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FISCAL DECENTRALIZATION AND HEALTH INFRASTRUCTURE DEVELOPMENT IN KERALA

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Abstract:

Fiscal decentralization is generally refers to the devolution of taxing and spending powers to lower levels. It is considered to be the most important for the success of planning and decision making process at the local level. One of the important objectives of decentralization has been provide quality health care services to all. Decentralization has been identified as a means of achieving health equity in many reform initiatives across the world. WHO (1978) argued that decentralization can make health system functions more efficiently and can increase community involvement in oversight and locally relevant decision making. Kerala is a state in south-west of India, which is known to have decentralised its governance in ways far more advanced than most Indian states and the state has a well known health model. There is a vast change in health infrastructure of Kerala after decentralisation, there is an establishment of more health centres, beds and other facilities in public health cenbtres of Kerala. But the progress in human resource is not much satisfactory and the resource allocated for the maintenance of health centres at Grama Panchayat level were seems to low.

Key words: Fiscal Decentralisation, health infrastructure, public health centres

INTRODUCTION

The term 'decentralization' had been in the forefront of the development agenda of developing countries since 1980s. Twelve of the seventy five developing countries with more than five million inhabitants have implemented some form of decentralization with varying degree of financial and political power (World Bank, 2000). The effects of decentralization on

good governance depend to a large extent on the form and nature of the decentralization involved in the particular country. Based on the nature of transfer, decentralization can be categorized in to *Political, administrative and fiscal decentralization.* All the three forms of decentralization are important and should be compliment to each other. In order to perform the responsibilities devolved to local bodies, they need appropriate level of fiscal resources to cover the costs of providing public goods and services (Sankaran, 2006). In this regard '**fiscal decentralization'** is considered to be most important for the success of planning and decision making process at the local level. Fiscal decentralization is generally refers to the devolution of taxing and spending powers to lower levels of government (Fukasaker and De Mello, 1999). It is broadly defined as an empowerment of lower tiers; it ensures that all elected officials weigh carefully joys of spending someone else's money and pains associated with raising revenues from the electorate and facing the possibility of being voted out (Shah 2005).

One of the important objectives of decentralization has been provide quality health care services to all. Decentralization has been identified as a means of achieving health equity in many reform initiatives across the world, it may be perceived as a tool for change in the regime of health sector reform initiatives underway striving to maximize the use of scarce resources in meeting the ever increasing demand for health (Mishra, 2012). WHO (1978) argued that decentralization can make health system functions more efficiently and can increase community involvement in oversight and locally relevant decision making. Once the Panchayati Raj System becomes fully operational there will have local authorities more involved in understanding their problems, so that they can participate better in the health care delivery services (Bajaj Committee, 1996). Setting up of health institutions and development of health infrastructures are necessary for the successful delivery of health care services.

REVIEW OF LITERATURE

Decentralisation in governance leads to welfare gains. It entails the provision of public goods by sub national governments so that public consumption levels are tailored to suit the preference of a heterogeneous population and promotes efficiency as well as equity (Rangarajan and Srivastava, 2011). Good local governance is not just about providing a range of local services but also about preserving the life and liberty of residents, space for providing democratic participation and civic dialogue, supporting market-led and environmentally sustainable local development and facilitating outcome that enrich the quality of life of residents (Boadway& Shah, 2009).

Decentralisation helps to welfare gains in the distribution of health services. It facilitates to take regional measures for health challenges as epidemiological pattern varies from region to region. It helps to create greater awareness and accomplishment of preventive measures and more responsive health care system through proper intervention. More over Decentralisation helps to brings decision making closer to the communities and increase the efficiency of service provisioning through informational advantage.

A critical issue in decentralisation is the assignment of services to sub-national governments. Andrews and Schroeder (2003) examines the experiences of Sub-Saharan service assignment in two key service sectors, primary health care and rural roads, each of which is a common target for decentralisation efforts and has substantially different characteristics. In analysing intergovernmental provision and production arrangements and the way in which different service components are organised in these sectors, it is apparent that legislated models of decentralisation are largely informed by normative theory. In both sectors, however, a disjoint is evident between what governments decentralise in a formal sense (i.e. in the law) and what they decentralise in an actual sense. This disjoint can be partially explained by normative arguments about the limits to decentralisation. Not only spill over and economies of scale, but also result from the influence of factors such as intergovernmental and bureaucratic politics, local level capacity constraints and particular production issues are associated with this disjoint.

Health is an important subject transferred to the LSGs. Strumpf et al. (1999) examined the allocative efficiency changes from provision of public good in Uganda. The study gave an extensive detail on the allocation decisions made by local government officials and the type of health activities/services undertaken each year. The results shows that not all was favorable to decentralisation; in particular that local government health planner was allocating declining proportions of their budgets to public goods activities.

RESEARCH PROBLEM

Kerala is a state in south-west of India, which is known to have decentralised its governance in ways far more advanced than most Indian states and the state has a well known health model. The health status of Kerala is far advanced and higher than the all India average and is even comparable with advanced countries (Gangadharan, 2005). Kerala's decentralised planning is different from the rest of India because it initiated institutional reforms and moved ahead sufficiently early to devolve powers, responsibilities and funds to the local governments (Oommen, 2014). It is generally held that no other Indian state has deepened decentralization to the extent of Kerala (Sebastian et al, 2014). The Panchayat Empowerment and Accountability Scheme (PEAIS) of the Ministry of Panchayat Raj under which states are ranked in terms of their decentralization efforts in 2012-13, where Kerala is an outstanding exception. Despites of its poverty, Kerala shows high development indicator and stands out very high among low income countries in adult literacy, life expectancy, infant mortality and birth rate.

As a part of decentralization of health care services, the primary and secondary institutions working under the health department were transferred to the LSGs. The family welfare sub-centres (SCs) and Primary Health Centres (PHCs) were transferred to the Gram Panchayats, Community Health Centres (CHCs) to the Block Panchayats, Taluk Hospitals to Municipalities or Corporations and the District Hospitals to the District Panchayats. Government of Kerala decided to devolve 35-40 percent of their plan fund to the LSGs with the criteria that LSGs can spend up to 40% of the funds for the development of service sector, health is an

important segment. In this context present study proposed to understand the resources allocation and utilization for the health infrastructure developments at local levels of Kerala. **Objectives:**

1. To find out the magnitude of expenditure for the development of health infrastructure at three levels of panchayats in kerala
2. To examine the progress in health infrastructure of kerala after decentralization

Results and discussions

The protection and the promotion of public health at the local level became a pivotal responsibility of the LSGs. As far as rural areas are concerned panchayats were the cram of health infrastructure development. The table 1 & 2 shows the health expenditure of three levels of panchayats and sub sector wise allocation of these resources during the last FYP (XI th FYP).

Table 1 Expenditure pattern of Panchayats for health sector during XI Five Year Plan (Rupees in Lakh)

Year	Grama Panchayat			Block Panchayat			District Panchayat		
	Allocation	Expenditure	%	Allocation	Expenditure	%	Allocation	Expenditure	%
2007-08	2378.00	1720.53	72.35	1546.14	1173.76	75.92	4547.95	3401.56	74.79
2008-09	4215.64	2879.45	68.30	1532.36	999.32	65.21	1972.29	1120.23	56.80
2009-10	6842.79	4456.99	65.13	2098.22	1277.96	60.91	2894.38	1688.97	58.35
2010-11	9798.20	6124.87	62.51	2973.80	1584.45	53.28	3906.51	1896.18	48.54
2011-12	11512	7112.10	61.78	2988.89	1654.32	55.35	4324.65	2876.76	66.52

Source: Kerala Economic Review Various issues (2007-12)

The table 1 reveals that GPs were allocating more resources than other two levels of panchayats as it is the most resourceful authority and more closer to the people, its expenditure is more fruitful than other two levels. Even though resource allocation is increasing year after year, rate of utilization seems to be diminishing.

Table 2 Sub- sector wise allocation of health expenditure by Panchayats (Rupees in Lakh)

Health and Allied Services	**District Panchayat**		**Block Panchayat**		**Grama Panchayat**	
	Allocation	**Expenditure**	**Allocation**	**Expenditure**	**Allocation**	**Expenditure**
Health Centre	574.14 (19.84)	367.57 (21.76)	221.27 (10.55)	139.03 (10.88)	208.17 (3.04)	129.79 (2.91)
Public Health	169.67 (5.86)	63.06 (3.73)	41.49 (1.98)	38.66 (3.03)	437.21 (6.39)	350.81 (7.87)
Special Health Programmes	164.56 (5.69)	141.60 (8.38)	82.31 (3.92)	58.23 (4.56)	923.11 (13.49)	791.45 (17.76)
Medicine	7.00 (0.24)	7.00 (0.41)	24.78 (1.18)	24.68 (1.93)	379.02 (5.54)	359.13 (8.06)
Waste treatment	5.00 (0.17)	0.00 (0)	1.95 (0.09)	0.77 (0.06)	4.89 (0.07)	0.70 (0.02)
Insurance Programmes	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	4.80 (0.07)	2.71 (0.06)
Other Health Programes	190.83 (6.59)	134.29 (7.95)	60.50 (2.88)	48.31 (3.78)	135.66 (1.98)	113.90 (2.56)
Drinking Water	1776.39 (61.37)	974.46 (57.70)	1598.22 (76.17)	913.14 (71.45)	4184.18 (61.15)	2354.31 (52.82)
Sanitation	6.79 (0.23)	67.70 (4.01)	67.70 (3.23)	55.14 (4.31)	565.76 (8.27)	354.18 (7.95)
Total	2894.38	1688.98	2098.22	1277.96	6842.80	4456.98

Note: Figures in parenthesis shows percentage

Source: Kerala Economic Review 2015

It is understood that drinking and sanitation facilities getting major share of health resources under GPs. The share of expenditure for the maintenance of health institution and infrastructure development were low, only district panchayat has giving more attention for maintenance and management of health centres in Kerala.

Table 3 Correlation results of health expenditure pattern

GramaPanchayats		Health Centre	Public Health	Special Health	Medicine	Waste Treatment	Insurance	Drinking Water	Sanitation
Health Expenditure	**Pearson Correlation coefficient**	.446	.325	.327	.433	.490	.428	.803**	.823**
	Sig. (2-tailed)	.229	.393	.391	.245	.180	.251	.009	.006
Block Panchayats									
Health Expenditure	**Pearson Correlation coefficient**	.300	.014	.096	.075	-.328	.[a]	.752	-.176
	Sig. (2-tailed)	.624	.982	.878	.904	.590	.	.143	.777
District Panchayat									
Health Expenditure	**Pearson Correlation coefficient**	.827**	.036	.319	.480	.[b]	.[b]	.064	.207
	Sig. (2-tailed)	.003	.926	.369	.160	.	.	.861	.565

**** Significant at 5% level,**

Source: Calculated on the basis of data from Panchayat records

Correlation result (Table 3) signifies that there is no significant important given by the each level of panchayats for different segments of their health expenditure. Health expenditure is correlated to some segments only. It is observed that the health expenditure of Grama Panchayats are highly correlated with provision of drinking water (.803**) and sanitation (.823**) facilities. The District Panchayats health expenditure is highly correlated with maintenance of health centres (.827**). Whereas in the case of Block Panchayats, expenditure shows no significant positive correlation and it is also noted that waste treatment and sanitation shows negative correlation. It indicates that Grama panchayats are giving prime importance to preventive part of health care rather than curative part where as District Panchayats were giving priorities to curative segment and Block Panchayat has no such priorities.

Decentralisation and Health infrastructure development in Kerala

A preliminary analysis of rural health infrastructure in India brings out several important observations. Between 1950 and 2000 the rural health infrastructure, the facilities in Sub Centres, Primary Health Centres, and Community Health Centres has gone up significantly. The data for 1997-2000 (the first three years of People's Planning Campaign) shows that the LSGs constructed 90,021.6 square meters of buildings for the expansion of healthcare institutions at the local level (Ekbal 2000). As far as Kerala is concerned, during the 9th Five Year Plan (1997-2002), 1,40,671 square meters of buildings for hospitals and health centers were constructed all over the state (Economic Review 2006). In 10th Five Year plan also the LSGs spent substantial amounts for this purpose. Almost all the LSGs gave importance to the construction of buildings for the family welfare sub-centres of the PHCs, provision of furniture and medical equipments for the transferred centres, which had remained neglected before the decentralization era. It is to be noted that the facilities at the PHCs, CHCs and district hospitals also improved during the last 15 years (Elamon, 2006).

Table 4 Change in availability of Public Health institutions in Kerala

Year	CHC		PHC		SC	
	Number	Annual rate of change	Number	Annual rate of change	Number	Annual rate of change
1985-86	NA	---	299	---	2774	---
1990-91	54	---	883	39.03	5094	11.38
1995-96	52	-0.74	940	1.21	5094	0
2000-01	105	20.39	944	0.09	5094	0
2005-06	115	1.90	930	-0.29	NA	--

2010-11	230	20	835	-2.04	NA	--
2012-13	233	0.65	855	1.20	5403	0.51
2014-15	230	-0.65	852	-0.18	4575	-7.66

Source: Directorate of Health Service, Trivandrum

Annual rate of change in health centres reveals that rate of increase in CHCs was prominent after decentralization. The period 1996-2000 have highest rate of change in number of CHCs. Compare to CHCs, increase in Primary health centres and sub centres were diminutive. Based on the requirement statistics of Rural Health Care System, at present there is surplus number of health institutions (Sub Centres, PHCs and CHCs) in Kerala, which is shown in table 5

Table 5 Present status of Health Institutions in Kerala

Year	Health Institution	Required	In position	Shortfall
2005	Sub Centres	4325	5094	*
	Primary Health Centres	721	933	*
	Community Health Centres	180	115	65
2016	Sub Centres	3551	4575	*
	Primary Health Centres	589	824	*
	Community Health Centres	147	225	*

Source: HMIS, RHS report 2016

Table 6 District wise availability of Public health institutions of Kerala As on 2014-15

Sl.no	District	District Hospital	General Hospital	Specialty Hospital	CHCs	24*7 PHC	PHC	FW Sub-Centres *	Total
1	Trivandrum	2	2	5	23	6	64	483	585

2	Kollam	1	0	2	17	6	52	418	496
3	Pathanamthitta	1	2	0	12	5	38	260	318
4	Alappuzha	1	1	4	16	17	42	366	447
5	Kottayam	0	4	1	19	12	43	339	418
6	Idukki	1	0	0	14	11	31	307	364
7	Ernakulam	1	2	1	22	34	42	410	512
8	Trissure	1	2	2	24	11	68	472	580
9	Palakkad	1	0	2	19	11	65	504	602
10	Malappuram	3	1	0	20	20	66	578	688
11	Kozhikode	1	1	3	16	6	57	402	486
12	Wayanad	1	1	0	9	8	14	204	237
13	Kannur	1	1	1	11	13	70	413	510
14	Kasargod	1	1	0	9	10	30	247	298
	Total	16	18	21	231	170	682	5403	6541
	Average	1.14	1.29	1.50	16.50	12.14	48.71	385.93	467.21

Source: Directorate of Health Service, Trivandrum *As on 2013-14

District wise analysis of health institutions in Kerala (table 6) discloses that Malappuram (the district with highest population) has highest number of public health institutions in Kerala. It is noticed that the entire district have Community Health Centre, Primary Health centres and sub centres. Kannur district has highest number of Primary Health Centres. District hospital is also available all the district except Kottayam. The district Kannur, Kozhikode, Malappuram, Palakkad, Trissure, Ernakulam, Kollam and Trivandrum have above average level availability of Public health institutions. The rural district like Wayanad and Kasargod have least number of health centres.

A study by KSSP comparing the scenario in 1996 to that of 2004 showed that 28 per cent of the population was dependent on the government sector in 1996 and it increased to 32 per cent in 2004 (KSSP 2006). Along with the high cost of treatment in the private sector, the improved

quality of services in the government sector also has contributed to this change. There is a family welfare sub-centre every 6 kilometers and a PHC every 33 square kilometers in Kerala. This made higher institutional service accessible to the public especially in the period of pregnancy and delivery (Economic Review 2002).

Table 7 Bed in public health centres in Kerala before and after decentralization

Year	CHC		PHC	
	Number of bed	Annual rate of change	Number of bed	Annual rate of change
1985-86	--	--	2886	---
1990-91	3127	---	4480	11.05
1995-96	2797	-2.11	5371	3.98
2000-01	4202	10.05	5009	-1.34
2005-06	4726	2.49	5063	0.22
2010-11	6527	7.62	5525	1.83
2012-13	6589	0.47	5462	-0.57
2014-15	6529	-0.45	5405	-0.52

Source: Directorate of Health Service, Trivandrum

Table 8. Availability of public bed per 10,000 population in Kerala

Year	Bed per 10,000 population
1990-91	15.0
1991-92	15.0
1992-93	13.6
1993-94	13.7
1994-95	13.7
1995-96	13.8
1996-97	13.8
1997-98	13.8
1998-99	14.3
2010-11	11.19
2014-15	11.45

Source: Directorate of Health Service, Trivandrum

The statistics on availability of bed reveals that present status is pathetic compare to 1990s . During 1990-91 period the availability of bed per 10000 people is 15, which reduced to 13.7 before decentralization. A slight progress was seen during the decentralization, the availability reached to 14.3 in 1998-99, but at present it is only 11. Change in bed strength of CHCs seems to momentum during 1996-2000 period.

Table 9 District wise availability of bed in Public health institutions of Kerala As on 2014-15

Sl.no	District	District Hospital	CHCs	24*7 PHC	PHC	Total	Bed per 10000 population
1	Trivandrum	562	733	67	182	1544	14.67
2	Kollam	537	443	114	32	1126	9.08
3	Pathanamthitta	210	218	96	264	788	16.24
4	Alappuzha	347	424	254	54	1079	16.04
5	Kottayam	---	684	292	62	1038	14.90
6	Idukki	130	312	164	122	728	9.80
7	Ernakulam	217	729	894	60	1900	13.98
8	Trissure	117	806	166	262	1351	11.31
9	Palakkad	544	623	206	414	1787	9.83
10	Malappuram	483	453	88	174	1198	6.39
11	Kozhikode	210	283	312	80	885	9.13
12	Wayanad	500	267	140	24	931	13.97
13	Kannur	616	363	290	442	1711	12.16
14	Kasargod	400	229	168	0	797	8.39
	Total	4873	6567	3251	2172	16863	11.45
	Average	348.07	469.07	232.21	155.14	1204.50	0.8

Source: Directorate of Health Service, Trivandrum

The district wise status reveals that Ernakulam has the highest number of bed. The average availability of bed in Kerala is 1205. The district Kannur, Palakkad, Trissure, Ernakulam and Trivandrum have above average number of bed.

Apart from bed, other infrastructural facilities Quarters facilities, water and electricity supply, operation theatre and labour room, weather road connections, communication and internet facilities were also important. Other infrastructure facilities of the public health centres were contemptible. Most of the centres were suffering with limitations. It is pitiable to understand that only reckoning public health centres have keeping IPHS standard in Kerala. There is only 7 CHCs, 1 PHC and no SC in Kerala working as per IPHS norms. Availability of quarter and its living conditions were wretched, 44.68% of SCs lacked quarters facilities and in the available quarters and there is 61.16% SCs were ANMs were not living in quarters. 13.3% SCs were deprived with regular water supply and 2.4% without electricity and 5% suffering with road facilities. 44.68% PHCs have lacked quarter's facilities and 61.16% of the quarters facilities of PHC were non-conditional for living.

In the case of PHCs labour room, operation theatre, bed facilities and proper accessibility were the problems. 7.5% have no labour rooms, 7.3% have no operation theatre and 5.8%

suffering with road facilities. Even though essential bed facilities were available in all PHCs, 30.4 PHCs disadvantaged with at least 4 beds.

There is no quarters facilities available for the specialist doctors of CHCs and most of the CHCs have the precincts of X-ray, labour room, Operation Theatre, New Born Care. 20.7 % lacking laboratory facilities, 52.25 with lack of operation theatre, and 63.06% without labour room. In the case of New born care, almost all the CHCs were deprived; only 3.6 % CHCs in Kerala have new born care facilities. Essential bed facilities were available in all CHCs, but 60.81% were destitute with at least 30 beds and 16.22 suffering with proper referral transport services in Kerala.

Availability of human resource is an important determinant of successful delivery of health care services. Considerable changes have been noted in the strength of health personnel in the Government health care system. The staff strength in the state grew at an annual growth rate of 0.9 percent between 1992 and 2001. The proportion of nurses grew at an annual growth rate of 3.1 percent, doctors 1.8 percent, pharmacist 3.1 percent and field staff 0.4 percent during the same period (Government of Kerala, 2003). But changes in human resources at public health centres were not satisfactory one. The status of human resource at government health centres in Kerala is shown in table

Doctors availability in public health centres of Kerala before and after decentralization.

Table 10 Doctors in public health institutions of Kerala before and after decentralization

Year	Number of doctors	Annual rate of change	Availability of doctors per 100,000 population
1980-81	640	--	2.50
1991-92	4140	49.71	13.6
1992-93	4020	-2.81	15.1
1993-94	4500	11.94	15.2
1994-95	4574	1.64	15.3
1995-96	4664	1.96	15.7
1996-97	4818	3.30	15.8
1997-98	4898	1.66	14.7
1998-99	4587	-6.35	14.9
1999-2000	4712	2.73	14.8
2014-15	5061	0.49	15.15

Source: Directorate of Health Service, Trivandrum

Doctors statistics of public health institutions of Kerala shows that the availability of doctors improved during 1990s. Availability of doctors per 100,000 populations is only 2.50 in

1980-81; it increased to 15 during 1990s and the change is elevated after 1995, it reached to 15.8 in 1996-97. But the improvement during the period 1995-97 is not seen in subsequent years, it shows retreating trend. The present status shows that availability is again improved, it is 15.15 in 2014-15.

Table 11 District wise ratio of doctors and bed in Public health institutions of Kerala 2014-15

Sl.no	District	Population (2011 census)	Number of bed	Number of doctors	Doctor per 10000 population	Doctor bed ratio
1	Trivandrum	3307284	4853	481	1.45	10.09
2	Kollam	2629703	2388	316	1.20	7.56
3	Pathanamthitta	1195537	1942	240	2.00	8.09
4	Alappuzha	2121943	3404	323	1.52	10.54
5	Kottayam	1979384	2949	476	2.40	6.20
6	Idukki	1107453	1085	178	1.61	6.10
7	Ernakulam	3279860	4586	337	1.03	13.61
8	Trissure	3110327	3519	421	1.35	8.36
9	Palakkad	2810892	2764	680	2.42	4.06
10	Malappuram	4110956	2627	421	1.02	6.24
11	Kozhikode	3089543	2820	416	1.35	6.78
12	Wayanad	816558	1141	177	2.17	6.45
13	Kannur	2525637	3070	398	1.58	7.71
14	Kasargod	1302600	1093	197	1.51	5.55
	Total	33387677	38241	5061	1.52	7.56
	Average	2384834.1	2731.5	361.5	0.1	0.5

District wise doctors statistics of Kerala reveals that eight districts seven districts (Kannur, Kozhikkode, Malappuram, Palakkad, Trissure, Kottayam, Trivandrum) have above average level of doctors. The district Palakkad has highest number of doctors. Compare to its population status the availability of doctors per 10000 population is higher in Palakkad and kottayam districts. Palakkad has highest doctors –bed ratio also.

Table 12 Status of human resource in public health centres of Kerala As on March 2016

Human Resources	Required	Sanctioned	In position	Short fall
Health Assistant at Sub Centres (Female)	4575	4575	4590	*
Health Assistant at Sub Centres (Male)	4575	3401	3401	1174

Health Assistant at PHCs	5399	7929	7950	*
Doctors at PHCs	824	2186	2197	*
Total Specialists at CHCs	900	30	40	860
Surgeons at CHC	222	0	0	222
Gynecologists & Obstetricians at CHCs	222	14	20	202
Physicians at CHCs	222	2	2	220
Pediatricians at CHCs	222	14	17	205
Radiographers at CHCs	222	16	18	204
Pharmacist at PHCs &CHCs	1,049	1036	1102	*
Laboratory Assistant at PHCs &CHCs	1049	324	365	684
Nursing Staff at PHCs & CHCs	2399	3610	3969	*

*surplus

Source: RHS Report 2016

The table depicts that there is huge shortage of human resource in CHCs of Kerala. Most of the CHCs were suffering with shortage of Specialist doctors include Surgeons, gynaecologists, obstetricians, physicians, paediatricians and laboratory assistants. It is pleasure that there is surplus number of female Health Assistant at SCs, Health Assistants and doctors at PHCs and pharmacist and nursing staffs at PHCs and CHCs in Kerala.

Table 13 Change in availability of human resource

CATEGORY	2010-11	2013-14	2014-15
Medical staff	4391	4500	5295
Staff nurse/ head nurse	7503	7924	6506
Health supervisor	168	168	173
Lady health supervisor	157	157	153
Health Inspector	876	876	1465
Lady Health Inspector	955	959	1107
Junior Health inspector	3504	3615	3638
Junior Public Health Nurse	5575	5576	6244
Total para medical staff	38800	44141	45134

Source: Directorate of Health Service, Trivandrum

Table 13 revels that the availability of human resources at public health centres were increasing. But the availability of staff nurse/head nurse and lady health supervisors were shows small diminution during 2014-15.

FINDINGS

- Health expenditure of Grama Panchayats are highly correlated with provision of drinking water (.803**) and sanitation (.823**) facilities. The District Panchayats health expenditure is highly correlated with maintenance of health centres (.827**). Whereas in the case of Block Panchayats, expenditure shows no significant positive correlation and it is also noted that waste treatment and sanitation shows negative correlation.
- Number of CHCs were prominent after decentralization. The period 1996-2000 have highest rate of change in number of CHCs. Compare to CHCs, increase in Primary health centres and sub centres were diminutive
- At present there is surplus number of health institutions (Sub Centres, PHCs and CHCs) in Kerala
- Compare to southern Kerala availability of health centres and health infrastructures were less in northern districts. The rural district like Wayanad and Kasargod deprived more.

- Availability of human resource is a big hurdle for the successful delivery of health care service.

CONCLUSION

Decentralization as an innovative tool of governance mechanism was a successful administrative reform in Kerala. As far as health sector is concerned it was not as much effective. The progress in health expenditure and infrastructure shows retreating trend in subsequent period of decentralization and progress in human resource were not as much of physical infrastructure. There is large regional inequality in health infrastructure development. Compared to southern Kerala, availability of health centers and health infrastructures were less in northern districts. Deliberate attempt from the side of local authorities needed for health infrastructure development at local level. The power of human resource management for local governments will helps successful intervention from the part of local governments. Persistent enthusiasm during the planning campaign and a close follow up action is necessary for more welfare results of decentralization for the health sector development.

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