

# SPATIAL DISTRIBUTION OF PUBLIC HEALTH CENTER IN MYSORE DISTRICT

there is a need to study the public health center, their function, and served and un-served areas of each health centers to reduce the gaps and take into the consideration of unserved areas by proposing new health care centers in the study area.

## Keywords:

Distribution, served area, un-Served Area.

## Abstract:-

Human health plays an important role in the development of the region or the country. Health care system of any country or region has an important role to play for the sustainable health management. In this paper an attempt has been made to study the spatial distribution of public healthcare centers and their services in Mysore district. As a result, the present paper aimed to identify the served and un-served area/settlements by the health centers based on their functions. At present, totally there are 150 Public health centers in the study area and each health centers has different types of structure and functions and served area of various sizes. So



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## INTRODUCTION :-

The study of regional variations in the distribution of social services (like healthcare) has captured the interest of geographers, planners and other scientists because of their general interest in the spatial variation of phenomena on the earth's surface. In particular, the question of access to sources of human need or want satisfaction stresses the importance of location and distance. Traditional focus of empirical studies on facilities in general, is on the relationship between distance and pattern of the facilities. General consensus among researchers investigating this relationship is that fewer people are willing to patronize a particular facility as the distance from it increases (Shanon and Dever, 1974; Iyun, 1978; Knox, 1979; Aloba, 1995; Olatubara, 1996).

There are number of theories and concepts in geographic literature which attempt to explain the spatial distribution and patterns of geographic phenomena in space. The Central Place Theory, the p-Median Model and the Market Area Analysis are some of such theories. The central place theory apart from recognizing the spatial distribution of settlements also, identified settlement hierarchy based on other things the type's services that settlements provide (Christaller 1966). Thus, higher order centres/services and lower order centres/goods will command differential market areas because they present different range of opportunities to their customers. In a review of literature on barriers to access health services, Ensor and Cooper (2004) regard distance and time as two crucial factors affecting the procurement of health services in many low income countries. According to them, the direct costs of transport invariably account for a substantial percentage of overall expenditure in health care equation of individuals. For instance, in a study carried out in North-east Brazil, travel cost of procuring health care have been estimated at 25% of total expenditure on health (Terra de Souza et al, 2000) and 28% in Cameroon (Sauerborn et al, 1995). Christaller, W. (1933) Central Place Theory in Southern Germany. Englewood Cliffs, New Jersey: Prentice-Hall.

This Paper describes the spatial distribution of public healthcare centers and their services in Mysore district As a result, the present paper aimed to identify the served and un-served area by the health centers based on their functions.

### Study Area:

Mysore District is an Administrative District located in the southern part of the state of Karnataka, India. This district has a prominent place in the history of Karnataka. Mysore district is located between latitude 11°45' to 12°40' N and longitude and 75°57' to 77°15' E latitude. The District spreads across an area of 6854 sq.km (ranked 12th in the state) constituting 4% of the state's total area. Totally, Mysore district is having 7 taluks namely, Mysore, Tirumakudal Narsipur, Nanjangud, Heggadadevanakote, Hunsur, Piryapatna, Krishnarajanagara. According the Census of 2011 Mysore District had a population over 30 lakhs making it third largest district in Karnataka.

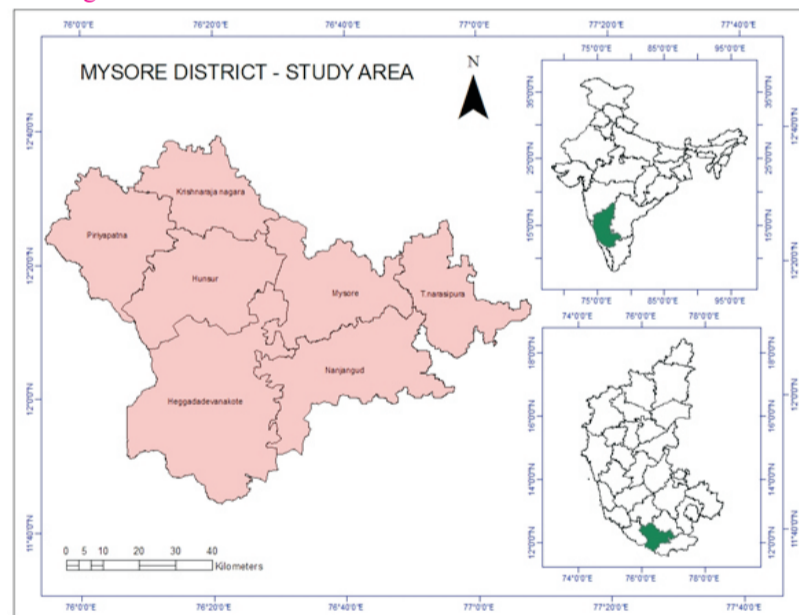


Fig.No.1 Location Map of Mysore District

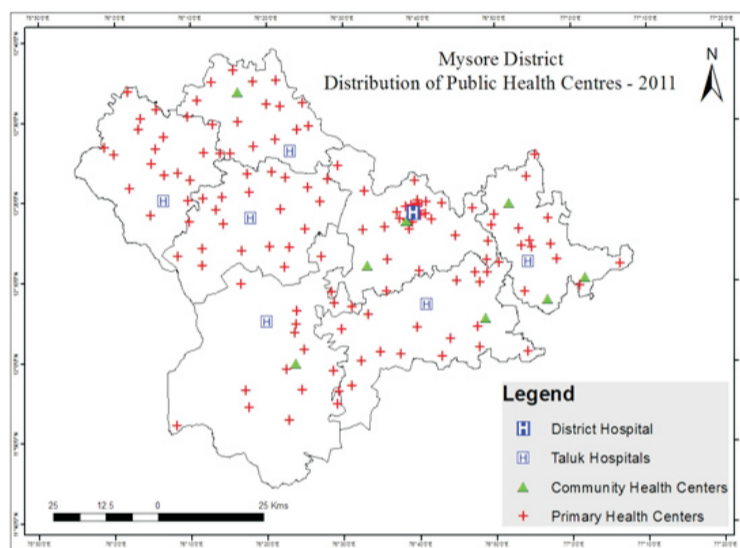
### Methodology

The present study used both Primary and secondary source data. The primary source of information has been collected by questionnaire through the field survey by visiting all the Health Care centers. The Secondary data related to health care are collected from various offices like District Health Office, Taluk Health Office and Municipal Corporations. Population Data are collected from Census

Office Bangalore for the Year 2011. The other secondary data are collected in the form of published works such as, Books, Gazetteers, Journals, Articles, both National and International reports published by the Government collected through the Libraries and website also. Along with that, the basic information related to location, extent and physiography are extracted from Toposheets. The collected information has been compiled and put in the form of maps and tables for further analysis.

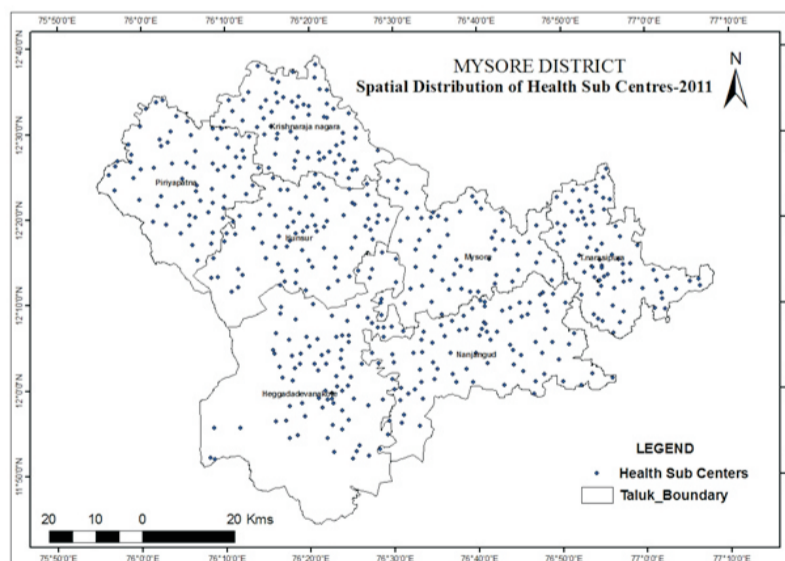
**Spatial Distribution of Public Healthcare Centers in Mysore District:**

The Existing government healthcare centers can be organized in different hierarchical order as the Health Sub Centre, Primary Health Centre including Community health care, General Hospitals, District Hospitals. They are located on the basis of economic feasibility and requirement by the people. The spatial distribution of healthcare centers are unevenly as the human population on the earth's surface and the factors for such uneven distribution is almost similar. The uneven distribution of health centers are observed even at micro level not only between the regions but within the region also. Depending upon the demand of the health care institutions and the supply of the patients. So far as the public health institutions of the Mysore district is concern which comprises of one District Hospital, Six General hospitals, 8 Community Health Centers, 135 Primary Health Centers out of that 24 are working 24x7 and 511 Sub Centers.



**Fig.2 Spatial Distribution of Public HealthCare Centres**

The present hospitals system varies in size and kinds of medical care services, where one can get all types of treatments that are needed by a patient. In the study area, the existing public healthcare centers can be structured in different hierarchical order to study the optimum use of available resources in different health institutions of the district



**Fig.3 Spatial Distribution of Health Sub Centres**

**HEALTH CARE CENTRES AND POPULATION RATIO IN STUDY AREA (2011):**

The health care system of the Mysore district depends up on the availability of government healthcare facilities which are distributed with the territory premises of the district. As per Government of India, National Rural Health Mission (NRHM) policy the population norms for the provision of Sub-Centers, PHC's and Community Health Centers in plain areas are suggested 5000, 30,000, 1,20,000 people respectively, where as in the Hilly/Tribal regions it is 3,000, 20,000, 80,000 respectively. The NRHM norms in Mysore district reveals that, the each PHC is serving to a population of 22231 persons and the Sub Centres available in the district serving the population of 5873 persons. It reveals that, the study area had more numbers of health institutional compare to NRHM norms.

**MYSORE DISTRICT**

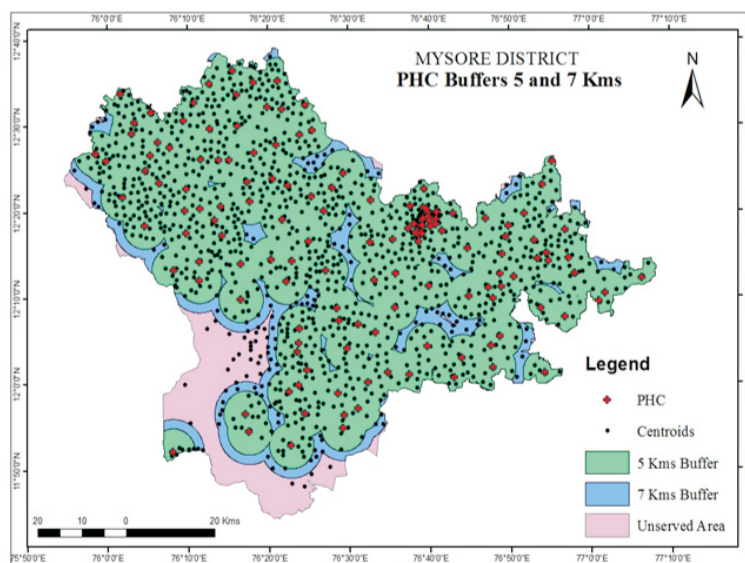
**TABLE: 1 Taluk Wise Distribution of Health Care Centers and Ratios of Health Centers to the Population 2011**

Sl. No	Taluks	Population	CHC	CHC/ Population Ratio (1:1,20,000)	PHC	PHC/ Population Ratio (1:30,000)	Sub Centre	Sub Centre/ Population Ratio (1:5,000)
1	K.R.Nagar	252657	1	252657	14	18047	64	1:3948
2	P.Patna	243076	0	0	19	12793	68	1:3575
3	Hunsur	282963	0	0	21	13474	73	1:3876
4	Mysore	1281768	2	640884	33	38841	60	1:21363
5	H.D.Kote	263706	1	263706	16	16482	89	1:2963
6	Nanjangud	384922	1	384922	18	21385	81	1:4752
7	T.Narsipura	292035	3	97345	14	20860	76	1:3843
	<b>Total</b>	<b>3001127</b>	<b>8</b>	<b>375141</b>	<b>135</b>	<b>22231</b>	<b>511</b>	<b>1:5873</b>

Source: Compiled by author

**Served and Unserved areas by the Public Health care centers (PHC's):**

Buffer analysis has been used to show the served and unserved area for the PHC's in the study area. It has been used to identify the villages within a given buffer limit of facility. Euclidean buffer is drawn around each PHC. The villages of an area can be easily determined whether they are served or un-served. A village within the buffer was considered to have access to a facility, while those outside the buffer were assumed not to have access. In the present study the buffers are drawn from each PHC at a distance of 5 and 7 Kilometers.



**Figure 5.3 Buffers of PHC Service area  
Table No.2 Buffer Analysis**

Buffer	Population	Percentage of Population	Percentage of Settlements
Less than 5 KMS	2759097	91.06	86.64
5-7 KMS	214514	7.08	8.93
More than 7 KMS (Unservd)	56200	1.85	2.43
<b>Total</b>	<b>3029811</b>	<b>100</b>	<b>100</b>

Source: Field Survey and Personal Computation (2011)

The results of served and unserved areas for PHC's, is shown in the above table in the study area. The 91.06 percent of the population is being served within the buffer of 5 kilometers and 7.08 percent of population is being served by PHC's. Beyond the buffer of 5 kilometers up to 7 Kilometers i.e. (within 2 Km) 7.08 population is being served by PHC's of the study area. The unserved area accounts the population of 1.85 percent of the total population of the study area.

#### CONCLUSION:

From the above analysis it can be concluded that, healthcare centers are not equally distributed among different taluks of Mysore. In addition to this there is scarcity in the availability of workforce and infrastructure among the taluks of the study area. The identification of served and unserved areas of health care centers is the main observation in this study. It also reveals that, there exists the spatial variation in the distribution of PHC's, which were not evenly distributed across the study area. A large proportion of the residents have to travel a long way to access the health care facilities most importantly in South and south western parts of Heggadadevanakote and western parts of Piriapatna. Geographical access models have enormous potential for informing policy development and grounding debate on how to achieve social equity of hospital access. In the study an attempt has been made to identify the health care centers served areas with population to reduce the gaps and take into consider this unserved areas and proposing new health care centers from temporal point of view.

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