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Preparedness of Public Health Care System in India- A Case Study

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Conflicts of interest

There are no conflicts of interest.

Abstract

Objectives: To examine the availability and accessibility of primary health care system in Tamil Nadu and to examine the achievements of primary health care system in Tamil Nadu.

Methods: Both secondary and primary data were used. Secondary data were from Tamil Nadu Health and Family Welfare department and Rural Health Statistics of India. Primary data were collected from Theni District. Sample size was 480. Identified respondents were interviewed for to find the reason for using the primary health care system with an interview schedule. The tools applied were simple as annual growth rate, Compound growth rate, and Garret ranking method.

Findings: Sub Centre (SC), Primary Health Centre (PHC) and Community Health Centre (CHC) are the mode of serving of primary health care system as three tier to rural and urban people which satisfies their basic needs near their proximities. Tamil Nadu is leading and extending its services to people year by year since its inception and earmarked its service. The Zero priced health care services and medicine are the prime reasons for demanding primary health care system which was a signal and added value for the dynamic nature of primary health care system. Distance and waiting time are the last items in ranking means that people are willing to travel. The compound annual growth rate of out-patients was negative from 2011 to 2021 as -1.45, the calculated statistical number may be the due to reduced accessing of outpatient in 2021 due to Covid-19. The Compound annual growth rate of deliveries in Tamil Nadu was -11.41 percentages which reflected a reduction in accessing the health care services for deliveries by secondary sources.

Novelty: Planners and Policy maker's needs for revisiting and reframing the health policy and target to achieve 2030.

Keywords: Accessibility, Primary Health Care System, Inpatient, Delivery, Opinion

Introduction

Primary health care facilities are defined as essential today. It plays a huge role globally. Primary Health Care System gave medical awareness to every individual and every households/ families. The cost of providing health services by the government resulted output of protecting the health of patients and their financial hardship due to illness. In India, Primary Health Care System is stated to be the primary points of contact between the population and the healthcare delivery system. Until the rise of corporate hospital chains in India,

which began as tertiary healthcare delivery facilities and eventually expanded their healthcare models to include primary healthcare, government primary health care system was the only way to provide primary healthcare. In addition to that, National Rural Health Mission aims to improve the health status of the people especially those who live in the villages. So, the condition is still true in rural regions of many states of India and includes Tamil Nadu too. Hence here, in this paper an attempt is made by the researchers to assess the demand for and supply of primary health care system in Tamil Nadu.

In India in 1980's, it was found that 65.6 per cent of the respondents had utilized the medical care services rendered by the selected health centers; and 64.8 per cent of respondents had utilized the services of Registered Medical Practitioners for their medical care. Thirty-four out of 97 deliveries were conducted at the health centers'. It was observed that the people living very close to the PHCs had utilized the services to the maximum extent possible than the people living away from it. The supply of medicines was not sufficient enough to cope up with heavy attendance in out-patient department daily. Moreover, there was no regular supply of medicines to the health centers'. In 2016 approximately 72 percentage of respondents had satisfactory opinion about health services. Nearly 60 percentage of the patient's households with acute & chronic illness had utilized the services at PHC respectively. The utilization of primary level services (PHC and Subcentres) is better for preventive and promotive care but is poor for treatment of acute illness, intranatal care and family welfare services, special investigation services. Most of the rural Indian populations are from the low economic group and it is difficult for them to afford private healthcare services, therefore, mostly rural individuals travel to PHCs (Primary Health Centre) to meet their health needs.

Methods

The 7.94 Crores population of Tamil Nadu resides in 38 districts, 88 revenue divisions, 310 Taluks, 385 Blocks, 121 Municipalities / Corporations, 528 Town Panchayats, 12,618 Gram Panchayats and 16,317 villages. As per Niti Aayog 2016 report, Total Fertility Rate of Tamil Nadu is 1.6. The present

study used both secondary and primary data. The secondary data sources were from the published reports of Tamil Nadu Health and Family Welfare department and Rural Health Statistics of India. The sample respondents were identified by simple random sampling method from Purposively selected Theni District as study area because of utilisation Indian medicine system than allopathy which was understood from the secondary source of data published by Theni District (Statistical Handbook of Theni District). The sample size was 480. All the identified respondents were interviewed for to find the reason for using the primary health care system with an interview schedule. The well-structured interview schedule was used for data collection after the pilot survey observations incorporated in the schedule. The statistical tools applied were simple as annual growth rate, Compound growth rate, and Garret ranking method to find the answers of selected objectives.

Objectives

1. To examine the supply of primary health care system in Tamil Nadu
2. To assess the demand for primary health care system in Tamil Nadu
3. To examine the achievements of primary health care system in Tamil Nadu

Results and Discussions

The results and discussion depicted into three parts according to the objectives: First spells about the supply of primary health care system, the second part elaborates about the demand for health care system in Tamil Nadu and Last part explains the reasons for accessibility of primary health care system with help of field data from Theni district.

Assessment of Supply of Primary Health Care System in Tamil Nadu

The primary health care infrastructure was developed as a three-tier system, with Sub-Centers, Primary Health Centers (PHCs), and Community Health Centers (CHCs) being the three pillars of the primary health care system. Primary Health Care (PHC) has always been recognized as the foundation of a stronger and more efficient healthcare system.

Efforts to strengthen more powerful PHC-based healthcare services in India began in 1943 when the Health Research and Development Commission, chaired by Sir Joseph Bohr, was established. The community development program was started in 1952 with the start of the health plan in India and the formulation of the first five-year plan (1951-1955). It was envisioned as a versatile health and hygiene program through the establishment of a Primary Health Center (PHC) and Sub-Centers. At the end of the Second Five-Year Plan (1956-1961), the Health Survey and Planning Committee (Mudaliar Committee) was appointed by the Government of India to monitor the progress of the health sector after the submission of the Bhore Committee report-I reviewed it. The main recommendation of this Commission report is to limit the population served by PHC by improving the quality of services provided and providing one primary health worker per 10,000 populations.

The first national health policy of 1983 aimed at access to basic services for all people in India by 2000, and the national health policy of 2002 and the national health policy of 2017 was the sixth. India has met plans from the plan of inception to the 12th planning period. The 2017 National Health Policy (NHP, 2017) of India aims to provide National Universal Health Coverage or Health for all and provide quality medical services to all at an affordable price. At the end of 12th Plan, and in the 2019 Local Health Statistics Report, 7.21% of India's community health centers are functioning in Tamil Nadu. This was 3.95% of India's community health centers during the 6th plan. As can be seen from Table 1, not only CHC, but also SC and PHC in Tamil Nadu have seen positive growth in healthcare during the planning period and over the years. According to the 2019 Rural Health Statistics Report, 4.8% of India's PHC from Tamil Nadu in 6th Plan was shifted to 5.72% of India's PHC in Tamil Nadu at the end of the 12th Plan period and remains the same in 2019.

The medical services provided by Tamil Nadu, especially in rural areas, are reflected on the supply side of medical services. According to the population, the required Sub-Center was 7355, but the available was 8713, and according to the 2019 Rural Health

Statistics Report, there was no shortage in supply. PHC requirement was 1222 and the availability of PHC was 1422 in 2019 again a surplus supply of primary health care in Tamil Nadu. Required CHC according to the population coverage planned was 305 but available was 385 again surplus of supply of health care infrastructure in Tamil Nadu. Accessibility of health care system of all level was on an average of 85 percentages of respondents in Theni District.

The enlightened point of observation at the time of field data collection in Theni district, researchers found that, PHC of Chinntalcherri, Devaram, Rayappanpatti were maintained in par with private hospital by the monetary support of local panchayat and people's participation.

The table -2 presents the district wise functional health infrastructure in numbers as on 31st March 2021. It is well known that, districts are varied in existing land area and population which is base for allocation of primary healthcare system. But still to reveal the disparities of availability, the following data aids; Salem has 20 CHC, followed by Tiruvannamalai with 18 CHC, Chennai and Namakkal has 15 CHC, Dindigul, Erode, Thiruchirappali, Thiruvallur, and Tanjavur has 14 CHC, Cuddalore, Madurai, Pudukkottai, Tirupur, Villupuram has 13 CHC, Coimbatore, Sivaganga, Tuticorin has 12 CHC, Ramanathapuram, Viruthunagar has 11 CHC, Krishnagiri and Thiruvarur has 10 CHC, and the remaining districts has single digit CHC with lowest one as 4 in Perambalur and The Nilgiris. Each CHC covers one lakh twenty thousand population as per the report 2021 rural health statistics. It means that Salem covers 24 lakh populations by its CHC health care services alone followed by other districts. The lowest coverage was Perambalur and The Nilgiris. (4.8 lakh Population).

Salem district is the leading one in supply of health care system based on the number of SC, PHC in functional form. Meanwhile the total current (2021 Midyear) population of Salem district is 3,865,083 in that 1,774,122 are in urban area and 1,707,934 are in rural area. 463,944 households are in urban, 452,023 are in rural area. Assume that the total CHC in Salem covers the entire district means 1, 93,255 persons needed to serve by a CHC. It is 73,255 persons

more than the targeted persons to cover by a CHC. It means that even though the number of CHC in Salem is leading but the coverage of persons is a risk or burden to the medical personnel to deliver efficient health care. This is not only in Salem District, but the mismatching of current population and of primary health care system and its location of existing which is a challenge to Tamil Nadu Supply of Primary Health Care System. In that aspect PHC and SC are also included. The growing population by birth and by mobility from one district to another district for employment purpose is dynamic now and then which is a challenge to public health care system to cover the entire population.

Demand for Primary Health Care System in Tamil Nadu

The Primary health care system demand can be explored from the inpatients, outpatients and deliveries taken in the system. From the following table-3 one can easily know the number of outpatients, inpatients and delivery from primary health care system of Tamil Nadu specifically from the middle supplier called PHC where the upper one is CHC and lower one is SC.

The annual growth of inpatients in accessing primary health care facilities shown a up and down trend. In 2012 annual growth rate of inpatient was negative and -3.21 per cent, may be a good healthy period, but the immediate following year was 23.10 per cent in 2013 due to the high incidence of viral infections, and -1.64 per cent in 2014. At the same time, the annual growth rate was 4.15 in 2015. The percentage of inpatients increased significantly in 2016, 9.25 per cent, 0.92 per cent in 2017, 15.02 per cent in 2018, 4.08 per cent in 2019 and 4.85 per cent in 2020 due to COVID-19 infection this year. And the number of patients affected by the continuing increase in COVID-19 failure in 2021 was enrolled in primary health care centers thus growing to -26.62 per cent. The combined annual growth rate of inpatients was 1.88.

The annual growth of outpatients in accessing primary health care facilities was zig zag nature. Some of the year it was positive and some of the year it was negative it may be due to the health situation of people. The annual growth of outpatient

in 2012 was -1.88 per cent in 2012 moved to 5.64 percentages 2013. In outpatient accessing was reduced in its annual growth rate as - 4.77 per cent in 2014. The outpatient accessing the health care service was growing nature from 2016 to 2019 as 4.81 percentages in 2016, 0.94 percentages in 2017, 3.29 percentages in 2018 and 4.41 percentages in 2019. Annual growth rate was 2.06 percentages in 2020 was drastically reduced to -25.72 per cent, it may due to pandemic. The compound annual growth rate of out-patients was negative from 2011 to 2021 as -1.45, the calculated statistical number may be the due to reduced accessing of outpatient in 2021 due to Covid-19.

Further the table three reveals about the Average delivery taken over the year. The Annual growth rate of delivery in primary health care was negative as -8.15 percentages in 2012 and continued in the same way as reduction in accessing the services for delivery and reached two digit downward trends in annual growth rate as -10.52 percentages in 2021. The Compound annual growth rate of deliveries in Tamil Nadu from 2011 to 2021 was -11.41 percentages. A downward trend of annual growth rate was reflected in accessing the health care services for deliveries by secondary sources.

Achievement of Primary Health Care System in Tamil Nadu

The demand for and supply of primary health care system are at equilibrium when both are equal. The report of rural health statistics states about the achievements of primary health care system in 2020-2021 reports. The report gave the picture of average coverage of primary health care system in India and its states. In that Tamil Nadu is placed under the category of covering maximum number of 5000 population in Sub Centre, PHC covers 30,000 populations and CHC covers less than one lakh Population.

The table 4 depicts the achievement's mentioned in report of Rural Health Statistics that the a Sub Centre covers a 4131 population, Primary Health Centre covers 25,310 population and Community Health Centre covers 93, 483 population. A SC covers 2 villages; PHC covers 13 villages while a CHC covers 48 villages. Results of rural health statistics report was checked by the primary data

collected by the researchers and same presented in table 5. The demand for primary health system is good as 80.7 percentages which was revealed during field observation and interaction with respondents. If there are ten 10 persons interviewed one is selecting the private clinic or dispensary for their ailing due to time needed for travelling and one is neutral about the accessing public and private health care.

Zero cost for treatment, free medicine, doctor service, devotion to patients, quality service, proximity and less waiting time are the main reasons for utilising the primary health care system by the needy population which was checked in the selected study area Theni District.

The area of PHC's situated is little bit different in key data collections for research projects funded by The Rashtriya Uchchar Shiksha Abhiyan (RUSA) conducted by researchers in Theni District: respondents ranked the services rendered by SC as first as free treatment, second is the approach of physicians, and third is free medical care. It states that it provides quality services and incentives, Fifth is personal attention, attitude of medical staff and dedication to service; sixth and seventh are reduction of waiting time and distance, that is, reduction of transportation cost.

The reasons for utilising CHC provided by the respondents were ranked that the first ranks as free treatment, second as free medicine, third as doctors' service, fourth as less waiting time, fifth as devotion

to patients, sixth as quality of service and seventh preference as proximity. For T.B., Diabetic, Leprosy and HIV patients PHCs staffs are extending their services to door steps medicine. People utilise CHCs services because of the zero cost of treatment and with zero cost of medicine. The distance placed in fourth place after doctor's availability.

Conclusion

Government policies and initiatives taken have achieved its objectives which can be visualized from the accessing of primary health care system and increased availability of primary health care. However, mere infrastructures and human resources do not guarantee its use. Provision of user friendly services and innovative dissemination of information about the services has helped to create a demand in the community. Good managerial systems, motivated staff, enabling environment for the staff to practice their skills are added factors. Such multipronged effort has led to a trend of increased utilization of PHCs for birthing care, compared to the situation of 6 years back. People participation via panchayat, self-help group in maintaining the building, Human resources (tangible and intangible assets/ knowledge and experienced personnels of Primary Health Care System) and accessing the existing resources of SC, PHC and CHC will be added value for the supply of Primary Health Care System of Tamil Nadu and then India.

Table 1 Trend in Supply of Primary Health Care System in Tamil Nadu

State Nation	Plan Wise Health Infrastructure in Tamil Nadu and India						
	6th Plan	7th Plan	8th Plan	9th Plan	10th Plan	11th Plan	12th Plan
	[1981-85]	[1985-90]	[1992-97]	[1997-2002]	[2002-2007]	[2007-2012]	[2012-2017]
Sub Centres Functioning at the End of 12th Plan							
Tamil Nadu	5860	8681	8681	8682	8683	8706	8713
All India	84376	130165	136258	137311	145272	148366	157411
Primary Health Centres Functioning at the End of 12th Plan							
Tamil Nadu	436	1386	1436	1436	1181	1227	1422
All India	9115	18671	22149	22875	22370	24049	24855
Community Health Centres Functioning at the End of 12th Plan							
Tamil Nadu	30	72	72	72	236	385	385
All India	761	1910	2633	3054	4045	4833	5335

Source: Various reports of Health Statistics (NSSO, Health Survey, Rural Health Statistics)

Table 2 District wise Health Care Infrastructure as on 31 March 2021

Districts	Functional Health Care Infrastructure as on 31st March 2021 (in Numbers)				
	Sub Centres	PHC	CHC	Sub Divisional Hospital	District Hospital
Ariyalur	117	33	6	3	0
Chengalpattu	221	41	8	7	0
Chennai	0	144	15	4	0
Coimbatore	328	77	12	12	1
Cuddalore	319	58	13	9	1
Dharmapuri	218	43	8	3	1
Dindigul	311	59	14	12	0
Erode	311	62	14	7	1
Kallakurichi	212	36	9	4	0
Kanchipuram	143	23	5	3	1
Kanniyakumari	267	38	9	8	1
Karur	168	29	8	6	1
Krishnagiri	239	51	10	6	0
Madurai	314	75	13	7	1
Mayiladuthurai	147	26	5	6	0
Nagapattinam	111	21	6	5	0
Namakkal	240	48	15	8	0
Perambalur	90	25	4	3	1
Pudukkottai	242	63	13	12	1
Ramanathapuram	244	48	11	9	0
Ranipet	163	29	7	4	1
Salem	398	87	20	11	1
Sivaganga	275	40	12	16	1
Tenkasi	177	42	10	8	1
Thanjavur	309	63	14	13	1
The Nilgiris	194	33	4	5	0
Theni	162	33	8	5	1
Thiruvallur	303	54	14	11	0
Thiruvarur	195	40	10	7	1
Tiruchirappalli	307	70	14	9	1
Tirunelveli	202	43	9	8	0
Tirupathur	134	31	6	4	0
Tiruppur	242	54	13	9	0
Tiruvannamalai	410	81	18	9	1
Tuticorin	253	48	12	8	1
Vellore	157	39	7	4	0
Villupuram	345	52	13	7	0
Virudhunagar	245	47	11	10	0
Total Districts 38	8713	1886	400	282	20

Source: Rural Health Statistics 2020-2021

Table 3 Annual Growth Rates of Average Outpatient, Inpatient and Delivery of Primary Health Care User/ Demand in Tamil Nadu per Year

Year	Out-Patient	AGR: Out Patient	In-patient	AGR: Inpatient	Delivery	AGR: Delivery
2011	1736.85	-	745.93	-	189.84	-
2012	1704.05	-1.88	721.95	-3.21	174.35	-8.15
2013	1800.25	5.64	888.75	23.10	151.49	-13.11
2014	1714.24	-4.77	874.17	-1.64	140.74	-7.09
2015	1707.79	-0.37	910.47	4.15	113.15	-19.60
2016	1789.96	4.81	994.71	9.25	89.6	-20.81
2017	1806.84	0.94	1003.96	0.92	73.58	-17.87
2018	1866.35	3.29	1154.79	15.02	64.42	-12.44
2019	1948.74	4.41	1201.98	4.08	60.68	-5.80
2020	1989.03	2.06	1260.37	4.85	56.45	-6.97
2021	1477.44	-25.72	924.83	-26.62	50.51	-10.52
CAGR:2011-2021		-1.45	CAGR:2011-2021	1.88	CAGR:2011-2021	-11.41

Source: Health & Family Welfare Department

Table 4 Parameter of Achievements [Mid-Year Population as on 1st July 2021]

S. No	Primary Health Care System	Average Population covered Nos	Rural Area Sq. Km. Covered	Average Radial Distance Kms	Average No of Villages Covered
1	Sub-Centre (3000-5000 Pop)	4131	13.36	2.06	2
2	PHC - (20000-30000 Pop)	25,310	81.88	5.1	13
3	CHC - Less than One lakh Pop	93, 483	302.41	9.81	48

Source: Rural Health Statistics Report 2020-2021

Table 5 Reasons for Utilising the Primary Health Care System – A Case study

Reasons	SC		PHC		CHC	
	Garrett Score	Rank	Garrett Score	Rank	Garrett Score	Rank
Free Treatment	79	I	80	I	80	I
Doctors Availability	76	II	74	III	76	III
Free medicine	71	III	78	II	73	II
Quality of Service	67	IV	67	VI	67	V
Devotion to Patients	65	V	68	V	65	VI
Less Waiting Time	64	VI	60	IV	64	VII
Proximity	62	VII	61	VII	60	IV

Source: Computed from Survey data

References

- Aagari–Jirhandeh, Nima, et al. “Strengthening Primary Health Care as a Means to Achieve Universal Health Coverage: Experience from India.” *Journal of Health Management*, vol. 23, no. 1, 2021, pp. 20-30.
- Anjali. “Access to Public Health Care Services in Odisha.” *Conference on Health for All to Universal Health Coverage: Journey so far and Challenges ahead*, 2014.
- Bajpai, Nirupam, et al. “Scaling Up Primary Health Services in Rural Tamil Nadu: Public Investment Requirements and Health Sector Reform.” *CGSD Working Paper 36*, 2008.
- Chandrakant Lahariya. “Health & Wellness Centers to Strengthen Primary Health Care in India: Concept, Progress and Ways Forward.” *The Indian Journal of Paediatrics*, vol. 87, no. 11,

- 2020, pp. 916-29.
- Chandrasekaran, N. *A Study on the Utilisation of Health Care Services in Coimbatore District – TamilNadu*. Bharathiyar University, 2001.
- Cyril Kanmony, J. “Public Healthcare Sector: Is Losing its Importance in Rural Tamil Nadu.” *Review of Public Administration and Management*, vol. 5, no. 1, 2017.
- Ghuman, B.S., and Akshat Mehta. “Health Care Services in India: Problems and Prospects.” *International Conference on the Asian Social Protection in Comparative Perspective*, 2009.
- Hammer, J.S., and P. Berman. “Ends and Means in Public Health Policy in Developing Countries.” *Health Policy*, vol. 32, 1995, pp. 29-45.
- Jana, Arnab, and Noboru Harata. “Provisioning Health Care Infrastructure in Communities: Empirical Evidences from West Bengal, India.” *Socio-Economic Planning Sciences*, vol. 54, 2016, pp. 37-46.
- Jayanthi, TP, et al. “Primary Health Centres: Preferred Option for Birthing Care in Tamilnadu, India, from Users’ Perspectives.” *Journal of Health, Population and Nutrition*, vol. 33, no. 1, 2015, pp. 177-86.
- Lavanya, V.L., and Sherly Thomas. “Utilisation of Primary Health Care Services among Select Rural Women in Coimbatore.” *Conference on Health for All to Universal Health Coverage: Journey so far and Challenges Ahead*, 2013.
- Malaney, Pia. *Health Sector Reform in Tamil Nadu: Understanding the Role of the Public Sector*. 2000.
- Mohankumari, S. “Primary Healthcare Facilities Functional, and Increases the Utilization: A Case Study in Mysore City Mysore District.” *International Journal of Creativity Research Thoughts*, vol. 10, no. 4, 2022.
- Ramani, Sudha, et al. “How Context Affects Implementation of the Primary Health Care Approach: An Analysis of What Happened to Primary Health Centre in India.” *BMJ Global Health*, 2019.
- Rao, Mala, and Eva Pilot. “The Missing Link - The Role of Primary Care in Global Health.” *Global Health Action*, vol. 7, 2014.
- “Reality of Healthcare in Rural India.” *Gram Vaani*, 2013.
- Rushender, Rajan, et al. “A Study on Effective Utilization of Health Care Services Provided by Primary Health Centre and Sub-Centres in Rural Tamil Nadu, India.” *International Journal of Community Medicine and Public Health*, vol. 3, no. 5, 2016, pp. 1054-60.
- Shaw, Subhojit, and Harihar Sahoo. “Accessibility to Primary Health Centre in a Tribal District of Gujarat, India: Application of Two Step Floating Catchment Area Model.” *GeoJournal*, vol. 85, 2020, pp. 505-14.
- Sivanandan, Arulprakash, et al. “Awareness and Preference in Utilizing Primary Health Care Services from Rural Health Center as First Point of Care: A Community-based Cross Sectional Study in South India.” *Journal of Education and Health Promotion*, 2020.
- Soman, Krishna. “Rural Health Care in West Bengal.” *Economic and Political Weekly*, vol. 37, no. 26, 2002, pp. 2562-64.
- Supply Side Analysis of Human Resources for Long Term Availability of Health Providers, Department of Health and Family Welfare (DoHFW), Government of Orissa (GoO)*. Xavier Institute of Management, 2014.
- Thimmaia, N and C V. Anith. “Utilization of Primary Health Centre Services in Rural and Urban Areas: A Comparative Study in Mysore Taluk.” *International Journal of Public Health and Human Rights*, vol. 3, no. 1, 2013.

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