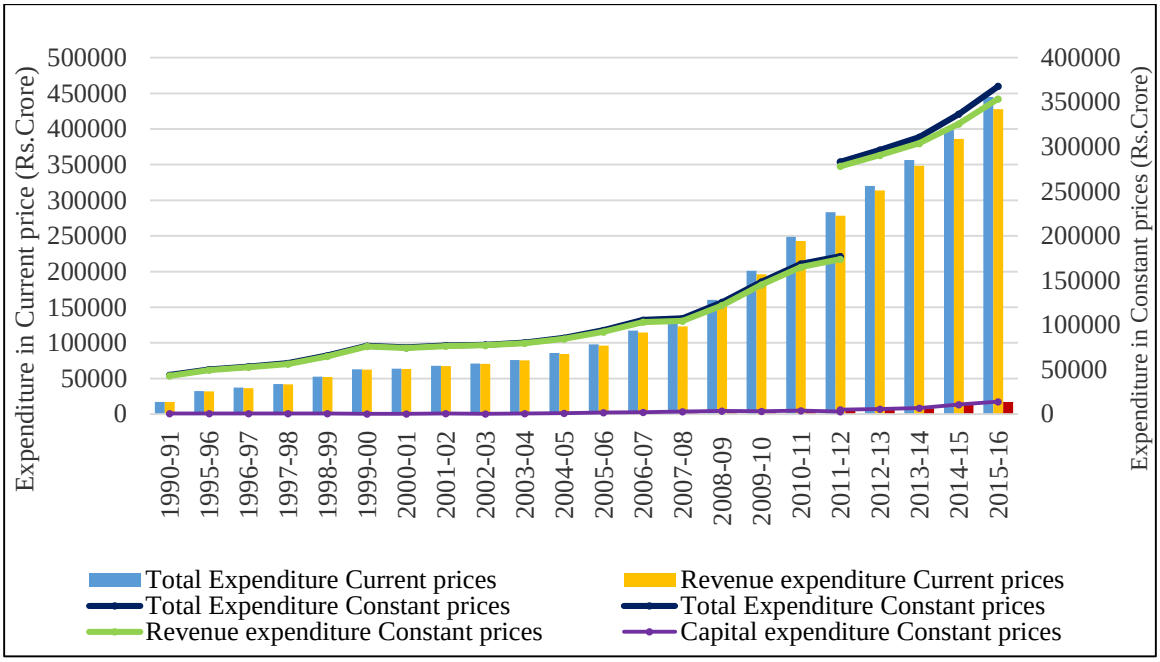
Source: Various Indian Public Finance Statistics, MoF

Figure 5.8
Per Cent Share of Education Expenditure in GDP



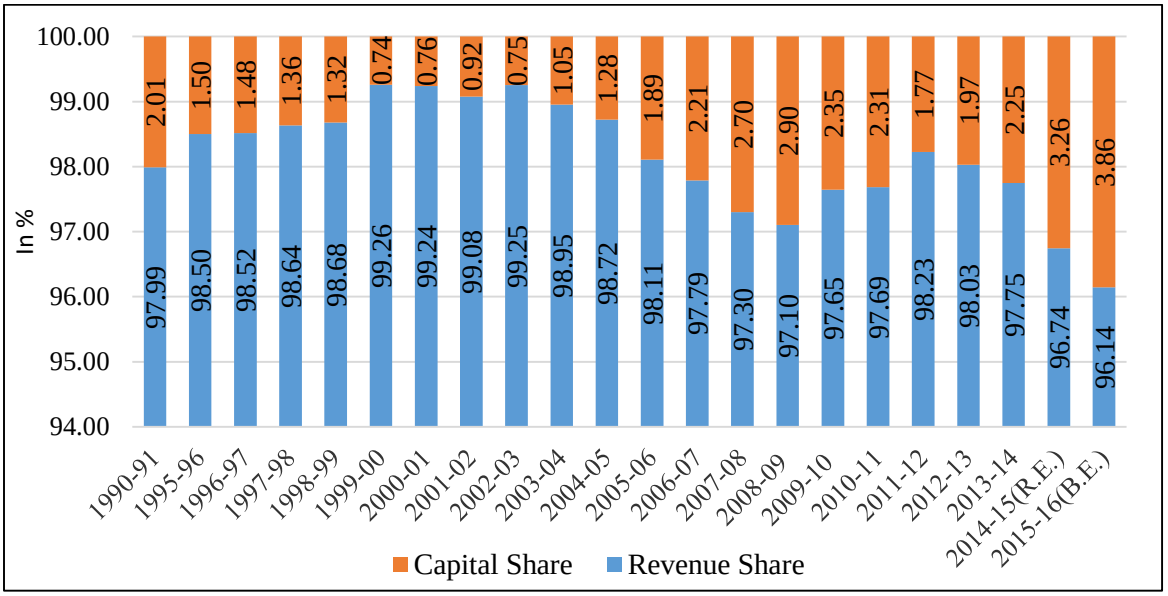
Source: Various Indian Public Finance Statistics, MoF
Note: * in 2011-12 price, others in 2004-05 price

Figure 5.9
Public Expenditure on Education (Centre+State)



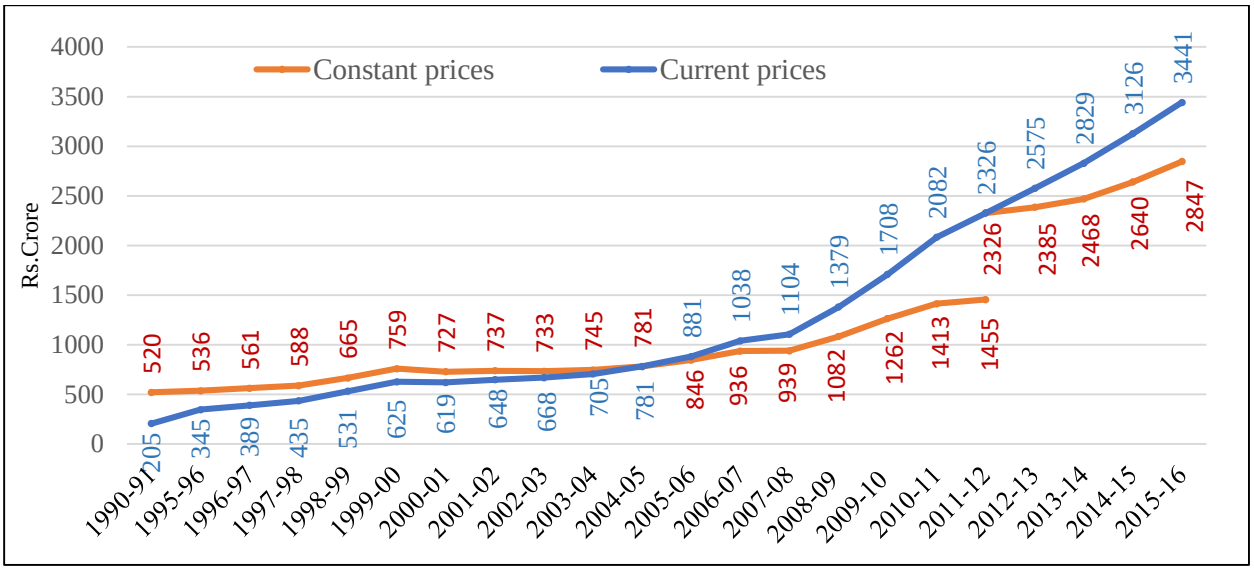
Source: Various Indian Public Finance Statistics, MoF

Figure 5.10
Share of Revenue and Capital expenditure of Centre and States



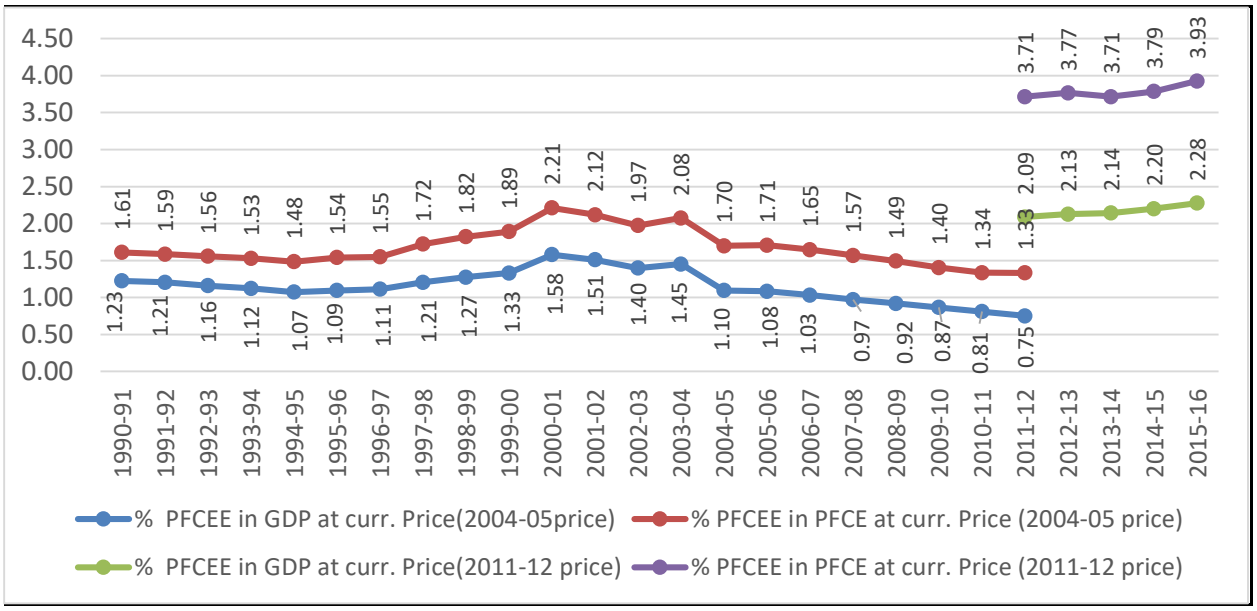
Source: Various Indian Public Finance Statistics, MoF

Figure 5.11
Annual Per Capita Public Expenditure on Education



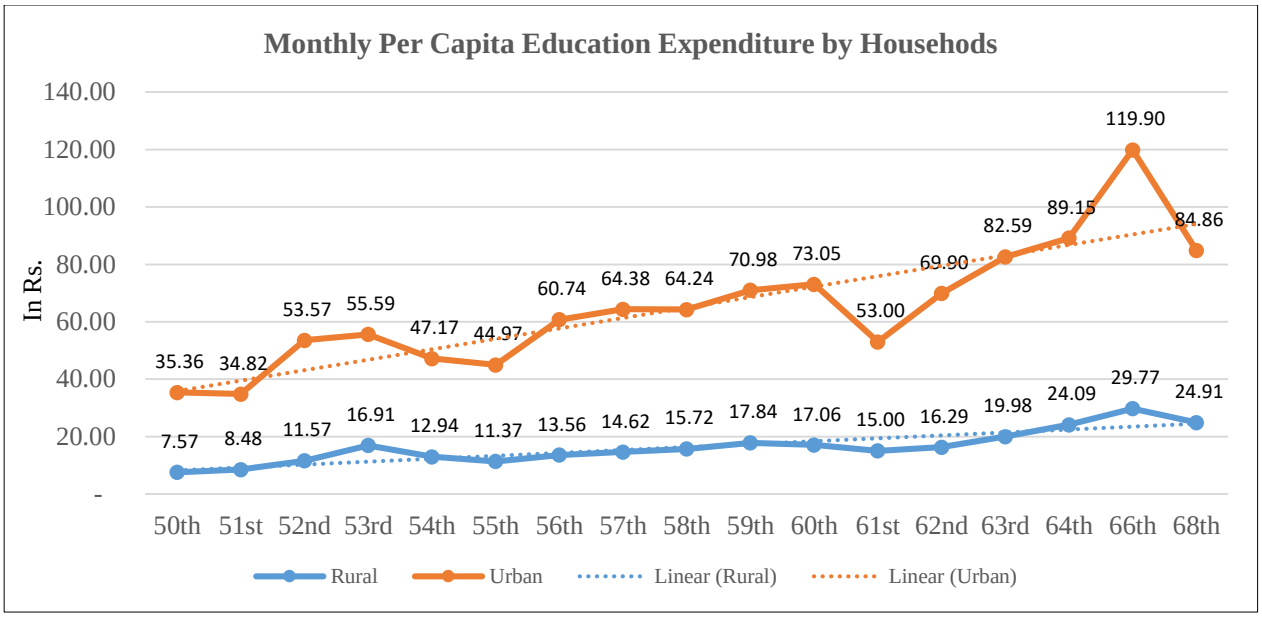
Source: Author's calculation

Figure 5.12
Share of Private Education Expenditure in Total Private Final Consumption Expenditure



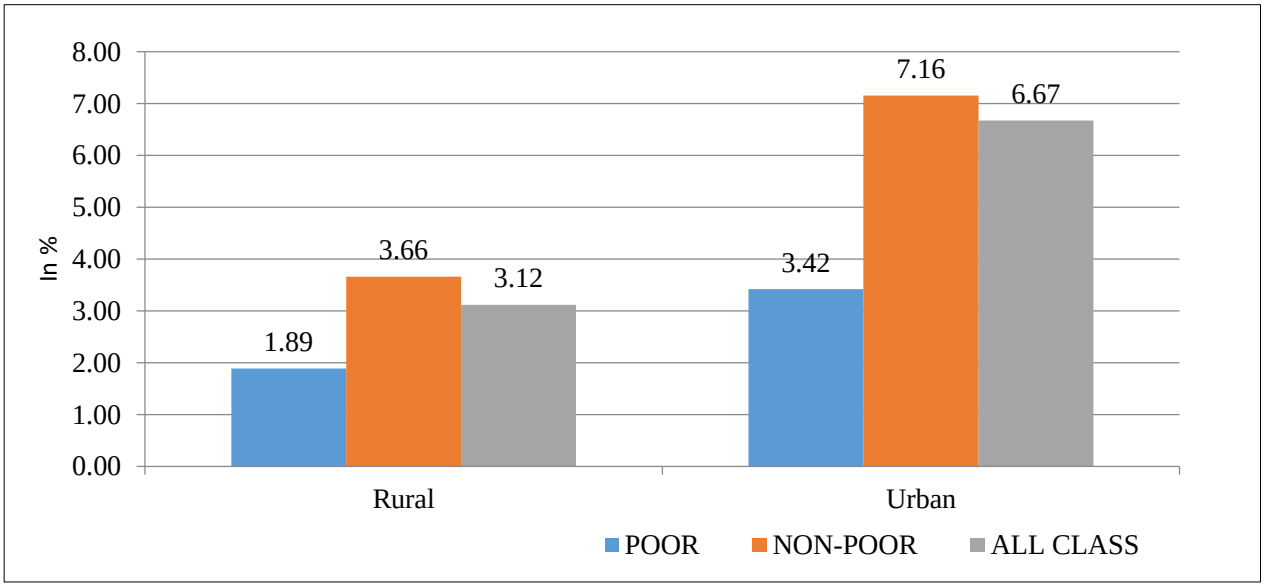
Source: Author's calculation

Figure 5.13
Trend in the Monthly Per Capita Education Expenditure in Rural and Urban Areas



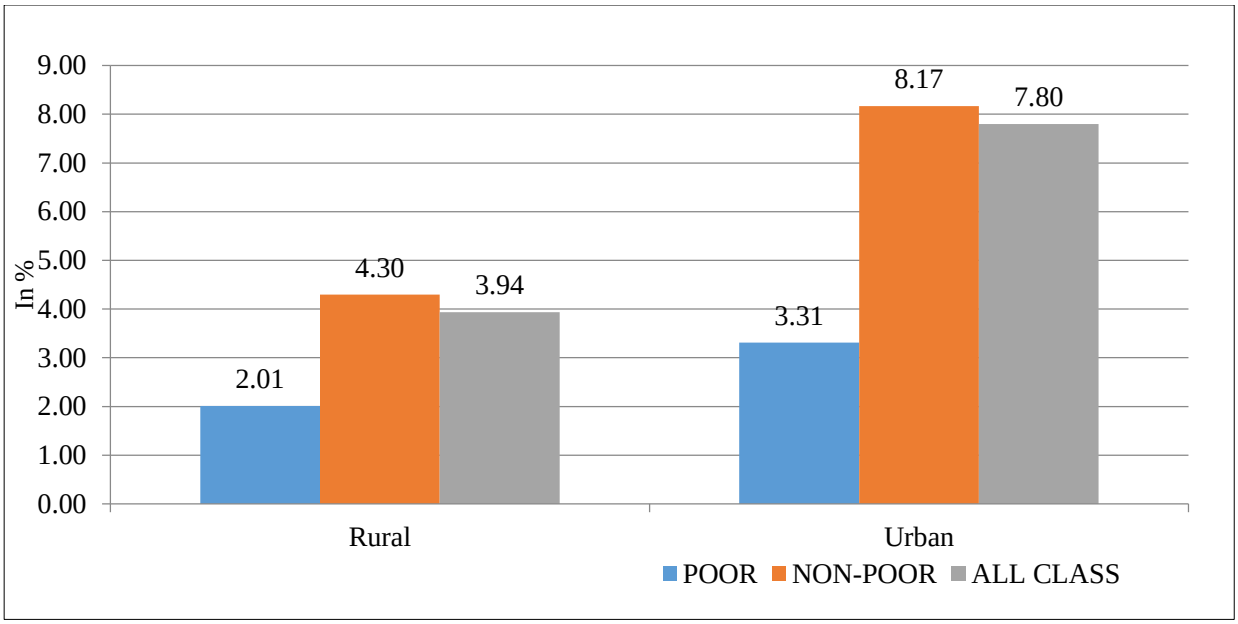
Source: Various Rounds of NSS of HH Consumer Expenditure

Figure 5.14
Category wise Share of Education Expenditure to Total Consumption Expenditure, 2004-05



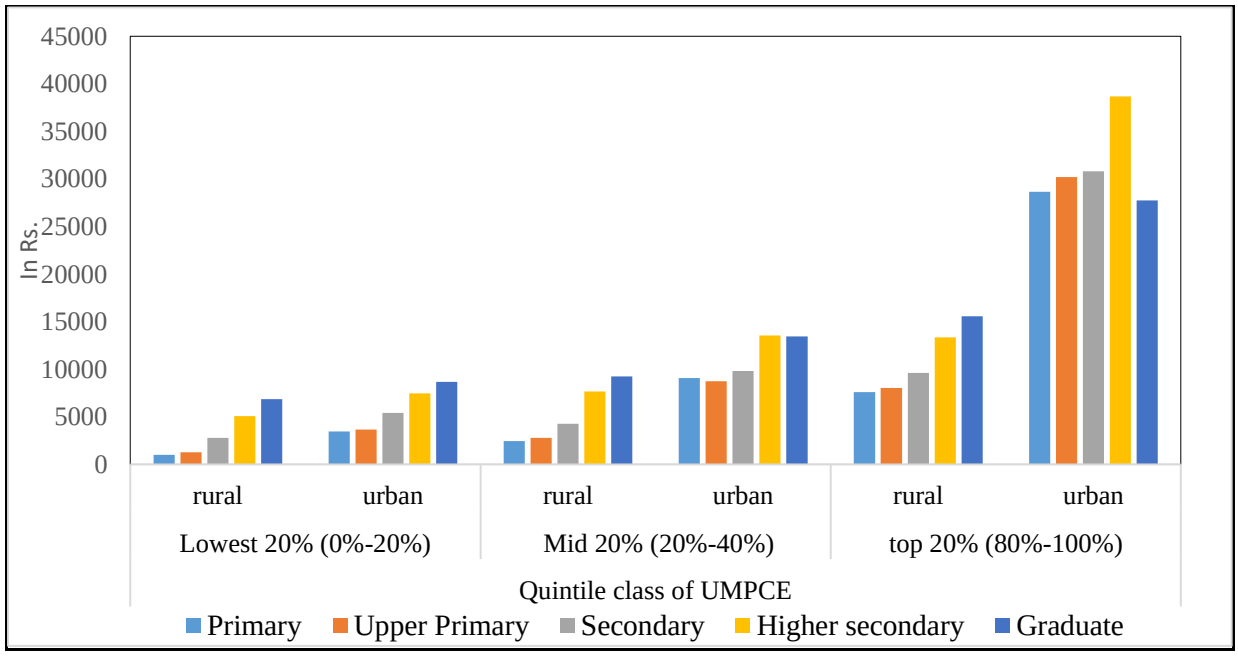
Source: Author's calculation from Unit Data of NSSO

Figure 5.15
Category wise Share of Education Expenditure to Total Consumption Expenditure, 2011-12



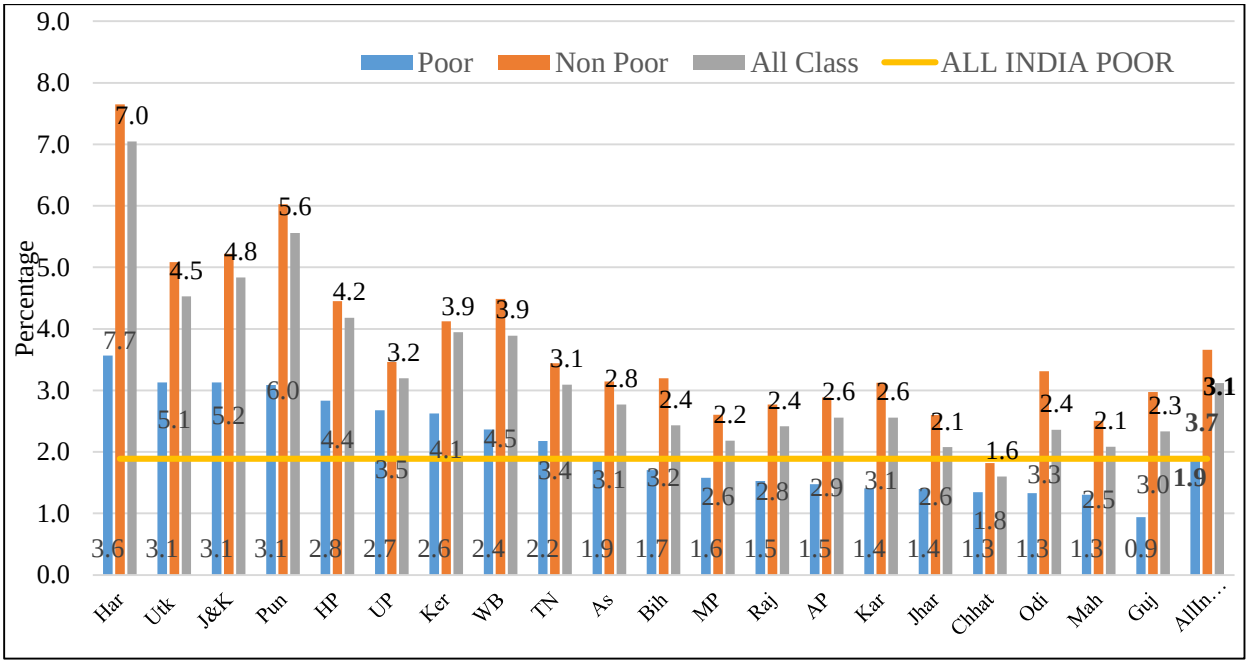
Source: Author's calculation from Unit Data of NSSO

Figure 5.16
Average Annual Expenditure (Per Student) for Each Quintile Class of UMPCE, 2007-08



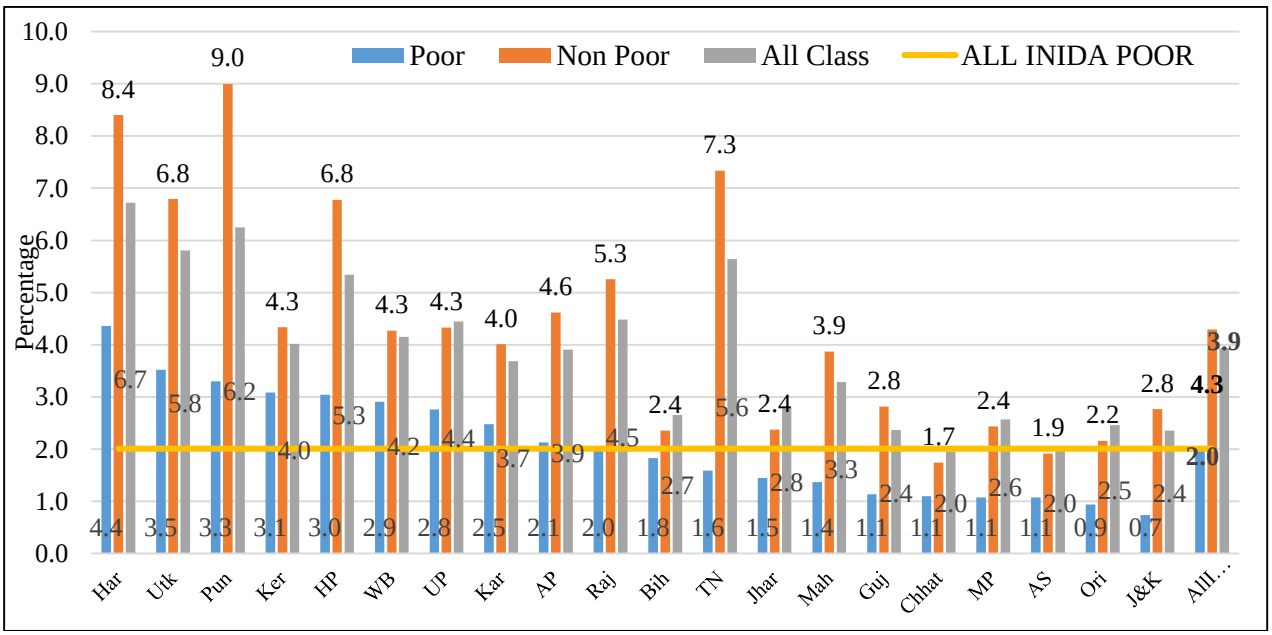
Source: NSS 71st Round

Figure 5.17
Category wise Education Expenditure out of Total Consumption Expenditure (In%) in Rural Areas, 2004-05



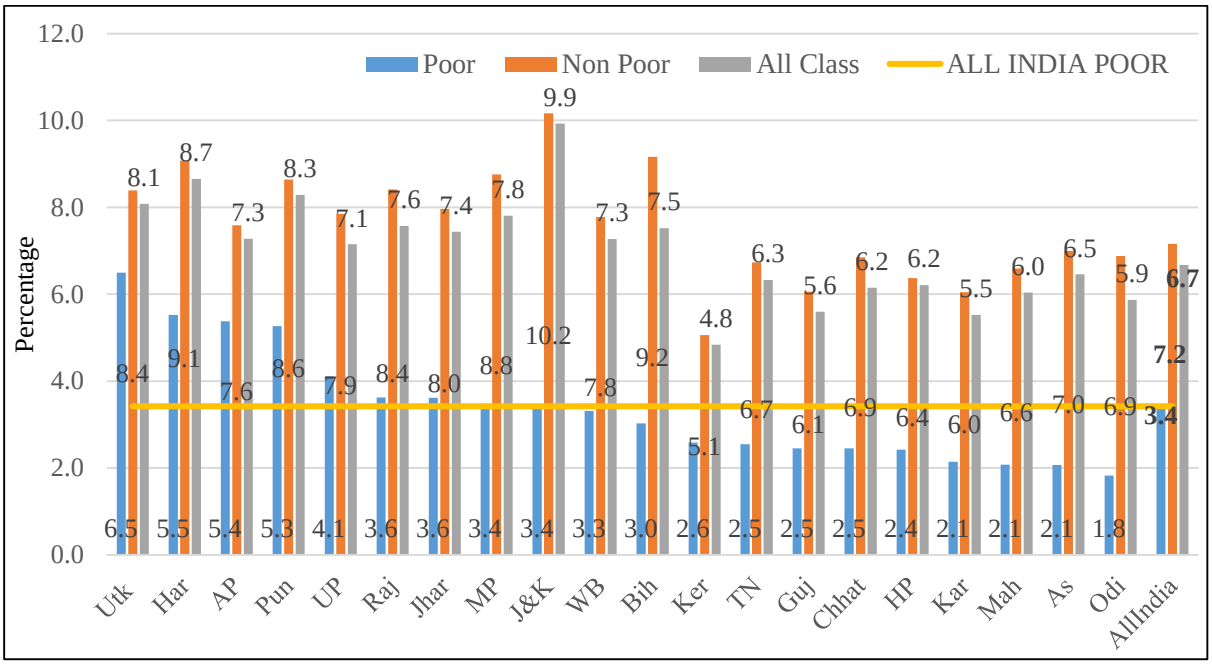
Source: Author's calculation from Unit Data of NSSO

Figure 5.18
Category wise Education Expenditure out of Total Consumption Expenditure (In%) in Rural Areas, 2011-12



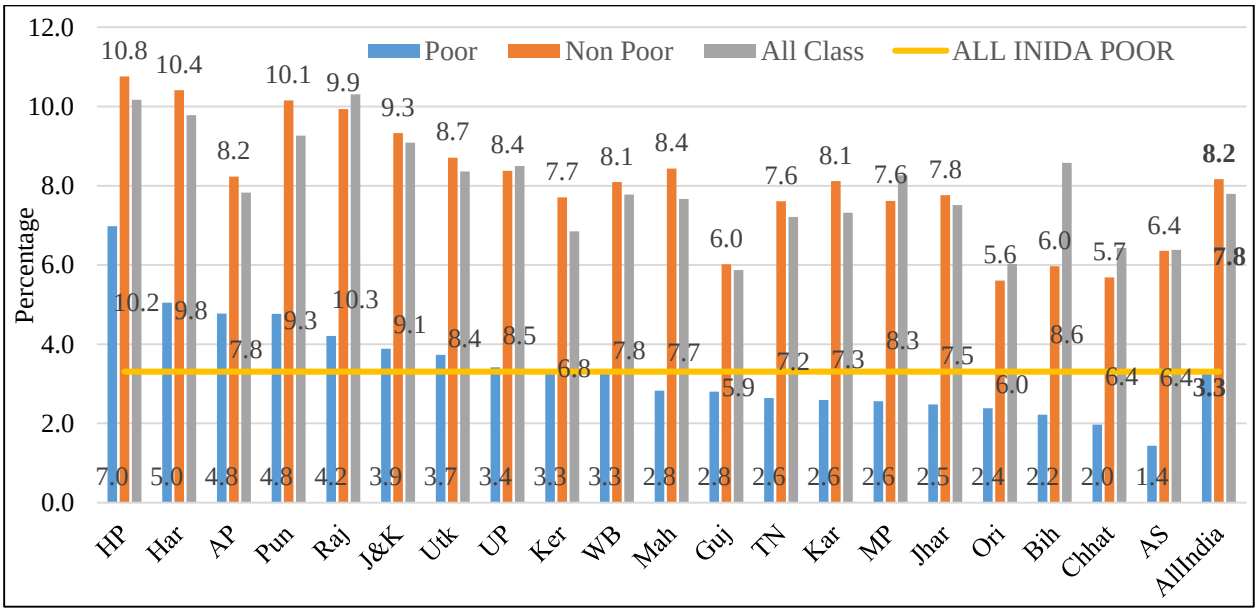
Source: Author's calculation from Unit Data of NSSO

Figure 5.19
Category Wise Education Expenditure out of Total Consumption Expenditure (In%) in Urban Areas, 2004-05



Source: Author's calculation from Unit Data of NSSO

Figure 5.20
Category Wise Education Expenditure out of Total Consumption Expenditure (In %) in Urban Areas, 2011-12



Source: Author's calculation from Unit record data of NSSO

CHAPTER 6

EDUCATION FACILITITES AND OUTCOMES IN INDIA

6.1. Introduction

Level of education is an important aspect for equitable and sustainable growth of a country. The education system of India is considered to be one of the largest, ranking second only to china in terms of population it serves. A remarkable achievement for the citizens of India was the enactment of Right to Education Act, 2009, which is supposed to ensure free and compulsory education to children aged 6 to 14 years. Given the huge population that Indian education system serves and to establish equity in education opportunities, it is essential to recognize Education as a Fundamnetal right.

School act as an architect for giving shape to child's future life. They learn the importance of becoming a good citizen and social man from the school. Children get their confidence boosted up for facing any struggle in life from the school. The children are also sent to schools with the confidence that necessary guidances for leading a healthy and spirited life will be given to them by experienced hands in school and the safe environment in school would promote their growth. There is no denying that infrastructure plays a crucial role in child's growth by creating a conducive environment; the important facilities that are required in any educational institution and especially schools include the availability of schools, adequate number of classes, low pupil-teacher ratio, drinking water facility, toilets for both girls and boys, and electricity connection. Apart from these very basic facilities that are required in every school, there is an increased demand in schools for provision of Information and Communication Technology (ICT). Schemes like Sarva Shiksha Abhaiyan and the Right to Education Act, 2009 have helped in improving the basic facilities at schools, whereas programme like ICT at School has provided accessibility to technology for students in deprived regions as well.

6.2. Background

The literacy rate in our country has remarkably increased over the decades from 18.39% in 1950-51 to 74.04% in 2011, but one -third of our population of age 7 years and above is still illiterate. Numerous isssues consisting significant low level of achievement, extremely low participation of

children from marginalized sections of society and persistent high dropout rates are still need to be tackled. The inadequate infrastructure in schools, low teacher-student ratio, no school building with bounadary walls, non-availability of teachers in remote rural or tribal areas, high rate of teacher absenteeism, less number of teachers than required are other issues of concern. The most relevant issue is inadequate allocation of resources on education (UNICEF)[151]. that is gross;y inadequate public expenditure on education

The ASER report of 2017[152] has confirmed that the overall percentage of youth in the 14-18 age group that has entered either school or college, the formal education system, is 86%, whereas, around fifty-four per cent, more than half, of all youth in this age group got enrolled in the tenth standard or below. The percentage of youth that are either in standard XI or XII is around twenty-five per cent and the same was six percent in undergraduate and other degree courses, and the percentage that are not enrolled in any form of formal education is only fourteen per cent. Also, it has been shown that the gap in enrollment between males and females in the formal education system gets widend with the increase of age.

At age 14 years there does exist only a narrow gap between boys' and girls' enrollment, but, this gap widens at the age 18 and it has been found that 32% of females do not get enrolled at all. However, the drop-out rates immediately after the primary education is also very high. Generally, the extent of demand for and the availability of schholing determines the level of participation in schooling as has been reported in a study of the World Bank, 2006. It has also been stated in the study that demand side puts a barrier than the supply side for school admission.

The achievement in terms of Gender Parity Index (GPI) in the elementary school has been 0.94 in 2016-17 in comparison to 0.86 in 2010-11, which is quite impressive improvement, as has been shown by All India Survey on Higher Education (AISHE)[153]. However, the girls to boy's ratio in primary and secondary school is not in equal proportion. Also, for higher education the proportion of students is around 23% to 25 % only.

[151] UNICEF Global Campaign for Education – More Teachers Needed., available at http://unicef.in/Story/746/Global-Campaign-for-Education-more-teachers-needed (2015)
[152] Annual Status of Education Report, 2017,
http://img.asercentre.org/docs/Publications/ASER%20Reports/ASER%202017/aser2017fullreportfinal.pdf
[153]All India Survey on Higher Education, Ministry of Human Resource Development- Department Of Higher Education. http://aishe.nic.in/aishe/viewDocument.action?documentId=239

The findings of the World Bank Survey on the issue of "teacher's absenteeism", in 2004[154] state that in Government Primary Sschool 25% per cent of teachers were absent on any given day. Only 50% of teachers amongst the present teachers on a particular day were actually engaged in teaching the students. This survey was conducted in 20 States taking 3700 schools as samples. The attendance of teachers teaching in primary and upper primary schools in a given day was 85.4% and 84.7% respectively as per ASER, 2016. The Government of India conducted two studies in 2006 and 2013 on the attendance of teachers. These studies have revealed that there has been overall improvement on attendance level in primary and upper primary schools. The improvent at primary school is from 81.7% in 2006 to 84.3% in 2013 and that in upper primary level is 80.5% in 2006 to 81.3% in 2013.

Annual Survey of Education Report (ASER) of 2016, has found that 3.5% of schools had no toilet facility, while only 68.7% of schools had usable toilet facility in India. 75.5% of the schools surveyed had library in 2016, a decrease from 78.1% in 2014. The drinking water facility is available in 74.1 per cent of schools and the play ground is available in 64.5 per cent of schools. There has been improvement in the provision of separate girls' toilet facilities in schools. The increase in this facility was from 32.9% in 2010 to 61.9% during 2016.

A research on the determinants of school education in North India (Dreze, J., and Kingdon, G. G. (2001) [155] found that quality education can successfully be provided to the children if there is lower pupil-teacher ratios and better teaching standards in the school. A more cooperative rapport between parents and teachers also contribute in a very effective way for successful provision of quality education. The National Policy on Education (1986) had recognised that unattractive school environment, unsatisfactory condition and insufficiency of buildings as demotivating factors for the parents and students.

6.3. Rationale

The Government has to ensure the availability and accessibility to all levels of school education, starting with early childhood, through the provision of required funds. Even, the role of community participation in running and managing schools can not be denied. Additionally, to keep the schools

[154]), Teacher Absence and Incentives in Primary Education, World Bank and Inter-American Development Bank, Ecuador: Creating Fiscal Space for Poverty Reduction, 2.
[155] School Participation in Rural India, Review of Development Economics, *5*(1), 1-24.

a place for motivation and to ensure better health and safety, there need to be facilities like separate toilet facilities for boys and girls, drinking water, electricity connections etc. To build equal opportunities we need at the outset to provide equal educational opportunities for all. It is possible that most of the children enter schools, as can be interpreted from the enrolment figures, but, many of them drop out fairly quickly and do not continue up to the the secondary level of schools.

As already mentioned above the Sustainable Development Goals agenda of 2030 aims to have quality education, it has been clearly recognized as the foundational brick necessary for sustainable development of any country. The SDGs also have targets for providing equal access to quality technical and vocational education with the aim for completion of primary and secondary education by all children. Skills get enhanced through education and it brings for a person self-reliance, opportunities for better livelihoods, improved standard of living and along with it the boost for economic progress for the country. Therefore, any barrier which do not give access to quality education and gender inequalities in availing education need to be removed in an urgent manner. And policy intervention is required in this direction including increase in public expenditure, various facilities and hiring quality teachers.

The achievement of universal primary education has been towards the progress of enrolment and completion rates of girls at the level of primary and elementary school. In the year 2013-14, the literacy rate of female youths is 92% in comparison to the literacy rate of male youth being 94% at national level. The new national Education Policy of 2017 has been aligned with the SDG-4, which aims to achieve universal quality education and lifelong learning.

6.4 Education Facilities in India

A strong public education system is the most essential necessity for achieving universal education. The condition for developing such system need to come from the provision of some vital requirements. These are improved infrastructure facilities and learning resources, high quality teachers, training etc. Though India has progressed in many educational outcomes and provision of infrastructure facilities, it is now important to establish their credentials through effective monitoring and evaluation.

6.4.1. Schools

According to U-DISE report 2015-16, states like West Bengal (80.1%), Assam (68.3%), Uttarakhand (64.5%) have the percentage of total primary schools well above the national average

of 55.2 percent whereas the states like Gujarat has the least with 22.6%. The country average of upper primary schools is 9.7% and majority of the states of India like Bihar, Goa, Kerala and Tamil Nadu have about 0.4%, 0.8%, 3.8%and 0.2% respectively, which is much below the national average (detailed in Figure 6.1, pg-174).

The schools in India are maintained/managed by different kind of private and public bodies (Figure 6.2, pg-174). As per U- DISE 2015-16, the local bodies handle most of the schools in the states of Andhra Pradesh, Tamil Nadu and Maharashtra, though the Department of Education manages the maximum number of schools in most of the states. The Central schools also maintain a prominent percent amongst the total number of schools functioning in India but the number of schools that are managed by the department of tribal/social welfare are very less.

The student to class ratio essentially describes the number of students per classroom. As per U-DISE 2015-16 at the primary level, an average of 27 students per classroom, at the upper primary and secondary levels about 46 and 47 students per classroom respectively are available. Bihar has the highest number of students per classroom at all levels with 51 students in the primary, 107 in the upper primary and 86 students in the secondary levels. West Bengal, Uttar Pradesh have 25 students per class room at primary level. The secondary and higher secondary levels have more than 50 students per classroom (shown in Figure 6.3, pg-175).

6.4.2. Teachers

In India around 8691.9 thousand total number of teachers are working as per U-DISE report 2015-16. Andhra Pradesh has the maximum number of teachers (Figure 6.4, pg-175) with 1084.2 thousand in numbers, Uttar Pradesh has the minimum with only 95 thousand teachers. The issue of lack of adequate number of teachers needs immediate attention. Other categories show lesser distribution of teachers (Figure 6.5, pg-176), which requires consideration as it affects the quality of education above primary level.

The percentage of regular teachers (male) is the highest in Rajasthan with 63.47% while it is the lowest in Goa with 19% (detailed in Figure 6.6, pg-176). The percentage of regular female teachers is the highest in Goa with 68%. Across the states in the country the percentage of contractual female teachers is higher than their male counter parts with Punjab having the highest percentage of almost 32%. The highest percent of male contractual teachers is the highest in Jharkhand. This points out to the necessity of providing regular positions for teachers at all the levels.

It has been laid down in the Schedule of the Right of Children to Free and Compulsory Education (RTE) Act, 2009, that thirty students per teacher should be the Pupil Teacher Ratio (PTR) for both primary level schools and thirty-five students per teacher should be the PTR in the upper primary level schools. Higher is the PTR more is the burden on each teacher, worsening the situation for impartment of education (shown in Figure 6.7, pg-176). On an average the PTR at primary level is 23 and at the upper primary level the PTR is 17 students per teacher (Figure 6.8, pg-176). At both primary and upper primary levels the ratio is highest (worst) in Uttar Pradesh (39.1in primary; 31, in upper primary) while it is the lowest in state like Jammu and Kashmir and Sikkim.

The pupil teacher ratio, PTR, in secondary level is 27 students per teacher and that in higher secondary is 37 students per teacher, which are quite high in comparison to average PTR in respect of primary and upper primary levels (Figures 6.9 and 6.10, pg-177). At the higher secondary level, the lowest ratio has been found in Himachal Pradesh with 14 students per teacher. In Bihar it is 66 students per teacher and in Uttar Pradesh 97 students per teacher in higher secondary level, making them the worse states in terms of PTR.

It has been documented that due to high rate of teachers' absenteeism, the performance of government schools actually becomes very weak. Many studies (Kremer et al. 2005[156]; Government of India 2009[157], Bhattacharjea et al. 2011[158], Muralidharan et al. 2016[159]) have dealt with the high rate of teachers'absenteeism in government schools and come out with the finding that on any given day one out of four teachers remains absent. However, the teachers' absence in government schools is less than 20 % in most of the states (Pratham 2017)[160].

6.4.3. Infrastructure Facilities:

Almost all schools, round about 96.8%, in most of the states have drinking water facility (Figure 6.11, pg-178). Availability of drinking water being a basic facility should be made available in all the schools across the country.

[156] Teacher absence in India: A snapshot, Journal of the European Economic Association,3(2-3): 658-667
[157] Teachers' Absence in Primary and Upper Primary Schools: Synthesis Report of Study Conducted in Andhra Pradesh, Madhya Pradesh and Uttar Pradesh, New Delhi: EdCIL
[158] Inside Primary Schools. A Study of Teaching and Learning in Rural India, Mumba, Pratham.
[159] The Fiscal Cost of Weak Governance: Evidence from Teacher Absence in India, Policy Research Working Paper 7579, World Bank Group.
[160] Pratham (2017), Annual Status of Education Report (Rural) 2016

Electricity is an essential facility required for a well-functioning school (Figure 6.12. pg-178). The State of Rajasthan, UP, Bihar, Odisha, Jammu and Kashmir, Madhya Pradesh and Assam fall below the national average of 62.8% with schools having electricity connection (U-DISE). It is hoped that with the recent government initiative of 100 percentage electrification across the country, this need will be met for all the schools.

Almost 90% of schools in most of the states have separate boys' and girls' toilet facilities (Figure 6.13, pg-179). While state of Haryana, Kerala, Madhya Pradesh and Gujarat have almost all of their schools with sanitation facilities. The lowest available facility for boys' toilet, 82% and girls' toilet, 83% is in Assam. Overall about 96 percent schools have boys' toilets and 97 per cent of schools have girls' toilets facility (U-DISE).

Boundary wall is the basic necessity of every school, giving safety and security to the children. There is an urgent requirement of safeguarding all the schools irrespective of the level and type of management of the schools (shown in Figure 6.14. pg-179 and 6.15. pg-180).

Distance from residence affects the access to nearest schools, thus attendance and education. The 94% and 93% of households tn rural and urban areas respectively (Figure 6.16, pg-180) have reported that the primary school is available within 1 km from the house, according to the NSS 71st[161] round survey. It has also been reported that around 67% and 83%of households in rural and urban areas respectively have the availability of the upper primary schools within one km. Around 37% of rural househods and 73% of urban households have reported to have secondary schools within one km.

If we consider the distance of primary school from the residence within 1 kilometer radius, then It can be seen from the Figure 6.16 (pg-180), that rural and urban areas in India have the proximity to primary schooling. However, the gap in physical access to upper primary and secondary schools in rural and urban areas is quite significant. In case of rural areas, 40% of the the households could access the schools beyond 2 kilometers distance having secondary level classes. In urban areas only for 9% of households had to face this difficulty.

In most of the States (shown in Figure 6.17, pg-181), nearly 90% of the households had primary schools within 1 kilometer distance from their residence, except in Assam (87% of hh) and Kerala

[161] India - Social Consumption - Education Survey: NSS 71st Round, January 2014 -June 2014.

(67% of hh). In respect of having accessibility to secondary schools within less than 1 kilometer distance from residence, less than 1/3rd of the households in Assam, Jharkhand, Bihar, Odisha and Kerala, among the 18 major States, did not have that scope.

6.4.4. Students receiving free education

In most of the states there is no tuition fee for education in government schools. Also in some states private schools are free up to certain levels. Though education is considered free in these schools, still children have to pay some fixed amount of money for development purposes, library fees, etc. In India around 70% children in rural areas and 30% children in urban areas (nearly 60% children on an average) are getting free primary and upper primary levels of education. It has also been found that around 94% students and 89% of students in rural and urban areas respectively are studying in government institutions at primary level. At upper primary levels, corresponding figures were 89% and 80% respectively. The percentage of students getting free education at secondary and higher secondary levels is around 40% from rural areas and 22% from urban areas. Percentage of students studying in private unaided institutions and receiving free education at primary and upper primary levels were very negligible (around 1-2%) in both rural and urban areas. Statewise number of students getting free education at primary and upper primary level is shown in Figure 6.18 (pg-181).

6.4.5. Students receiving various Incentives

The 66% of students in rural areas and 28 % of students in urban areas (on an average 56% of students) received free text books at primary level (Figure 6.19, pg-182); 72% of students in rural areas and 33% of students in urban areas (on an average 63% of students) received mid-day meal from government and other sources. Statewise number of schools providing Mid-Day Meal can be seen in Figure 6.22 (pg-183). Similarly, for primary level, the percentage of rural and urban students getting free textbook was 63% and 30% respectively (averge 54%); getting mid-day meal was 70% and 37% respectively (average 62%) (shown inFigure 6.14).

On analyzing the state wise percentages of students pursuing general education and availing incentives of books and stationaries at the primary level, it can be seen that major states like Jammu and Kashmir, Punjab, Uttar Pradesh and Himachal Pradesh avail low levels of both books and stationary, as compared to all India average. At upper primary level of schools, amongst the states,

West Bengal, Uttar Pradesh, Jammu and Kashmir had low levels of availing incentives of both books and stationaries than the Indian average of 54.1% and 4.1% respectively (Figure 6.20, pg-182).

The number of students receiving free uniforms are very less in Jharakhand (Figure 6.21, pg-183*).* Rajasthan, Uttarakhand, Himachal Pradesh and Jammu and Kashmir. Government and Aided schools providing Mid-day meals were less in number for Uttarakhand, Punjab, Himachal Pradesh and Jammu and Kashmir, (Figure 6.22, pg-183).

The facilities like free education, free books and uniforms, Mid-Day meals could be a driving force for increase in enrollment in chools. Hence these initiatives should be properly implemented and monitored in all the states so as to increase the enrollment ratio and reduce the dropout rates.

6.5. Education Outcomes

The levels of education, and the achieveents made by the Governments in respect of education sector are measured by the education outcomes in the counry. They generally provide a direction to the planners and policy makers to develop schemes and programmes in the desired way so that the country achieves the standard in education level. Some of the education outcomes are discussed below.

6.5.1. Total Enrollment in Schools

The DISE has reported that more children are completing elementary schooling due to near-universal enrollment and routine promotion. It has also reorted the doubling of Standard-VIII enrollment from 11 million to almost 22 million in the last decade. Major improvement has been made in case of enrolment rates and access to education by all, particularly girl children at all levels of school. With the effective implementation of the scheme, Beti Bachao Beti Padhao, the rate of enrolment and literacy amongst the girl child has improved. A positive change has been observed across the States of the Nation but a lot is still desired.

The extent of enrollment in schools at primary, upper primary and secondary levels, is shown in the Figure 6.23 (pg-184). Uttar Pradesh shows the maximum number of enrollment in primary school with 482.9 lakh students. The increase in the upper primary and secondary has not been as rapid as primary enrolments but has shown an improvement compared to the previous years.

6.5.2. Gross Enrollment Ratio

The total enrolment in a certain level of education, irrespective of age is called the Gross enrolment ratio (GER). It is estimated as the percentage of total enrolment out of eligible official school-age population in the same education level, in a given school-year. The U-DISE 2015-16 has reported that in Bihar the GER is the lowest with 35.62% (Figure 6.24, pg-184) while, Himachal Pradesh has the highest with 95.53%.

6.5.3. Drop-Out-Rate

Generally, Drop-Out Rates are calculated for primary level. It is obtained by subtracting from one the ratio calculated by dividing the number of enrolment in Class V during 2008-09 by the number of enrolment in Class I during 2004-05, and then converted in per cent value. As per U-DISE 2015-16 dropout rate (Figure 6.25, pg-185) among girls is highest in the state of Assam with 10.7% whereas the least in Sikkim with 3.75% in boys and 0.6% in girls in primary school. It is also seen that the drop-out rates amongst the boys are greater than girls in majority of the states in the primary schools. The scenario is completely opposite in the case of upper primary (Figure 6.26, pg-185), where the drop out is more amongst the girls. Madhya Pradesh has the highest case of students discontinuing in the upper primary while states of Sikkim, Himachal Pradesh and Goa have the least.

6.5.4. Literacy Rate

The average literacy rate in our country is 74.04%. Among the states, Bihar, has the lowest rate at 63.82% and Kerala has the highest literacy rate at 93.91% (Figure 6.27, pg-186). The average male literacy rate is over 80%, and that of female is 65.46%, still very low, according to Census 2011, A lot of focus needs to be given for overall increase in the literacy levels in India.

6.5.5. Analysis:

An analysis has been done to study the association of education facilities with its outcomes. The important indicators like student classroom ratio, pupil teacher ratio, percentages of classrooms in a school, infrastructural facilities like drinking water facilities, toilet facilities, electricity connections, various incentives like textbooks, uniforms, midday meals provided to the students, were all studied with the educational outcomes. The Table 6.1 (pg-173) shows the association of infrastructural facilities with the drop-out rates in primary and upper primary levels.

The percentages of schools having primary/Upper-primary classrooms is negatively and significantly correlated with the primary dropout rates, indicating that increase in the percentage of Primary/Upper-primary classrooms tend to reduce the dropout rates. Similarly, a significant negative correlation has been found when girl's toilet facility is seen, indicating that with the increase in girl's toilet facilities there is reduction in the dropout rates. When all the variables were controlled, similar result of significant negative correlation with the drop-out rates are seen. The analysis given in Table 6.1 (pg-173) shows about 39 per cent of inter-state variation in drop-out rates are explained by the infrastructural facilities of the schools and incentives provided, in the primary and upper-primary levels. Our hypotheses H3 that education facilities and education outcomes are highly related holds true and therefore can be accepted.

This analysis sheds light on the importance of an institute's infrastructure and its influence in the reduction of dropout rates. Approaches and activities involving improvement in infrastructural facilitates and the well-being of students need to be given priority, in the development agenda of governments at National and State level.

6.6. Concluding Remarks

The evidences as discussed above reveals that gradual increase in the number of schools have taken place with increasing trend in enrolmen in India at the primary, secondary, and higher secondary levels. The major initiatives like Sarva Shiksha Abhiyan and Beti Bachao Beti Padhao by the Government at the National and State level, are showing improvements in terms of enrollment in schools; more specifically the enrolment of girls at all levels addressing the issue of gender inequality and girl child education. It has been revealed in the NSS 71st Round that schools are now more accessible in all states; but the pupil teacher ratio is still a matter of concern in many states, worsening the situation for education. The infrastructure facilities in all aspects play a prominent role in reduction of the drop out rate.

The target of Sustainable Development Goals, 2030 in respect of education ensures that all children, boys and girls, would complete the primary and secondary education and gives assurance to equal access for everyone to opportunities for quality, technical and vocational education. To improve success, quality of education, gender inequalities, better facilities, good teachers, it is required that relevant policy decisions be made for increasing education expenditure.

It is necessary that all children should receive and complete quality education within a certain time frame to make the universal education a reality. Therefore, access to education need to be given more focused attention. Special attention is also required to retain the deprived and girl children in school.

The most deprived schools are those which are located in remote areas and do not have proper infrastructure, teachers, education instruments and any academic support on site. These schools generally do not have good teachers including women teachers due to isolation. that make the problems worse. To reduce these disparities, more financial resources from the Government need to be diverted to these deprived schools.

Poverty is the root cause for disparities in educational development. Households not having financial resources can not ensure continued participation of their children in schools. For poor people day to day survival is the main concern and the education of their children is hampered. These children need to be supported, so that they can come out of the vicious circle of continued under development leading to poverty. The upliftment of the poor can only happen if all the organizations (Government, NGOs, individuals, private etc.) come together to support their education (Yash Aggarwal)[162]. Incentives in different ways need to be provided to all the deserving under-privileged students in all the schools across the country. In addition to these, the course curriculum for secondary and higher-secondary need to be such that, it will help the children, especially belonging to economically weaker sections, to participate in the labour force immediately after completion of their education.

[162] Disparities in Educational Development. U-Dise Reports and Studies. http://udise.in/Downloads/Reports&Studies/Disparities%20in%20Educational%20Development.pdf

TABLES AND FIGURES

Tables:

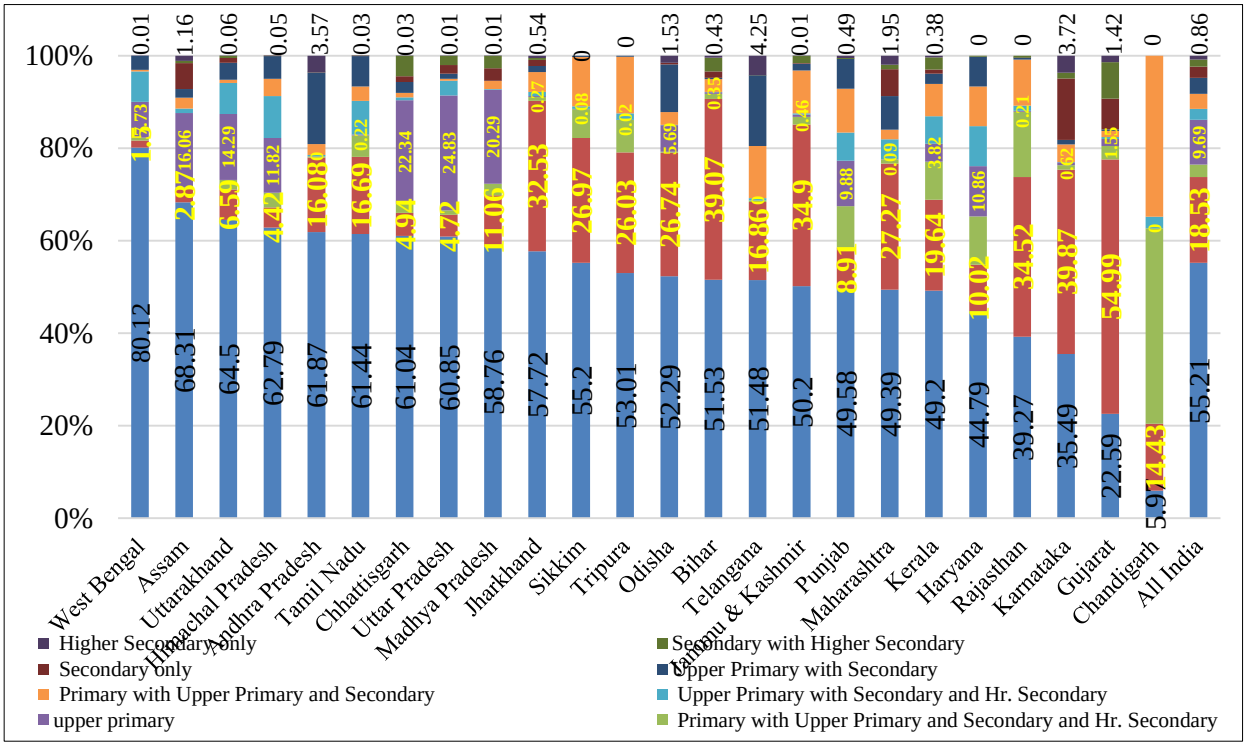
Table 6.1
Association of Education Facilities with Average Annual Drop-Out Rate by Education Level

Primary Drop-Out Rate				
	Model I	Model II	Model III	Model IV
Percentage of Schools having primary classrooms	-.5163**	-	-.3325**	-.3464*
Percentage of schools having girls's toilet facilities	-	-.5412**	-.4459*	-.4943*
Percentage of students receiving textbooks as incentives	-	-	-	-2.6636
R-Squared	0.1924	0.3039	0.3743	0.3868
Upper-Primary Drop-Out Rate				
Percentage of Schools having primary classrooms	-0.3958***	-	-.2734**	-.2797**
Percentage of schools having girls's toilet facilities	-	-.3667***	-.2842**	-.2954**
Percentage of students receiving textbooks as incentives	-	-	-	-1.230
R-Squared	0.2247	0.2753	0.3686	0.3843

* p<.05; ** p<.01; *** p<.001

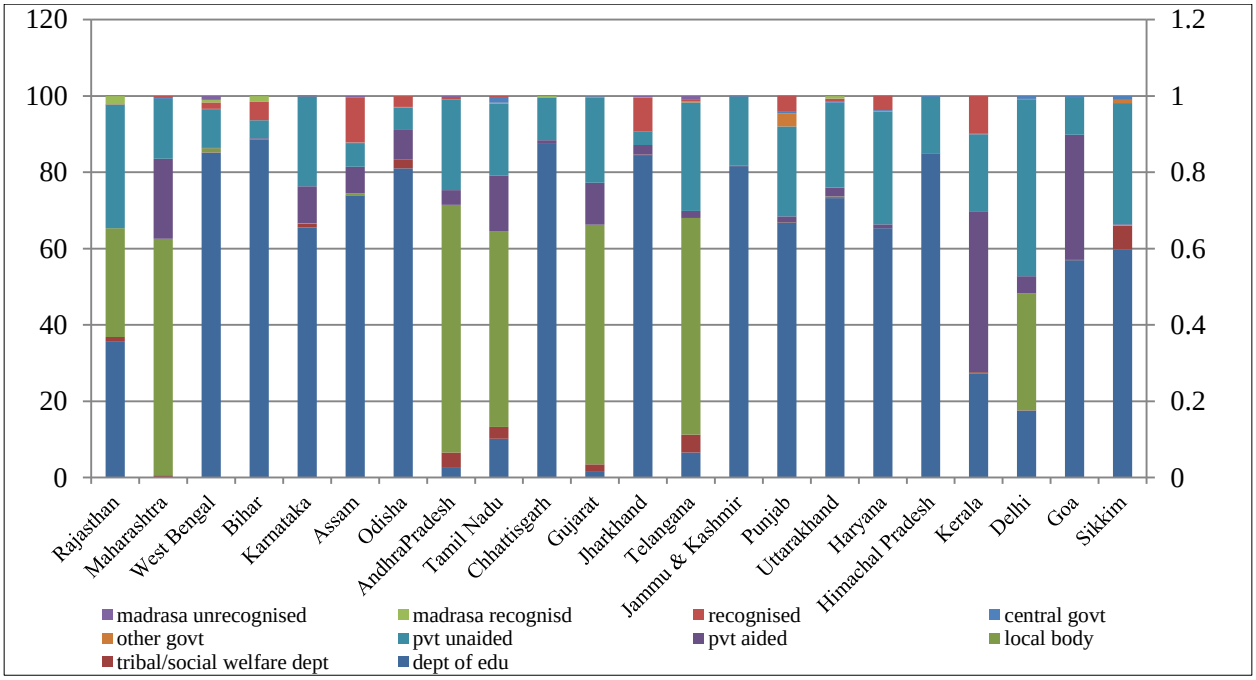
Figures:

Figure 6.1
Percentage of Schools by Category, 2015-16



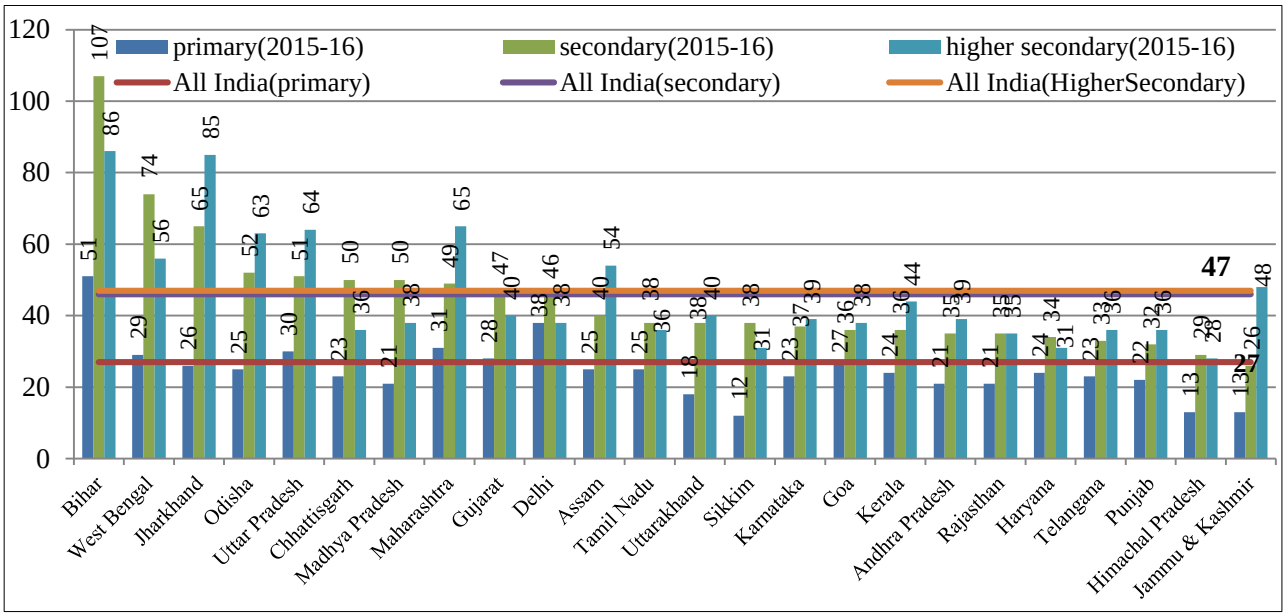
Source: U-DISE report 2015-16

Figure 6.2
Percentage of Schools by Management, 2015-16



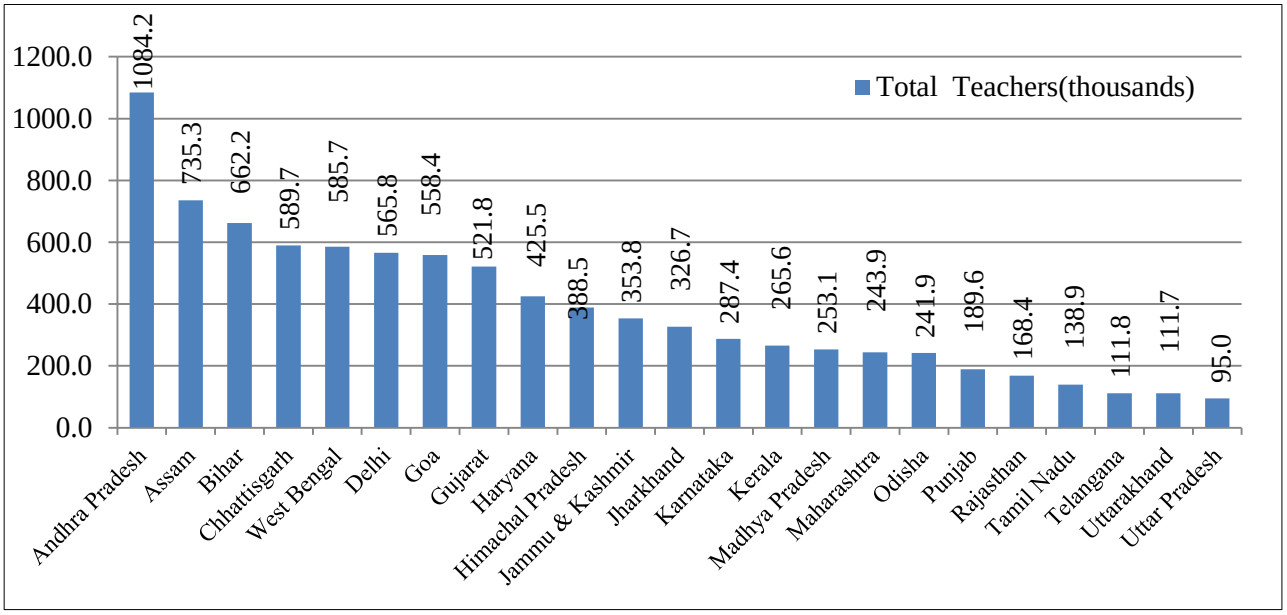
Source: U-DISE report 2015-16

Figure 6.3
Students to Class Ratio, 2015-16



Source: U-DISE report 2015-16

Figure 6.4
Total Number of Teachers in Thousands, 2015-16



Source: U-DISE report 2015-16

Figure 6.5
Distribution of teachers by School Categories in India, 2015-16

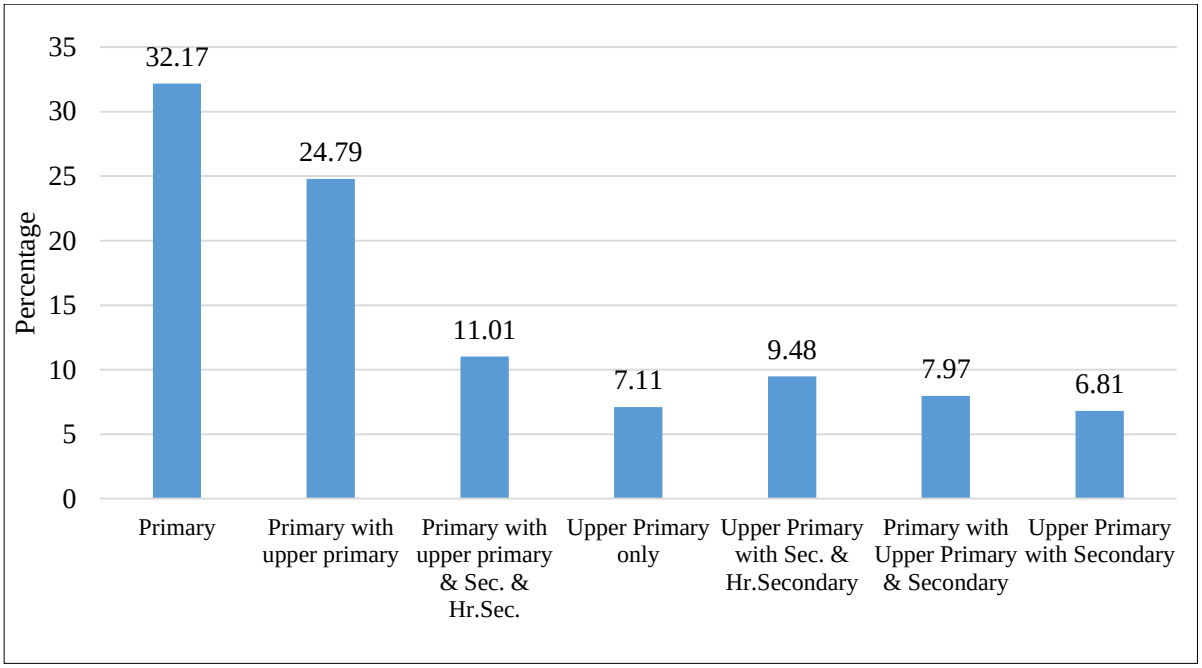
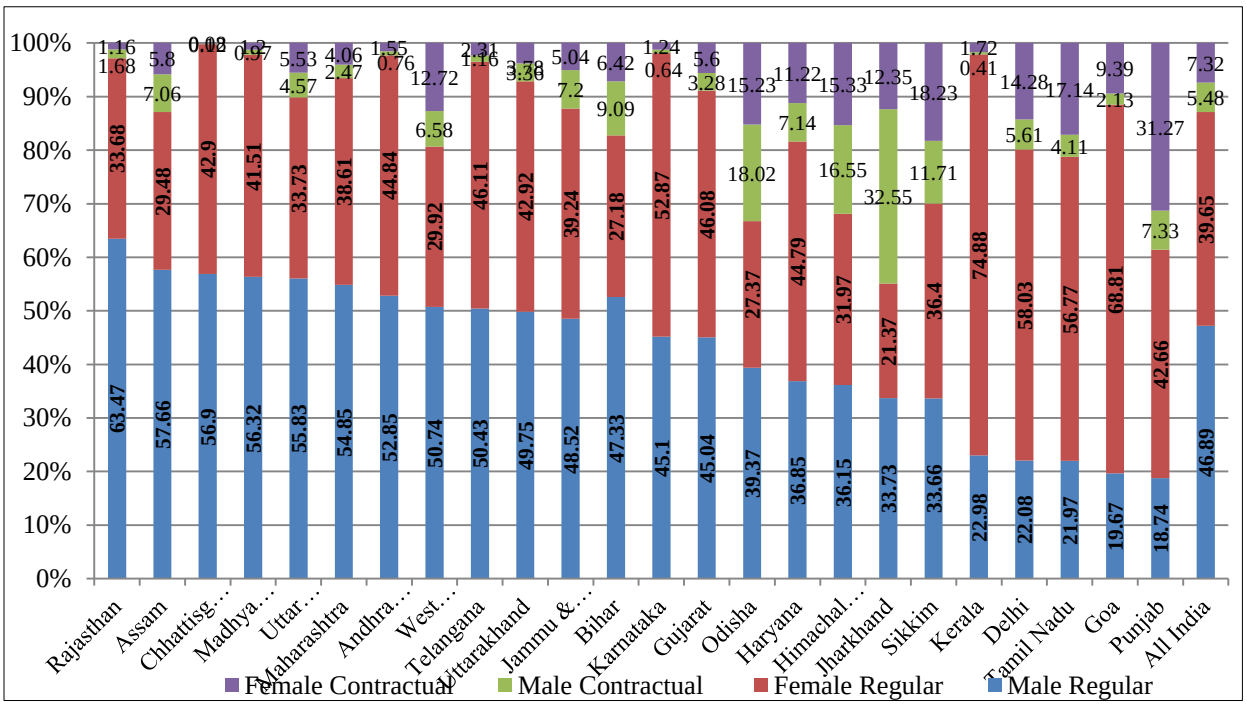
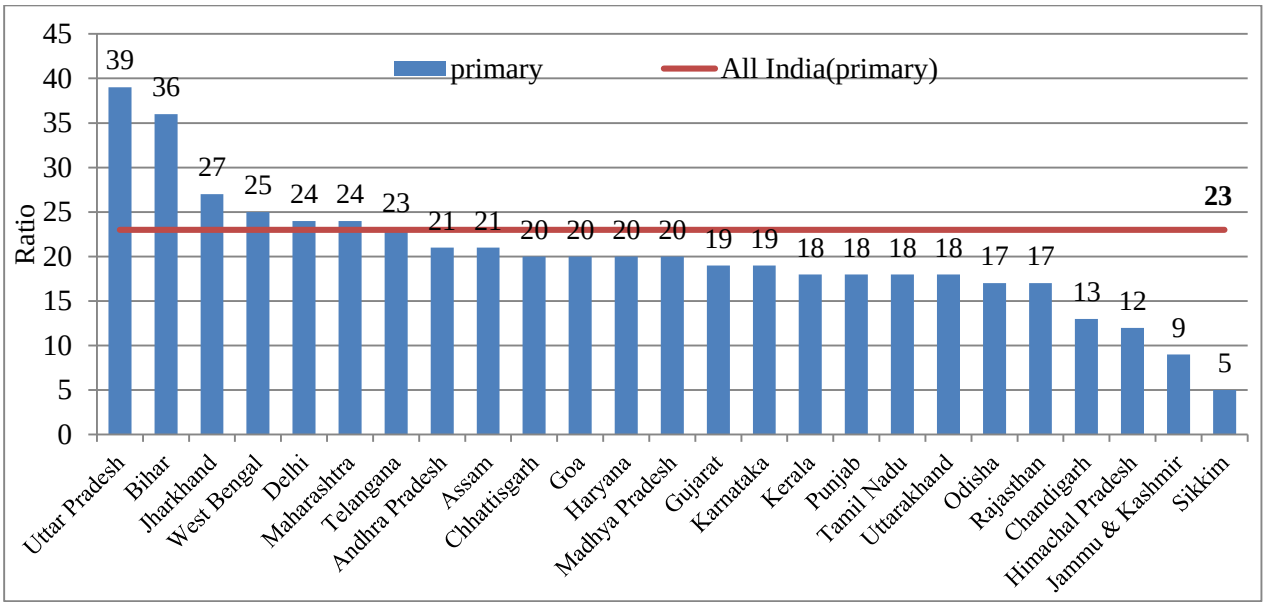


Figure 6.6
Percentage of Regular and Contractual Teachers, across States of India 2015-16



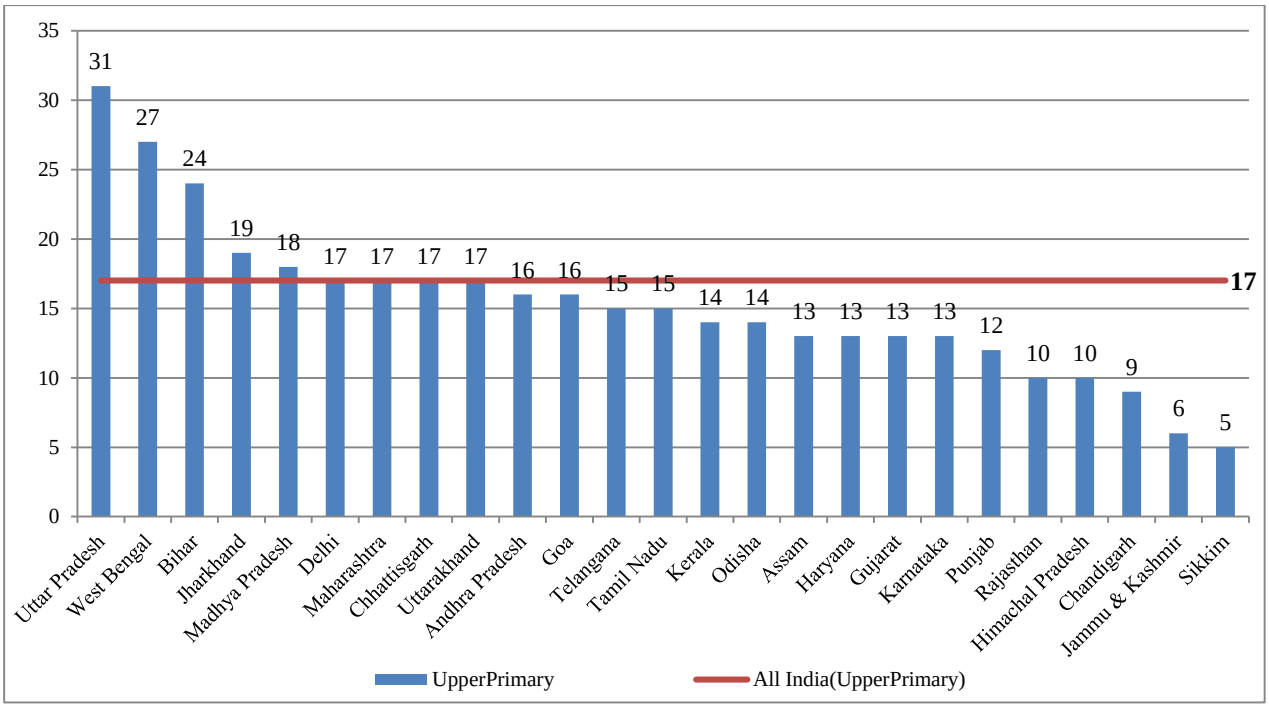
Source: U-DISE report 2015-16

Figure 6.7
Pupil to Teacher Ratio at Primary Level, 2015-16



Source: U-DISE report 2015-16

Figure 6.8
Pupil to Teacher ratio (Upper Primary) across states of India, 2015-16



Source: U-DISE report 2015-16

Figure 6.9
Pupil to Teacher Ratio at Secondary Level, 2015-16

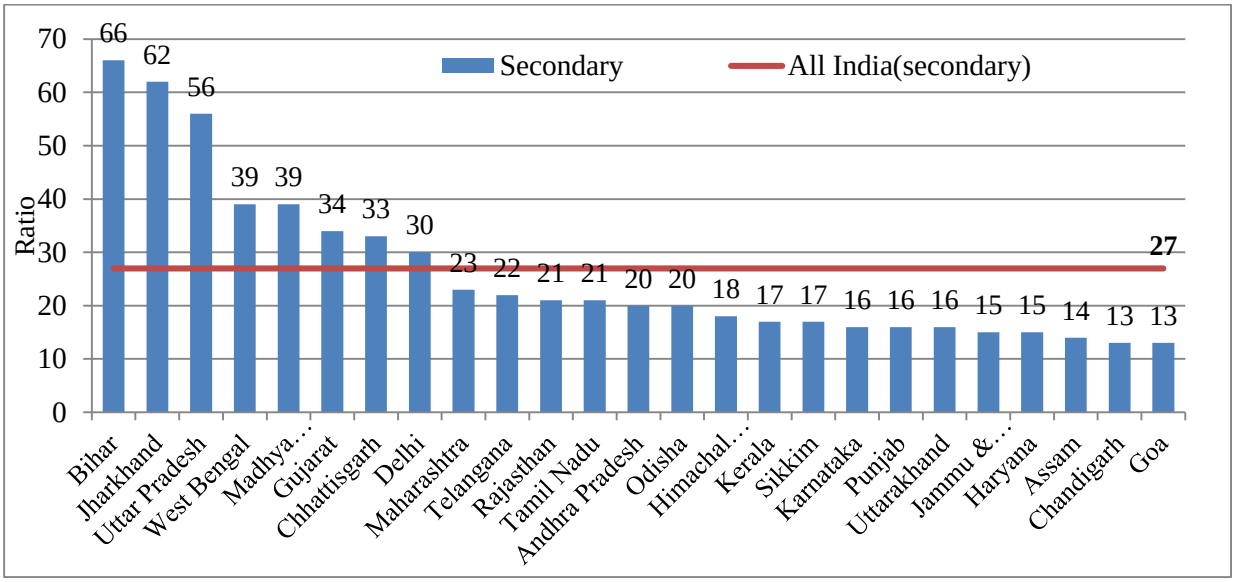
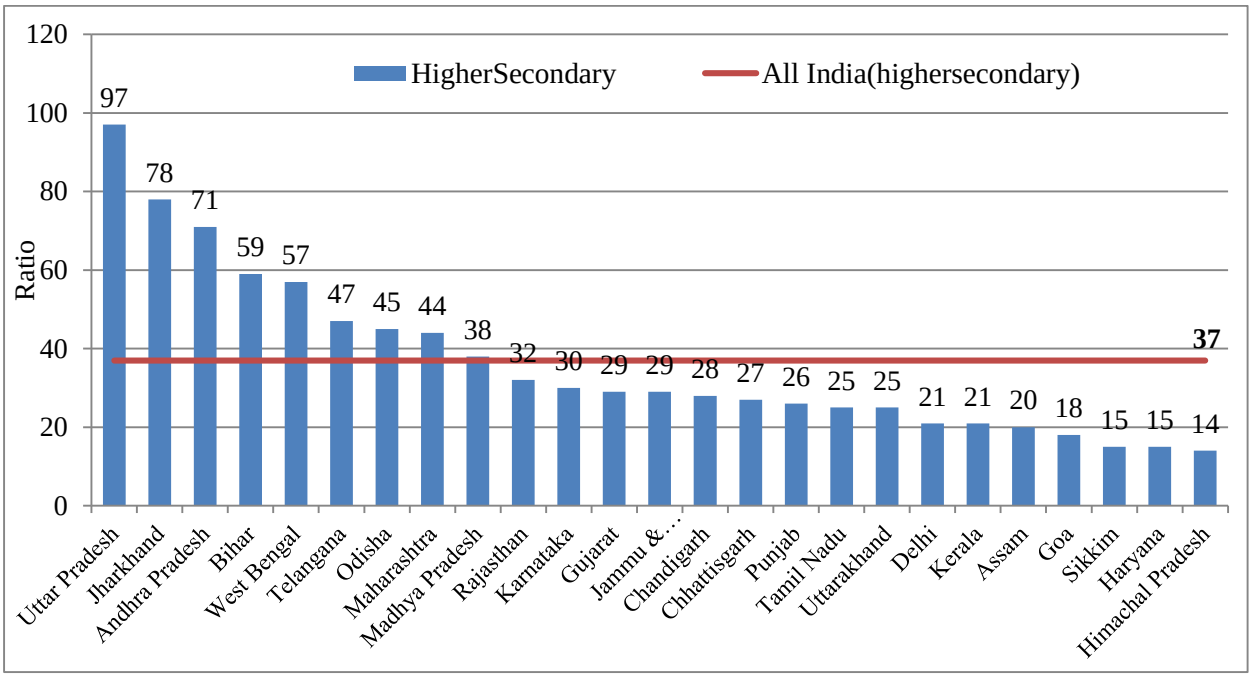
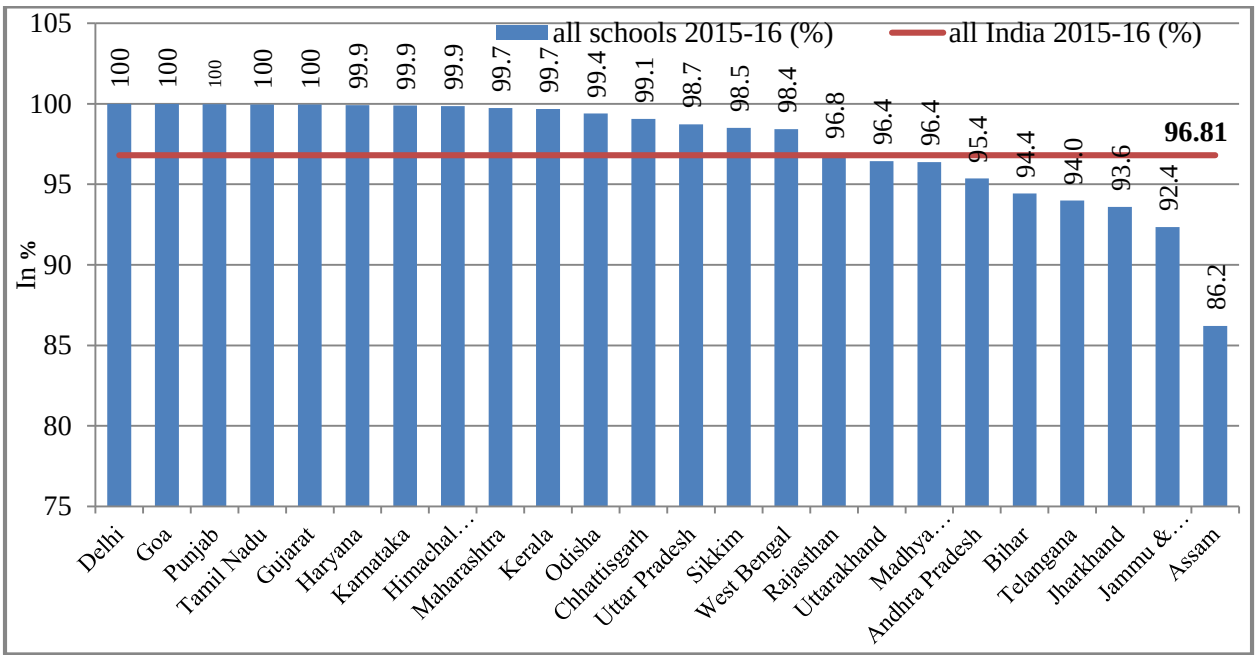


Figure 6.10
Pupil to Teacher Ratio at Higher Secondary Level 2015-16



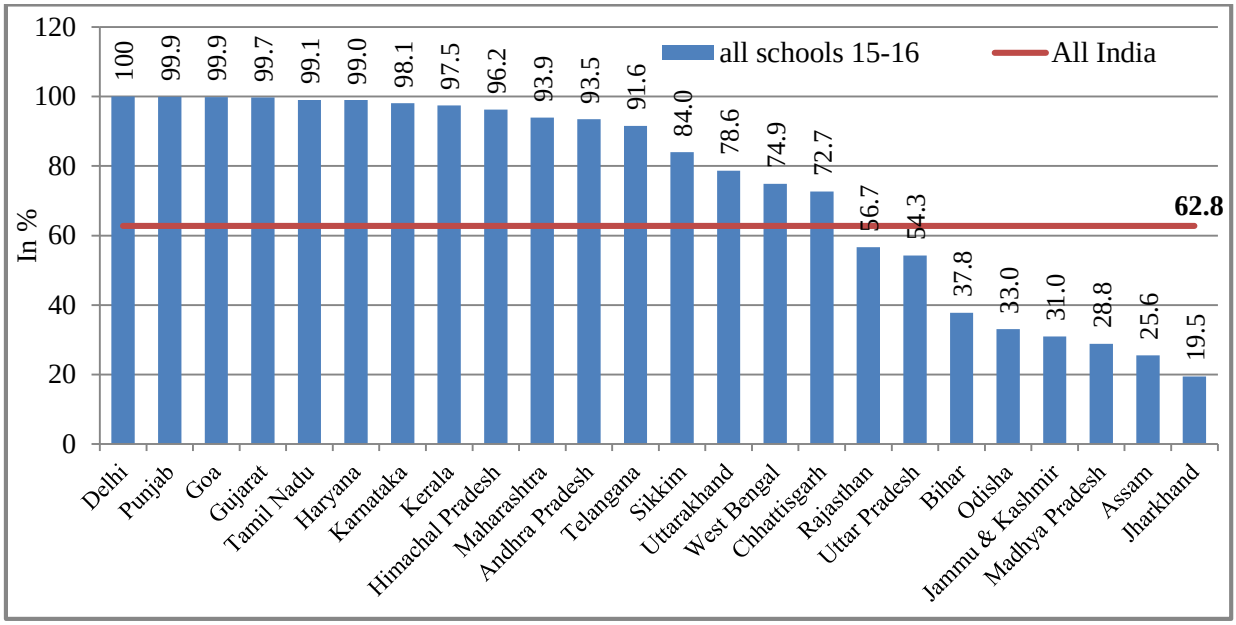
Source: U-DISE report 2015-16

Figure 6.11
Percentage of Schools with Drinking Water Facility, 2015-16



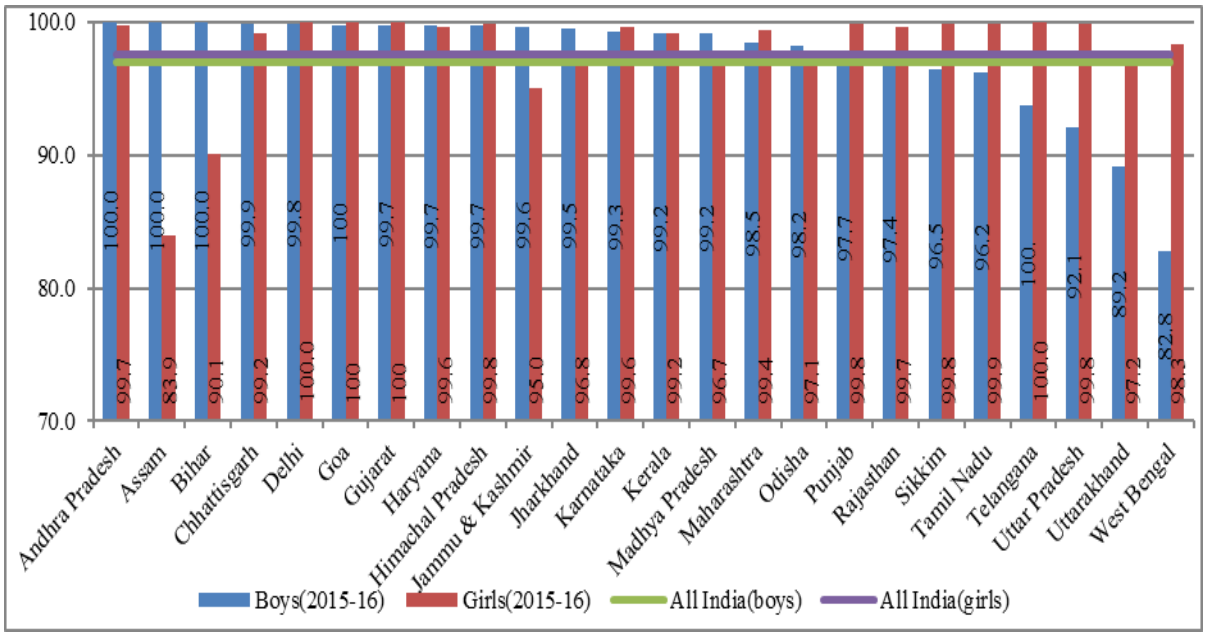
Source: U-DISE report 2015-16

Figure 6.12
Percentage of Schools with Electricity Connection, 2015



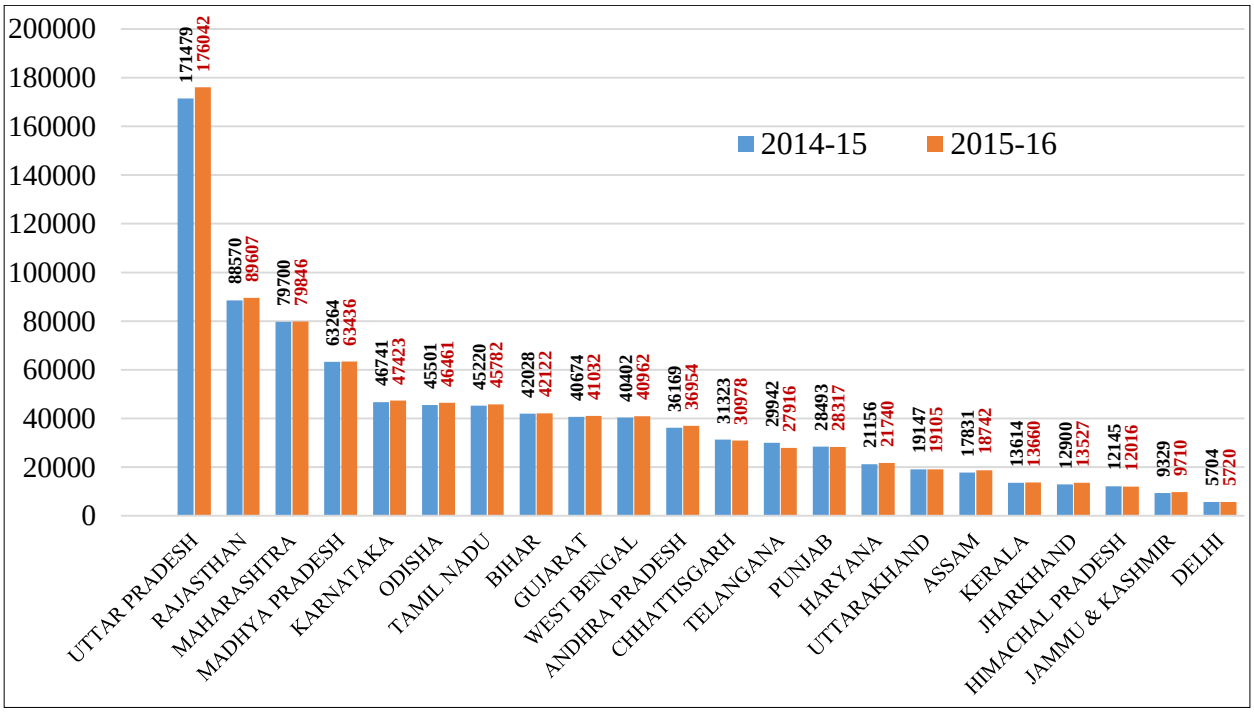
Source: U-DISE report 2015-16

Figure 6.13
Percentage of Schools with Boys and Girls Toilet Facilities, across India, 2015-16



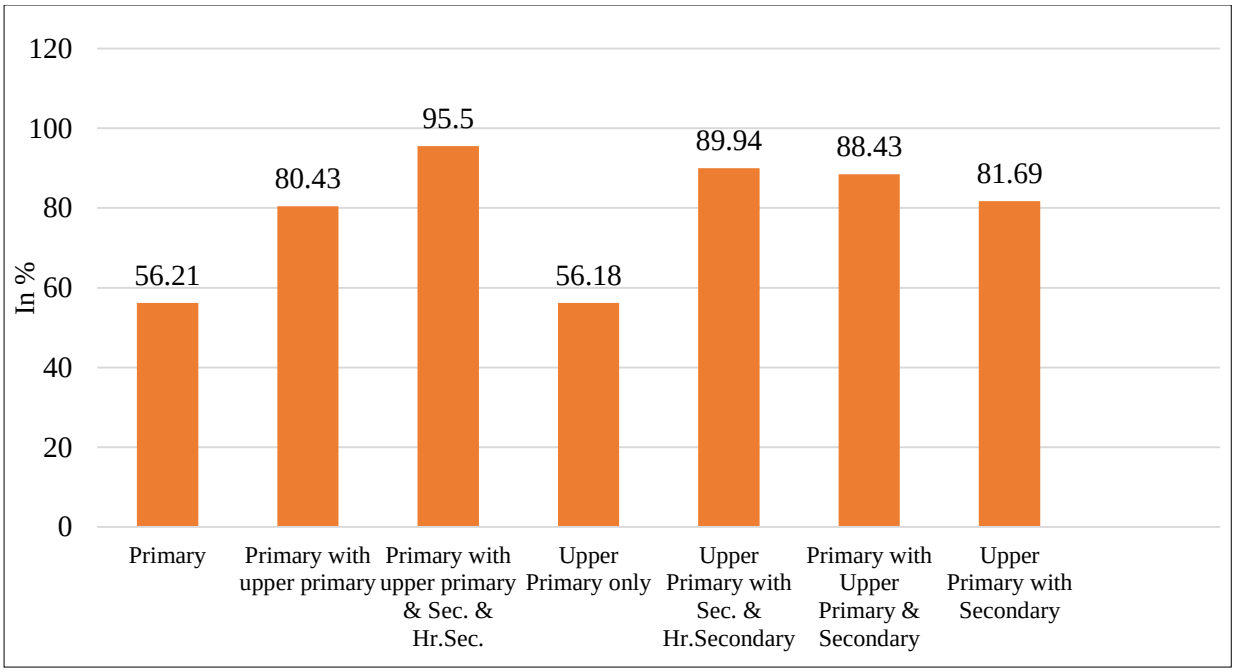
Source: U-DISE report 2015-16

Figure 6.14
Schools with Boundary Walls, across States of India



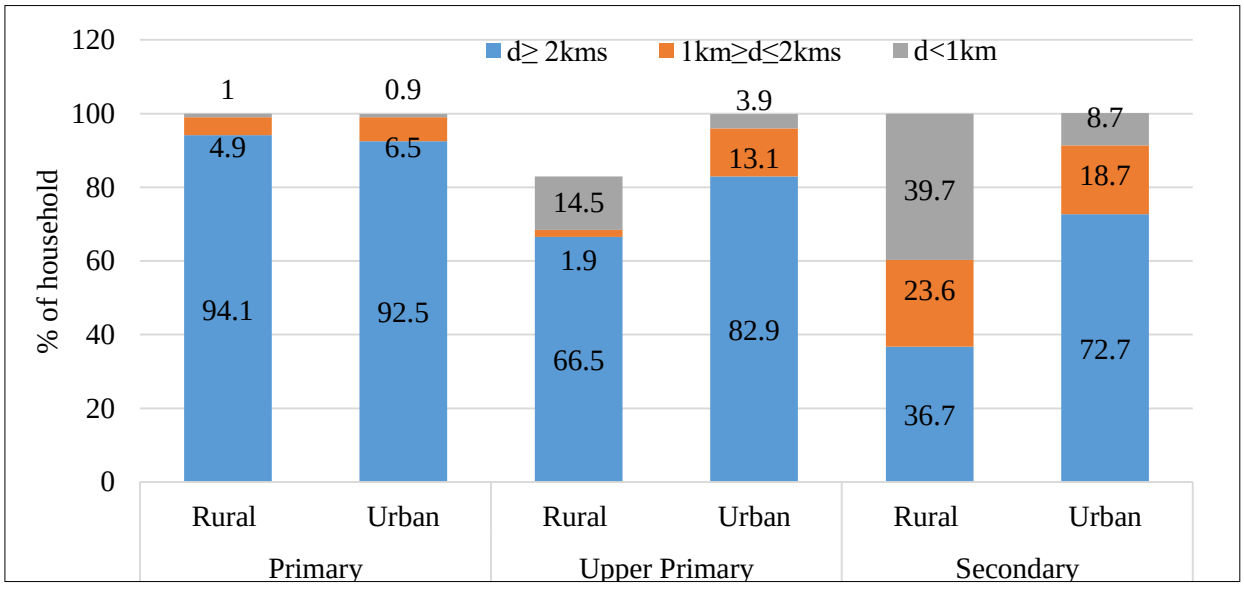
Source: U-DISE report 2015-16

Figure 6.15
Schools with Boundary Walls, at Different School Categories, 2015-16



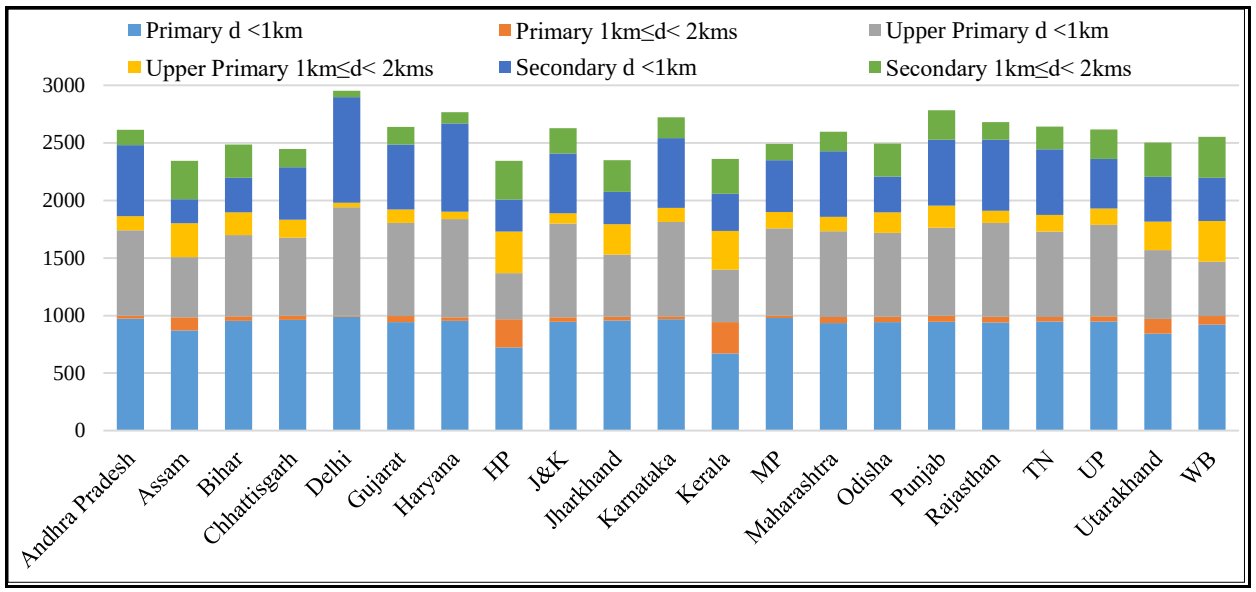
Source: U-DISE report 2015-16

Figure 6.16
Distribution of Households by Distance (d) from Nearest School



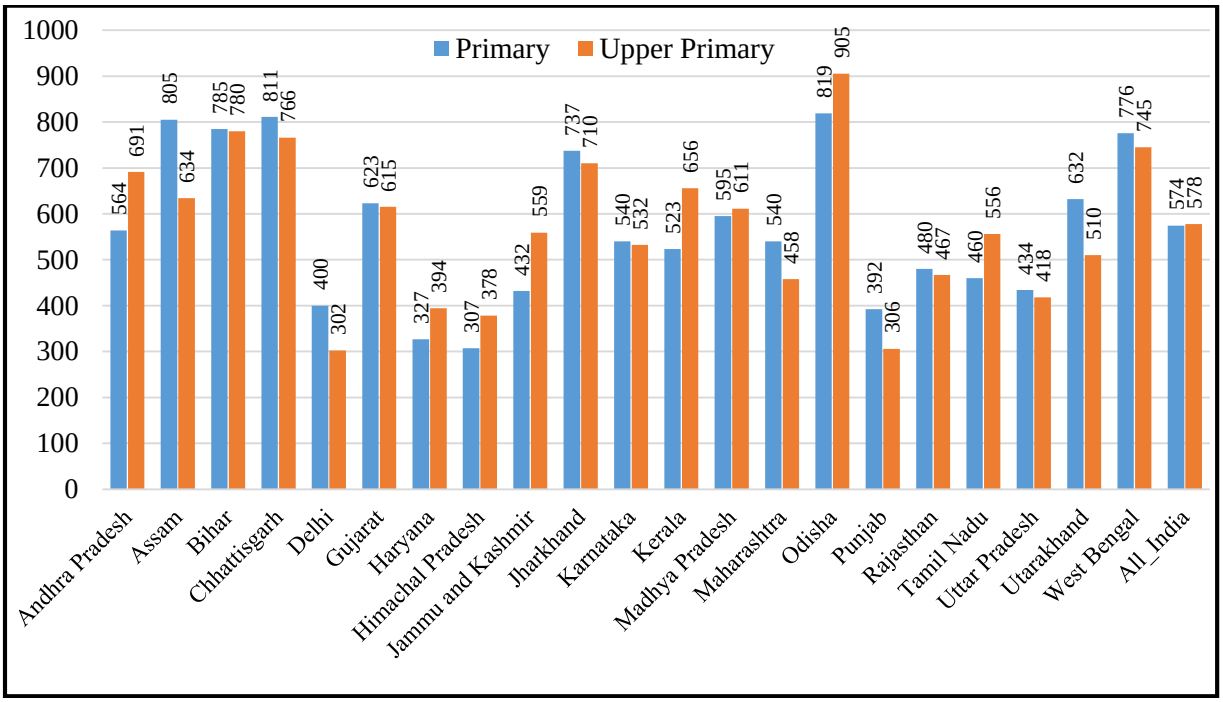
Source: 71st round NSS (2014), Education in India

Figure 6.17
State wise Distribution of Households by Distance from School



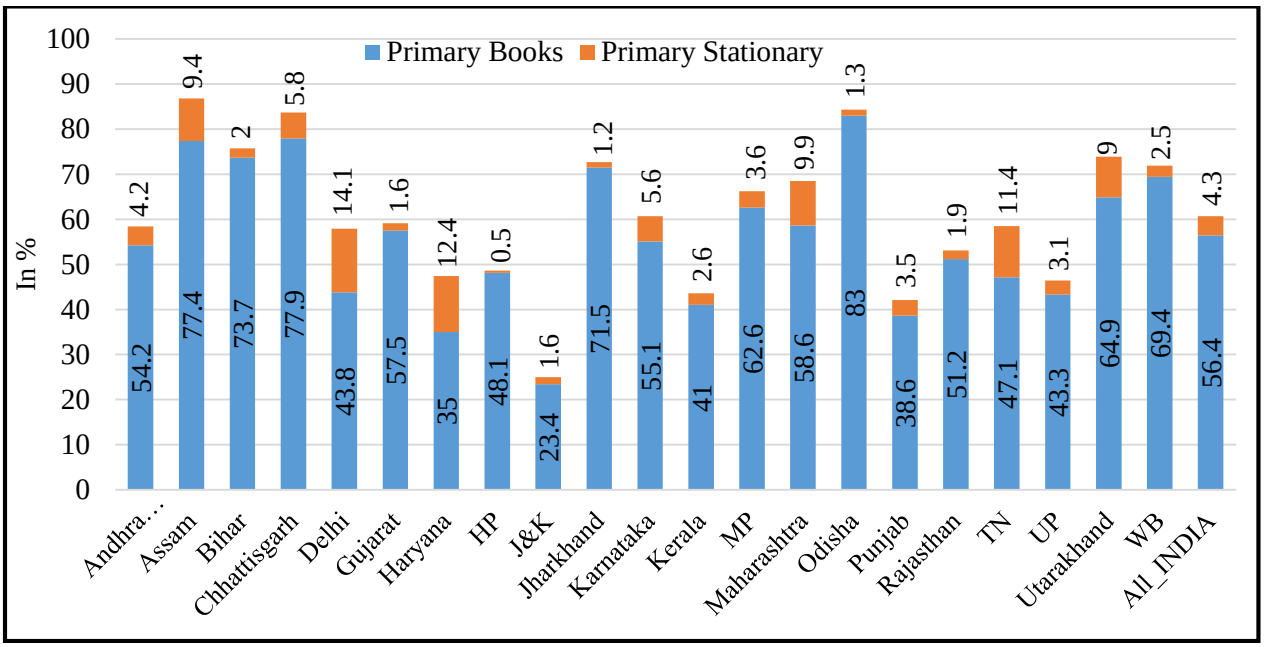
Source: 71st round NSS (2014), Education In India

Figure 6.18
Proportion (Per 1000) of Students at Primary and Upper Primary, getting Free Education, 2014



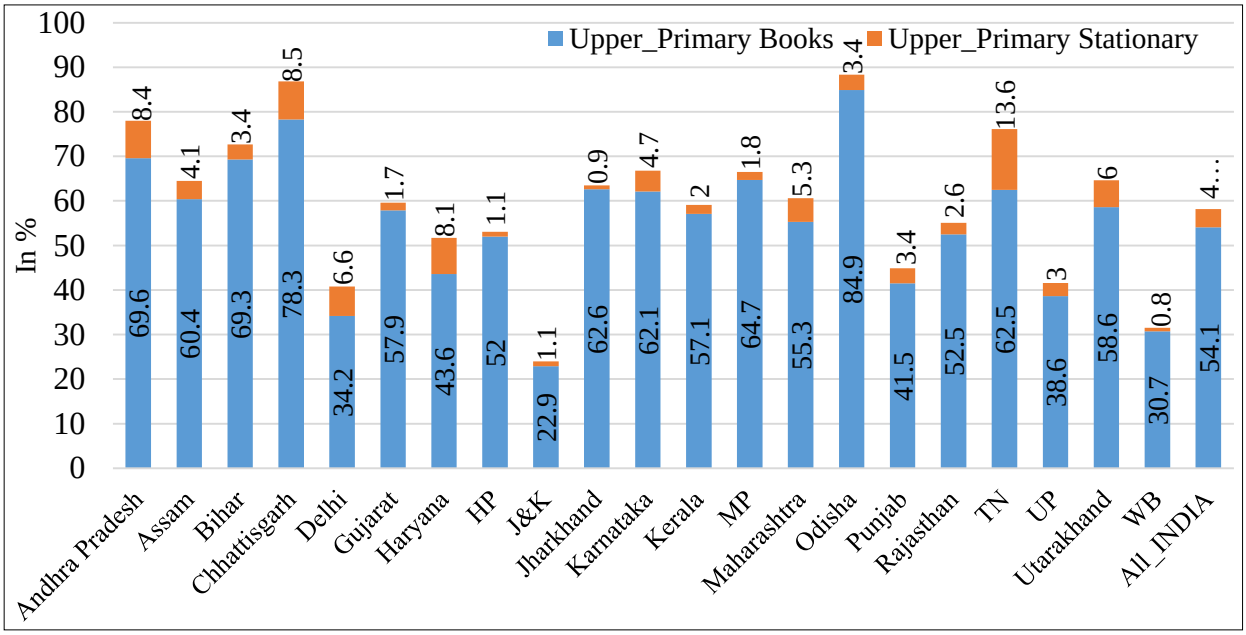
Source: 71st round NSS (2014), Education In India

Figure 6.19
Students at Primary Level receiving Incentives- Books and Stationary, 2014



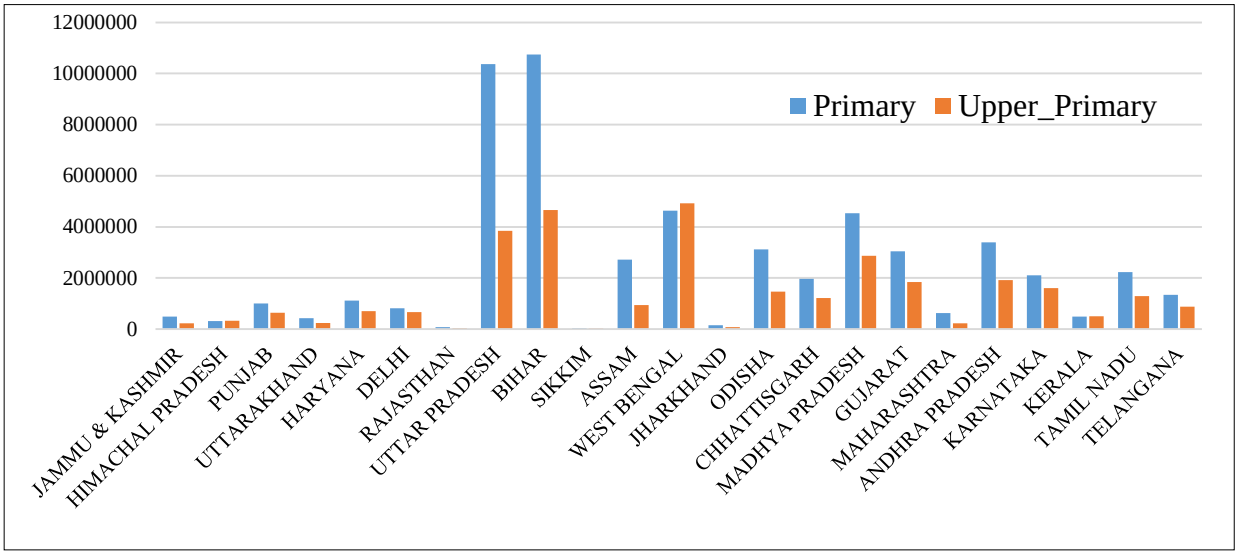
Source: 71st round NSS (2014), Education In India

Figure 6.20
Students at Upper Primary Level receiving Incentives- Books and Stationary, 2014



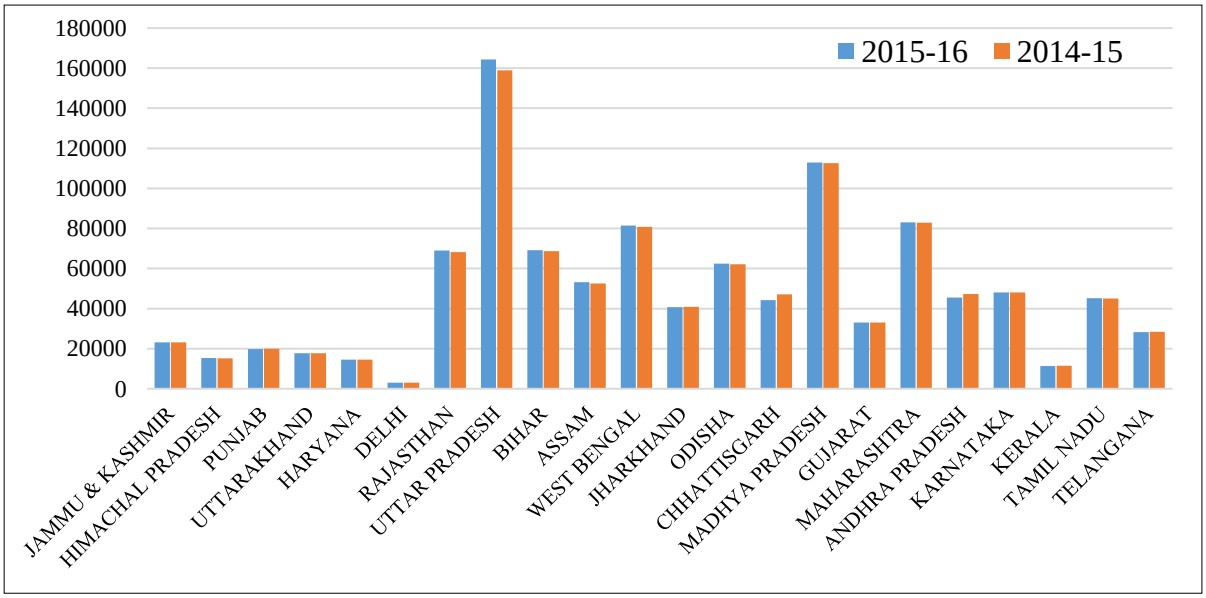
Source: 71st round NSS (2014), Education In India

Figure 6.21
Students by Education Category, Receiving Free Uniforms, 2015-16



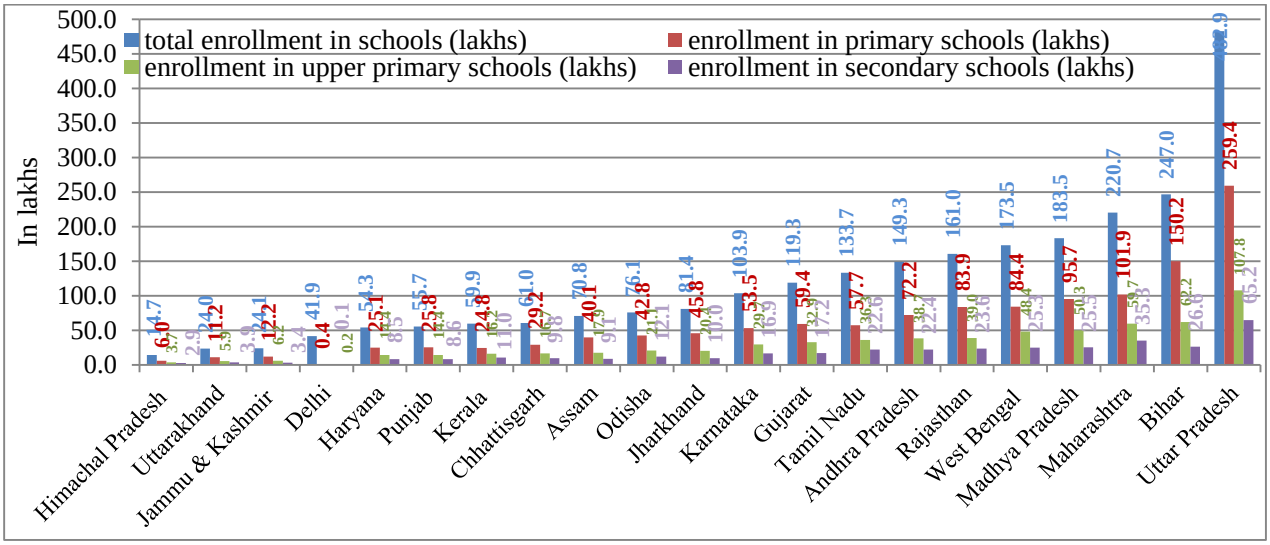
Source: 71st round NSS (2014), Education In India

Figure 6.22
Schools providing Mid-Day Meals, 2015-16



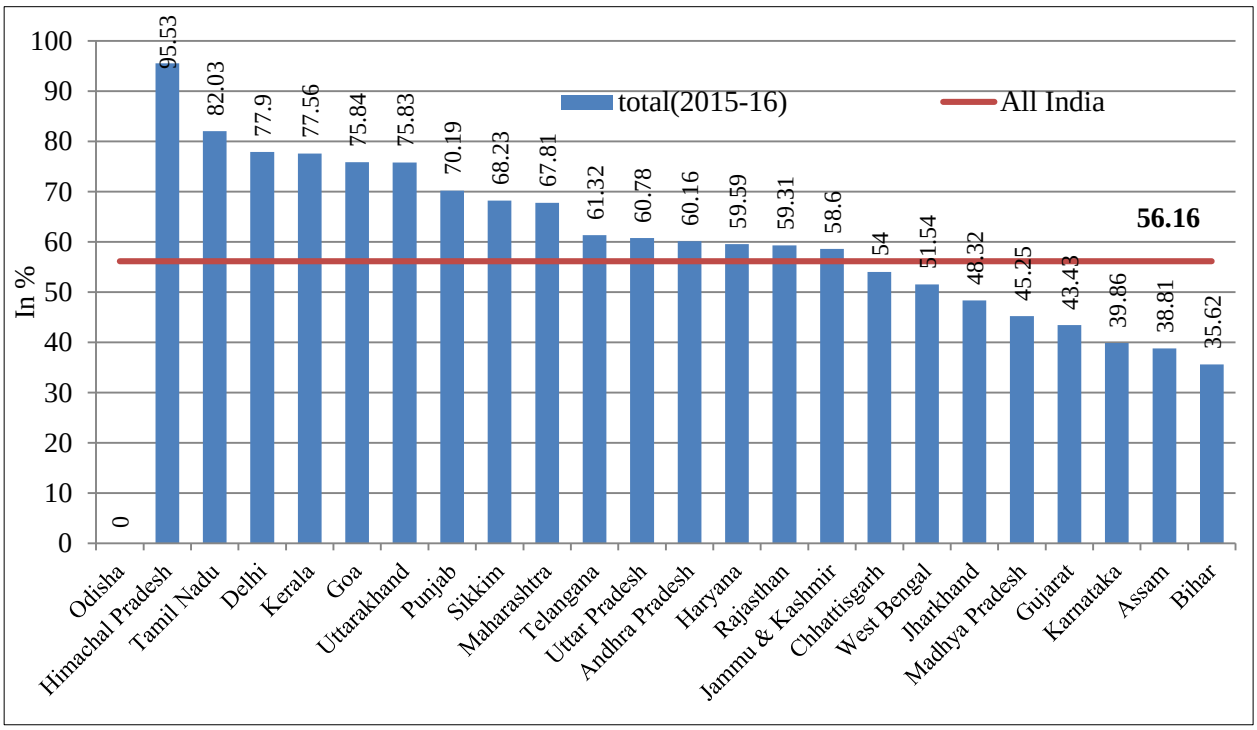
Source: 71st round NSS (2014), Education In India

Figure 6.23
Total Number of Enrollment in School at All Levels, 2015-16



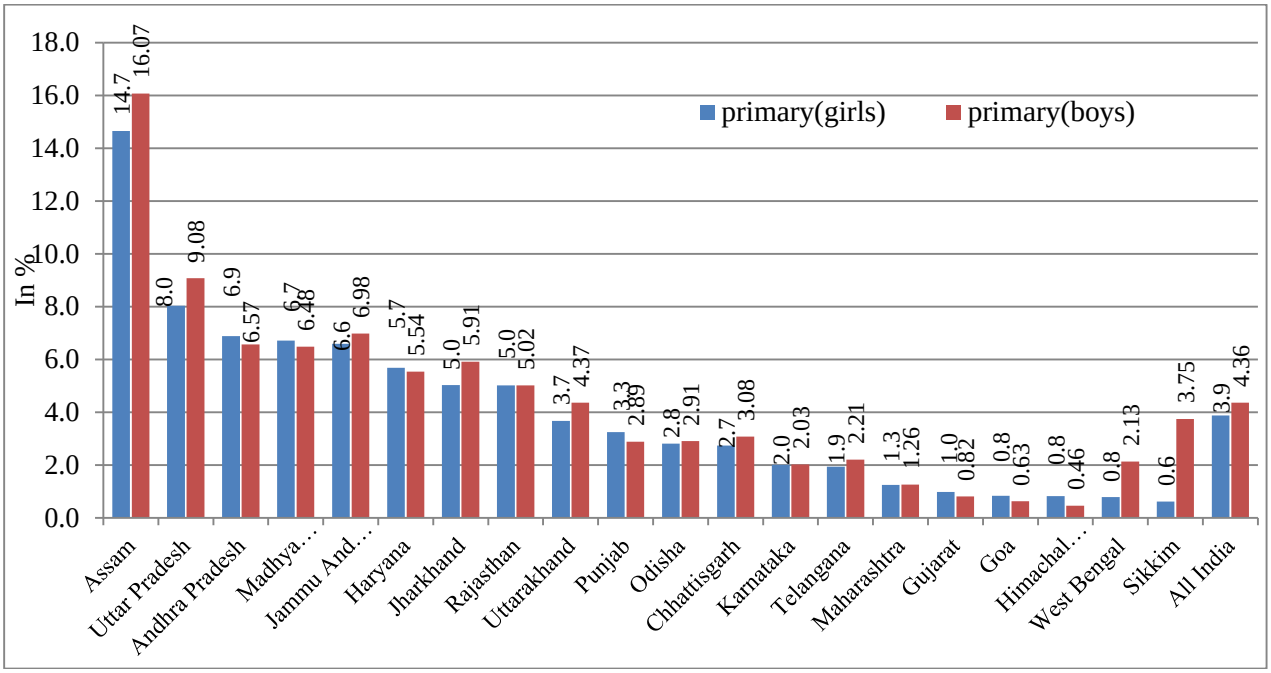
Source: U-DISE report 2015-16

Figure 6.24
Gross Enrolment Ratio, , 2015-16



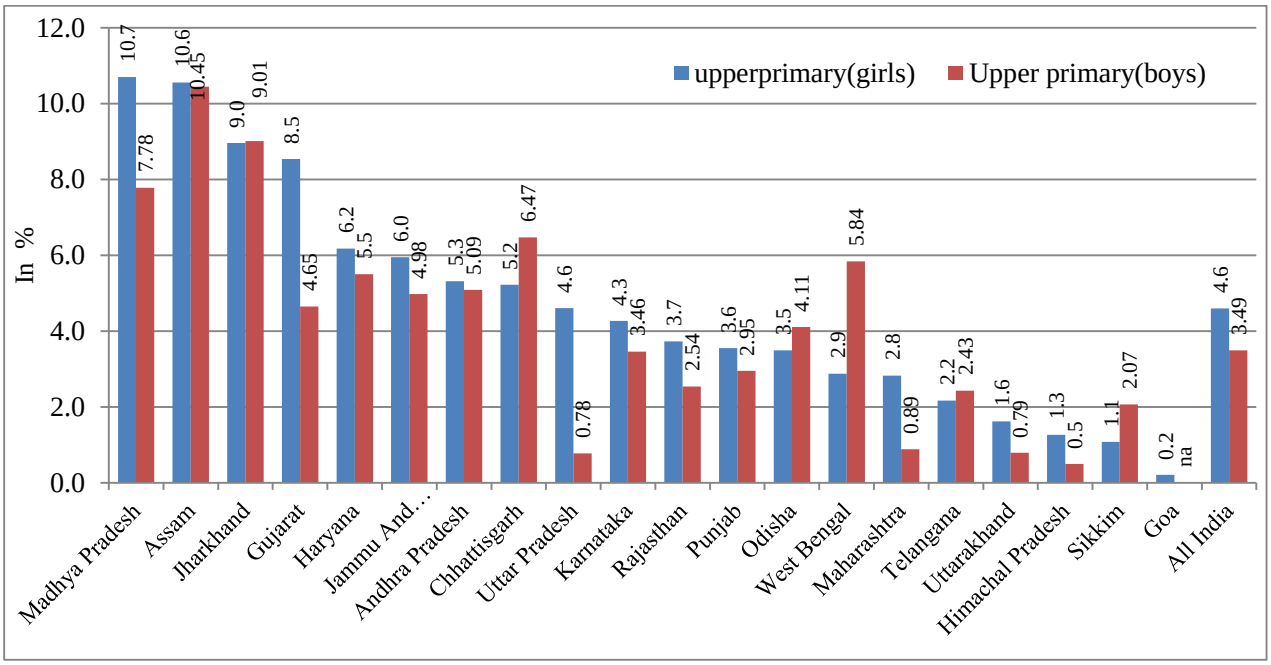
Source: U-DISE report 2015-16

Figure 6.25
Drop-Out-Rates in Primary, 2014-15



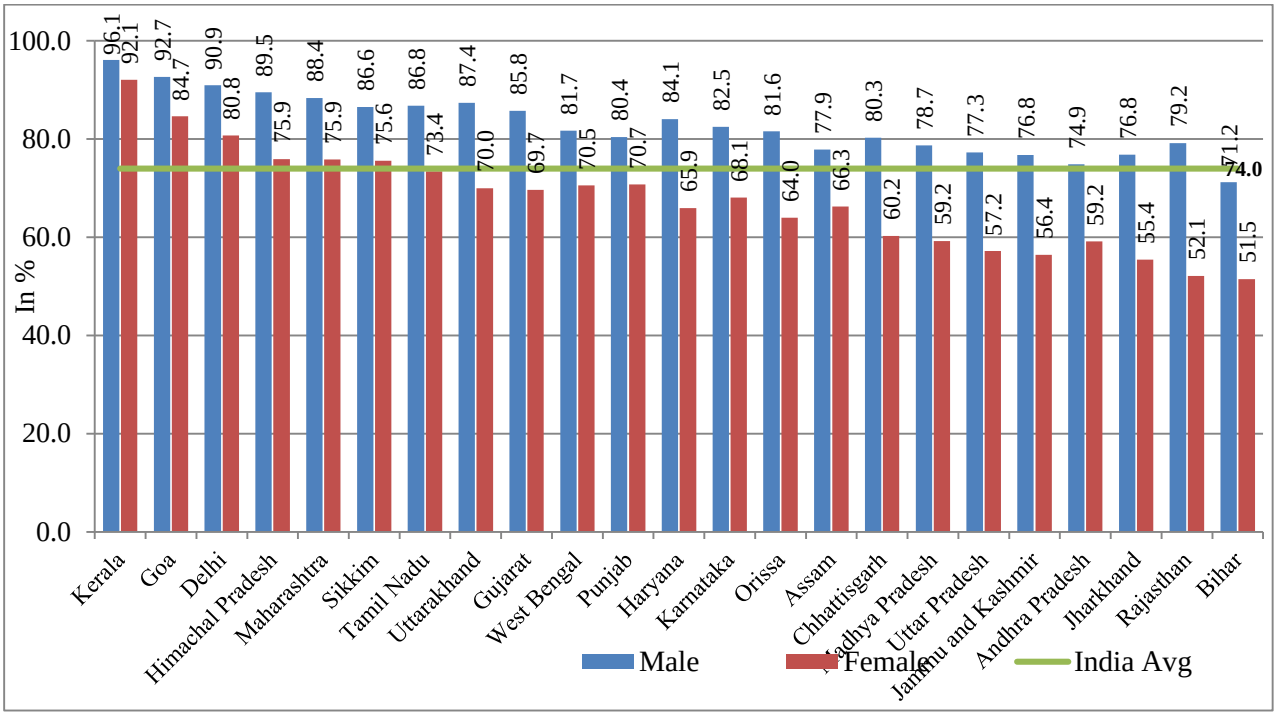
Source: U-DISE report 2015-16

Figure 6.26
Drop-Out-Rates in Upper Primary, 2014-15



Source: U-DISE report 2015-16

Figure 6.27
Literacy Rates, 2015-16



Source: U-DISE report 2015-16

CHAPTER 7

POVERTY AND OUT OF POCKET EXPENDITURE ON HEALTH AND EDUCATION

7.1. Introduction

The provision of health care services and education are the two key elements of the government policies for the promotion of broad based economic growth and there is no doubt that investment in human resources has much importance in alleviating household poverty. For any Nation, Health services and quality Education do not only provide a better standard f living for every citizen having affirmative effects on the economic growth. The evidences from various researches show that the public expenditures in these two sectors has a definite role for the progression of human development. However, it has been seen in the earlier chapters that the government expenditure has not been adequate in respect of health and education, and as a proportion of GDP, they have been very low and yet to achieve its targets. It has been analysed in earlier chapters that in absence of adequate public expenditure and limited public facilities, individuals in our country are bound to spend from their own income on health and education, as they rely on private service providers, increasing the vulnerability of people becoming poor. Also due to poverty, quality health care services can not be accessed by the poor households, again leading to ill health.

India, though has major Government led institutions in the higher education and the tertiary health sector e.g the Central Universities, and major medical research centres like AIIMS (All India Institute of Medical Sciences), but, has not adequately strengthened the lower level of health and education services which are of immense importance for well-being of population. The unavailability of public health and educational services at the lowest level increases the economic burden of people and they get trapped with ill-equipped and unqualified practitioners/ teachers, due to the continued absence of public health and education system. Lack of monitoring of all the private alternative systems also undermines public health and education especially in the remote location.

The private expenditure constitutes the largest proportion of expenditure in these two social sectors in India as has been discussed in the earlier chapters that, out-of-pocket expenditure are the direct cash expenditure by a consumer for the goods and services availed by them. It also includes the cash paid that could be later reimbursed or paid back to the consumers. Health and education constitutes the most essential services for an individual or a family. Compulsion of out of pocket expenditure on these services may also reduce the expenditure on other essential goods and services like food and clothing etc. and can bring a family to a vicious situation like debt-trap. Families also sell their assets for availing health and education services. So it is quite imperative to understand the impact of private expenditure (Household expenditure) on health and education on the general level of poverty.

7.2. Background

Developing countries especially focus on enhancing human capital through public services like education, health care etc by contributing a large amount of resources for subsequent economic growth (Yesufu 2000[163], Sakthivel & InderSekhar 2007[164]). Better level of education is linked to economic development (Ola 1998d)[165] and hence cannot be ignored as it helps steer the country towards progress. A significant share of what is spent on education, comes from two domains- public investment and household investment (World Bank 2008)[166].. In countries with low levels of income, the burden on households to pay for education often raises issues of equity and accessibility (UNESCO Institute of Statistics (UIS), 2016))[167]..

According to the UIS) report (2017) out of pocket expenditure remains high in developing countries even at the primary level despite most of the countries have highest amount of government spending for public education at primary level. UIS data also points to the fact that households in most of the developing countries spend a much higher proportion of their average GDP per capita on education than those from developed nations (Huebler and Legault 2017)[168].. Highly educated households having higher incomes generally do spend higher amount on

[163] The Human Factor in National Development: Nigeria, Ibadan: Spectrum Books
[164] Causality between Public Expenditure and National Income in India: A Reexamination, The Icfai University Journal of Public Finance,5(4), pp. 36-51.
[165] Education in National Development, Vanguard Newspaper August 2.
[166] World Development Indicators 2008 : Poverty Data, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/28241 License: CC BY 3.0 IGO."
[167] http://uis.unesco.org/sites/default/files/documents/who-pays-for-what-in-education-national-revealed-through-accounts-2016-en_0.pdf
[168] http://uis.unesco.org/en/blog/worlds-families-hidden-funders-education

education (Psacharopoulos, Arieira, and Mattson 1997)[169]. A systematic understanding of the same is given by the Human Capital theory that views education as an investment to maximize earnings for the lifetime (Becker, 1964, 1981[170]; Becker and Tomes 1976[171]). People belonging to lower socio- economic strata consider education as a stepping stone towards social and economic mobility (Assaad, Salehi-Isfahani, and Hendy 2014)[172]. So the lower economic class tends to expend a large proportion of their income on these services.

We have discussed in the earlier chapters the stagnation of public education expenditure as a share to GDP at 3.1 per cent from the year 2009-10 to 2013-14. But there was decrease in this share to 2.8 per cent in the year 2014-15, and again an increase to 3.2 per cent in the year2016-17 (Economic Survey 2017)[173]. The average private expenditure on education per student per year which includes both primary and secondary has risen from Rs. 2,461 in 2007-08 to Rs. 6,788 in 2014. The cost of essential education is ever rising.

The Out-of-pocket payments (OOPs) are the direct payments made for health care services at the time of its use by an individual, as has been defined by WHO. The majority of OOP payment is made by the poor sections of the society who do not have access to financial security when they fall sick. They fall into the trap of poverty, often taking recourse to borrowings or selling assets. The NHA (2014-15)[174] has estimated that in our country 62.6% of Total Health Expenditure comprises of "Out of Pocket Expenditure"These expenditures are from individuals/households. The Institute for Health Metrics and Evaluation, University of Washington (2017)[175], in a study placed India at the 6th position among 25 countries where OOP spending on health services was 50%, higher in 2014 (at 65.6%).

World wide, due to OOP expenditure for healthcare around 150 million people have to face financial catastrophe and around 100 million of those due to OOP health expenditure suffer from poverty. Most of them around 90% live in low-income countries where they do not get any help

[169] Private Education in A Poor Country: The Case of Urban Bolivia. Economics of Education Review, 16(4), 395-406.
[170] Human Capital, A Theoretical and Empirical Analysis, With Special Reference To Education. New York, National Bureau of Economy.
[171] Child Endowments and the Quantity and Quality of Children, Journal of political Economy, 84(4, Part 2), S143-S162.
[172] Inequality of Opportunity in Educational Attainment in Middle East and North Africa: Evidence from Household Surveys, in Economic Research Forum Working Paper Series No (Vol. 834).
[173] Economic Survey 2017-18 Volume I Government of India Ministry of Finance Department of Economic Affairs Economic
[174] National Health Accounts Estimates Report 2014-15, Ministry of Health and Family Welfare.
[175] http://www.healthdata.org/sites/default/files/files/policy_report/2018/IHME_FGH_2017_fullreport.pdf

from institutions for such losses (Xu et al. 2007)[176]. The countries in Asia which have to face the highest burdens of health care payments are Vietnam, India and Bangladesh (Van Doorslaer et al. 2007)[177]. In India, numerous studies estimated the number of people pushed into poverty by OOP expenditure between 32-39 million, every year (van Doorslaer et al. 2006[178]; Bonu et al. 2007[179]; Garg and Karan 2009[180]; Berman et al. 2010[181]). In India the government expenditure on health, has systematically been low at less than 1% of GDP, in comparison to other countries.OOP expenditures thus severely impacting the living standards of many BPL households (Garg and Karan, 2008)[182].

In India, households' Out of Pocket Expenditure on education is highest among the BRICS nations and still lag behind on a lot of the parameters of both health and education (NSSO). Generally OOP payments for health care made by about half of BPL families and around 60% of all households; these payments were directly responsible for increase of head count ratio by 3.5%, thus making the overall poverty increase; rural populations suffering the most (Shahrawat and Rao 2011[183]).

Taking cue of the literature as detailed above, efforts hasve been made to analyse the impoverishing effect on people after spending on health and education. We have used data from the NSS 61st and 68th rounds of household consumer expenditure survey.

7.3. Rationale

The long term impact of expenditure on education and health on Nation's economy cannot be denied as India has the largest young population in the world. To become a large growing economy in near future, health and education facilities need to be provided to all and the public system of provisioning need to be strengthened. As better health and educational services are often

[176] Financial Burden of Household Out-of Pocket Health Expenditure in VietNam: Findings from the National Living Standard Survey 2002–2010. https://doi.org/10.1016/j.socscimed.2012.11.028.
[177] Catastrophic Payments for Health Care in Asia. Health economics, 16(11), 1159-1184.
[178] Effect of Payments for Health Care on Poverty Estimates in 11 Countries In Asia: An Analysis Of Household Survey Data, Lancet
[179] Incidence, Intensity, and Correlates of Catastrophic Out-of-Pocket Health Payments in India, Asian Development Bank, ERD Working Paper No. 102.
[180] Reducing Out-of Pocket Expenditures to Reduce Poverty: A Disaggregated Analysis at Rural-Urban and State Level In India. Health Policy and Planning, 24(2).
[181] The Impoverishing Effect of Healthcare Payments in India: New Methodology and Findings, Economic & Political Weekly, 45 (16).
[182] Reducing Out-of-Pocket Expenditures To Reduce Poverty: A Disaggregated Analysis at Rural-Urban and State level in India, Health Policy and Planning 24(2):116-28 · March 2009.
[183] Insured yet Vulnerable: Out-of-Pocket Payments and India's Poor, Health Policy and Planning, 27(3), 213-221.

unaffordable for large section of population, low cost or subsidized education and health system with quality are therefore essential in India.

It has been seen in the earlier chapters that the expenditure burden in case of essential and emergency services, especially for health makes household often to take huge loans or sell assets. Moreover, the lack of accessibility to formal credit system has reinforcing impact on the poverty level due to reduced income of the family in longer term. The expenditure on these services are also rising which could make education and health service out of reach for poor. Further, the rising price level in general can also undermine the importance for prioritizing health and education for the lower income group, spending more on basic necessities like food, clothing and shelter or in investments for economic sustenance.

In this chapter an estimate of impact of health and educational expenditure on poverty is presented. A state level analysis of expenditure and poverty level has been done on the basis of surveys conducted by NSSO in its various round.

7.4. Poverty Lines: Household Health and Education Expenditure

The 61st round (2004-05) and 68th round (2011-12) of the National Sample Survey (NSS) provide estimates for average household expenditure along with the average estimations of various components of the total household expenditure at the State and National level. In the year 2009, the Tendulkar committee estimated the monthly per capita level of expenditure essential for survival for a household, and estimated new poverty lines at the national and state level on the basis of Mixed Reference Period[184].

Table 7.1(pg-198) has shown the poverty lines estimated by Tendulkar Committee in urban and rural area for major states. The poverty lines also include expenditure on education and health. Expenditure on health and education can be compulsive and catastrophic especially for the poor section having lower level of expenditure.

Out of pocket expenditure on health and educational service may be low for poor but can form a substantial part of their total household expenditure when these services are availed.

[184] Report No. 508(61/1.0/1), Level and Pattern of Consumer Expenditure, 2004-05 NSS 61st Round (July 2004 - June 2005, MRP: Mixed reference period

7.5. Association of Health and Education Expenditure with Poverty

To understand the association of expenditure on education and health with level of poverty, it is important to construct a poverty line that is adjusted for expenditure on education and health. The modified poverty line is constructed by deducting average expenditure made by poor on health and education from the poverty line (Tendulkar Committee). A similar analysis has also been done by excluding health expenditure only.

Modified PL $_{\text{without Health and Education}}$($MPL_{WHE}$)= Poverty Line (PL) – Average Expenditure on Health and Education by Poor

Modified PL $_{\text{without Health}}$(MPL_{WH})= Poverty Line (PL) – Average Expenditure on Health by Poor

7.5.1. Modified Poverty Lines – 2004-05: Estimates

Two kinds of poverty line have been constructed using the above method. The Table 7.1(pg-198) provides estimates of the two modified poverty lines for major states along with the Tendulkar Committee poverty lines for the 61st round of NSS, taking Mixed Reference Period (MRP), separately for rural and urban areas. For rural areas, the poverty line reduces from Rs. 447 to Rs. 432.5 at national level, if modified poverty line excluding health is considered, while it further reduces to Rs. 425.5 if poverty line is modified for both health and education expenditure.

Using the above mentioned modified poverty lines, effect of expenditure on health and education, which could be catastrophic and compulsive in nature, has been removed. The modified poverty line provides a cut-off level expenditure using which the percentage of people below poverty line has been estimated after deducting household's expenditure on health and education. An analogy for this analysis has been drawn by assuming that all health and educational expenditure of the economy is borne by the State. Similar analysis also has been done by excluding only health expenditure.

7.5.2. Impoverishment during 2004-05

To see the impoverishment effect, we have considered both rural and urban areas separately, with the modified poverty lines adjusted for health expenditure, education expenditure and, health and education taken together for the year 2004-05.

7.5.2.1.Rural Areas

The Figures 7.1 and 7.2 (pg-202) show comparative estimates of proportion of people below poverty line as per the Tendulkar Committee and with modified poverty lines (MPL_{WH} MPL_{WHE}) using mixed reference period for the year 2004-05 for Rural areas.

It is clearly observed that during 2004-05, at all India level, approximately 7 per cent of population was pushed into poverty level because of the expenditure made on 'health' and 'health & education' separately. The large percentage of this surplus poverty is seen in rural areas especially in Rajasthan, around 23%, while the percentages were also greater than 10 per cent in Gujarat and Himachal Pradesh.

7.5.2.2.Urban Areas:

The Figures7.3 and 7.4 (pg-203) show comparative estimates of proportion of people below poverty line as per the Tendulkar Committee and the same with modified poverty line (MPL_{WH}) and (MPL_{WEH}) for the year 2004-05 in urban areas. It is observed that in majority of the states, people could have been pulled out of poverty if the state governments' health expenditure were substantive, and, people were spared to spend on health services on their own.

The percentage of people that fall-off to poverty in urban regions by making expenditure on health, and, health and education together are comparatively lower than that in the rural regions; about 2 per cent at national level; while about 5 per cent in Haryana, Punjab, Kerala and Uttarakhand. However, when MPL_{WHE} is considered many states do not seem to follow the trend as with MPL_{WH}. This can be due to higher proportion of expenditure on other goods and services than on health and education in the urban region. That is expenditure of other goods-services (like clothing, housing, travel, food) might be more detrimental for pushing people to poverty.

7.5.2.3. People Pushed to Poverty due to Expenditure on Health and Education: 2004-05

The analysis above shows the percentage of people that are pushed into poverty due to the expenditure that they incurred on health and education, separately in urban and rural regions. The table 7.2 (pg-199) shows the absolute number of people in each state that are pushed into poverty by taking both the regions (urban and rural) together. Further, the table shows the changes in absolute number if MPL_{WH} or MPL_{WHE} is used for calculation of number of poor.

It can be observed from the table 7.2 (pg-199) above that about 6 crores person fall into poverty due to expenditure on health and education. In the state of Rajasthan, a large number of people fall into poverty. In Punjab, Himachal and Jammu & Kashmir, though the absolute number of person pushed to poverty are not as large as Rajasthan, the proportion of people falling into poverty are observed to be quite high.

7.5.3. Modified Poverty Lines – 2011-12: Estimates

A similar analysis done below for the NSSO 68th round (year 2011-12). The poverty line from Rs. 816 reduces to Rs. 772 in rural areas and from Rs. 1000 to Rs. 935 in urban areas as shown in Table 7.3 (pg-200). The new Poverty line is estimated by deducting average expenditure on 'health' and 'health and education' of poor from the poverty line (Tendulkar committee estimate).

7.5.4. Impoverishment during 2011-12

For analyzing the impoverishment effecy for 2011-12, we have used the poverty lines for 2011-12, and adjusted in the same mannesr as above for health expenditure, education expenditure, and, health and education expenditure taken together.

7.5.4.1 Rural Areas:

The Figures7.5 and 7.6 (pg-204) show the percentage of people pushed to poverty as per the 68th round of NSS due the out of pocket expenditure made on 'health' and 'health & education' expenditure. It can be observed that about 6.7 to 7 per cent of people are pushed into poverty if health and education expenditure are included. However, the same trend is not seen in the states if MPL_{WH} (Modified Poverty $Line_{Without\ Health}$) is considered where majority of states are seen to have a reduced level of poverty. This show an under estimation of poverty level, as the compulsive medical expenditure increases the total expenditure of the households and thereby reducing the number of households being below the estimated poverty-line.

The increase in poverty level can also be seen in most of the States of India in the rural areas if we move from MPL_{WHE} estimated to Tendulkar PL estimates. Similar difference in the increase in the level of poverty can be observed at the national level when expenditure on medical and health is included.

7.5.4.2. Urban Areas:

A similar comparison for the urban region is made in the Figures 7.7 and 7.8 (pg-205). These figures for the 68th NSSO Round for urban regions has similar tend at the state level as has been analysed for rural regions for the 68th round. In most of the states people fall to poverty by making expenditure on health and 'health and education'. However, the same is not true when MPL_{HE} is considered (Figure7.7, pg-205), showing an under-estimation of poverty in many states like Bihar, Jharkhand, Uttar Pradesh, Chattishgarh, Madhya Pradesh, Odisha.

7.5.4.3. People Pushed to Poverty due to Expenditure on Health and Education: 2011-12:

The Table 7.4 (pg-201) shows difference in absolute number of poor person in India when Tendulkar Estimate is compared with estimates from MPL_{WE} and MPL_{WHE}. It shows that about 3.5 to 4.5 crores person are pushed to poverty due to the out of pocket expenditure made on 'health' and 'health and education'. In Uttar Pradesh with addition of medical expenditure for estimation of poverty level, the absolute number of person becoming poor falls by 13 Lakh showing an under estimation of level of poverty. A huge number of people in the state of Bihar, Maharashtra and Madhya Pradesh fall into poverty with expenditure on health and education.

We can therefore, accept our hypothesis H4, 'the extent of poverty would increase due to Out-of-Pocket Health and Education' expenditure.

The number of people being pushed into poverty level reinforces the importance of government health and education policy and public expenditure on health and education in our economy. Here it is also important to note that the medical expenditure includes two kind of medical expenditure—institutional and non-institutional medical expenditure. In many states the non-institutional medical expenditure for poorer expenditure group is higher than the institutional medical expenditure. Hence, even if the private expenditure is made on health in two different ways, it is not necessary that expenditure has been done in the desired direction, reinforcing the importance of public health expenditure and infrastructure.

7.6. Inequality in Health and Education Expenditure

It becomes very much important to understand the inequality of expenditure on health and education for any state to formulate appropriate policies to bring the poor people at least at par with average. Higher inequality indicates that the health and education facilities for the poorer

section are out of reach. In this regard an analysis of inequality in expenditure on health and education has been made by estimating the Gini coefficients for different states. This analysis has been done on two time-points with the 61st (2004-05) and 68th (2011-12) rounds of of NSS Consumer surveys. The estimated Gini coefficients of the expenditure on education and health would determine the level of inequality within the states. The Gini coefficient ranges from '0' to '1', where '0' implies complete equality and '1' imply complete inequality. So, higher gini implies higher level of inequality of expenditure within a state.

The analysis is also made over two time periods, which would show the changes in inequality with time. The Figures 7.9 and 7.10 (pg-206) show gini coefficient for medical expenditure state-wise for 61st and 68th NSSO Round. According to the 68th round, rural Karnataka, Tamil Nadu, Maharashtra and Uttar Pradesh has the highest level of inequality; while rural regions of Bihar, Assam and Jharkhand have the lowest inequality. It can also be noticed that three states with lower gini coefficient also has lower average per capita medical expenditure; whereas Tamil Nadu, Maharashtra, Karnataka and U.P have higher level of medical expenditure. It can also be observed that the inequality of medical expenditure in rural area have reduced from 61st to 68th round for majority of the states presented in the Figures7.9 and 7.10 (pg-206).

The above mentioned Figures show that unlike the rural India the Gini coefficient for urban regions for medical expenditure has increased for majority of the states over the two time points. The rise in the inequality for few states is very high. Uttar Pradesh, West Bengal and Himachal Pradesh have high inequality with Gujarat Punjab and Haryana have the lowest inequality for medical expenditure. The Figures7.11 and 7.12 (pg207) present similar analyses for educational expenditure.

It can therefore be concluded that our hypothesis H5, 'the inequality in monthly per capita education and health expenditure across states does exist' is quite valid.

7.7 Concludig Remarks

This chapter elucidated the association of health and medical expenditure with poverty. Expenditure on health and education can be categorized as compulsive and catastrophic for low expenditure groups. Majority of states were observed to have lower level of poverty when expenditure on health and education is adjusted for.

Although Government of India has many policies and programmes that aims to support poor with their expenditure on health and education but still a substantial proportion of out of pocket expenditure is spent on health and education. Affordability for education and health for the low expenditure group of the population is a constraint to achieve better living standards.

While the analysis shows the association of out of pocket health expenditure and poverty, the better health and educational service will also help in improving the demographic dividend for the economy. Reach of government mechanism to the lowest economic class is hence very much important.

From the analysis of inequality in level of expenditure on education and health, it can be clearly observed that the level of inequality in urban regions have been higher than in rural regions. One of the reason can be limited level of accessibility for all the economic classes in rural regions than in urban regions. Further if inequality in terms of Gini Co-efficients is compared over the two periods, 2004-05 and 2011-12, then, it can be seen that there has been a fall in inequality in rural regions. However, the inequality in urban regions of India has increased over the years.

The Government of India has made various efforts through its programmes like National Rural Health Mission and SarvSiksha Abhiyan having the objectives to improve facilities for health and education in rural regions. Reduction in the level of inequality could be a reflection of these efforts. There is also need to understand the requirement to reach urban poor to bridge the increasing inequality in urban areas.

The estimated level of poverty when health expenditure and education along with health expenditure is removed from the analysis, it is observed that in majority of states, level of poverty increases if health expenditure is added back in the analysis, especially for the rural regions. However, the same trend in not seen in the latest 68th NSS Round when Health expenditure is removed from the analysis.

The reverse trend shows an under-estimation of poverty. As the share of expenditure of health rises it leads to increase in total expenditure and hence shows an understated estimation of poverty. For instance, in rural Bihar the share of expenditure of health has increased by 3 per cent to 5.6 per cent over the two NSSO Rounds. Likewise, in Uttar Pradesh the share of medical expenditure in rural region has increased from 8.4 percent to 9.7 percent. The rising expenditure (in all class)

includes those household for which the health expenditure could be of catastrophic and compulsive in nature.

The mutually reinforcing nature of poverty and lower level of education and health facility needs to be corrected by improving government health and education policy for reduction of the burden on poor. It is important to reduce the share of out of pocket expenditure in total health and education expenditure to pull out large proportion of population from poverty.

TABLES AND FIGURES

Tables:

Table 7.1
Poverty Line Estimates for the Year 2004-05

	Tendulkar Comm.		Modified PL (Health Excluded)		Modified PL (Education & Health Excluded)	
States	Rural	Urban	Rural	Urban	Rural	Urban
Andhra Pradesh	433	563	421.3	541.1	415.9	513.9
Assam	478	600	472.1	587.4	464.4	576.9
Bihar	433	526	424.7	516.4	418.7	504.0
Chhattisgarh	399	514	386.8	489.8	382.4	479.3
Gujarat	502	659	483.0	633.3	479.1	618.9
Haryana	529	626	509.6	609.9	493.2	580.8
Himachal Pradesh	520	606	499.9	559.2	486.8	544.1
Jammu & Kashmir	522	603	513.6	591.7	499.0	572.6
Jharkhand	405	531	397.1	518.5	392.4	502.8
Karnataka	418	588	408.0	569.8	402.8	559.4
Kerala	537	585	500.7	521.6	488.1	507.9
Madhya Pradesh	408	532	392.1	518.7	386.9	504.2
Maharashtra	485	632	467.4	607.6	462.4	597.1
Odisha	408	497	396.7	483.1	392.6	476.0
Punjab	544	643	523.2	623.9	508.1	593.6
Rajasthan	478	568	464.8	546.6	458.6	529.0
Tamil Nadu	442	560	431.6	542.8	423.3	530.5
Uttar Pradesh	435	532	413.2	509.4	403.4	491.4
Uttarakhand	486	602	471.6	588.8	458.0	554.7
West Bengal	445	573	431.2	555.7	422.3	539.9
All India	447	579	432.5	558.5	425.5	542.2

Source: Author's Calculation

Table 7.2
Number of Poor (In Lakhs) after Adjustment of Poverty Lines (Urban+ Rural), 2004-05

61st Round(2004-05)	No. of Poor (lakhs)	No. of Poor as per MPL (lakhs)		Absolute Change (lakhs) (Original Est.- Modified Est.)	
States	Tendulkar Estimates	Without Health	Without Health & Education	Without Health	Without Health & Education
Andhra Pradesh	238.4	249.8	246.9	-11.4	-8.5
Assam	97.2	74.7	72.5	22.5	24.7
Bihar	486	456.4	462.4	29.6	23.6
Chhattisgarh	109.9	103.3	101.2	6.6	8.7
Gujarat	172	128.9	126.2	43.1	45.8
Haryana	55.1	35.7	38.9	19.4	16.2
Himachal Pradesh	14.6	8.6	8.6	6	6
J&K	14.2	7.1	6.9	7.1	7.3
Jharkhand	130.7	120.9	121.4	9.8	9.3
Karnataka	185.8	192.0	186.8	-6.2	-1
Kerala	65.2	45.2	45.2	20	20
Madhya Pradesh	317	275.6	278.9	41.4	38.1
Maharashtra	393.2	319.2	312.9	74	80.3
Odisha	220	208.9	213.3	11.1	6.7
Punjab	53.7	32.8	33.3	20.9	20.4
Rajasthan	210	89.5	96.2	120.5	113.8
Tamil Nadu	186.9	173.5	174.6	13.4	12.3
Uttar Pradesh	735	706.1	710.5	28.9	24.5
Uttarakhand	29.7	22.1	22.9	7.6	6.8
West Bengal	289.1	275.2	281.7	13.9	7.4
All India	4074.2	3448.6	3454.8	625.6	619.4

Source: Author's Calculation

Table 7.3
Poverty Line Estimates for the Year 2011-12

	Tendulkar Comm.		**MPL$_{WH}$** (adjusted for health)		**MPL$_{WHE}$** (adjusted for health & education)	
States	Rural	Urban	Rural	Urban	Rural	Urban
Andhra Pradesh	860	1009	805.4	964.0	783.8	908.8
Assam	828	1008	814.3	987.5	806.8	975.9
Bihar	778	923	753.9	906.5	742.6	893.7
Chhattisgarh	738	849	724.9	826.0	719.5	815.9
Gujarat	932	1152	896.2	1101.9	885.1	1066.4
Haryana	1015	1169	963.2	1117.1	907.2	1049.0
Himachal Pradesh	913	1064	859.5	992.5	823.8	899.6
Jammu & Kashmir	891	988	875.0	950.0	869.6	907.6
Jharkhand	748	974	732.4	956.3	724.1	938.9
Karnataka	902	1089	882.7	1054.6	859.9	1029.7
Kerala	1018	987	903.3	915.9	859.8	879.0
Maharashtra	967	1126	914.9	1060.4	901.5	1025.0
Madhya Pradesh	771	897	751.4	872.8	745.8	855.8
Orissa	695	861	681.0	842.9	676.5	828.0
Punjab	1054	1155	944.5	1080.7	893.0	1018.5
Rajasthan	905	1002	867.3	966.6	848.5	924.3
Tamil Nadu	880	937	838.0	885.0	822.7	859.0
Uttar Pradesh	768	941	737.1	911.1	720.3	888.5
Uttaranchal	880	1082	838.3	1040.7	801.6	999.9
West Bengal	783	981	754.8	940.8	734.3	913.0
All India	816	1000	785.8	963.8	771.9	935.1

Source: Tendulkar Committee Report, and Author's Calculation

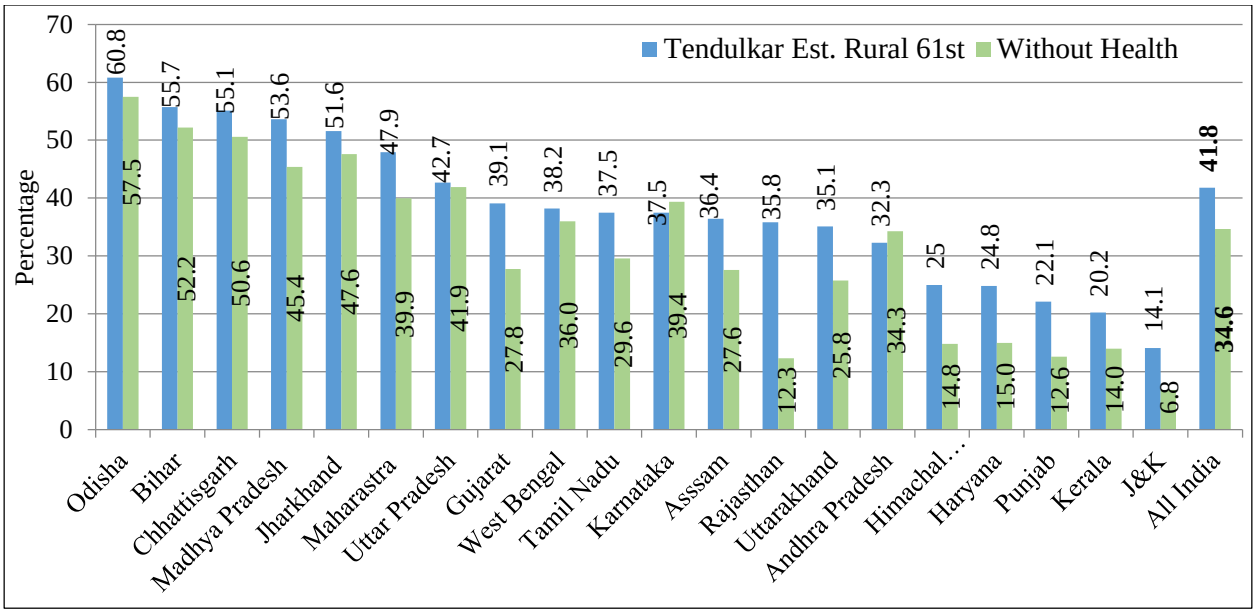
Table 7.4:
Number of Poor (In Lakhs) after Adjustment of Poverty Lines (Urban+ Rural), 2011-12

68th Round (2011-12)	No. of Poor (lakhs)	No. of Poor as per MPL (lakhs)		Absolute Change (lakhs) (Original Est.- Modified Est.)	
States	Tendulkar Estimates	Without Health	Without Health & Education	Without Health	Without Health & Education
Andhra Pradesh	78.8	78.1	49.5	0.7	29.3
Assam	101.3	103.7	85.1	-2.4	16.2
Bihar	358.2	380.5	303.8	-22.3	54.4
Chhattisgarh	104.1	112.1	89.5	-8	14.6
Gujarat	102.3	106.7	80.4	-4.4	21.9
Haryana	28.8	28.2	20.2	0.6	8.6
Himachal Pradesh	5.6	5.3	4.3	0.3	1.3
Jammu & Kashmir	13.2	14.1	11.8	-0.9	1.4
Jharkhand	124.3	128.9	103.2	-4.6	21.1
Karnataka	129.8	138.4	95.6	-8.6	34.2
Kerala	24	24.5	18.5	-0.5	5.5
Madhya Pradesh	234.1	252.4	193.8	-18.3	40.3
Maharashtra	198	199.6	146.9	-1.6	51.1
Orissa	138.5	156.3	107.3	-17.8	31.2
Punjab	23.2	20.8	13.5	2.4	9.7
Rajasthan	102.9	106.2	77.8	-3.3	25.1
Tamil Nadu	82.6	84.7	62.2	-2.1	20.4
Uttar Pradesh	598.2	659.4	611.9	-61.2	-13.7
Uttaranchal	11.6	11.6	9.6	0	2
West Bengal	184.9	199.0	146.9	-14.1	38
All India	2697.8	2263.0	2341.6	434.8	356.2

Source: Author's Calculation

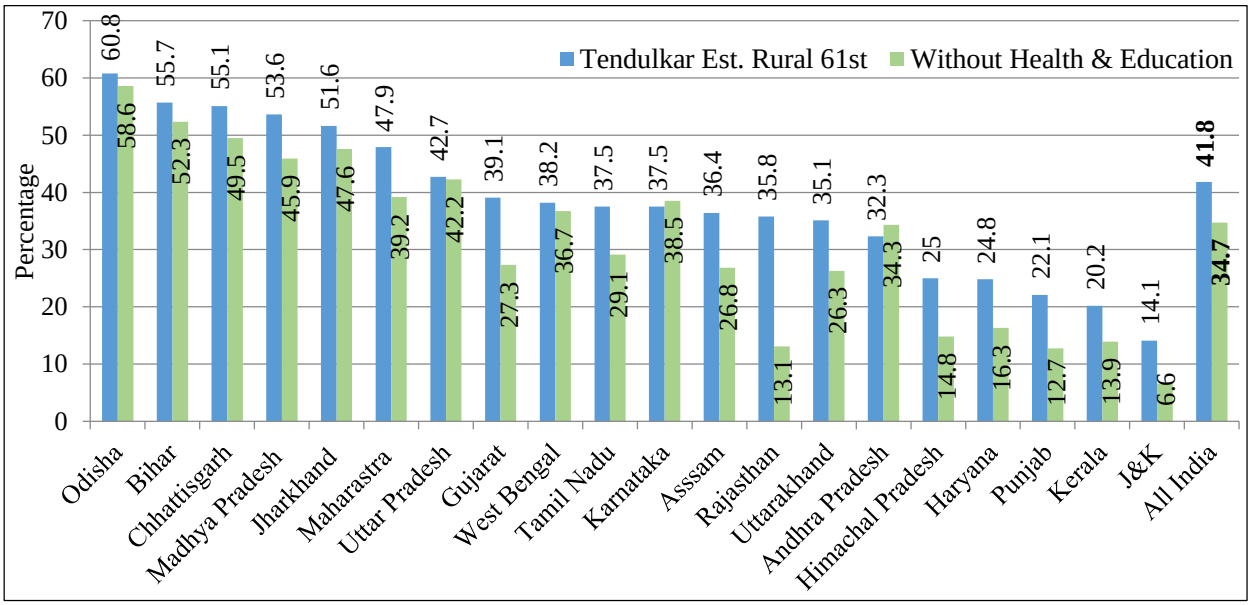
Figures:

Figure 7.1:
Poverty Estimated Excluding Health Expenditure- Rural, 2004-05



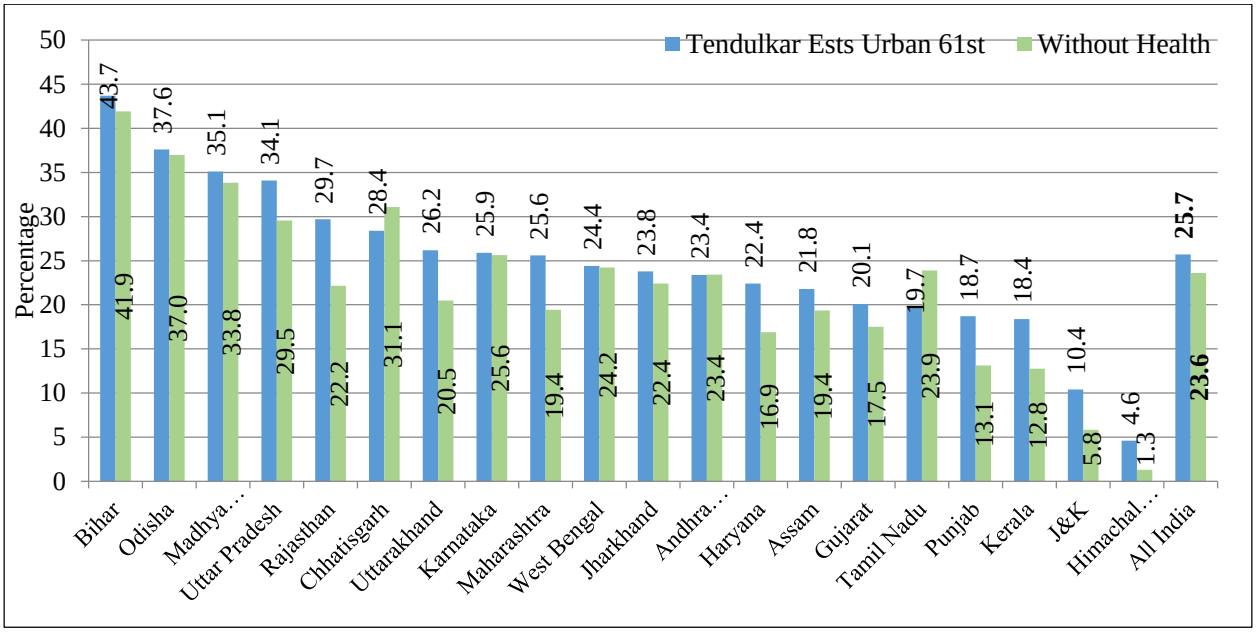
Source: Author's Calculation

Figure 7.2
Poverty Estimated Excluding Health and Education Expenditure- Rural, 2004-05



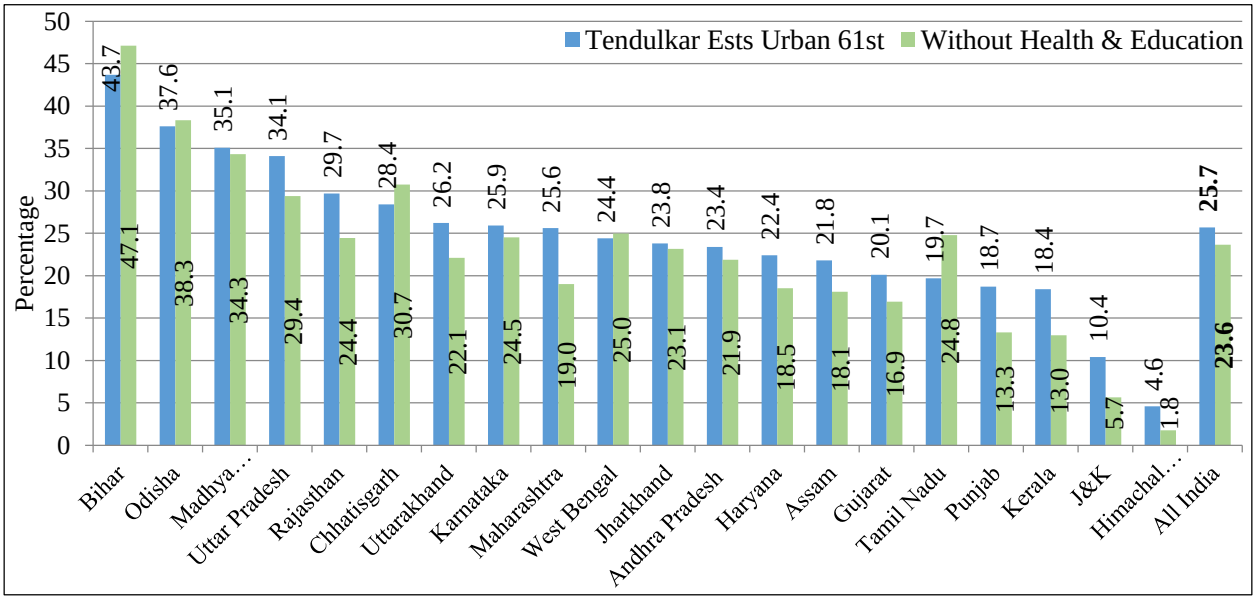
Source: Author's Calculation

Figure7.3
Poverty Estimated Excluding Health Expenditure- Urban, 2004-05



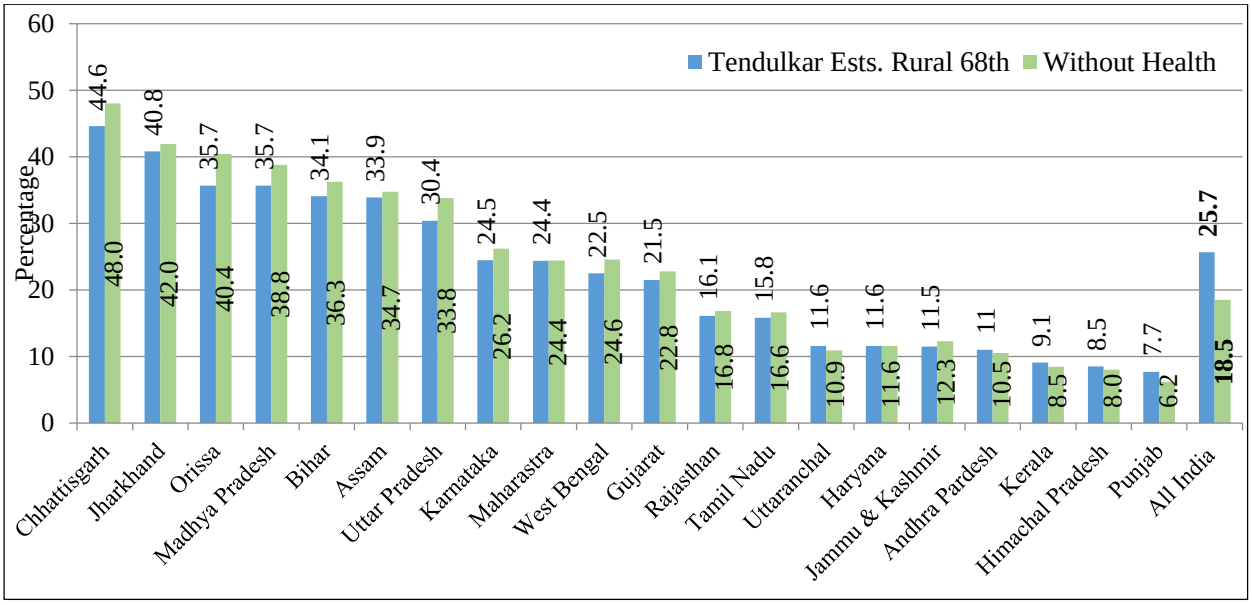
Source: Author's Calculation

Figure 7.4
Poverty Estimates Excluding Health and Education Expenditure- Urban, 2004-05



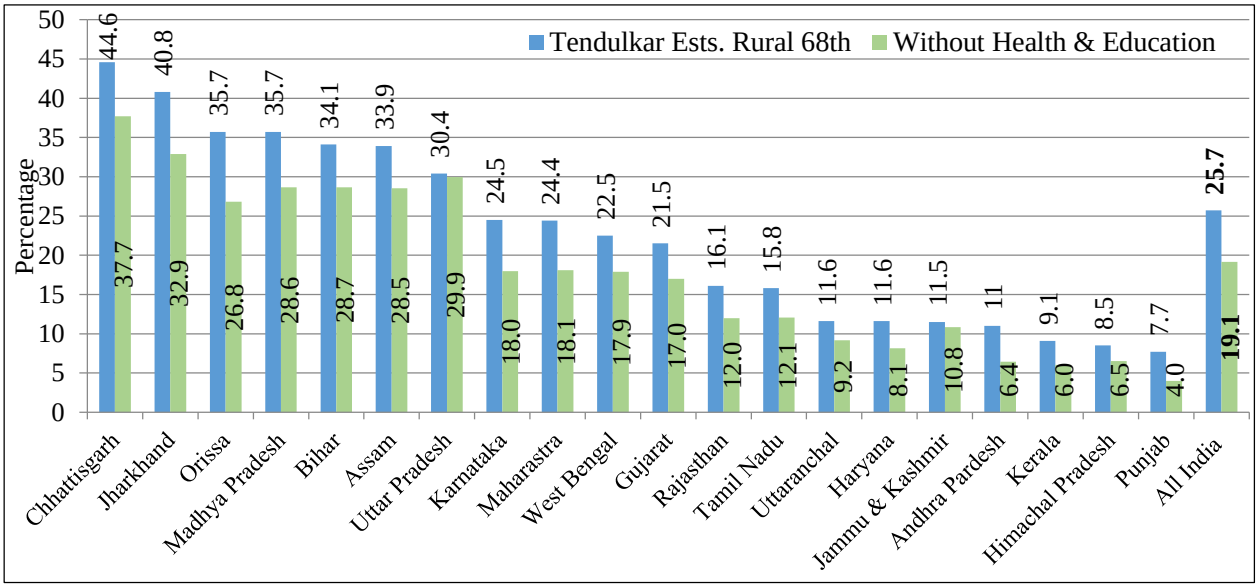
Source: Author's Calculation

Figure 7.5
Poverty Estimates excluding Health Expenditure- Rural, 2011-12



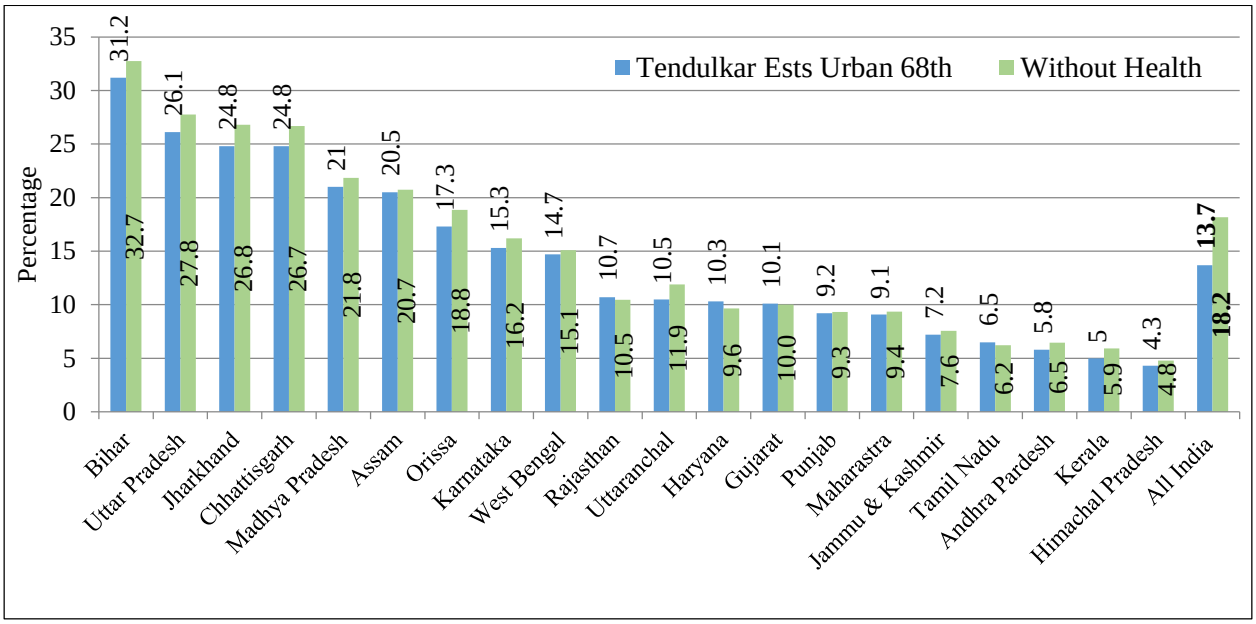
Source: Author Calculation

Figure 7.6
Poverty Estimates excluding Health and Education Expenditure- Rural, 2011-12



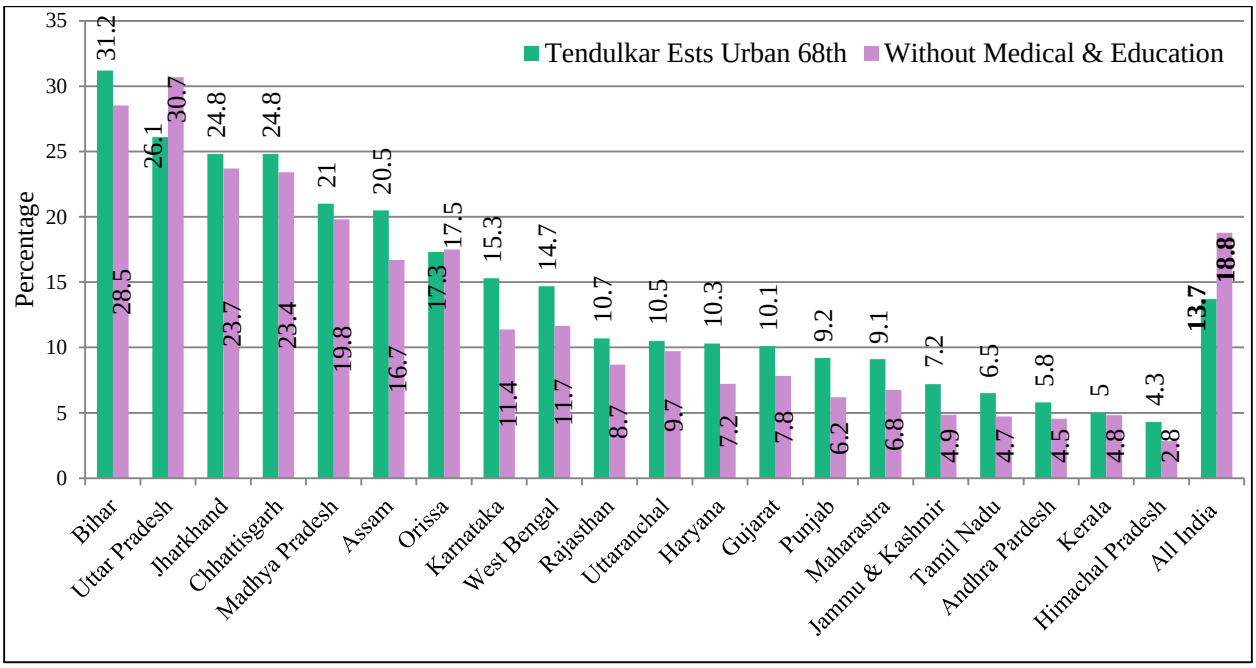
Source: Author Calculation

Figure 7.7
Poverty Estimates excluding Health Expenditure: Urban, 2011-12



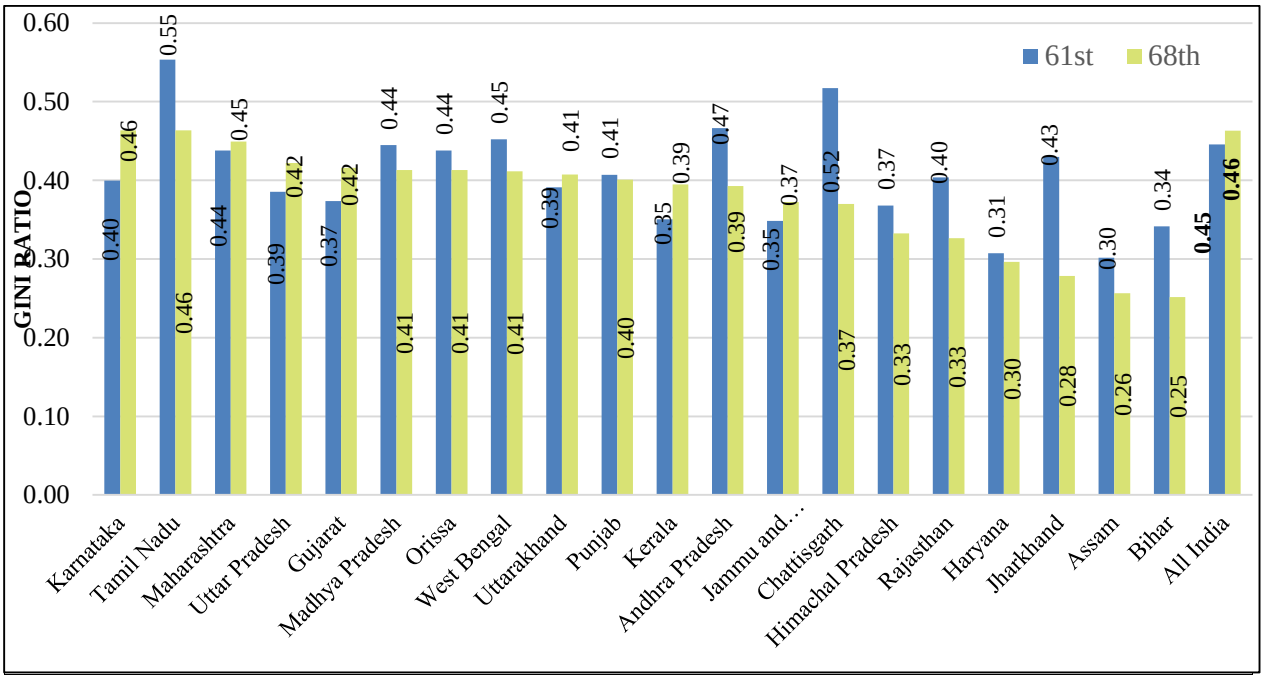
Source: Author's Calculation

Figure 7.8
Poverty Estimates excluding Health and Education Expenditure: Urban. 2011-12



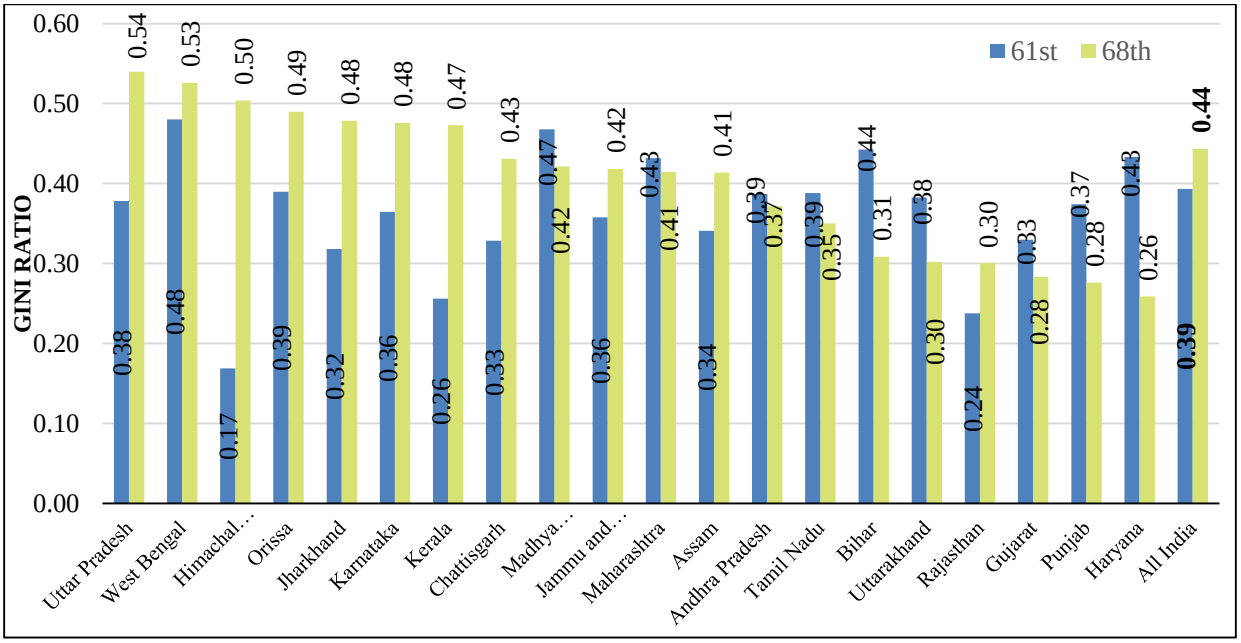
Source: Author's Calculation

Figure 7.9
Inequality in Medical Expenditure-Rural



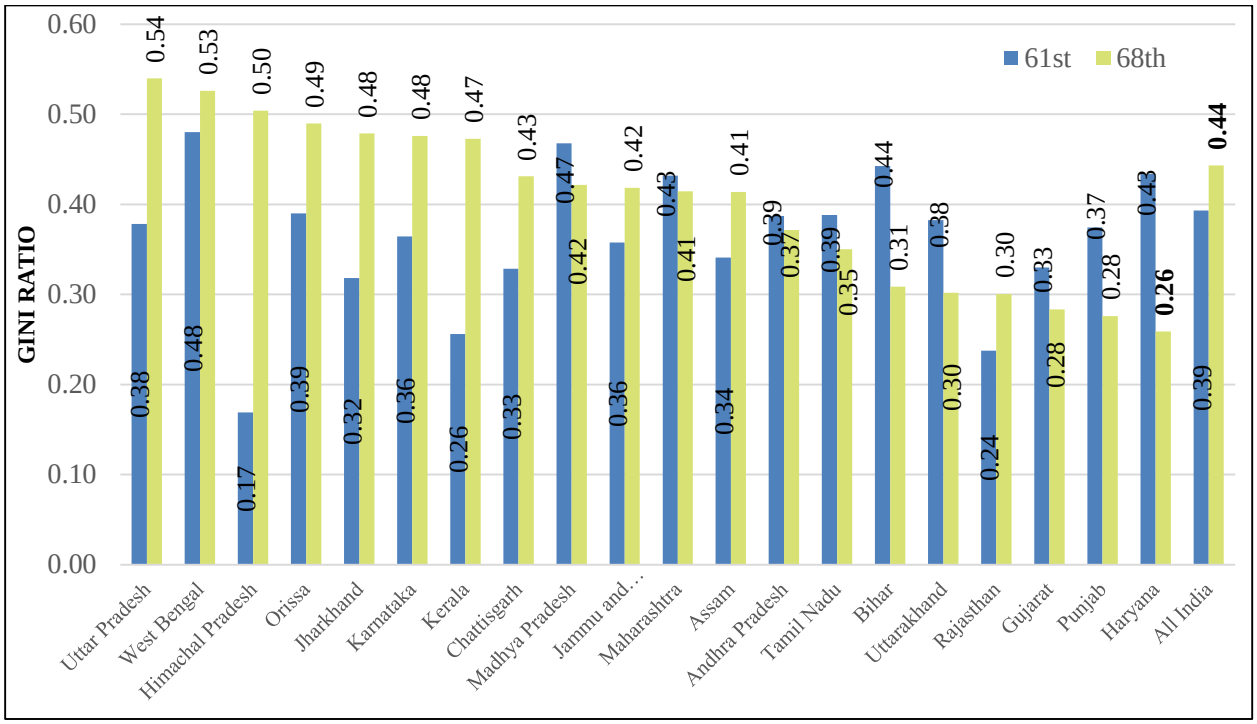
Source: Author's Calculation

Figure 7.10
Inequality in Medical Expenditure-Urban



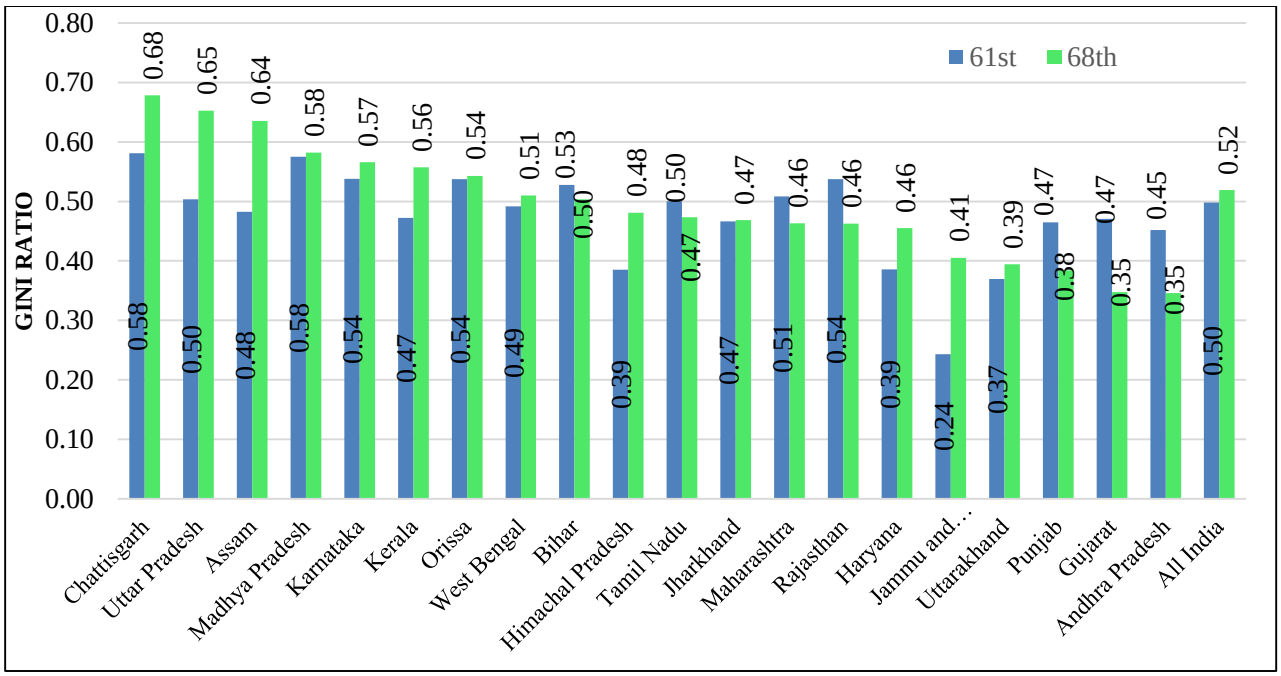
Source: Author's Calculation

Figure 7.11
Inequality in Education Expenditure-Rural



Source: Author's Calculation

Figure 7.12
Inequality in Education Expenditure-Urban



Source: Author's Calculation

CHAPTER 8

CONCLUSION AND RECOMMENDATIONS

8.1. Introduction:

The responsibility of ensuring that good education and health care is received by each citizen lies directly with the government. A comprehensive health care is one of the States' responsibilities, and it has an obligation to provide educational facilities to its citizens. It has been guaranteed by the Constitution of India. Right to health care and education without any discrimination is ingrained in the Constitution, and hence, is the primary agenda of the state. Education and health play a key role in creating human capital of a country. It is very well understood that education and health are the two important keys to alleviate households out of poverty.

Considering the importance of health and education in the development and growth of a nation, government in India has been allocating a considerable fund in the area of health and education. The economy of India is growing faster than many economies in the world. However, India's percentage share of public expenditure out of total public expenditure on health and education is still less than that of neighbouring countries like Sri Lanka and Nepal. As a result, India shows a dismal performance on many key development parameters. When compared to BRICS countries like Brazil, Russia, India, China, South Africa and other Asian economies, India has the lowest rank.

This chapter therefore brings out the summary of the findings and indicates some policy recommendations.

8.2. Summary of the Findings

Public expenditure on health in India is steadily increasing in absolute terms, but its share to GDP is only 1.3% during 2014-15, and has reduced to 1.15% in 2015-16, when measured in constant price. It has been seen that, according to WHO, health expenditure of India has been, around 1 per cent of its GDP for the last few decades, very low in comparison to the developed and many developing countries. During 2014, the world average health expenditure with respect to GDP was

5.8 per cent, whereas the same in India was much lower than this; even many developing countries' average health expenditures with respect to GDP were higher than that of India.

The analysis has also highlighted that states' share of expenditure on health (both capital and revenue) is increasing in a faster manner than that of the Centre over the last few years. Centre's share on health expenditure as per 2011-12 prices in the year 2015 was 5% out of Total Development Expenditure whereas state government had around 12% in the year 2015-16. However, yet again, expenditure on three parameters namely, i) on medical and family welfare as per cent of aggregate expenditure, ii) per capita expenditure and iii) as a percentage of GSDP varies across states of India.

The expenditure on health reflects through parameters like number of PHCs, Community Health Centres, Sub-centers, basic medical and non-medical amenities, etc. and its outcome through IMR, MMR, immunization, etc. Findings reveal that states that have invested more in public health expenditure have reduced percentage of mortality rates. Health-care infrastructure in our country is largely inadequate to serve the vast population. There are marked variations in getting treatment for hospitalized cases, be it in rural or urban areas. More public health care institutions with better facilities and services are needed in the low performing states to make the outreach of health care services better, so that the health outcome of the institutions get improved. To achieve better health outcomes, there is an urgent need for better health care facilities to be provided for majority of Indian states covering most of the population. Availability of medical personnel and better quality services need to be focused to improve Indian Health care system.

Findings of the study present many aspects of the health expenditure scenario in the country. Much more needs to be done for mitigating physical and financial constraints, especially of the rural populace in the sphere of health expenditure. The NSS 71st round categorically revealed that there is lack of access to the required health services either due to geography or financial barriers which restricts people to seek medical advice. There is a huge gap between the Urban and Rural households of similar quintile class in the average total medical expenditure for treatment per hospitalization case. In order to decrease the financial burden of families, which eventually leads to poverty, the Out-of-Pocket expenditure on health that currently stands at 67% of the Total Health Expenditure in the country needs to be decreased. Even the share of Pakistan, Nepal and Sri Lanka (56.3%, 47.7%, and 42.1% respectively in 2014) is less than that of India. The exceptionally high

out-of-pocket expenditure on health reflects upon the inaccessibility of quality public health service delivery systems. Due to household private expenditure on health, millions of people become impoverished

In India, when the poor people require tertiary health care services at the time of emergency, they generally find the public health care services not accessibile. Hence, they reach out to private health care services available to them. And in the process of paying for private care providers ends up in devastating debt. This further causes more impoverishment, also sometimes they cannot but forego treatment for their illness. The Government of India is currently implementing several policies and programmes for the improvement of health care services for its population in general and for poor in particular. Government is investing in public providers of health services as well as purchasing services from private providers through different schemes similar to Karnataka state government's Vajpayee Arogyashree scheme, which is an initiative hrough which a medical cover for treatment of diseases requiring surgery or hospitalisation is offered to the Below Poverty Line (BPL) families. These kind of schemes might have provided significant health benefits for the poor at ground level, however it is necessary to assess the effectiveness and cost-benefit of these programmes, not only run by the state governments but also the programs run by the central governments, as compared to alternative social protection and health promotion programs.

In our analyses, we have found that poverty, health and public investment in healthcare are very much closely correlated. Since independence, due to inadequacy of expenditure, India has been unable to establish an organized structure of universal access to healthcare system and therefore suffers continued large scale poverty. The government through the formulation of health policies need to strategise the public sector in a manner that quality health services can be provided to the people and the private health care service providers can be regulated for cost and quality. The major and urgent reqirements at this juncture is modernization of healthcare management and orientation of private providers along with the public providers to make provisions for health care services to the people for free. Simplification of the formalities to obtain health insurance for getting primary and tertiary quality health care servces is the need of the hour.

Though there has been increasing focus on the demand side with NHM (National Health Mission), greater emphasis is needed to strengthen the supply side as well, to meet the growing challenge of unmet demand and provision of good quality services. To achieve equity in all health related

dimensions, improved access to health care and protecting the poor against financial catastrophe, more actions are required from the Government regulating the private healthcare services. Then only, India can achieve improved health outcomes as envisaged in the Sustainable Development Goals.

The Governments have made various efforts to improve the education system to include all in the education net through many policies from time to time. There has been a significant improvement in the achievement of universal primary education. There has been increase in the girls' enrolment in both primary and elementary schools and the completion rates of them in these schools have shown improvement. Sarva Shiksha Abhiyan, the important flagship programme of Government of India, having the objective of achieving universal quality education for all children, needs to be supplemented through other targeted schemes on higher education, teacher training and nutritional support etc. so that government's effort gets fulfilled. However, findings suggest that access to education in states across India is uneven. All the sub-sectors of education, for example, elementary, secondary, adult education, higher education, etc. have not received enough attention. Majority of the attention by both Centre and States is found to have been given to elementary education.

The Government's education expenditure is an excellent tool to engage children from poorer families to attain proper education and become qualified to get into better paid jobs. Lower share of govt. expenditure on education makes public education less accessible and available, especially to the poor, and quality education suffers. The affordable quality education provided by the government can be the catalyst to pull households out of poverty cycle, as the poor households are not capable of investing adequately in education. Their physical labour without education has less market value which eventually drives them into the circle of poverty.

The public spending on education in India is around 3 % of GDP much lower than that of many advanced and developing countries., The education expenditure has grown very tslowly and during 2015-16, it has grown only 9.25 % over the year 2014-15. It could be because of the concerted effort in the implementation of the scheme Sarva Siksha Abhiyan; the highest growth in public education expenditure was 18.32 per cent during 2009-10. There is a variation between 20% to 29% of education's share in development expenditure over the years; this share was only 22.95

percent in 2015-16. Over the years, the share of development expenditure in GDP has shown increasing trend, but the same for education expenditure was very low at 3.23 per cent.

In revenue account of total education expenditure, the contribution of the centre in 1990-91 was only 12% and the states contributed 88%. For the capital expenditure in the same year, the contribution of Centre and state was almost same 11.8 % and 88.2% respectively. But the Centre's share in capital expenditure has steadily declined and came down to 1.81 % during the year 2015-16 and conversely the contribution of the states in capital expenditure has increased over the years and became 98.74 % in 2015-16. Public expenditure per capita on education has been on a significant rise. In 2015-16 the annual per capita public expenditure on education was around Rs. 3441 at current and Rs. 2847 at constant prices. But there is still scope for more as there has been an increase of Rs 1300 approximately through a period of nearly 25 years, which is not sufficient.

The analyses in previous chapters indicate that India's education sector has made a significant stride in the aspects of increasing coverage, infrastructure developments in urban areas. Providing meals in the school and other services for retention of the children has changed the over all educational scenario of the country. The evidences reveal the gradual increase in the number of schools with increasing enrolment trend. It indicates that the efforts made by government of India through its programmes Sarva Shiksha Abhiyan and Beti Bachao Beti Padhao at the national and state level are showing improvement in terms of enrollment in schools, more specifically the enrolment of girls in all levels of education, thereby, addressing the issue of gender inequality and girl child education. However, there exits many more challenges which need to be overcome. Some of them are, gaps in infrastructure (e.g., buildings), quality and capacities, sanitation, drinking water, electrification, toilets, equipments for education, ICT facilities, engagement of good teachers, teacher's absenteeism etc.

Individuals or households also have to incur expenditure to avail the facilities and functioning of the educational infrastructure provided by the government in the form of payment of fees of different kinds, purchase of books, stationery and uniforms, spending on conveyance, private coaching, study tours, etc. The Private Expenditure on education actually comprises of all the above expenditures. Its share in GDP is quite substantial around 3.71%, at constant price for the year 2015-16.

Over the years, in absolute terms, there is an increasing trend of average monthly per capita education expenditure from Rs. 4.07 in 1993-94 to Rs. 39.84 in 2011-12. Its share in the average monthly expenditure per capita is quite huge in rural areas increasing from 1.45 % to 4.23 % during 2009-10. It reveals the burden of education expenditure on rural people. The share that the education expenditure has in total consumption expenditure for poor persons is 2.0 %: it is 4.3 % for non-poor persons and for all class it is 3.9 % in rural areas in the year 2011-12. In the same year in urban areas this share for poor is 3.3%, for non poor it is 8.2% and for all class it is 7.8%.

The findings in the previous chapters emphasise that human development outcomes can only be achieved through the porovision of the two most crucial factors, quality health care services and education. It has been found that states having better infrasture facilities have performed better in the overall educational achievements. Evidences from different states of India suggest that it is possible to achieve the goals, 'education and health for all' with urgent actions. Education is indispensable to enhance India's upliftment in the global economy. Therefore, quality education, indispensible for economic and social development need to be accessed by all in general, and, the poor and the rural people in particular of the country.

The urgent attention of the Government is required towards the three utmost significant areas of education sector; i) reduction of the educational cost, ii) to improve the quality, and, iii) direct intervention in those backward regions where the outcome indicators are very low. Even in the poorest areas of the country should not be denied the standards and norms envisaged at the national level. There is need to encourage further improvisation and enhancement through better implementation of policies and programmes, active local participation, information sharing and accountability. Both public and private sectors should come together in capacity building for achieving full access and better quality; as of now both the sectors are lagging behind. Hence, the expansion of Public-Private Partnerships is needed to be explored for offering good quality services in all sectors especially health. More and higher quality vocational education facilities are required so that youth can be prepared for earning income after leaving school, so that the progression of poverty can be escaped.

Inter-linkages and convergence of various schemes of government like National Health Mission, Swachhata Abhiyan. MGNREGA, SSA, Ayushman Bharat, National Nutrition Mission and Skill Development etc.can really make people of India free of poverty. Our analysis has examined the

trend of public spending on the two important social sectors and found that there is an increasing trend in recent years. Hence it is important to increase public health and education expenditure so that burden of these expenditures by public can be reduced.

The findings show us the challenges India faces in ensuring the right to Health and Education for all its citizens, but it can also be interpreted that we have the capacity and the resources for making universal access to health care services and education an immediate reality. Only the political will is required for attained this. We havr to replicate those models of public sector delivery, which have produced great results. By adapting such models, India can also deliver better results in all areas of development.

The schemes and programmes of the governments should be directed towards eradication of illiteracy from everywhere through effective mechanism of controlling the school drop-out rates at the elementary and intermediate levels. The State and the Central Governments should have complementary role to each other in this important education sector. Similar way, programs to be designed to reach the masses most in need with better public health services, which will help in reducing the out-of-pocket expenditure they are spending on medical expenses. Both the Governments, the Central and the State need to formulate effective policies so that the standard of living of the rural and urban poor is raised. An urgent steps need to be taken for comprehensive social development strategy by both the governments. The needs of traditionally vulnerable and marginalized people need to be prioritized in the policy making, so that outreach and investment of the government increases.

8.3. Policy Recommendations

The health and education sectors in India are not without the existence of several constraints. In the health sector the major challenge is accessibility and coverage of health services and availability of infrastructure facilities, doctors, health care professionals and trained staffs in the health centres. Policies in this regard need to be modified keeping in view the above challenges.

In India, many primary and upper-primary schools are not having the minimum basic infrastructure facilities like drinking water, electricity, and toilets etc. Not only that, the schools are also constrained with non-availability of good teachers, absenteeism, training quality, lack of good and effective management. There is an urgent need to strengthen PPP structures within local governments as they are being evolved in many states. Identification of schools for investing

according to PPP model is required for developing as a pilot and then if proved effective, can be replicated in other states. The models may be oriented to provide quality of life with equity and sustainable service delivery.

India is much way behind the international average of spending on health and education. Not only that, the public spending in these two sectors in most of the states across the country are much lower than the required levels of resources, which have been specified in various policy documents for provision of minimum basic health and education facilities. The government must increase its health and education expenditure, which is the urgent need and can not be denied any more.

The analyses made in previous chapters confirm to the fact that the commitment to the constitutional rights "Right to Health" and "Right to Education" for its citizens have not been fulfilled by the Government and it is much behind from it. The commitment of 'Right to Education' has been addressed well over the years and has showed improvement. In India the public health system has never been revamped or strengthened, thus never given any opportunity to perform well. The unsatisfory health outcomes are mostly due to low level of public heath sector funding over more than two decades.

India can achieve better health outcomes if the public funds allotted in this sector become reasonably high. It is specifically needed that the funding in the health sector be doubled or tripled so that the failing nature of existing health outcomes is reversed. Not only commitment of health sector funding, government has to monitor for ensuring effective utilization of the additional public funds on the ground. The Ayushman Bharat Yojana or National Health Protection Scheme are to be implemented with effectiveness, so as to provide services for creation of capable and healthy population in India. These programmes should ensure health by creating a network of wellness infrastructure throughout the country for delivering compreshensive primary health care services with the effective assurance of covering the majority of India's deprived population to bring under insurance cover for getting secondary and tertiary health care services.

Further, to improve our health outcomes, there is an urgent necessity for better health care facilities to be provided for majority of Indian states covering most of the population. Availability of medical personnel and better quality services need to be improved for deliveryof better health care services. The Indian Government has to allocate enough budget for public health care delivery system and quality education, not only because that health and education has been treated as

fundamental right of citizens but also overall economic development. This would also help achieve the targets for SDGs within the stipulated timeframe.

Along with addressing the demand side issues, policies need to focus more on the inefficiencies of the supply side, and, also put efforts to improve drop-out rate, vocational skill building, in terms of education and to maintain hygiene and sanitation so that ailments and diseases are not spread among the masses. India's plan towards achieving the SDGs aims to accelerate economic growth and eliminate poverty through an integrated approach. Alleviation of poverty will require raising the incomes of the poor, particularly, the bottom quartiles in both rural and urban area. This will require economic growth as well as better distribution of income. It requires greater emphasis and investments in both health and education sectors along with an employment oriented strategy for education and skill development that can help raise the incomes of the poor more rapidly. The policies should aim towards successful achievement of the existing schemes so that the whole country, be it rural or urban areas, be reached to make our population educated and to ensure their health and well-being.

8.4. Limitation of the Study and Scope for Future Work

Before concluding this thesis, we would like to make few points on limitation and future extension of this thesis We have extensively studied about the trend of Public Expenditure on Health and Education in its various components. However, this study also has some limitations. We have indirectly shown the impact of Public Expenditure on Health and Eductaion on poverty and the relevance of the States' role in providing the health care services and free education. Since the Public Expenditure is much required for provisioning of theses facilities as the impact of public health and education facilities on the outcomes of health and education is substantial. However, we could not show the direct impact of public expenditure on poverty as data of government expenditure is not available location wise, that is, at the microlevel for estimation of incidence poverty.

One interesting scope for future study could be analyzing how the Out-of-Pocket expenditure on health and education make the marginalized and vulnerable people such as scheduled castes and scheduled tribes much poorer. Another important scope could be in depth scrutinization of the related surveys on health and education by the NSSO to find out the amount of indebtedness that a housuhod incurs due to Out of Pocket expenditure on health and education. An indepth study

could also be taken to collect data from the Stae Government about their Total Public Expenditure, and the Expenditure on health and education district wise and to estimate district wise incidence of poverty. And then to find out if there is any impact of state govrnmrnt's expendiyure on poverty and if there can be established any significant relationship between the incidence of poverty and state govrnmrnt's intervention, in terms of expenditure and provision of facilities.

ANNEXURE I

Table AI.1
Five Year Plan Outlay (1950-2017)

Five year Plans	Outlays (in Rs Cr.) Health	Outlays (in Rs Cr.) Education	GDP (in Rs Cr.)	Health Outlay out of GDP (%)	Education Outlay out of GDP (%)
1st	97.9	149	56255	0.17	0.26
2nd	216.3	255.8	77375	0.28	0.33
3rd	225.9	418	119125	0.19	0.35
4th	433.5	822.7	267876	0.16	0.31
5th	681.7	1284.3	366747	0.19	0.35
6th	1821.1	2523.7	1007723	0.18	0.25
7th	3392.9	6382.7	1920505	0.18	0.33
8th	7575.9	21217	5357492	0.14	0.4
9th	5118.2	4910.8	9932160	0.05	0.05
10th	36378	43825	16608114	0.22	0.26
11th	123900	269873	33888817	0.37	0.8
12th	408521	453728	62488407	0.65	0.73

Source: NITI Aayog

Table AI.2
Combined Expenditure (Capital + Revenue) at constant prices of Centre and States

Year	Total Exp. (rev+cap)at 2004-05 prices	Dev.Exp. (rev+cap)at 2004-05 prices	Health exp. (rev+cap) at 2004-05 prices	Edu, art & culture exp. (rev+cap) at 2004-05 prices	Av. growth rate of total exp	Av. growth rate of dev exp	Av. growth rate of health exp	Av. growth rate of edu exp
1990-91	393208	187555	19000	44045				
1995-96	455341	196548	22184	50257	2.98	0.94	3.15	2.67
1996-97	469322	207314	23235	53552	3.07	5.48	4.74	6.56
1997-98	504223	221590	25686	57203	7.44	6.89	10.55	6.82
1998-99	557984	238839	28533	65930	10.66	7.78	11.09	15.26
1999-00	627451	265276	30781	76662	12.45	11.07	7.88	16.28
2000-01	648086	277131	31912	74837	3.29	4.47	3.67	-2.38
2001-02	698130	288515	32358	77234	7.72	4.11	1.4	3.2
2002-03	725765	298305	32270	78007	3.96	3.39	-0.27	1
2003-04	806318	347432	34798	80509	11.1	16.47	7.84	3.21
2004-05	824480	342791	37702	85717	2.25	-1.34	8.34	6.47
2005-06	895798	401115	43642	94204	8.65	17.01	15.76	9.9
2006-07	979696	468041	47838	105771	9.37	16.69	9.62	12.28
2007-08	1057564	528385	51666	107604	7.95	12.89	8	1.73
2008-09	1191154	604256	56577	125676	12.63	14.36	9.5	16.8
2009-10	1341469	656190	65823	148703	12.62	8.59	16.34	18.32
2010-11	1428767	722244	69235	168810	6.51	10.07	5.18	13.52
2011-12	1489169	753467	70361	177110	4.23	4.32	1.63	4.92
2011-12*	2381434	1204921	112519	283229				
2012-13*	2454513	1274498	118484	296513	3.07	5.77	5.3	4.69
2013-14*	2576796	1291088	124150	310857	4.98	1.3	4.78	4.84
2014-15*	2958277	1527142	149212	336822	14.8	18.28	20.19	8.35
2015-16*	3139114	1603798	160189	367993	6.11	5.02	7.36	9.25

Note * At 2011-12 prices

Table AI.3
Combined Expenditure (Capital + Revenue) at Current prices of Centre and States

Year	Total Exp. (rev+cap)	Dev Exp (rev+cap)	Health Exp	Education, art & culture exp	Av. growth rate of total exp	Av growth rate of dev exp	Av. growth rate of health exp	Av. growth rate of edu exp
1990-91	155141	74000	7496	17378				
1995-96	293104	126518	14280	32350	13.57	11.32	13.76	13.23
1996-97	325615	143834	16120	37154	11.09	13.69	12.89	14.85
1997-98	372973	163910	19000	42313	14.54	13.96	17.86	13.88
1998-99	445980	190897	22806	52696	19.57	16.46	20.03	24.54
1999-00	517056	218603	25365	63174	15.94	14.51	11.22	19.88
2000-01	552124	236096	27187	63756	6.78	8	7.18	0.92
2001-02	613591	253578	28440	67881	11.13	7.4	4.61	6.47
2002-03	661664	271958	29420	71117	7.83	7.25	3.45	4.77
2003-04	762765	328666	32919	76160	15.28	20.85	11.89	7.09
2004-05	824480	342791	37702	85717	8.09	4.3	14.53	12.55
2005-06	933642	418061	45486	98184	13.24	21.96	20.65	14.54
2006-07	1086592	519110	53058	117312	16.38	24.17	16.65	19.48
2007-08	1243598	621332	60755	126532	14.45	19.69	14.51	7.86
2008-09	1519081	770609	72153	160275	22.15	24.03	18.76	26.67
2009-10	1814610	887630	89039	201151	19.45	15.19	23.4	25.5
2010-11	2105695	1064432	102038	248790	16.04	19.92	14.6	23.68
2011-12	2381434	1204921	112519	283229	13.09	13.2	10.27	13.84
2012-13	2649263	1375622	127885	320040	11.25	14.17	13.66	13
2013-14	2953311	1479739	142290	356279	11.48	7.57	11.26	11.32
2014-15	3503497	1808599	176712	398899	18.63	22.22	24.19	11.96
2015-16	3794689	1938737	193643	444845	8.31	7.2	9.58	11.52
CAGR	13.64	13.95	13.89					13.85

Table AI.4
Capital Expenditure at Constant price of Centre and States

Year	Total Exp. (cap)at 2004-05 prices	Dev.Exp. (cap)at 2004-05 prices	Health exp . At 2004-05 prices	Education, art & culture exp . At 2004-05 prices	Av. growth rate of total exp	Av. growth rate of dev exp	Av. growth rate of health exp	Av. growth rate of edu exp
1990-91	76546	41825	1604	885				
1995-96	66687	36922	2083	753	-2.72	-2.46	5.37	-3.18
1996-97	55328	32428	2197	794	-17.03	-12.17	5.49	5.45
1997-98	64959	41007	2382	780	17.41	26.46	8.4	-1.76
1998-99	74050	38713	2993	873	14	-5.6	25.68	11.81
1999-00	80881	44183	3293	568	9.22	14.13	10	-34.89
2000-01	71555	48291	4414	569	-11.53	9.3	34.06	0.14
2001-02	79765	49015	3873	713	11.47	1.5	-12.26	25.35
2002-03	80482	50049	4588	584	0.9	2.11	18.47	-18.17
2003-04	99895	69095	4736	844	24.12	38.05	3.22	44.55
2004-05	125380	76860	6229	1094	25.51	11.24	31.51	29.72
2005-06	140381	93611	6862	1781	11.96	21.79	10.17	62.81
2006-07	153889	109079	9200	2341	9.62	16.52	34.06	31.4
2007-08	199139	151236	9928	2905	29.4	38.65	7.92	24.09
2008-09	174747	128064	11405	3643	-12.25	-15.32	14.88	25.39
2009-10	201675	140523	10961	3501	15.41	9.73	-3.9	-3.9
2010-11	220928	144975	9614	3908	9.55	3.17	-12.29	11.63
2011-12	213930	145722	9699	3140	-3.17	0.52	0.89	-19.64
2011-12*	342110	233035	15511	5022				
2012-13*	347217	240662	17909	5842	1.49	3.27	15.46	16.32
2013-14*	368105	259999	20240	7002	6.02	8.03	13.01	19.86
2014-15*	456383	341066	33853	10968	23.98	31.18	67.26	56.64
2015-16*	516137	389328	31016	14191	13.09	14.15	-8.38	29.39

Note * At 2011-12 prices

Table AI.5
Capital Expenditure at Current prices of Centre and States

Year	Total Exp (cap)	Dev Exp. (cap)	Health Exp (cap)	Education, art & culture exp (cap)	Av. growth rate of total exp	Av. growth rate of dev exp	Av. growth rate of health exp	Av. growth rate of edu exp
1990-91	30202	16502	633	349				
1995-96	42927	23767	1341	485	7.29	7.57	16.21	6.78
1996-97	38386	22499	1524	551	-10.58	-5.34	13.7	13.66
1997-98	48050	30333	1762	577	25.17	34.82	15.57	4.74
1998-99	59186	30942	2393	697	23.18	2.01	35.8	20.82
1999-00	66651	36409	2713	468	12.61	17.67	13.41	-32.87
2000-01	60960	41140	3761	485	-8.54	13	38.59	3.52
2001-02	70106	43080	3404	627	15	4.71	-9.48	29.32
2002-03	73374	45629	4183	532	4.66	5.92	22.88	-15.11
2003-04	94499	65362	4480	798	28.79	43.25	7.1	49.99
2004-05	125380	76860	6229	1094	32.68	17.59	39.02	37.12
2005-06	146311	97566	7152	1857	16.69	26.94	14.83	69.69
2006-07	170680	120981	10203	2596	16.66	24	42.66	39.84
2007-08	234170	177839	11674	3416	37.2	47	14.42	31.57
2008-09	222855	163320	14545	4645	-4.83	-8.16	24.59	35.99
2009-10	272807	190086	14827	4735	22.41	16.39	1.94	1.94
2010-11	325601	213662	14169	5759	19.35	12.4	-4.44	21.62
2011-12	342110	233035	15511	5022	5.07	9.07	9.47	-12.8
2012-13	374767	259757	19330	6305	9.55	11.47	24.62	25.55
2013-14	421892	297989	23197	8025	12.57	14.72	20.01	27.28
2014-15	540496	403925	40092	12989	28.11	35.55	72.83	61.86
2015-16	623927	470635	37494	17155	15.44	16.52	-6.48	32.07
CAGR	12.88	14.34	17.74	16.85457				

Table AI.6
Revenue Expenditure at Constant prices of Centre and States

Year	Total Exp. (rev) at 2004-05 prices	Dev.Exp (rev) at 2004-05 prices	Health Exp.(rev) at 2004-05 prices	Edu, art & culture Exp(rev). at 2004-05 prices	Av. growth rate of total exp (rev)	Av. growth rate of dev exp (rev)	Av. growth rate of health exp (rev)	Av. growth rate of edu exp (rev)
1990-91	311619	145730	17396	43160				
1995-96	381598	159626	20101	49503	4.13	1.84	2.93	2.78
1996-97	407581	174885	21038	52757	6.81	9.56	4.66	6.57
1997-98	434156	180583	23304	56422	6.52	3.26	10.77	6.95
1998-99	482096	200126	25540	65057	11.04	10.82	9.59	15.3
1999-00	544191	221094	27488	76094	12.88	10.48	7.63	16.96
2000-01	569750	228840	27498	74268	4.7	3.5	0.03	-2.4
2001-02	610390	239500	28485	76521	7.13	4.66	3.59	3.03
2002-03	641792	248256	27682	77424	5.14	3.66	-2.82	1.18
2003-04	691318	278338	30062	79665	7.72	12.12	8.6	2.9
2004-05	700307	265932	31473	84622	1.3	-4.46	4.69	6.22
2005-06	757342	307504	36780	92423	8.14	15.63	16.86	9.22
2006-07	830443	358962	38639	103430	9.65	16.73	5.05	11.91
2007-08	859949	377149	41738	104699	3.55	5.07	8.02	1.23
2008-09	1011924	476193	45171	122034	17.67	26.26	8.22	16.56
2009-10	1139736	515667	54862	145203	12.63	8.29	21.45	18.99
2010-11	1210702	577269	59621	164902	6.23	11.95	8.68	13.57
2011-12	1261615	607744	60662	173970	4.21	5.28	1.75	5.5
2011-12*	2017536	971886	97009	278207				
2012-13*	2105123	1033836	100575	290671	4.34	6.37	3.68	4.48
2013-14*	2208648	1031090	103910	303855	4.92	-0.27	3.32	4.54
2014-15*	2501825	1186076	115359	325854	13.27	15.03	11.02	7.24
2015-16*	2627484	1214471	129173	353802	5.02	2.39	11.97	8.58

Table AI.7
Revenue Expenditure at Current prices of Centre and States

Year	Total Exp. (rev)	Dev.Exp (rev)	Health Exp.(rev)	Edu, art & culture Exp(rev).	Av. growth rate of total exp (rev)	Av. growth rate of dev exp (rev)	Av. growth rate of health exp (rev)	Av. growth rate of edu exp (rev)
1990-91	122950	57498	6864	17029				
1995-96	245635	102751	12939	31865	14.85	12.31	13.52	13.35
1996-97	282779	121335	14596	36603	15.12	18.09	12.8	14.87
1997-98	321144	133577	17238	41736	13.57	10.09	18.1	14.02
1998-99	385325	159955	20413	51998	19.99	19.75	18.42	24.59
1999-00	448445	182194	22652	62706	16.38	13.9	10.97	20.59
2000-01	485388	194956	23426	63271	8.24	7	3.42	0.9
2001-02	536476	210498	25036	67255	10.53	7.97	6.87	6.3
2002-03	585107	226329	25237	70585	9.06	7.52	0.8	4.95
2003-04	653977	263304	28439	75362	11.77	16.34	12.69	6.77
2004-05	700307	265932	31473	84622	7.08	1	10.67	12.29
2005-06	789337	320495	38334	96327	12.71	20.52	21.8	13.83
2006-07	921053	398129	42855	114716	16.69	24.22	11.79	19.09
2007-08	1011221	443492	49081	123116	9.79	11.39	14.53	7.32
2008-09	1290508	607289	57607	155630	27.62	36.93	17.37	26.41
2009-10	1541724	697544	74212	196416	19.47	14.86	28.82	26.21
2010-11	1784314	850770	87869	243031	15.73	21.97	18.4	23.73
2011-12	2017536	971886	97009	278207	13.07	14.24	10.4	14.47
2012-13	2272152	1115865	108555	313734	12.62	14.81	11.9	12.77
2013-14	2531370	1181750	119093	348254	11.41	5.9	9.71	11
2014-15	2962919	1404674	136620	385910	17.05	18.86	14.72	10.81
2015-16	3176210	1468102	156149	427690	7.2	4.52	14.29	10.83
CAGR	13.89	13.84	13.31	13.76215				

Table AI.8
Combined Expenditure (Capital + Revenue) at Constant prices of the Centre

Year	Total Exp. (rev+cap) at 2004-05 prices	Dev.Exp. (rev+cap)at 2004-05 prices	Health Exp.	Edu, art & culture exp. at 2004-05 prices	Av. growth rate of total exp	Av. growth rate of dev exp	Av. growth rate of health exp	Av growth rate of edu exp
1990-91	255692	87607	3853	5552				
1995-96	270653	74198	4702	5882	1.14	-3.27	4.07	1.16
1996-97	278675	76283	4626	5995	2.96	2.81	-1.61	1.91
1997-98	280742	84372	5156	7052	0.74	10.6	11.44	17.65
1998-99	313828	90260	5998	8792	11.79	6.98	16.35	24.67
1999-00	351189	102594	7123	9818	11.91	13.67	18.75	11.67
2000-01	367414	107854	7338	10247	4.62	5.13	3.02	4.37
2001-02	394369	115520	7941	10243	7.34	7.11	8.22	-0.04
2002-03	402804	129400	8445	11163	2.14	12.02	6.34	8.98
2003-04	380385	142163	9181	11891	-5.57	9.86	8.72	6.52
2004-05	402550	143010	10076	14369	5.83	0.6	9.75	20.84
2005-06	476484	167860	11542	18408	18.37	17.38	14.54	28.11
2006-07	509358	197533	12133	22847	6.9	17.68	5.12	24.12
2007-08	596973	258773	15207	24723	17.2	31	25.33	8.21
2008-09	685980	300405	16855	30091	14.91	16.09	10.84	21.71
2009-10	749014	305944	21076	31686	9.19	1.84	25.04	5.3
2010-11	806019	356239	23606	37587	7.61	16.44	12	18.62
2011-12	804791	363249	23090	39402	-0.15	1.97	-2.18	4.83
2011-12*	1286997	580897	36925	63010				
2012-13*	1291134	558212	37622	64025	0.32	-3.91	1.89	1.61
2013-14*	1344946	556770	36377	68086	4.17	-0.26	-3.31	6.34
2014-15*	1410298	536758	24743	58357	4.86	-3.59	-31.98	-14.29
2015-16*	1457439	505569	25327	56586	3.34	-5.81	2.36	-3.03

Table AI.9
Combined Expenditure (Capital + Revenue) at Current prices of the Centre

``Year	Total Exp. (rev+cap)	Dev.Exp. (rev+cap)at	Health Exp.	Edu, art & culture exp.	Av. growth rate of total exp	Av. growth rate of dev exp	Av. growth rate of health exp	Av growth rate of edu exp
1990-91	100884	34566	1520	2191				
1995-96	174219	47761	3027	3786	11.55	6.68	14.77	11.57
1996-97	193345	52925	3210	4159	10.98	10.81	6.05	9.84
1997-98	207664	62410	3814	5217	7.41	17.92	18.82	25.43
1998-99	250833	72142	4794	7027	20.79	15.59	25.72	34.71
1999-00	289400	84544	5870	8091	15.38	17.19	22.43	15.13
2000-01	313011	91884	6252	8730	8.16	8.68	6.5	7.9
2001-02	346613	101531	6980	9003	10.74	10.5	11.65	3.12
2002-03	367227	117972	7699	10177	5.95	16.19	10.31	13.04
2003-04	359839	134484	8685	11249	-2.01	14	12.81	10.53
2004-05	402550	143010	10076	14369	11.87	6.34	16.02	27.74
2005-06	496614	174952	12029	19186	23.37	22.34	19.38	33.52
2006-07	564934	219087	13457	25340	13.76	25.23	11.87	32.08
2007-08	701985	304293	17882	29072	24.26	38.89	32.88	14.73
2008-09	874831	383107	21495	38375	24.62	25.9	20.21	32
2009-10	1013193	413852	28510	42862	15.82	8.03	32.63	11.69
2010-11	1187898	525019	34790	55395	17.24	26.86	22.03	29.24
2011-12	1286997	580897	36925	63010	8.34	10.64	6.14	13.75
2012-13	1393577	602503	40607	69105	8.28	3.72	9.97	9.67
2013-14	1541466	638124	41692	78035	10.61	5.91	2.67	12.92
2014-15	1670220	635684	29303	69112	8.35	-0.38	-29.72	-11.43
2015-16	1761812	611153	30616	68404	5.48	-3.86	4.48	-1.02
CAGR	12.12	12.18	12.76	14.76				

Table AI.10
Revenue Expenditure at Constant prices of the Centre

Year	Total Exp. (rev) at 2004-05 prices	Dev. Exp. (rev) at 2004-05 prices	Health exp. . at 2004-05 prices	Edu., art & culture exp. at 2004-05 prices	Av. growth rate of total exp.	Av. growth rate of dev exp	Av. growth rate of health exp	Av. growth rate of edu exp
1990-91	186431	67272	3784	5448				
1995-96	217049	65886	4619	5811	3.09	-0.42	4.07	1.3
1996-97	228900	69124	4490	5931	5.46	4.92	-2.8	2.06
1997-98	243338	74152	5049	6996	6.31	7.27	12.47	17.96
1998-99	270769	80296	5845	8740	11.27	8.29	15.75	24.92
1999-00	302004	89037	6976	9767	11.54	10.89	19.36	11.75
2000-01	326289	94760	7276	10198	8.04	6.43	4.29	4.42
2001-02	343353	101507	7841	10193	5.23	7.12	7.76	-0.05
2002-03	373041	115581	8337	11113	8.65	13.87	6.33	9.02
2003-04	383774	126179	9035	11837	2.88	9.17	8.37	6.52
2004-05	383031	124996	9993	14304	-0.19	-0.94	10.61	20.84
2005-06	422456	148817	11415	18352	10.29	19.06	14.23	28.3
2006-07	463717	177154	11963	22800	9.77	19.04	4.8	24.24
2007-08	504851	203393	15189	24675	8.87	14.81	26.96	8.22
2008-09	619926	276794	16291	30027	22.79	36.09	7.26	21.69
2009-10	669380	277629	20571	31563	7.98	0.3	26.27	5.12
2010-11	702993	314956	22921	37495	5.02	13.45	11.43	18.79
2011-12	716594	325364	22313	39344	1.93	3.3	-2.65	4.93
2011-12*	1145955	520313	35682	62917				
2012-13*	1146766	497458	36287	63892	0.07	-4.39	1.7	1.55
2013-14*	1191998	487272	35175	67942	3.94	-2.05	-3.06	6.34
2014-15*	1253165	469248	23730	58217	5.13	-3.7	-32.54	-14.31
2015-16*	1266584	412312	24400	56330	1.07	-12.13	2.83	-3.24

Table AI.11
Revenue Expenditure at Current prices of the Centre

Year	Total Exp. (rev)	Dev.Exp (rev)	Health Exp.(rev)	Edu, art & culture Exp(rev).	Av. growth rate of total exp (rev)	Av. growth rate of dev exp (rev)	Av. growth rate of health exp (rev)	Av. growth rate of edu exp (rev)
1990-91	73557	26543	1493	2149				
1995-96	139715	42411	2973	3741	13.69	9.83	14.77	11.72
1996-97	158811	47958	3115	4115	13.67	13.08	4.76	10
1997-98	179997	54850	3735	5175	13.34	14.37	19.91	25.76
1998-99	216417	64179	4672	6985	20.23	17.01	25.08	34.98
1999-00	248869	73372	5749	8048	15	14.32	23.06	15.22
2000-01	277975	80729	6199	8688	11.7	10.03	7.82	7.95
2001-02	301775	89215	6891	8959	8.56	10.51	11.17	3.11
2002-03	340093	105373	7600	10131	12.7	18.11	10.29	13.08
2003-04	363045	119363	8547	11198	6.75	13.28	12.45	10.53
2004-05	383031	124996	9993	14304	5.51	4.72	16.92	27.74
2005-06	440303	155104	11898	19127	14.95	24.09	19.06	33.72
2006-07	514313	196484	13268	25288	16.81	26.68	11.52	32.21
2007-08	593659	239171	17860	29015	15.43	21.73	34.61	14.74
2008-09	790593	352996	20776	38293	33.17	47.59	16.33	31.98
2009-10	905473	375549	27826	42695	14.53	6.39	33.93	11.5
2010-11	1036061	464177	33781	55259	14.42	23.6	21.4	29.43
2011-12	1145955	520313	35682	62917	10.61	12.09	5.63	13.86
2012-13	1237755	536928	39166	68961	8.01	3.19	9.76	9.61
2013-14	1366170	558471	40315	77870	10.37	4.01	2.93	12.92
2014-15	1484128	555732	28103	68947	8.63	-0.49	-30.29	-11.46
2015-16	1531099	498419	29496	68094	3.16	-10.31	4.96	-1.24
CAGR	12.91	12.45	12.68	14.82				

Table AI.12
Capital Expenditure at Constant prices of the Centre

Year	Total Exp. (cap) at 2004-05 prices	Dev.Exp. (cap) at 2004-05 prices	Health exp. at 2004-05 prices	Edu, art & culture exp. at 2004-05 prices	Av. growth rate of total exp.	Av. growth rate of dev exp.	Av. growth rate of health exp.	Av. growth rate of edu exp.
1990-91	69261	20335	69	104				
1995-96	53603	8312	83	71	-5	-16.38	3.88	-7.38
1996-97	49775	7159	137	64	-7.14	-13.87	64.77	-10.43
1997-98	37404	10220	107	56	-24.85	42.77	-22.13	-11.42
1998-99	43059	9963	154	53	15.12	-2.52	44.36	-6.54
1999-00	49185	13557	147	51	14.23	36.07	-4.47	-2.22
2000-01	41125	13094	62	49	-16.39	-3.42	-57.59	-4.48
2001-02	51016	14013	101	50	24.05	7.02	61.73	1.96
2002-03	29763	13819	108	50	-41.66	-1.38	7.35	0.41
2003-04	3389	15984	146	54	-88.61	15.66	35.4	7.49
2004-05	19520	18014	83	65	475.91	12.7	-43.14	20.36
2005-06	54028	19044	126	56	176.79	5.72	51.68	-13.25
2006-07	45641	20379	170	47	-15.52	7.01	34.38	-16.07
2007-08	92122	55380	18	49	101.84	171.75	-89.36	2.85
2008-09	66053	23611	564	65	-28.3	-57.37	3021.34	32.37
2009-10	79633	28315	505	123	20.56	19.92	-10.44	91.36
2010-11	103025	41283	685	92	29.37	45.8	35.59	-25.29
2011-12	88197	37885	777	58	-14.39	-8.23	13.44	-36.94
2011-12*	141042	60584	1242	93				
2012-13*	144367	60755	1335	132	2.36	0.28	7.49	42.46
2013-14*	152948	69498	1201	144	5.94	14.39	-10.01	8.66
2014-15*	157132	67510	1014	138	2.74	-2.86	-15.59	-3.81
2015-16*	190855	93257	926	256	21.46	38.14	-8.72	85.19

Table AI.13
Capital Expenditure at Current prices of the Centre

Year	Total Exp (cap)	Dev Exp. (cap)	Health Exp (cap)	Education, art & culture exp (cap)	Av. growth rate of total exp	Av. growth rate of dev exp	Av. growth rate of health exp	Av. growth rate of edu exp
1990-91	27327	8023	27	41				
1995-96	34504	5350	53	46	4.77	-7.78	14.56	2.14
1996-97	34534	4967	95	44	0.08	-7.17	77.6	-3.46
1997-98	27668	7560	79	42	-19.88	52.21	-16.98	-5.56
1998-99	34416	7963	123	42	24.39	5.33	55.99	0.98
1999-00	40531	11172	121	42	17.77	40.29	-1.51	0.81
2000-01	35036	11155	53	42	-13.56	-0.15	-56.15	-1.25
2001-02	44838	12316	89	44	27.98	10.41	66.86	5.18
2002-03	27134	12599	99	46	-39.48	2.29	11.35	4.16
2003-04	3206	15120	139	51	-88.18	20.01	40.5	11.54
2004-05	19520	18014	83	65	508.79	19.14	-39.89	27.23
2005-06	56311	19848	132	59	188.48	10.18	58.09	-9.59
2006-07	50621	22602	188	53	-10.1	13.88	43	-10.69
2007-08	108327	65122	21	57	114	188.12	-88.72	9.04
2008-09	84238	30111	719	82	-22.24	-53.76	3285.17	43.56
2009-10	107720	38302	683	167	27.88	27.2	-5.01	102.98
2010-11	151837	60842	1009	136	40.96	58.85	47.73	-18.6
2011-12	141042	60584	1242	93	-7.11	-0.42	23.09	-31.57
2012-13	155822	65575	1441	143	10.48	8.24	16.02	53.76
2013-14	175296	79653	1377	165	12.5	21.47	-4.44	15.38
2014-15	186092	79952	1201	164	6.16	0.38	-12.78	-0.61
2015-16	230713	112733	1119	310	23.98	41	-6.83	89.02
CAGR	8.91	11.15	16.05	8.42				

Table AI.14
Combined Expenditure (Capital + Revenue) at Constant prices of States

Year	Total Exp. (rev+cap) at 2004-05 prices	Dev.Exp. (rev+cap) at 2004-05 prices	Health exp. (rev+cap) at 2004-05 prices	Edu, art & culture exp. (rev+cap) at 2004-05 prices	Av. growth rate of total exp	Av. growth rate of dev exp	Av. growth rate of health exp	Av. growth rate of edu exp
1990-91	206083	125575	17283	39782				
1995-96	254402	146715	20111	45362	4.3	3.16	3.08	2.66
1996-97	265351	156219	21010	48488	4.3	6.48	4.47	6.89
1997-98	283175	162573	23000	50886	6.72	4.07	9.47	4.95
1998-99	309312	175174	25393	58055	9.23	7.75	10.41	14.09
1999-00	355132	192618	27159	68547	14.81	9.96	6.95	18.07
2000-01	359993	197670	27845	66564	1.37	2.62	2.53	-2.89
2001-02	388251	204470	27947	68623	7.85	3.44	0.36	3.09
2002-03	397013	202140	27644	67207	2.26	-1.14	-1.08	-2.06
2003-04	454530	242207	29311	68918	14.49	19.82	6.03	2.54
2004-05	465066	239479	31389	71720	2.32	-1.13	7.09	4.07
2005-06	501196	275370	34945	78046	7.77	14.99	11.33	8.82
2006-07	558401	320137	38057	84854	11.41	16.26	8.91	8.72
2007-08	565607	331876	39564	85828	1.29	3.67	3.96	1.15
2008-09	611017	371959	42690	97057	8.03	12.08	7.9	13.08
2009-10	706976	421414	48085	118357	15.7	13.3	12.64	21.95
2010-11	740044	438729	49040	133946	4.68	4.11	1.99	13.17
2011-12	787563	468472	51040	141251	6.42	6.78	4.08	5.45
2011-12*	1259447	749166	81621	225885				
2012-13*	1338779	835938	86956	238251	6.3	11.58	6.54	5.47
2013-14*	1409864	851499	92918	250964	5.31	1.86	6.86	5.34
2014-15*	1830927	1195135	139310	311394	29.87	40.36	49.93	24.08
2015-16*	1941813	1254341	148907	340070	6.06	4.95	6.89	9.21

Table AI.15
Combined Expenditure (Capital + Revenue) at Current prices of States

Year	Total Exp. (rev+cap)	Dev Exp (rev+cap)	Health Exp	Education, art & culture exp	Av. growth rate of total exp	Av growth rate of dev exp	Av. growth rate of health exp	Av. growth rate of edu exp
1990-91	81311	49546	6819	15696				
1995-96	163759	94441	12946	29200	15.03	13.77	13.68	13.22
1996-97	184101	108385	14576	33641	12.42	14.76	12.6	15.21
1997-98	209464	120255	17013	37640	13.78	10.95	16.71	11.89
1998-99	247224	140012	20296	46402	18.03	16.43	19.3	23.28
1999-00	292649	158728	22381	56487	18.37	13.37	10.27	21.73
2000-01	306689	168401	23722	56708	4.8	6.09	5.99	0.39
2001-02	341237	179710	24562	60313	11.26	6.72	3.54	6.36
2002-03	361948	184286	25202	61272	6.07	2.55	2.6	1.59
2003-04	429979	229124	27727	65195	18.8	24.33	10.02	6.4
2004-05	465066	239479	31389	71720	8.16	4.52	13.21	10.01
2005-06	522369	287003	36422	81343	12.32	19.84	16.03	13.42
2006-07	619328	355067	42210	94112	18.56	23.72	15.89	15.7
2007-08	665101	390256	46524	100926	7.39	9.91	10.22	7.24
2008-09	779230	474359	54443	123776	17.16	21.55	17.02	22.64
2009-10	956329	570048	65045	160102	22.73	20.17	19.47	29.35
2010-11	1090665	646592	72274	197408	14.05	13.43	11.11	23.3
2011-12	1259447	749166	81621	225885	15.48	15.86	12.93	14.43
2012-13	1445003	902265	93855	257155	14.73	20.44	14.99	13.84
2013-14	1615870	975918	106495	287634	11.82	8.16	13.47	11.85
2014-15	2168373	1415402	164985	368785	34.19	45.03	54.92	28.21
2015-16	2347343	1516299	180005	411090	8.25	7.13	9.1	11.47
CAGR	14.4	14.67	13.99	13.95				

Table AI.16
Revenue Expenditure at Constant prices of States

Year	Total Exp. (rev) at 2004-05 prices	Dev.Exp (rev) at 2004-05 prices	Health Exp.(rev) at 2004-05 prices	Edu, art & culture Exp(rev). at 2004-05 prices	Av. growth rate of total exp (rev)	Av. growth rate of dev exp (rev)	Av. growth rate of health exp (rev)	Av. growth rate of edu exp (rev)
1990-91	171993	102294	15748	39001				
1995-96	218268	118105	18111	44680	4.88	2.92	2.84	2.76
1996-97	234472	130950	18949	47757	7.42	10.88	4.63	6.89
1997-98	245342	131785	20724	50162	4.64	0.64	9.37	5.04
1998-99	270239	146424	22554	57235	10.15	11.11	8.83	14.1
1999-00	309272	161992	24013	68030	14.44	10.63	6.47	18.86
2000-01	319235	162473	23493	66044	3.22	0.3	-2.16	-2.92
2001-02	347526	169468	24174	67960	8.86	4.31	2.9	2.9
2002-03	348567	165910	23163	66674	0.3	-2.1	-4.18	-1.89
2003-04	389016	189096	24721	68128	11.6	13.98	6.72	2.18
2004-05	394137	180633	25244	70691	1.32	-4.48	2.11	3.76
2005-06	417861	200802	28209	76321	6.02	11.17	11.75	7.96
2006-07	459501	231437	29028	82560	9.97	15.26	2.9	8.17
2007-08	459936	236021	29654	82972	0.09	1.98	2.16	0.5
2008-09	498869	267506	31848	93479	8.46	13.34	7.4	12.66
2009-10	583017	309206	37629	114980	16.87	15.59	18.15	23
2010-11	621481	335037	40110	130131	6.6	8.35	6.59	13.18
2011-12	662247	360634	42117	138169	6.56	7.64	5	6.18
2011-12*	1059046	576715	67353	220956				
2012-13*	1131715	656030	70382	232543	6.86	13.75	4.5	5.24
2013-14*	1193859	660999	73880	244106	5.49	0.76	4.97	4.97
2014-15*	1529155	921578	106471	300566	28.09	39.42	44.11	23.13
2015-16*	1613796	958272	118816	326135	5.54	3.98	11.59	8.51

Table AI.17
Revenue Expenditure at Current prices of States

Year	Total Exp. (rev)	Dev.Exp (rev)	Health Exp.(rev)	Edu, art & culture Exp(rev).	Av. growth rate of total exp (rev)	Av. growth rate of dev exp (rev)	Av. growth rate of health exp (rev)	Av. growth rate of edu exp (rev)
1990-91	67860	40360	6213	15388				
1995-96	140499	76024	11658	28760	15.67	13.5	13.41	13.32
1996-97	162677	90853	13147	33134	15.78	19.51	12.77	15.21
1997-98	181479	97481	15330	37105	11.56	7.3	16.6	11.99
1998-99	215994	117033	18026	45746	19.02	20.06	17.59	23.29
1999-00	254858	133491	19788	56061	17.99	14.06	9.77	22.55
2000-01	271966	138416	20015	56265	6.71	3.69	1.14	0.36
2001-02	305443	148947	21247	59730	12.31	7.61	6.16	6.16
2002-03	317780	151256	21117	60785	4.04	1.55	-0.61	1.77
2003-04	368003	178882	23386	64448	15.8	18.26	10.74	6.03
2004-05	394137	180633	25244	70691	7.1	0.98	7.95	9.69
2005-06	435514	209285	29401	79545	10.5	15.86	16.47	12.53
2006-07	509637	256689	32195	91568	17.02	22.65	9.5	15.11
2007-08	540843	277539	34871	97568	6.12	8.12	8.31	6.55
2008-09	636209	341151	40616	119213	17.63	22.92	16.48	22.19
2009-10	788649	418264	50901	155534	23.96	22.6	25.32	30.47
2010-11	915930	493772	59114	191785	16.14	18.05	16.14	23.31
2011-12	1059046	576715	67353	220956	15.63	16.8	13.94	15.21
2012-13	1221510	708082	75966	250994	15.34	22.78	12.79	13.59
2013-14	1368303	757583	84675	279774	12.02	6.99	11.46	11.47
2014-15	1810983	1091428	126094	355961	32.35	44.07	48.92	27.23
2015-16	1950822	1158398	143630	394245	7.72	6.14	13.91	10.76
CAGR	14.38	14.37	13.39	13.85278				

Table AI.18
Capital Expenditure at Constant prices of States

Year	Total Exp. (cap)at 2004-05 prices	Dev.Exp. (cap)at 2004-05 prices	Health exp . At 2004-05 prices	Education, art & culture exp . At 2004-05 prices	Av. growth rate of total exp	Av. growth rate of dev exp	Av. growth rate of health exp	Av. growth rate of edu exp
1990-91	34091	23282	1535	781				
1995-96	36134	28610	2000	682	1.17	4.21	5.43	-2.67
1996-97	30879	25269	2060	731	-14.54	-11.68	3.03	7.11
1997-98	37834	30787	2275	724	22.52	21.84	10.43	-0.92
1998-99	39073	28750	2840	820	3.27	-6.62	24.8	13.24
1999-00	45860	30625	3146	517	17.37	6.52	10.78	-36.98
2000-01	40758	35197	4352	520	-11.12	14.93	38.34	0.59
2001-02	40725	35002	3772	663	-0.08	-0.56	-13.32	27.56
2002-03	48446	36230	4480	533	18.96	3.51	18.76	-19.57
2003-04	65514	53111	4590	789	35.23	46.59	2.44	48.05
2004-05	70929	58846	6145	1029	8.26	10.8	33.89	30.36
2005-06	83335	74567	6736	1725	17.49	26.72	9.61	67.62
2006-07	98900	88700	9030	2293	18.68	18.95	34.05	32.96
2007-08	105671	95856	9910	2856	6.85	8.07	9.75	24.53
2008-09	112147	104453	10842	3578	6.13	8.97	9.4	25.28
2009-10	123959	112208	10456	3377	10.53	7.42	-3.56	-5.61
2010-11	118562	103692	8929	3815	-4.35	-7.59	-14.6	12.98
2011-12	125316	107838	8922	3082	5.7	4	-0.08	-19.22
2011-12*	200401	172451	14268	4929				
2012-13*	207064	179907	16574	5708	3.32	4.32	16.16	15.81
2013-14*	216005	190501	19038	6858	4.32	5.89	14.87	20.14
2014-15*	301773	273557	32839	10828	39.71	43.6	72.49	57.89
2015-16*	328018	296070	30091	13935	8.7	8.23	-8.37	28.69

Table AI.19
Capital Expenditure at Current prices of States

Year	Total Exp (cap)	Dev Exp. (cap)	Health Exp (cap)	Education, art & culture exp (cap)	Av. growth rate of total exp	Av. growth rate of dev exp	Av. growth rate of health exp	Av. growth rate of edu exp
1990-91	13451	9186	606	308				
1995-96	23259	18417	1287	439	11.58	14.93	16.28	7.34
1996-97	21424	17532	1430	507	-7.89	-4.8	11.04	15.44
1997-98	27986	22773	1683	536	30.63	29.9	17.73	5.64
1998-99	31230	22979	2270	655	11.59	0.9	34.85	22.36
1999-00	37791	25237	2592	426	21.01	9.83	14.22	-35.03
2000-01	34723	29986	3708	443	-8.12	18.82	43.02	4
2001-02	35794	30763	3316	583	3.08	2.59	-10.57	31.6
2002-03	44168	33030	4084	486	23.39	7.37	23.19	-16.57
2003-04	61975	50242	4342	747	40.32	52.11	6.3	53.62
2004-05	70929	58846	6145	1029	14.45	17.12	41.54	37.8
2005-06	86856	77717	7020	1798	22.45	32.07	14.24	74.7
2006-07	109691	98378	10015	2544	26.29	26.58	42.66	41.49
2007-08	124259	112717	11653	3359	13.28	14.58	16.36	32.03
2008-09	143022	133209	13826	4563	15.1	18.18	18.65	35.86
2009-10	167680	151784	14144	4568	17.24	13.94	2.3	0.11
2010-11	174735	152820	13160	5623	4.21	0.68	-6.96	23.09
2011-12	200401	172451	14268	4929	14.69	12.85	8.42	-12.34
2012-13	223493	194182	17889	6161	11.52	12.6	25.38	24.99
2013-14	247567	218336	21820	7860	10.77	12.44	21.97	27.58
2014-15	357391	323974	38891	12824	44.36	48.38	78.24	63.16
2015-16	396521	357902	36375	16845	10.95	10.47	-6.47	31.36
CAGR	14.49	15.78	17.8	17.35				

Table AI.20
Per Capita Public Expenditure on Health of Centre and State

States	Population 2014 (Census projections)	Public Expenditure in Health	Per Capita health exp	Exp on Public Health to Aggregate Exp.
AP	51073407	50131716	1.0	4.4
Assam	31693000	49919734	1.6	6.1
Bihar	1.02E+08	50671944	0.5	3.7
Chhattisgarh	25232000	34797245	1.4	5.1
Gujarat	61329000	74317175	1.2	5.6
Haryana	26675000	30548513	1.1	3.3
HP	6978000	18937641	2.7	5.9
J & K	12152000	29249245	2.4	5.7
Jharkhand	32766000	28909415	0.9	4.6
Karnataka	61214000	69798112	1.1	4.8
Kerala	35258000	52070539	1.5	5.6
MP	75614000	55349712	0.7	4
Maharashtra	1.17E+08	1.21E+08	1.0	4.9
Odisha	41797000	39214344	0.9	4.6
Punjab	28568000	34003413	1.2	5.1
Rajasthan	70969000	98578639	1.4	4.6
Tamil Nadu	68654000	85431235	1.2	4.7
Telangana	36307197	46264958	1.3	4.4
Uttar Pradesh	2.11E+08	1.59E+08	0.8	4.8
Uttarakhand	10362000	18705135	1.8	5.6
West Bengal	91920000	72389023	0.8	4.9

Source: State Finances A Study of Budgets of 2016-17,RBI

Table AI.21
Per Capita Public Expenditure on Education of Centre and States

Year	Total Education Expenditure		Population in Crore	Per Capita Public Education expenditure Centre+State	
	Constant prices	Current prices		Constant prices	Current prices
1990-91	44045	17378	84.7	520	205
1995-96	50257	32350	93.7	536	345
1996-97	53552	37154	95.5	561	389
1997-98	57203	42313	97.3	588	435
1998-99	65930	52696	99.2	665	531
1999-00	76662	63174	101.0	759	625
2000-01	74837	63756	102.9	727	619
2001-02	77234	67881	104.8	737	648
2002-03	78007	71117	106.4	733	668
2003-04	80509	76160	108.1	745	705
2004-05	85717	85717	109.7	781	781
2005-06	94204	98184	111.4	846	881
2006-07	105771	117312	113.0	936	1038
2007-08	107604	126532	114.6	939	1104
2008-09	125676	160275	116.2	1082	1379
2009-10	148703	201151	117.8	1262	1708
2010-11	168810	248790	119.5	1413	2082
2011-12	177110	283229	121.7	1455	2326
2011-12*	283229	283229	121.7	2326	2629
2012-13*	296513	320040	124.3	2385	2575
2013-14*	310857	356279	125.9	2468	2829
2014-15*	336822	398899	127.6	2640	3126
2015-16 *	367993	444845	129.3	2847	3441

Table AI.22
Share of Plan and Non-Plan Expenditure on Education in Central and State Sectors

Year	Plan		Non-Plan		Total	
	Centre	State	Centre	State	Centre	State
1991-92	40.27	59.73	4.65	95.35	9.14	90.86
1992-93	39.18	60.82	4.32	95.68	8.58	91.42
1993-94	39.01	60.99	4.33	95.67	8.95	91.05
1994-95	38.99	61.01	3.96	96.04	9.41	90.59
1995-96	41.17	58.83	4.29	95.71	10.52	89.48
1996-97	37.86	62.14	3.95	96.05	10.10	89.90
1997-98	46.50	53.50	3.97	96.03	11.25	88.75
1998-99	45.13	54.87	5.50	94.50	12.34	87.66
1999-00	47.32	52.68	5.64	94.36	11.97	88.03
2000-01	49.19	50.81	5.84	94.16	12.68	87.32
2001-02	51.97	48.03	4.59	95.41	12.39	87.61
2002-03	59.46	40.54	4.68	95.32	13.26	56.74
2003-04	61.44	38.56	4.60	95.40	13.93	86.07
2004-05	60.40	39.60	4.62	95.38	16.13	83.87
2005-06	62.30	37.70	4.60	95.40	18.86	81.14
2006-07	66.35	33.65	4.39	95.61	21.64	78.36
2007-08	63.92	36.08	4.57	95.43	21.35	78.65
2008-09	66.30	33.70	5.48	94.52	22.53	77.47
2009-10	61.90	38.10	6.29	93.71	21.01	78.99
2010-11	62.10	37.90	5.12	94.88	22.23	77.77
2011-12	59.61	40.39	5.13	94.87	21.69	78.31
2012-13 (RE)	52.41	47.59	4.95	95.05	22.86	77.14
2013-14 (BE)	51.86	48.14	5.65	94.35		

Source: Analysis of Budgeted Expenditure on Education, M/o HRD, Govt of India[185]

[185]Analysis Of Budgeted Expenditure On Education 2012-13 to 2014-15. Government Of India Ministry Of Human Resource Development http://mhrd.gov.in/sites/upload_files/mhrd/files/statistics/ABE2012-15_0.pdf

Table AI.23
Out of Pocket Expenditure in Current Price in various Rounds of NSS

Round	Year	Rural				Urban			
		Med. (inst.)	Med. (non-inst)	Tot Med.	% share in Tot Cons. Exp	Med. (inst.)	Med. (non-inst)	Tot. Med	% share in Tot Cons. Exp
50th	1993-94	2.52	12.76	15.28	5.43	5.54	15.51	21.05	4.6
%Share in tot med		*16.5*	*83.5*	*100*		*26.3*	*73.7*	*100*	
51st	1994-95	3.72	11.71	15.43	4.99	5.28	12.28	17.56	3.46
%Share in tot med		*24.1*	*75.9*	*100*		*30.1*	*69.9*	*100*	
52nd	1995-96	2.44	11.56	14	4.07	7.3	15.03	22.33	3.73
%Share in tot med		*17.4*	*82.6*	*100*		*32.7*	*67.3*	*100*	
53rd	1997	6.23	16.3	22.53	5.7	12.41	20.58	32.99	5.11
%Share in tot med		*27.7*	*72.3*	*100*		*37.6*	*62.4*	*100*	
54th	1998	6.1	14.74	20.84	5.45	17.62	20.1	37.72	5.51
%Share in tot med		*29.3*	*70.7*	*100*		*46.7*	*53.3*	*100*	
55th	1999-00	6.66	22.94	29.6	6.09	12.33	30.95	43.28	5.06
%Share in ot med		*22.5*	*77.5*	*100*		*28.5*	*71.5*	*100*	
56th	2000-01	7.79	25.95	33.74	6.82	15.16	37.69	52.85	5.78
%Share in ot med		*23.1*	*76.9*	*100*		*28.7*	*71.3*	*100*	
57th	2001-02	6.93	25.22	32.15	6.45	16.58	38.29	54.87	5.88
%Share in ot med		*21.6*	*78.4*	*100*		*30.2*	*69.8*	*100*	
58th	2002	9.47	26.45	35.92	6.76	16.69	41.68	58.37	5.77
%Share in tot med		*26.4*	*73.6*	*100*		*28.6*	*71.4*	*100*	

Round	Year	Rural				Urban			
		Med. (inst.)	Med. (non-inst)	Tot Med.	% share in Tot Cons. Exp	Med. (inst.)	Med. (non-inst)	Tot. Med	% share in Tot Cons. Exp
59th	2003	10.65	28.22	38.87	7.01	16.49	43.71	60.2	5.89
%Share in tot med		*27.4*	*72.6*	*100*		*27.4*	*72.6*	*100*	
60th	2004	9.3	25.76	35.06	6.21	18.78	39.31	58.09	5.48
%Share in tot med		*26.5*	*73.5*	*100*		*32.3*	*67.7*	*100*	
61st	2004-05	10.03	26.93	36.96	6.61	13.05	41.54	54.59	5.19
%Share in tot med		*27.1*	*72.9*	*100*		*23.9*	*76.1*	*100*	
62nd	2005-06	10.75	32.85	43.6	6.98	18.62	52.09	70.71	6.04
%Share in tot med		*24.7*	*75.3*	*100*		*26.3*	*73.7*	*100*	
63rd	2006-07	15.55	36.74	52.29	7.52	24.35	58.23	82.58	6.29
%Share in tot med		*29.7*	*70.3*	*100*		*29.5*	*70.5*	*100*	
64th	2007-08	13.75	34.92	48.67	6.3	19.4	56.87	76.27	5.18
%Share in tot med		*28.3*	*71.7*	*100*		*25.4*	*74.6*	*100*	
66th(URP)	2009-10	13.97	39.26	53.23	5.74	25.04	64.74	89.78	5.03
%Share in tot med		*26.2*	*73.8*	*100*		*27.9*	*72.1*	*100*	
66th(MRP)	2009-10	17.76	39.26	57.02	5.98	34.05	64.74	98.79	5.32
%Share in tot med		*31.1*	*68.9*	*100*		*34.5*	*65.5*	*100*	
68th(MRP)	2011-12	30.31	64.52	94.83	7.37	51.6	98.85	*150.45*	6.07
%Share in tot med		*31.96*	*68.04*	*100*		*34.30*	*65.70*	*100*	

Source: Various rounds of National Sample Survey

Table AI.24
Statewise Health Expenditure in 61st Round (2004-05) and Measures of Inequality

	Rural				Urban			
	GINI	Average	Low	High	GINI	Average	Low	High
Andhra Pradesh	0.47	39.57	3.29	154.9	0.39	53.84	4.22	192.51
Assam	0.30	11.38	7.87	43.01	0.34	31.75	4.97	179.47
Bihar	0.34	13.55	3.6	80.58	0.44	25.54	5.95	173.86
Gujarat	0.37	35.25	5.73	127.28	0.33	60.29	8	136.54
Haryana	0.31	50.9	1.1	108.58	0.43	53.23	13.68	248.74
Karnataka	0.40	22.61	6.69	80.34	0.36	42.4	5.5	233.1
Kerala	0.35	101.75	16.61	211.26	0.26	122.22	152.42	269.01
Madhya Pradesh	0.44	31.38	6.48	226.63	0.47	46.96	8.13	142.33
Maharashtra	0.44	44.4	5.02	178.24	0.43	80.5	7.44	299.85
Orissa	0.44	21.85	4.38	124.46	0.39	31.37	7.73	87.34
Punjab	0.41	62.94	12.5	164.15	0.37	65.42	6.93	248.63
Rajasthan	0.40	31.06	1.82	145.55	0.24	47.67	4.78	70.8
Uttar Pradesh	0.39	45.42	8.12	172.11	0.38	51.15	12.93	196.28
Tamil Nadu	0.55	37.28	3.02	249.85	0.39	53.81	6.84	203.76
Himachal Pradesh	0.37	55.96	4.6	149.14	0.17	69.36	18.16	147.87
West Bengal	0.45	39.67	8.15	213.32	0.48	77.4	8.29	356.59
Chattisgarh	0.52	28.15	3.16	239.76	0.33	57.59	10.8	157.73
Jharkhand	0.43	17.29	3.07	46.64	0.32	42.52	7.54	109.33
Uttarakhand	0.39	29.48	0	116.75	0.38	34.92	8.05	125.07
J&K	0.35	22.42	0	55.02	0.36	23.7	4.74	85.21
All India	0.45	36.34	5.3	164.86	0.39	57.42	11.02	211.98

Table AI.25
Statewise Health Expenditure in 68th Round (2011-12) and Measures of Inequality

	Rural				Urban			
States	GINI	Average	Low	High	GINI	Average	Low	High
Andhra Pradesh	0.393	133.2	24.8	609.1	0.372	150.5	31.2	864.0
Assam	0.256	29.1	8.2	112.3	0.414	82.7	22.4	267.0
Bihar	0.252	53.9	13.7	269.4	0.308	65.9	8.8	245.9
Gujarat	0.416	85.2	29.2	415.3	0.283	124.4	30.8	516.9
Haryana	0.296	93.0	23.1	342.6	0.259	140.6	22.3	296.5
Karnataka	0.464	90.7	14.4	537.1	0.476	151.5	24.9	642.9
Kerala	0.395	242.9	38.7	1150.9	0.473	269.3	61.8	1378.0
Madhya Pradesh	0.413	66.0	11.3	344.0	0.421	94.4	20.2	360.7
Maharashtra	0.449	124.8	16.3	890.1	0.414	199.6	39.8	964.8
Orissa	0.413	59.6	8.1	295.5	0.490	124.8	20.3	523.2
Punjab	0.401	197.7	47.8	1069.3	0.276	181.1	30.4	792.1
Rajasthan	0.327	91.2	26.5	406.7	0.300	107.0	25.3	377.4
Uttar Pradesh	0.422	104.5	22.0	568.3	0.540	134.0	26.2	589.8
Tamil Nadu	0.463	125.4	26.1	640.7	0.350	159.4	25.0	614.4
Himachal Pradesh	0.333	106.5	20.0	382.3	0.504	199.6	50.6	1323.2
West Bengal	0.412	93.5	17.7	490.2	0.526	211.4	24.6	1167.7
Chattisgarh	0.370	49.2	11.3	194.3	0.431	89.1	16.4	317.1
Jharkhand	0.279	36.4	4.9	118.5	0.479	107.4	9.6	386.7
Uttarakhand	0.408	66.5	24.6	332.1	0.302	89.7	22.6	261.6
J&K	0.373	71.5	14.5	245.5	0.418	133.6	20.4	798.2
All India	0.463	94.8	16.0	510.1	0.443	150.5	24.4	687.9

Table AI.26
Statewise EducationExpenditure in 61st Round (2004-05) and Measures of Iinequality

		Rural				Urban		
	GINI	Average	Low	High	GINI	Average	Low	High
Andhra Pradesh	0.412	15.4	2.4	51.3	0.452	79.4	7.0	339.5
Assam	0.345	16.0	5.2	73.9	0.483	72.9	15.0	360.1
Bihar	0.386	10.8	2.5	63.7	0.528	54.9	8.3	336.7
Gujarat	0.520	15.0	2.5	56.4	0.470	67.4	11.3	325.6
Haryana	0.519	63.8	10.1	260.1	0.386	102.4	15.7	255.4
Karnataka	0.521	13.9	3.2	160.9	0.538	62.9	4.9	278.3
Kerala	0.387	40.7	3.2	89.7	0.473	65.5	9.4	228.7
Madhya Pradesh	0.395	10.1	3.2	59.1	0.575	69.8	5.8	473.5
Maharashtra	0.489	12.4	1.9	64.9	0.508	74.2	3.9	269.8
Orissa	0.514	9.9	1.9	63.4	0.537	46.3	4.2	312.0
Punjab	0.451	50.3	18.8	146.4	0.465	108.2	7.4	548.3
Rajasthan	0.381	14.5	3.9	51.6	0.537	71.5	8.6	462.9
Uttar Pradesh	0.314	17.2	4.8	53.3	0.504	62.9	10.4	406.3
Tamil Nadu	0.434	18.6	5.8	80.8	0.500	73.8	9.7	308.8
Himachal Pradesh	0.370	34.9	7.4	98.5	0.385	88.4	10.9	213.0
West Bengal	0.458	22.4	3.1	135.8	0.492	84.2	8.0	327.7
Chattisgarh	0.377	7.1	2.1	56.5	0.581	59.3	7.3	444.7
Jharkhand	0.397	9.1	2.4	52.8	0.466	75.7	5.4	260.1
Uttarakhand	0.374	29.4	0.9	99.7	0.370	83.0	12.2	285.0
J&K	0.432	40.2	0.0	102.0	0.243	81.7	0.0	698.2
All India	0.468	18.1	2.9	93.4	0.498	73.7	7.6	330.6

Table AI.27
Statewise EducationExpenditure in 68th Round (2011-12) and Measures of Inequality

	Rural				Urban			
	GINI	Average	Low	High	GINI	Average	Low	High
Andhra Pradesh	0.342	61.0	7.5	272.4	0.346	200.3	29.7	663.5
Assam	0.344	21.0	4.2	88.4	0.635	133.4	6.3	1146.1
Bihar	0.273	25.8	6.4	116.4	0.504	119.8	9.9	771.1
Gujarat	0.490	33.9	9.1	160.4	0.347	145.2	15.1	674.2
Haryana	0.258	129.5	29.2	382.5	0.455	327.3	25.9	1271.4
Karnataka	0.417	41.6	4.0	203.8	0.566	212.0	12.0	1255.3
Kerala	0.354	94.7	12.3	408.5	0.557	208.5	21.3	1380.1
Madhya Pradesh	0.477	26.4	3.6	141.7	0.582	152.3	11.9	962.7
Maharashtra	0.529	47.5	4.5	365.9	0.463	225.2	14.1	1008.1
Orissa	0.428	22.3	2.9	93.1	0.543	110.2	8.6	591.2
Punjab	0.358	133.5	10.3	684.8	0.384	254.0	24.6	1078.2
Rajasthan	0.367	64.8	5.0	320.0	0.463	227.5	29.0	1371.1
Uttar Pradesh	0.359	47.7	8.6	227.6	0.653	165.1	18.8	973.8
Tamil Nadu	0.499	88.6	9.1	468.1	0.473	182.7	12.3	870.9
Himachal Pradesh	0.441	96.2	22.9	527.2	0.481	322.8	39.1	2462.6
West Bengal	0.306	48.6	9.8	149.7	0.510	193.6	27.3	952.8
Chattisgarh	0.376	17.7	4.1	91.8	0.678	114.1	11.7	978.9
Jharkhand	0.337	25.6	9.9	137.5	0.469	142.3	11.5	581.9
Uttarakhand	0.488	90.1	21.2	579.0	0.394	205.0	18.8	988.0
J&K	0.354	88.2	19.0	375.2	0.405	210.8	20.8	855.3
All India	0.492	50.7	7.1	283.5	0.519	193.1	17.5	1025.9

ANNEXURE II

Analyses:

Table AII.1
Association of Prevalence of Chronical Energy Deficiency in Women with Public Expenditure on Health

	Association of Expenditure with Prevalence of Chronically Energy Deficient Women		
Per capita total health expenditure	-0.008*	-	-0.008*
Ratio of expenditure on public health to aggregate expenditure	-	-2.454*	1.173
R squared	0.38	0.0673	0.3906

Source: Author's Calculation

Table AII.2
Association of Prevalence Aneamia in Women with Public Expenditure on Health

	Association of Expenditure with Prevalence of Anaemia in non-pregnant women		
Per capita total health expenditure	-0.006**	-	-0.002
Ratio of expenditure on public health to aggregate expenditure	-	-6.540*	-5.527*
R squared	0.196	0.3289	0.3673

Source: Author's Calculation

Principal Component Analysis

The analysis uses the Principal Component Analysis (PCA) method. The score of each state was developed as a linear composite index of the three variables. This is represented by:

SCOREj = W1X1j + W2X2j + W3X3j

SCOREj refers to the score for j^{th} state. X_{ij} refers to the standardised value of the i^{th} parameter for the j^{th} stateand W_i is the corresponding weight of the parameter. These weights are calculated using PCA method

Firstly, each indicator is standardised. Pairwise correlation coefficient of indicators of Health Expenditure is calculated and arranged in a matrix form. Calculation of weights for each parameter is shown in table below.

Table AII.3
Calculation of Weights (2004-05)

		Share of exp on Med. And Family Welfare out of total exp	Govt. health exp /GSDP	Govt. health exp per capita
(1)	Share of exp on Med. And Family Welfare out of total exp	1.00	0.76	0.67
(2)	Govt. health exp /GSDP	0.76	1.00	0.73
(3)	Govt. health exp per capita	0.67	0.73	1.00
(4=1+2+3)	column sum	2.42	2.49	2.40
(5)	Grand Sum	7.31		
(6)	Square Root of grand Sum	2.70		
(7)= 4/6	Weights	0.90	0.92	0.89

Source: Author's Calculation

Table AII.4
Calculation of Weights (2014-15)

		Share of exp on Med. and Family Welfare out of total exp	Govt. health exp /GSDP	Govt. health exp per capita
(1)	Share of exp on Med. And Family Welfare out of total exp	1.00	0.76	0.67
(2)	Govt. health exp /GSDP	0.76	1.00	0.73
(3)	Govt. health exp per capita	0.67	0.73	1.00
(4=1+2+3)	column sum	2.42	2.49	2.40
(5)	Grand sum	7.31		
(6)	Square root of Grand sum	2.70		
(7=4/6)	Weights	0.90	0.92	0.89

Source: Author's Calculation

Row 1, 2 and 3 in the above tables represent correlation matrix. Non-diagonal elements represent pair-wise correlation of all three variables. The weights are then calculated by dividing the column sum of the each parameter with the square root of the grand sum (see table C and D)

The next step is to normalise each of the standardize variable from 0 to 100 with 100 value given to state with highest health expenditure ratios and 0 implies the lowest value. The weights are then multiplied by these normalize values of each parameter for each state giving us the contribution of

respective parameter for a state. Sum of this contribution of the parameters is defined as the score of the states; it is used for assigning ranks to the states.

Rank 1 is given to state which gets highest score representing that government expenditure is highest in that state and lowest rank i.e. 20 is given to state with lowest score.

Table AII.5
Hausman Test— choice of Model for Panel Data Regression:

	(b)	(B)	(b-B)	sqrt (diag (V_b-V_B))
	Fixed	Random	Difference	S.E.
NSDP Per cap (Rs.)	0.0000123	0.0000131	-8.03E-07	9.75E-07
Receipts (Rs. Cr.)	8.03E-06	6.45E-06	1.58E-06	1.35E-06
Proportion of Urban Population	-0.0110577	-0.013949	0.0028917	0.0041493
Expenditure to receipts Ratio	-0.0006845	-0.00077	0.0000856	0.0043218
Test: Ho: difference in coefficients not systematic				
chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 1.76				
Prob>chi2 = 0.6242				

Table AII.6
Summary Statistics 2014

		2014				2004			
Parameters	No. of States	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
Public Exp on Health out of Total Govt. Exp	18	4.8	0.6	3.8	5.6	3.5	0.7	2.7	4.9
NSDP Per cap (Rs. thousand)	18	93.7	39.5	28.7	148.5	24.1	8.9	7.9	38.0
Receipts (Rs. Thousand Cr.)	18	72.6	49.7	18.5	193.4	16.7	10.7	4.1	41.0
Proportion of Urban Population	18	30.6	13.5	10.1	57.3	25.1	11.1	9.9	53.2
Expenditure to Receipts Ratio	18	120.7	6.2	109.6	132.1	128.1	14.6	107.9	153.1

Source: Author's Calculation

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