

RURAL HEALTH INFRASTRUCTURE: A COMPARATIVE STUDY OF KERALA AND HIMACHAL PRADESH

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ABSTRACT

An effective and efficient healthcare infrastructure plays a vital role in the development of healthy and competent human resources. The healthcare infrastructure in rural areas in India is in deplorable condition. With the emergence of private players in the healthcare sector, the healthcare facilities are getting costly and becoming inaccessible to the poorer sections of the society, therefore public healthcare system needs to step up to the challenge of providing affordable and quality services. The present paper examines the status of rural health infrastructure in the states of Kerala and Himachal Pradesh. Cross tab analysis and simple statistical tools such as Compound annual growth rate, Mean, Standard Deviation and Coefficient of Variation are used to arrive at results. From the analysis, it is found that although both states are doing better than the national average, Kerala has an upper hand in providing rural healthcare infrastructure. The study also found that there is a severe shortage of doctors and specialists in both the states. While the participation of private sector is increasing in Kerala, in Himachal Pradesh most of the population is dependent on public healthcare system which makes the case for improvement in public rural health services stronger.

Keywords: Healthcare, Health Specialists, Health Workers, Himachal Pradesh, Kerala, Rural Health Infrastructure.

INTRODUCTION

Infrastructure is defined as “physical framework of facilities through which goods and services are provided to the public.” (Khader, 1998) The need for infrastructure development for economic progress and human well-being and global integration is well recognised. Lack of infrastructure not only results in reduced economic output but it also translates into additional costs in terms of time, effort, and money for accessing essential services such as health care and education.

Infrastructure has been broadly classified into two categories- economic and social. The economic infrastructure is the infrastructure which directly aids the production process. It includes transport, communication, energy, banking etc. The social infrastructure, on the other hand, has an indirect impact on the production process. It aids production by developing efficient and productive human resources. It includes education, health, housing, water supply, sanitation etc. This not only improves the quality of life of the people but also ensures overall efficiency of the production process and the economy as a whole.

An important constituent of this kind of infrastructure is Healthcare infrastructure originally

defined by the WHO as 'a network of coordinated, peripheral and intermediate health units with a central administration, capable of performing effectively a selected group of functions essential for the health of a nation, and assuring the availability of competent professional and auxiliary personnel to perform these functions'. Health infrastructure including hospitals, hospital beds, doctors, nurses, pharmacists etc. have a significant direct and positive contribution towards health outcomes of any country. (Lakshmi and Sahoo, 2013)

Health infrastructure is the foundation of any sound health care delivery system. The externalities that arise from the strengthening of public health infrastructures in poor countries yield major benefits at local and national levels thus calling for the strengthening of the same. The efficiency and effectiveness of a health care system are largely a function of its infrastructure. A sound health infrastructure not only ensures peoples' access to quality healthcare but also has the ability to prepare the nation for any kind of threats to its health. Public health infrastructure plays a pivotal role in this regard. It is fundamental to the provision and implementation of public health services at all levels and is the foundation for planning, delivering, and evaluating public healthcare.

According to WHO, Public health infrastructure includes three key components that enable them to deliver public health services (Powles and Comim). They comprise:

- institutions and capacity
- knowledge (of public and professional)
- commodities (physical infrastructure)

Thus for Public health agencies to be capable of assessing and responding to public health, the system requires a) institutions and capacity appropriate to respond to the health problems as per the needs and circumstances of the country involved, b) knowledge, as assimilated and put to use both by the general population and by professional and administrative staff which includes a capable and qualified workforce and necessary commodities or resources or 'tangible' infrastructure with an up-to-date data and information systems.

In terms of public health, these components of health infrastructure support public health, having both direct and indirect influences protective of health. It has been widely acknowledged that public health infrastructures represent a class of goods and services that present strong externality effects, but are also subject to some degree of excludability or rivalry (Powles and Comim). The externalities that arise from the strengthening of public health infrastructures in poor countries yield major benefits at local and national levels and thus call for strengthening the same.

In India, health infrastructure indicators are subdivided into two categories viz. educational infrastructure and service infrastructure.

- Educational infrastructure includes the number of medical colleges, students admitted to M.B.B.S. courses, post graduate degree/diploma in medical and dental colleges, admissions to BDS & MDS courses, AYUSH institutes, nursing courses and Para-medical courses.
- Service infrastructure in health include details of allopathic hospitals, hospital beds, Indian System of Medicine & Homeopathy hospitals, sub centers, PHC, CHC, blood banks, eye banks, mental hospitals and cancer hospitals (NHP, 2013).

At the time of independence in 1947, the health infrastructure was mainly urban and clinic-based, providing only curative services. On 2 October 1952, rural health services were launched through a Primary Health Centre (PHC) in each block, covering a population of 66,000.

A number of disease control programmes were undertaken, to be integrated with rural health services. They were malaria, filaria and goitre in the 1950s; leprosy, tuberculosis and small pox in the 1960s; and the expanded immunization programme (EPI) and National Programme for Control of Blindness in the 1970s (Planning Commission). The government also initiated National Rural Health Mission Programme (NRHM) in 2005 which aims to bring qualitative and quantitative changes in the rural infrastructure. The network of primary healthcare institutions has increased over the years.

Notwithstanding the launch of rural health programmes and increase in the volume of health infrastructure, health sector in rural India suffers from major shortfalls in the primary healthcare institutions (19 percent for Sub centres, 22 percent for PHCs and 30 percent for CHCs) and health manpower (over 80 percent for specialists in CHCs). Therefore, for the majority of rural India universal access to healthcare facilities still remains a distant dream.

REVIEW OF LITERATURE

Large inequalities in health and access to health services continue to persist and have even widened across states, between rural and urban areas, and within communities (Baru et al). In rural areas the gap is being filled by mushrooming growth of quacks that provide sub standard medical treatment at high costs. The growth of the private health sector was largely unmonitored and unregulated, with no norms regarding quality or price of treatment (Gill et al 2010). Prioritizing rural health care in the state policy by allocating additional investment for sanitary infrastructure and medical personnel in rural areas is essential for redressing the growing disparity in health care facilities in rural and urban areas (Gill and Ghuman). There has been rapid commercialization of medical services which has led to cut-throat competition among doctors to attract patients for higher revenue generation (Gadre and Sardeshpande). The low quality of public facilities has also had an adverse influence on the people's health. In an environment where people's expectations of health care providers seem to be generally low the state has to take up the task of being the provider or regulator (Banerjee et al). Female health workers (FHWs) are the most vital link in the entire chain of health care delivery system in rural areas. Unless the social, health and administrative problems faced by the FHWs are addressed on a priority basis, the health and family welfare services will continue to perform poorly (Mishra). The government hospitals are facing the problem of lack of resources and infrastructure; there are inadequate number of beds, rooms and medicines. On the part of the government there is lack of monitoring of the funds and resources, which are devoted towards the improvements of healthcare sector (Kumar and Gupta). In India, not all the states with better health indicators have efficient health systems, investment in health sector alone would not result in better health indicators. Efficient management of the investment is required (Sankar and Kathuria). Judged in terms of conventional indices of health, Kerala stands out from the rest of India. The reason for the better health status of Kerala is in the state having given equal importance to prevention and promotive measures like sanitation, hygiene, immunization programmes, infant and ante-natal care, health education, especially among women in the rural parts of Kerala, was a crucial factor contributing to the high degree of awareness of health problems and fuller utilization of available health care facilities (Paniker). The high health status of Kerala is attributable to the social development in terms of wider distribution of health care services in the rural areas and their greater utilization, better transportation facilities, higher living especially among women

and political awareness all resulting from the public policy (Nag). Public sector health services played an important role to have an exemplary health status attained by Kerala in the initial stages. But of late, the importance of public sector in the health services in the state has declined greatly due to fiscal crisis (Ramankutty and Panikar). The hospitals in the private sectors and cooperative sectors are playing a crucial role in the Kerala's achievement in the field of health (Shyni). In Himachal Pradesh 83 Per cent of households generally use government health facilities, the highest in the country (Goel and Khera). In the Kamand region of Himachal Pradesh, there are bottlenecks in service delivery: inadequate supplies, lack of specialists and inaccessibility of facilities (Gaubal et al). Public-private partnership in the health sector can bring needed resources while also taking care that the vulnerable groups-the poor and rural populations-have access to health facilities (Bhat). What is needed at present is a vision that gives primacy or rather credibility to the vast network of health institutions that the country has built over the years. Strengthening the sub-centre and equipping the government's own health workers (instead of adding posts) would be epidemiologically and economically more effective. States should be allowed to define their own priorities and plan programmes (Nayar).

OBJECTIVES AND METHODOLOGY

The main objective of the study is to compare the rural health infrastructure in the states of Kerala and Himachal Pradesh and identify the gaps in the same.

The study is based on secondary data collected from various government publications such as Rural Health Statistics (RHS), Census Reports, SRS Reports and Ministry of Statistics and Programme Implementation (MOSPI) Reports. For the current study, cross tab analysis has been used. Appropriate statistical methods such as CAGR, mean, SD and Coefficient of Variation (COV) have been used for the analysis. For the sake of consistency, the data has been taken from the Rural Health Statistics reports for the time period 2005-2017. The states of Himachal and Kerala have been selected on the basis of their HDI indices. Both these states enjoy the highest HDI ranks among all other states in India.

HIMACHAL VS KERALA: AN OVERVIEW

Kerala and Himachal Pradesh are considered front-runners in health as they enjoy a better socio-economic status when compared to a lot of other states in India. The level of human development in the states has been consistent. In a study on human development across Indian states, Mukherjee et al (2014) ranked the Indian states on HDI over a period of time (1983 to 2011-12). The comparative results for the same are depicted in the table below. While Kerala has maintained the top position over the years, Himachal is also doing well in terms of Human development indicators.

Table 1 State-wise Human Development Index (HDI) Scores and Ranks

State	1983	1993	1999-2000	2004-05	2011-12
Himachal Pradesh	0.622 (4)	0.430 (7)	0.550 (5)	0.605 (4)	0.647 (3)
Kerala	0.818 (1)	0.805 (1)	0.515 (1)	1.000 (1)	0.911 (1)

Source: Three Decades of Human Development across Indian States: Inclusive Growth or Perpetual Disparity? Mukherjee et al

A proper assessment of health status of the states can be done in terms of indicators such as IMR, LEB, CBR, CDR, etc. These indicators facilitate a direct comparison of the health status of the population in question, the indicators such literacy, income levels, population have an indirect bearing on health. Table 2 provides such an analysis. It is clear from the table that both the states enjoy a better socio-economic status than the national average. Although Himachal does well on all the health and economic indicators, Kerala outperforms in almost all the areas.

Table 2 Himachal Pradesh vs kerala: Some Socio-Economic Indicators

	H.P.	Kerala	India
Area (sq. km)Total	55,673	38,863	3,287,263
Rural	55402.18	31253.20	3101505.41
Rural (%)	99.51	80.44	94.34
Population	6,856,509	33,387,677	1,210,193,422
Literacy	83.78%	93.91%	74.04%
Sex Ratio	974	1084	940
Per capita GSDP	Rs.182,359	Rs. 196,842	Rs. 112,432
IMR	25	10	34
TFR (2013)	1.7	1.8	2.3
CDR (2016)	6.8	7.6	6.4
CBR (2016)	16	14.3	20.4
LEB (2010-14)	71.6	74.9	67.9
HDI	0.67	0.712	0.608

Source: Census Reports, SRS, MOSPI

RURAL HEALTH INFRASTRUCTURE

Over 68 percent of the Indian population lives in the rural areas. Therefore, it is essential to lay special emphasis on the development of this segment. The structure of public Health care infrastructure is different in the urban and rural areas. While in urban areas, the healthcare is delivered by dispensaries and hospitals, in the rural areas, the structure is more elaborately defined.

The rural health care infrastructure has been developed as a three-tier structure.

Sub-centre is the first contact point between the primary healthcare system and the community. Each sub-centre has to be staffed with one Auxiliary Nurse Midwife (ANM) and one male Multi-Purpose Worker [MPW(M)]. A Lady Health Worker (LHV) is in charge of six sub-centres each of which is provided with basic drugs for minor ailments. Sub-centres are also expected to use various mediums of interpersonal communication in order to bring about behavioural change in reproductive and hygiene practices.

Primary Health Centres (PHCs) comprise the second tier. They provide integrated curative and preventive healthcare to the rural population with emphasis on preventive and promotive aspects. PHCs are established and maintained by State Governments under the Minimum Needs Programme (MNP)/Basic Minimum Services Programme (BMS). A medical officer is in charge of the PHC supported by fourteen paramedical and other staff. It acts as a referral unit for six sub-centres. It has four to six beds for inpatients. The activities of PHC involve curative, preventive, and Family Welfare Services.

Community Health Care Centres (CHCs) forming the uppermost tier are established and maintained by the State Government under the MNP/BMS programme. Four medical specialists

including Surgeon, Physician, Gynaecologist, and Paediatrician supported by twenty-one paramedical and other staff are supposed to staff each CHC. Norms require a typical CHC to have thirty in-door beds with OT, X-ray, Labour Room, and Laboratory facilities. A CHC is a referral unit for four PHCs within its dominion, providing facilities for obstetric care and specialist skills. The norms for establishing the Sub Centres, PHCs and CHCs and the levels of achievement of the norms have been given in table 3 (a) and 3 (b) respectively.

Table 3 (a) Norms and levels of achievement in Himachal Pradesh vs. India (as of Mar 2017)

S.No.	Indicators	National Norms		Status Himachal Pradesh	Status Kerala	Status India
		Plain Areas	Hilly/Tribal Areas			
1	Rural Population (Census, 2011) covered by a:	-		-		-
	Sub Centre	5000	3000	2965	3247	5337
	Primary Health Centre	30000	20000	11480	20578	32505
	Community Health Centre	120000	80000	69394	75307	148248
2	Number of Sub Centres per PHC	6		4	6	6
3	Number of PHCs per CHC	4		6	4	5
4	Rural Population (Census, 2011) covered by a:	-		-		
	HW (F) (at Sub Centres and PHCs)	5000	3000	3458	2198	3778
	HW (M) (At Sub Centres)	5000	3000	7450	5137	14819
5	Ratio of HA (M) at PHCs to HW (M) at Sub Centres	1:6		1:18	1:2	1:5
6	Ratio of HA (F) at PHCs to HW (F) at Sub Centres and PHCs	1:6		1:16	1:612	1:15

Source: Rural Health Statistics 2016-17

Table 3 (b) Levels of achievement in Himachal Pradesh and Kerala (as of Mar 2017)

S.No.	Indicators	Status Himachal Pradesh	Status Kerala	Status India
1	AVERAGE RURAL AREA (sq. km) covered by a:	-		-
	Sub Centre	26.60	6.62	18.90
	Primary health Centre	102.98	41.94	115.15
	Community Health Centre	622.50	153.50	525.17
2.	AVERAGE Radials Distance (kms) covered by a:	-		-
	Sub Centre	2.91	1.45	2.45
	Primary health Centre	5.72	3.65	6.05
	Community Health Centre	14.07	6.99	12.93
3.	Average Number of Villages covered by	-		-
	Sub Centre	10	0	4
	Primary health Centre	38	1	25
	Community Health Centre	232	4	114

Source: Rural Health Statistics 2016-17

It is evident from the tables that both Himachal and Kerala have achieved the norms of coverage and establishment of rural health infrastructure and have gone way beyond that. A look at the trends in the number of CHCs , PHCs and Sub Centres as given in table 4 reveals that in the last decade, the number of such institutions has remained fairly stagnant. The growth rate for the period 2005-2017 has been very slow. The maximum growth was witnessed for CHCs in both Kerala and Himachal Pradesh.

Table 4 Growth of Rural Health Infrastructure in Himachal Pradesh and Kerala

Year	Himachal Pradesh			Kerala		
	Sub Centres	PHCs	CHCs	Sub Centres	PHCs	CHCs
2005	2068	439	66	5094	911	106
2006	2069	439	66	5094	911	106
2007	2071	443	71	5094	909	107
2008	2071	449	73	5094	909	107
2009	2071	449	73	4575	697	226
2010	2071	449	73	4575	813	233
2011	2067	453	76	4575	809	224
2012	2065	472	76	4575	809	217
2013	2065	474	78	4575	820	220
2014	2068	489	78	4575	829	224
2015	2065	500	78	4575	827	222
2016	2071	518	79	4575	824	225
2017	2083	538	89	5390	849	232
CAGR	0.1%	1.7%	2.5%	0.5%	-0.6%	6.7%

Source: Rural Health Statistics (Various Issues)

Another important component of health infrastructure is the health manpower including doctors, nurses, paramedical staff etc. Health manpower is the backbone of a sound healthcare system. No amount of service infrastructure can be effective if not backed up by a team of healthcare professionals. Although the availability of healthcare manpower has improved since independence, the situation still remains grim. Table 5 (a) and 5 (b) depicts the healthcare manpower (in position) in the states of Himachal Pradesh and Kerala for the period 2005-2017. It is clear from the table that the number of health professionals in position has not changed much over the years. There is no definite growth pattern that can be assessed from the data available. Therefore, a mean is calculated to assess the average availability of health manpower in the states. SD and COV are also calculated to assess the variation in the (in position) health manpower. It was observed that there were minimum variations in the number of HW(F)/ANM at Sub Centres & PHCs, number of HW [M] / ANM at Sub Centres and the doctors serving at PHCs in Himachal Pradesh. The table also reveals that the specialists working in the CHCs were very less.

Table 5 Rural Health Manpower in Himachal Pradesh

Year	HW(F)/A NM at Sub Centres & PHCs	HW [M] / ANM at Sub Centr es	HA(F)/L HV	HA(M)	Docto rs at PHCs	Surgeo ns at CHCs	Gyn & Ob at CHs	Physicia ns at CHCs	Pediatric ian at CHCs	Total Speciali sts at CHCs	Nursi ng Staff at PHCs &CHC s
2005	1790	1286	268	361	457	NA	2	4	1	NA	1259
2006	1790	1786	348	361	467	NA	NA	NA	NA	NA	1259
2007	1836	1270	283	361	628	NA	NA	NA	NA	NA	484
2008	2496	1270	114	62	407	0	3	6	1	10	1062
2009	1725	1245	101	50	361	0	0	0	0	0	902
2010	1710	1225	101	50	438	1	0	2	0	3	379
2011	1685	1225	245	269	451	1	0	4	4	9	491
2012	1951	1183	61	22	436	1	0	2	2	5	376
2013	2054	1183	61	22	558	1	1	3	3	8	399
2014	2002	1097	61	22	571	1	2	3	2	8	434
2015	1999	978	127	69	571	1	1	3	2	7	635
2016	1951	978	127	69	424	1	1	7	2	7	666
2017	1786	1217	0	46	492	4	2	5	1	2	542
Avera ge	1906	1226	146	136	482	1	1	4	2	6	684
SD	207	189	101	138	75	1	1	2	1	3	314
COV	11%	15%	69%	101 %	16%	95%	91 %	53%	70%	53%	46%

Source: Rural Health Statistics (Various Issues)

A similar analysis of rural health manpower in Kerala reveals that the maximum variation was in the number of HA(F)/LHV serving at PHCs and HA(M), minimum variation in the number of Doctors at PHCs and HW(F)/ANM at Sub Centres & PHCs

Table 5 Rural Health Manpower in Kerala

Year	HW(F)/ANM at Sub Centres & PHCs	HW [M] / ANM at Sub Centres	HA(F)/LHV	HA(M)	Doctors at PHCs	Surgeons at CHCs	Gyn & Ob at CHs	Physician at CHCs	Pediatrician at CHCs	Total Specialist s at CHCs	Nursing Staff at PHCs &CHCs
2005	6331	3273	230	784	1152	40	42	46	16	280	1424
2006	5565	2677	873	514	949	6	32	7	37	82	2578
2007	5634	4266	740	794	1558	18	28	31	38	115	3064
2008	5320	2654	740	794	1732	18	28	31	38	115	3383
2009	5320	2654	695	544	1063	NA	NA	NA	NA	794	3383
2010	4173	1285	785	633	1122	NA	NA	NA	NA	774	3383
2011	4173	1285	795	633	1122	NA	NA	NA	NA	774	2014
2012	4173	1285	795	633	1152	NA	NA	NA	NA	774	2014
2013	7950	3401	795	2197	1168	0	17	2	14	33	3961
2014	7950	3401	13	2197	1168	0	20	2	17	39	3967
2015	7950	3401	13	2197	1169	0	20	2	17	39	3969
2016	7950	3401	13	2197	1169	1	20	2	17	40	3969
2017	7950	3401	13	2186	1169	1	20	2	17	40	3969
Average	6188	2799	500	1254	1207	9	25	14	23	300	3160
SD	1517	925	357	748	199	13	8	16	10	325	850
COV	25%	33%	71%	60%	16%	138%	30%	117%	43%	109%	27%

Source: Rural Health Statistics (Various Issues)

The average population and average area covered by CHCs, PHCs and Sub Centres is given in Table 6 and table 7. The tables depict the average rural population and average rural area covered by a Sub Centre, PHC and CHC in the state of Himachal and Kerala respectively over the period 2005-2017. Table 6 reveals that the average population covered by these institutions is greater in Kerala when compared with Himachal. This could be because the rural population of Kerala is almost three times more than that of Himachal Pradesh. On the other hand, the average area covered by these institutions is greater in Himachal as compared to Kerala. This is because the rural area in Himachal is almost twice as large as that of Kerala.

Table 6 Rural Primary Health Care Infrastructure and Average Rural Population Covered

Year	Himachal Pradesh			Kerala		
	Sub Centre	PHC	CHC	Sub Centre	PHC	CHC
2005	2652	12516	83065	4627	25267	204995
2006	2651	12488	83065	4628	25878	222400
2007	2647	12375	77216	4628	25934	220322
2008	2647	12210	75100	4628	25934	220322
2009	2647	12210	75100	5153	33823	104312
2010	2647	12210	75100	5152	28997	101178
2011	2984	13615	81155	3815	21577	77926
2012	2987	13067	81155	3815	21577	80440
2013	2991	13030	79180	3819	21306	71414
2014	2986	12630	79180	3819	21075	77996
2015	2991	12352	79180	3819	21126	78699
2016	2982	11923	78178	3819	21203	77649
2017	2965	11480	69394	3247	20578	75307

Source: Rural Health Statistics (Various Issues)

Table 7 Average Rural Area Covered by Primary Health Care Institutions

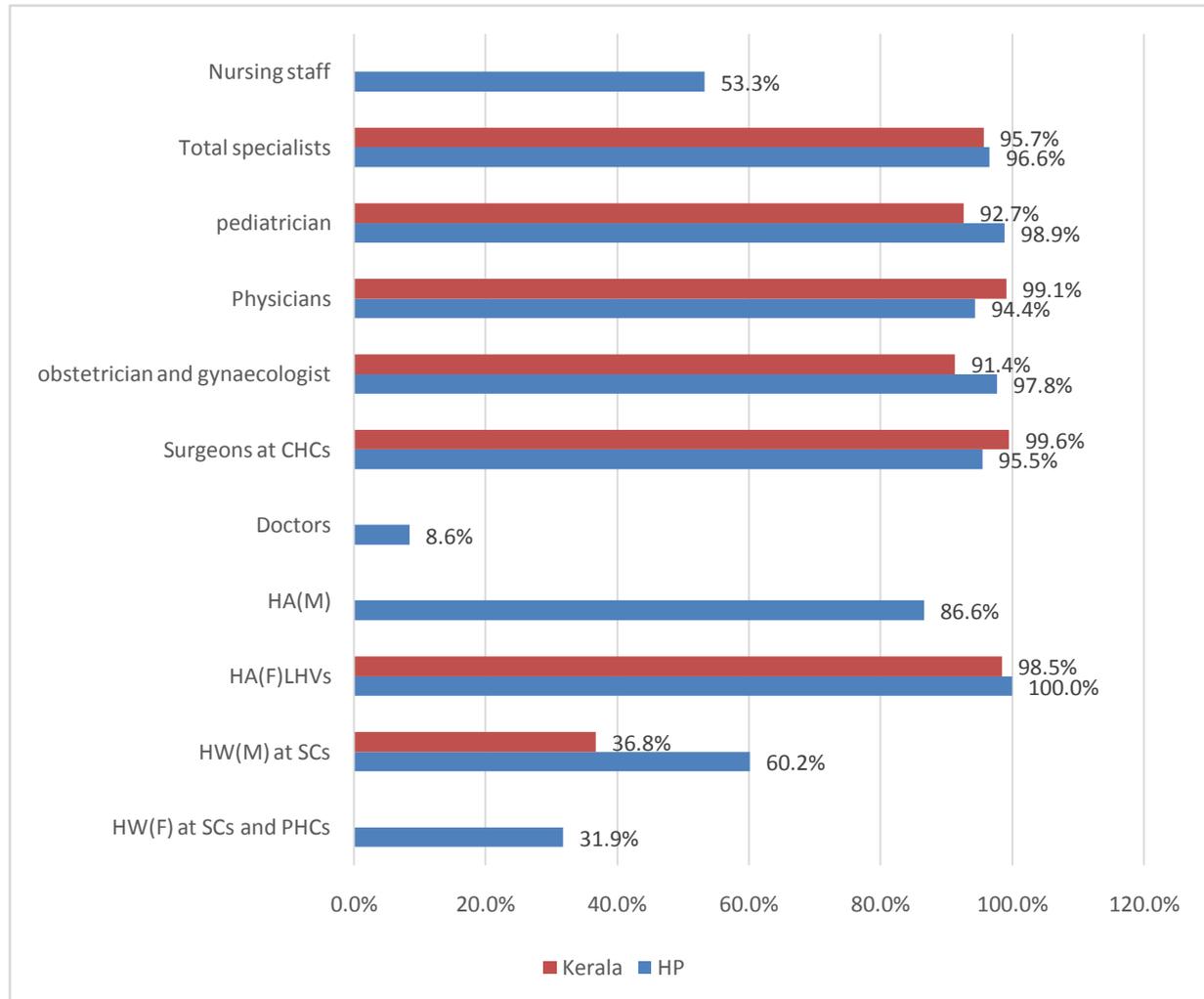
Year	Himachal Pradesh			Kerala		
	Sub Centre	PHC	CHC	Sub Centre	PHC	CHC
2005	26.82	126.56	839.87	6.99	38.17	309.66
2006	26.8	126.27	839.87	6.99	39.09	335.95
2007	26.77	125.13	780.72	6.99	39.18	332.81
2008	26.77	123.45	759.33	6.99	39.18	332.81
2009	26.77	123.45	759.33	7.78	51.09	157.57
2010	26.77	123.45	759.33	7.78	43.8	152.84
2011	26.82	122.36	729.36	7.78	44.02	158.98
2012	26.84	117.44	729.36	7.78	44.02	164.11
2013	26.84	116.94	710.66	7.78	43.43	161.87
2014	26.8	113.36	710.66	7.78	42.96	158.98
2015	26.84	110.86	710.66	7.78	43.06	160.41
2016	26.75	106.95	701.29	6.83	37.93	138.9
2017	26.6	102.98	622.5	6.62	41.94	153.5

Source: Rural Health Statistics (Various Issues)

The analysis cannot be considered complete without knowing the shortfalls in the provision and availability of healthcare infrastructure and manpower. For this purpose, a comparison of shortfall is done for the two states as given in figure 1. Despite achieving high scores in health indicators and achieving the norm levels of rural healthcare infrastructure, there seem to be high deficits in health manpower in both the states. While no shortfalls were witnessed for PHCs, CHCs and Sub Centres, a high shortfall in the availability of Specialists including Physicians,

Gynaecologists, Pediatricians and surgeons was witnessed in both the states. The shortfall in the total specialists was as high as 96.6 percent in Himachal and 95.7 percent in Kerala. In addition to this, there were no shortfalls for Kerala in Doctors in PHCs, Nursing Staff, HA(M) and HW (F), while there were shortfalls for the same in the state of Himachal Pradesh.

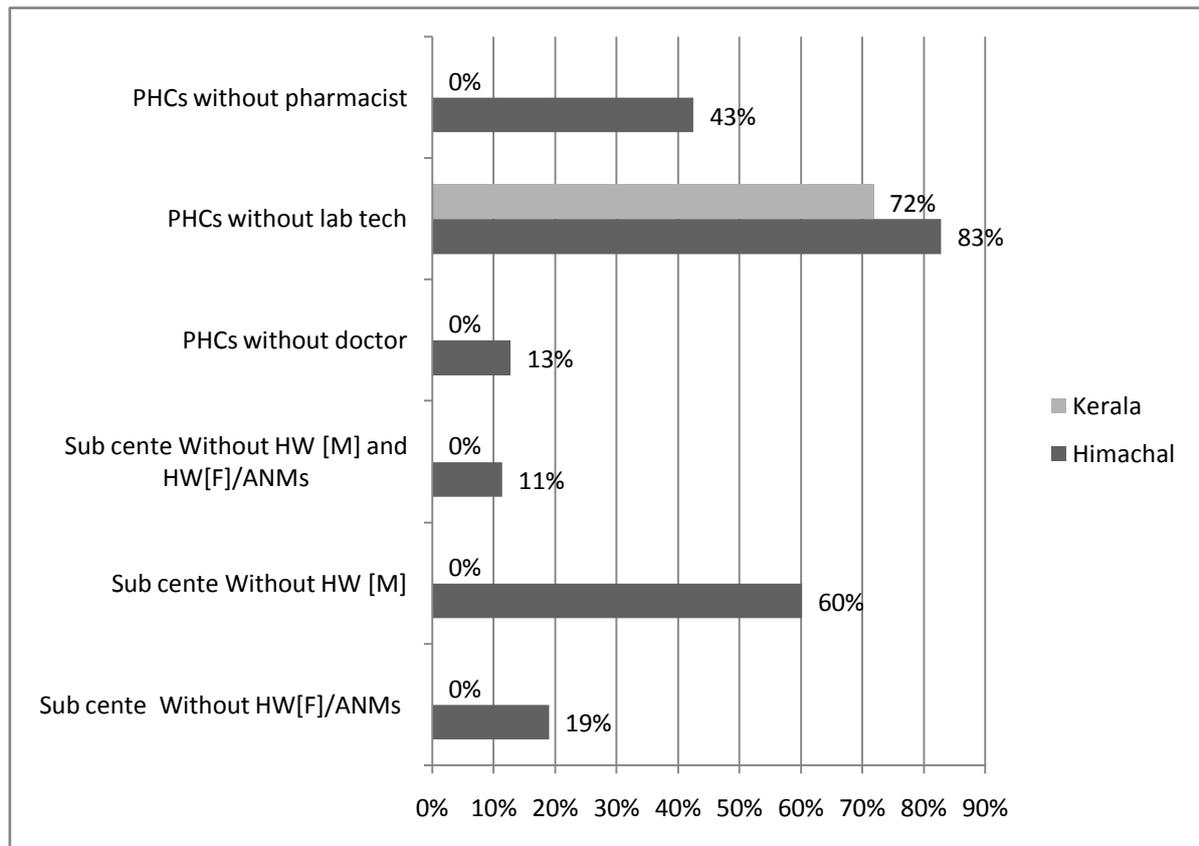
Figure 1 Shortfall in Health Manpower in Himachal and Kerala (as of 2017)



Apart from the stark lack of health manpower in the primary healthcare institutions in rural areas, another cause of serious concern is the total non-availability of the primary health workers in Sub Centres and PHCs. These institutions are the first contact point between the population and a formal health care system. Figure 2 represents the non-availability of health manpower in Himachal and Kerala. 60percent of the sub centres in Himachal Pradesh are functioning without a HW (M) and 19 percent do not have any HW(F)/ANMs. The condition in PHCs is no better as 13 percent of them are functioning without doctors.

The total absence of the Health workers is a cause of worry especially in Himachal Pradesh where a large section of the rural population is dependent upon public healthcare system. In Kerala, the private sector is playing an active role in providing healthcare services both in rural and urban areas and the dependence on public sector has reduced to only about 33 percent (NSSO 71st Round).

Figure 2 Non-availability of Healthcare Professionals in Sub Centres and PHCs



Therefore, it is evident from the analysis that although the basic criteria for health infrastructure have been met in both the states, there are still some areas that require special attention. The non-availability of healthcare staff is the main cause of concern in both the states, especially for Himachal Pradesh.

CONCLUSION

The analysis in the present paper reveals that even though the states of Himachal Pradesh and Kerala are doing well in the health sector, they are still lagging behind in certain areas. Despite having a better rural health infrastructure, when compared to other states in India, there is immense scope for improvement in these states. In the last decade, the number of primary healthcare institutions in rural areas has seen a minimal growth. The condition of Health manpower is a cause of serious worry as there are huge shortfalls in the availability of healthcare specialists in both the states especially in Himachal Pradesh.

Since most of the population in Himachal Pradesh is dependent upon public health services, it becomes critical to deal with the shortage of health manpower. The government authorities must ensure that the primary healthcare institutions are equipped with the required number of healthcare personnel. Working and living conditions in the peripheral areas must be improved such that doctors and other health personnel be more willing to serve in rural areas. Another area of focus for Himachal could be emphasis on the development of private sector in rural areas as in the case of Kerala. This could help increase the availability of healthcare manpower. However, it is important that the growth of private sector is both regulated and supervised so that there is no exploitation in terms of quality of service and pricing of healthcare services.

We must remember that no state and country can progress until all of the population is provided with basic healthcare facilities. Since the majority of India's population is rural, it becomes all the more important to ensure the availability of basic healthcare facilities.

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