



## DEVELOPMENT OF HEALTH CARE FACILITY IN RURAL AREA OF SOLAPUR DISTRICT

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### *Abstract*

*Medical Geography is concerned with the study of those local variations of environmental conditions which are causatively related to the human health or ill health. The term 'Health' has been defined as 'a state of complete physical, mental and social well being of the individual and not merely the absence of disease or infirmity'. A health facility is, in general, any location where healthcare is provided. Health care facilities are important aspect of medical geography. Good health is central to human wellbeing, economic progress and a prosperous society. Therefore an attempt is made here to study the development of health care facilities in rural area of Solapur district. The paper is based on primary data. To determine composite index of development of health care facilities the Shrivastava. S. L (1983) method i.e. "Proportional Standardized Mean and Composite Index" has been utilized. The study reveals that there is uneven distribution of health care facilities in Solpur distict.*

**Key words:** health care facilities, development, Composite index.

### **Introduction:**

The human resource is an important resource in the world. Man has optimum ability to make those resources. The creativity of human being is very important in this process. Therefore the study of human well-being becomes an important aspect. Human creativity depends on his health condition. In this context medical geography is a significant branch of human geography. Medical Geography is concerned with the study of those local variations of environmental conditions which are causatively related to the human health or ill health. In other words , medical geography is a study of the relationship between the pathological factors which cause disease and the geographical factors which give rise to those pathological factors. (May J. M.1950)

The Medical geography is the systematic study of diseases distributed over space and over time and analyse the ethiological factors in relation to climate, soils, drainage, agriculture in particular and economic factor in general. Medical geography also examines the health care network organization in a particular area. Pyle (1979) has asserted that "the study of spatial aspect of diseases as well health care are logical extensions trends in geographical analysis that have developed during this century

The medical geography can be named as 'Geography of Health'. Geography of health is concerned with the distribution and comparison of various indices of disease in human population and the interrelation with other elements of the physical, biological and cultural environment in space (Armstrong, 1965).

The term 'Health' has been defined by the World Health Organization, as 'a state of complete physical, mental and social well being of the individual and not merely the absence of disease or infirmity'. The concept of health is also viewed as a multidimensional process involving the well being of the whole person in the context of his environment.

Health care is defined as the active process by which an individual achieves physical and mental well being. This means that health care begins with the individual actively trying to maintain a proper diet and hygiene to avoid illness. Even where the individual tries to achieve health care, however, illness may occur as a result of biological, environmental or social conditions. If the individual is incapable of curing herself or himself, the health care delivery system must be sought out (Majid Husssain 1993).

Health care facilities are important aspect of medical geography. A health facility is, in general, any location where healthcare is provided. Health facilities range from small clinics and doctor's offices to urgent care centers and large hospitals with elaborate emergency rooms and trauma centers. The number and quality of health facilities in a country or region is one common measure of that area's prosperity and quality of life ([https://en.wikipedia.org/wiki/Health\\_facility](https://en.wikipedia.org/wiki/Health_facility)). According to Shannon and Dever (1974) the structure and spatial pattern of medical services and includes consideration of the spatial hierarchy of health care facilities and the distribution of health resources (Shannon, G. W. and Dever, G. E. A., 1962)

Good health is central to human wellbeing, economic progress and a prosperous society. Health is largely depends on levels of nutrition, housing conditions, environmental hygiene, personal hygiene, socioeconomic status, social security, health education, organized public health and medical care services ( Seal, S. C.,1971). The workload of a health facility is often used to indicate its size. Large health facilities are those with a greater patient load.

The growth of economy in any country, health forms a major contribution. Obviously the relationship between socio-economic development and progress of health is of extreme importance. In fact, every aspect of economy has a health component which has an important bearing on the overall socio-economic development (Seal, 1971). There for an attempt is made here to analyze health facilities in Solapur District.

**The Study Region:**

The Solapur District, area under study lies entirely in the Bhima basin of Krishna river system. The district is bounded by 17° 10' North to 18° 32' North latitudes and 74° 42' East to 76° 15' East longitudes. The North South stretch of the district is 150 kilometers and East-west extension is 200 kilometers. The adjoining districts are Sangli to its South-West, Satara to its West, Pune to its North-West, Ahmednagar to its North and Osmanabad to its East and Bijapur district in Karnataka to the South.

The shape of the district resembles flying eagle. The district has a total area of 14878 sq km. It constitutes 20 percent of the total area of Pune division, 5 percent of the state Maharashtra. The Solapur district is fairly well defined to its west as well as to its East by the inward looking scarps of Phaltan range and Osmanabad plateau respectively. The climate of district is hot and dry with 577 MM average annual rainfall and mean monthly maximum temperature ranging in between 32.8°C and 41.28°C while mean monthly minimum temperature ranging in between 13.94°C and 24.2°C. The district is drained by Bhima River. For administrative purpose, the district is divided into eleven talukas, which constitute 1150 villages and 10 urban areas. These talukas are North Solapur, Barshi, Akkalkot, South Solapur, Mohol, Mangalvedha, Pandharpur, Sangola, Malshiras, Madha and Karmala. According to total geographical area, Malshiras taluka ranks first and North Solapur the smallest in size. Solapur city is the district head quarter.

**Objectives:**

The main objective of present study is to determine and analyze development of health care facilities in the Solapur district.

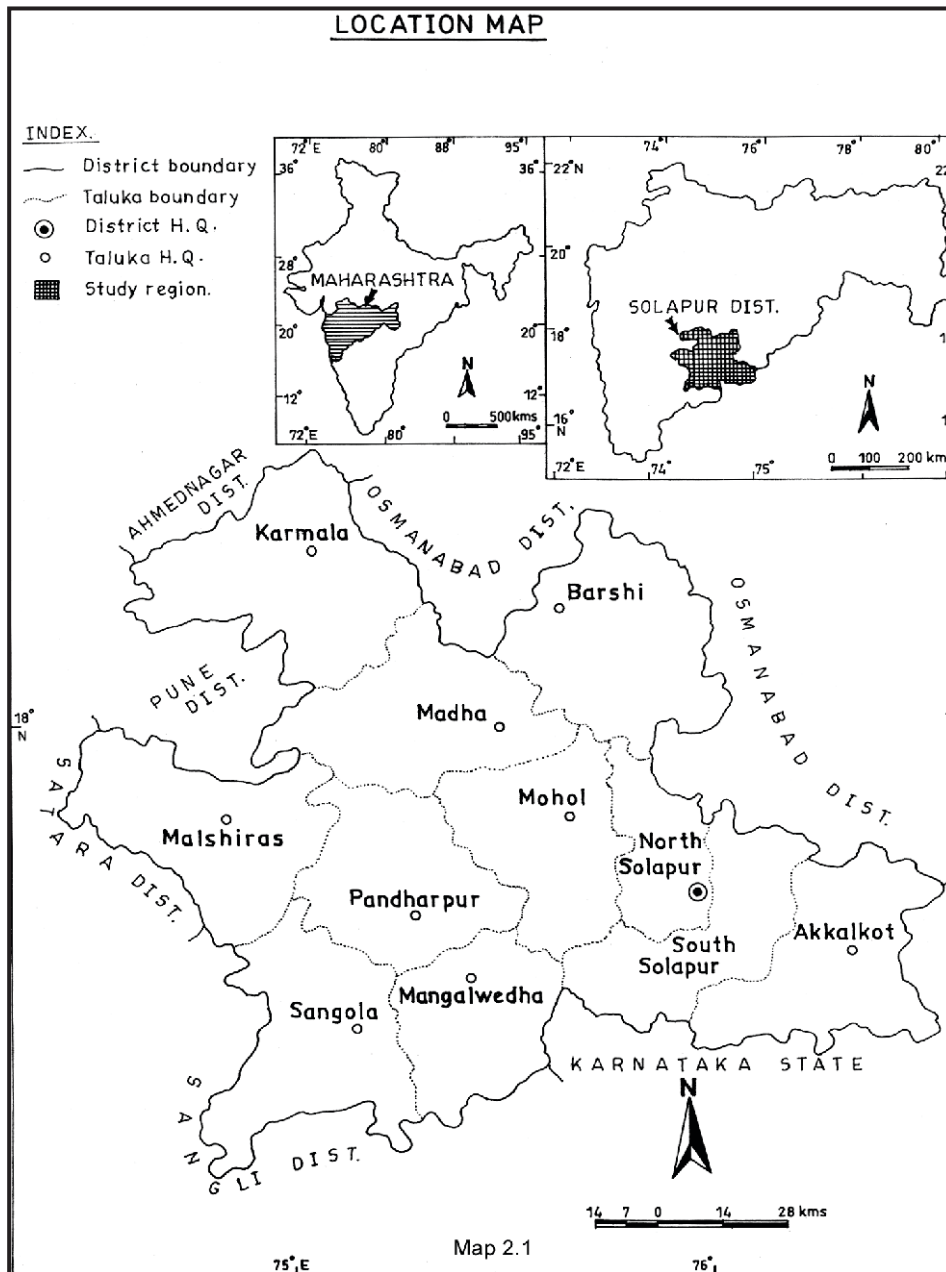
**Data Collection and Methodology:**

To fulfill above objective the data regarding to seven indicators of health facilities i. e. number of rooms, number of beds, number of doctors, number of nurse, number of wad boys, number of technicians, and other employees in the primary health centers is collected and used for the period of 2015-16 comes from primary sources. For the primary data collection schedule is prepared and field survey has been made. During field survey 22 P. H. C. are surveyed, Stratified random sampling technique is used to select P. H. C.. After the collection data is processed. To determine development of health care facilities Shrivastava. S. L (1983) method i.e. "Proportional Standardized Mean and

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Composite Index” has been utilized. Which is as Following.

Figure No-1



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$$w = \frac{\text{Mean}}{\text{SD}}$$

Where,

W= Weight of one particular indicator

Mean= The average of the series of one particular indicator.

SD= The standard deviation of same series.

$$C_i = \frac{A_1W_1 + X_2w_2 + x_3w_3}{W_1 + w_2 + w_3}$$

Where

CI= Composite Index

X= Particular Indicator

W= Weight of series of one particular Indicator

Depending upon the composite index the indices have also calculated by taking whole region as 100 ( for average composite index) by using following formula.

$$\text{Indices} = \frac{\text{Composite Index of Any Unit}}{\text{Average Composite Index}} \times 100$$

Then on the basis of mean and standard deviation of composite index of Tahsil of Solapur district are divided in to low, moderate and high development. On the basis of these statistical technique results and conclusions are drawn.

#### **Discussion:**

#### **Health Care Facilities in rural area of Solapur District:**

##### **1. Number of Rooms in P. H. C.:**

The table 1 indicates that the high number of rooms in Primarrry Health Centers (P. H. C.) are found in Barshi, karmala, Mohal, Akkalkot and Malshiras tahsil i.e. above 21. The moderate number of rooms in P. H. C. are found in Madha and Pandharpur tahsil ranging from 16 to 21, while low number of rooms are noticed in South Solapur, Sangola and Manglvedha Tahsil i.e. below 16.

##### **2. Number of Beds in P. H. C.:**

The table 1 indicates that the high number of beds in P. H. C. are found in South Solapur and North Solapur tahsil i.e. above 24 as district headquarter is located in North Solapur tahsil. The moderate number of beds in P. H. C. are found in Madha, Mohol, Sangola, Akkalkot and Karmala Tahsil ranging from 17 to 24, while low numbers of beds are noticed in Pandharpur, Malshiras, Barshi, Mangalvedha tahsil i.e. below 17.

##### **3. Number of Doctors in P. H. C.:**

The table 1 indicates that the high number of doctors in P. H. C. is recorded in Mohal, Sangola, South Solapur and North Solapur tahsil i.e. 4. The moderate number of doctors in P. H. C. is recorded in Madha, Pandharpur, Mohal, Mangalvedha and Akkalkot tahsil i.e. 3, while low number of doctors is noticed in only Barshi, tahsil i.e. below 3 mainly due to vacant post.

##### **4. Number of Nurses in P. H. C.:**

The table 1 indicates that the high number of nurses in P. H. C. is recorded only in South Solapur tahsil i.e. 31. The moderate number of nurses in P. H. C. is recorded in Malshiras, Sangola, Akalkot, North Solapur tahsil ranging from 13 to 22, while low number of nurses are found in Barshi, Madha, Mohal, Mangalvedha, Pandharpur and Karmala tahsil i.e. below 13.

Table -1: Indicators of development of health care facilities in Solapur district (2015-16)

Tahsil	Number of Rooms	Number of Beds	Doctors	Nurse	Ward Boys	Technician	Number of Employees Quarters
Karmala	25	18	3	4	6	2	8
Madha	20	21	3	8	3	2	6
Barshi	22	12	2	9	7	0	15
North Solapur	13	23	4	13	8	2	11
Mohol	18	20	4	8	4	2	8
Pandharpur	20	16	3	6	7	2	9
Malshiras	16	16	3	22	3	2	8
Sangola	13	20	4	19	5	0	11
Mangalvedha	11	10	3	7	4	1	8
S. Solapur	15	32	4	31	7	2	11
Akkalkot	18	19	3	16	6	3	14
Mean	17.36	18.82	3.27	13.00	5.45	1.64	9.91
SD	4.05	5.56	0.62	7.87	1.67	0.88	2.64
Weight	4.29	3.39	5.31	1.65	3.26	1.86	3.75
	23.5						
Total Weight							

Source: Compiled by researcher on the basis field survey.

#### 5. Number of Ward boys in P. H. C.:

The table 1 indicates that the high numbers of ward boys in P. H. C. are recorded only in North Solapur tahsil i.e. 7. The moderate number of ward boys in P. H. C. is recorded in Barshi, Pandharpur, South Solapur, Karmala, Akkalkot and Sangola tahsil ranging from 5 to 7, while low number of ward boys are found in Mohol, Mangalvedha, Madha and Malshiras tahsil i.e. below 5.

#### 6. Number of Technicians in P. H. C.:

The table 1 indicates that the high numbers of technicians in P. H. C. are recorded only in Akkalkot tahsil i.e. 3. The moderate number of technicians in P. H. C. is recorded in Karmala, Madha,

North Solapur, Mohol, Pandharpur, Malshiras and South Solapur tahsil i.e.2, while low number of technician are found in Mangalvedha and Sangola, i.e. 1. The notable thing is that there is no single technician in Barshi and Sangola tahsil.

**7. Other employees in P. H. C.:**

The table 1 indicates that the high numbers of other employees in P. H. C. are registered in Barshi and Akkalkot tahsil i.e. 12. The moderate number of other employees in P. H. C. is registered in North, Sangola, South Solapur and Pandharpur tahsil ranging from 9 to 12, while low numbers of other employees are registered in Karmala, Mohol, Malshiras, Mangalvedha and Madha i.e. below 9.

Development of health care facilities in Solapur District in 2015-16:

The table number 2 indicates composite index and indices value of each tahsil. The indices value of all tahsil ranging from mean minus two standard deviation to mean plus one standard deviation. Therefore all the tahsil are grouped into following three categories.

**Tahsil with high development of health care facilities:**

The table 2 indicates that, tahsil, which have above mean indices value i.e.> 99.98 are included in high development category. The high development of health care facilities is found in South Solapur, Akkalkot, North Solapur, Barshi and Karmala tahsil mainly due to the political leader and Government officers of these tahsil are more sensitive about the health care facilities.

Tahsil with moderate development of health care facilities:

The table 2 indicates that, tahsil which have mean minus one standard deviation to mean indices value i.e. 83.9 to 98.98 are included in this category. The moderate

**Table -2:  
Composite index of development of health care facilities in Solapur district (2015-16)**

Tahsil	CI	Indices
Karmala	10.38	103.79
Madha	9.45	94.45
Barshi	10.19	101.90
North Solapur	10.53	105.25
Mohol	9.62	96.20
Pandharpur	9.62	96.18
Malshiras	9.30	92.97
Sangola	9.94	99.40
Mangalvedha	6.53	65.27
S. Solapur	13.31	133.13
Akkalkot	11.13	111.25
Average	10.00	99.98
S. D.		16.08

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Source: Compiled by researcher on the basis of field survey.

development of health care facilities is found in Madha, Mohol, Pandharpur, Malshiras, Sangola tahsil.

**Tahsil with low development of health care facilities:**

Tahsil which have below mean minus one standard deviation indices value i.e.  $>83.9$  are included in low development of health care facilities category. The low development of health care facilities is found only in Mangalvedha tahsil. It is low in Mangalvedha because of lower development of education, on the other hand Solapur and Pandharpur urban centers are close to the people of Mangalvedha, so they go to Pandharpur and Solapur for their medical treatment.

**Conclusions:**

The forgoing analysis reveals that there is uneven distribution of health care facilities in Solapur district. The high number of beds in P. H. C. in South Solapur and North Solapur tahsil is a result location district headquarter in North Solapur tahsil. The low number of doctors in only Barshi tahsil is mainly due to the vacant post. The notable thing is that there is no single technician in Barshi and Sangola tahsil. The high development of health care facilities is found in South Solapur, Akkalkot, North Solapur, Barshi and Karmla tahsil mainly due to the political influence and educational development particularly in Barshi and North Solapur tahsil. The low development of health care facilities only in Mangalvedha tahsil is result of lower literacy rate, on the other hand Solapur city and Pandharpur urban center are close to the people of Mangalvedha, so patients of Mangalvedha go to Pandharpur and Solapur for their medical treatment, so the Government should develop health care facilities in rural area of Mangalvedha tahsil. The study also reveals that there are number of vacant posts of medical servant in rural area, so it suggested that government should pay attention toward recruitment.

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