A Geographical Study of Inequality in Distribution of Public Healthcare Centres in Hunsur Taluk, Mysuru

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ABSTRACT
Health is a basic element of every citizen in a country. The well being of the people is an important foundation of the prospective nation. The health of the people is determined by many factors, however, the role of healthcare resources are very significant. Primary care is recognized as the most important form of healthcare for maintaining population health because it is relatively inexpensive, can be more easily delivered than specialty and inpatient care, and if properly distributed it is most effective in preventing disease progression on a large scale. Recent advances in the field of health geography have greatly improved our understanding of the role played by geographic distribution of health services in population health maintenance. However, most of this knowledge has accrued for hospital and specialty services and services in rural areas. The paper has studied the hobliwise distribution of healthcare resources in Hunsur taluk. The data has revealed the uneven distribution of healthcare centres, which has indicated that Hanagodu hobli has high concentration of healthcare centres, while as Gavudagere has low. Secondly, the hobliwise ratio between population and health workforce has been carried out which has shown, the concentration of high health workforce were found in Hunsur hobli and less in Bilkere hobli which indicates higher and lower healthcare facilities respectively.

Key words: Health, Population, Healthcare Resources, Health workforce.

INTRODUCTION
Healthcare is a multitude of services rendered to individuals, families and communities. It is a concern for fellow human beings. The agents of health services or professionals are there for promoting, maintaining and restoring health. Healthcare includes medical care, which refers to the medical services that are provided directly by physicians or paramedical staff. (Lakshmi, 2008), the aim of the healthcare is ultimately provide better health conditions to all individuals (Sivagnanam, 1984). Healthcare Resources include practitioners such as physicians, nurses and native doctors, facilities such as hospitals, clinics, Health Maintenance Organisations etc… Resources are controlled by institutions such as the various national medical, hospital and more recently, insurance and health service management companies. Spatial analysis is the geographical approach to understanding inequalities in such things as income distribution, food supplies or healthcare services. An important issue of equitable service distribution is the contrast between need for services and demand for them. The economic efficiency criterion emphasizes demand which is based on use of resources. Some forms of medical care, such as qualified doctor when someone actually becomes ill, are considered necessities. (Meade & Earickson, 2006). The resources of the system are the labour and capital devoted to healthcare. Included will be health personnel, structures in which healthcare and education are provided, and the equipments and materials used in providing health services. The resource component includes total volume of resources relative to the population served and the way in which the resources are geographically distributed within a country. Volume includes personnel/population ratios for various kinds of health related occupations (including physicians, nurses, dentists etc) actively providing medical care. Total amount of resources can also be measured by examining facilities which provide patient care. (Ronald Anderson & John F. Newman, 2005)

STUDY AREA
Hunsur Taluk is one of the seven taluks of the Mysore district. It is bounded in the north by K.R.Nagara taluk, in the south by H.D.Kote taluk, in the east by Srirangapatna & Mysore taluk and in the west by Periyapatna taluk & Kodagu district. Hunsur is located at 12.31’ N 76.29’. It has an average elevation of 792 meters above Mean Sea Level. The total geographical area of the taluk is 897 Square kilometres. It has one town, 4 hoblis and 213 villages. The four hoblis are:
1. Bilkere Hobli
2. Gavudagere Hobli
3. Hunsur Hobli
4. Hanagodu Hobli.

Historically, this town used to be called ‘Gaadi Palya’, meaning ‘a resting station for bullock carts’, probably en route to Mysore, the nearest city 47 kilometres away. According to 2011 census the total population of the study area is 282731, out of this 143294 were males and 139437 were females. The density of population is 282 people per square kilometres. With the literacy rate of 59.81% includes 56.37% male and 43.63% were females. In general the literacy rate decreases from urban to rural area and the Hunsur taluk has no exception with it, the literacy rate of urban area were 72.76% and in rural area 56.92%.
METHODOLOGY
As the study is based on the inequalities of primary healthcare centres, the hobliwise data regarding the population and the availability of Healthcare facilities has been collected from District Health Office, Statistical Department. The hobliwise ratio between population and health workforce has been carried out to find out the variations in the healthcare facilities. The collected data were used in GIS field to show the spatial variation in the distribution of healthcare centres and health workforce.

DISTRIBUTION OF HEALTHCARE CENTRES:
The sound society is reflected by the sound health conditions of its people. The better health status is maintained by balanced diet, clean and hygienic environment. The distribution of healthcare facilities varies not only in rural and urban areas but also within rural and urban areas. The similar situation exists in Hunsur taluk. Hunsur taluk consists of one town and 213 villages. The total healthcare centres of Hunsur taluk includes one Community Health Centre, 21 Primary Health Centres (PHC’s), 73 Sub Centres, one private nursing home, 35 private clinics, 36 medical stores, 3 private X-ray centres and 4 laboratories. Hunsur taluk comprises of 4 hoblis and each hobli having 4-6 PHC’s. Hunsur hobli being the taluk head Quarters having more healthcare centres (30), followed by Hanagodu hobli (27), 20 healthcare centres exists in Bilikere hobli and Gawdagere hobli has less number of healthcare centres (17).

Table: 1. Distributions of Public Healthcare Facilities

<table>
<thead>
<tr>
<th>Hoblis</th>
<th>Population</th>
<th>PHC’s</th>
<th>PHC pop served</th>
<th>SC’s</th>
<th>SC pop served</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hanagodu</td>
<td>64326</td>
<td>8</td>
<td>1:8040</td>
<td>19</td>
<td>1:3385</td>
</tr>
<tr>
<td>Hunsur</td>
<td>84858</td>
<td>4</td>
<td>1:21214</td>
<td>26</td>
<td>1:3263</td>
</tr>
<tr>
<td>Bilikere</td>
<td>64051</td>
<td>5</td>
<td>1:12810</td>
<td>15</td>
<td>1:4270</td>
</tr>
<tr>
<td>Gawdagere</td>
<td>40691</td>
<td>4</td>
<td>1:10172</td>
<td>13</td>
<td>1:3130</td>
</tr>
<tr>
<td>Total</td>
<td>253926</td>
<td>21</td>
<td>1:12091</td>
<td>73</td>
<td>1:3478</td>
</tr>
</tbody>
</table>

Source: District Health Office, Mysore

As per Government of India, National Rural Health Mission (NRHM) policy the population norms for the provision of Sub-Centres, PHC’s and Community Health Centres 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. High concentration of PHC’s are located in Hanagodu hobli (8), serving the population at the ratio of 1:8040, followed by Bilikere hobli (5) with the serving population ratio of 1:12810. Hunsur and Gawdagere hoblis have 4 PHC’s each with serving population ratio of 1:21214 and 1:10172 respectively. The highest and lowest numbers of sub-centres are located in Hunsur (26) and Gawdagere (13) with serving population ratio of 1:3263 and 1:3130 respectively. Hanagodu and Bilikere hoblis have 19 and 13 sub centres,
serving the population ratio of 1:3385 and 4270 respectively (Table No 1). Though there are regional imbalances in the distribution of healthcare centres among hoblis of Hunsur taluk, the available health centres are satisfactory according to NRHM norms.

**Figure: 2 Locations of Health Centres in Hunsur Taluk**

HEALTH WORKFORCE:
The responsibility of healthcare centres is two-fold, (i) Providing skilled medical staff in the hospitals and (ii) Realization of Millennium Development Goals of improving healthcare facilities to reduce the different kinds of diseases. One of the pivotal factors to sustain the projected growth of the healthcare industry in India would be the availability of a trained workforce, besides cheaper technology, better infrastructure etc… worldwide shortage of doctors, nurses and paramedical staff has led to an exodus of such manpower from India. A major challenge for our nation and the healthcare industry would be not only to remain the health workforce but also to develop an environment which would attract those abroad and return. The following table shows the ratio between population and health workforce.

**Table: 2, Populations and Health Workforce:**

<table>
<thead>
<tr>
<th>Hoblis</th>
<th>Population</th>
<th>Doctors</th>
<th>Nurses</th>
<th>ANM’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hanagodu</td>
<td>64326</td>
<td>1:7147</td>
<td>1:8040</td>
<td>1:4288</td>
</tr>
<tr>
<td>Hunsur</td>
<td>84858</td>
<td>1:8485</td>
<td>1:21214</td>
<td>1:2357</td>
</tr>
<tr>
<td>Bilikere</td>
<td>64051</td>
<td>1:12810</td>
<td>1:12810</td>
<td>1:6405</td>
</tr>
<tr>
<td>Gawdagere</td>
<td>40691</td>
<td>1:10172</td>
<td>1:10172</td>
<td>1:4069</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>253926</strong></td>
<td><strong>1:9068</strong></td>
<td><strong>1:3576</strong></td>
<td><strong>1:3576</strong></td>
</tr>
</tbody>
</table>

Source: District Health Office, Mysore.

The average ratio between population served and health workforce among doctors, nurses and ANM’s are 1:9068, 1:3576 and 1:3576 respectively (Table No 2). Among the four hoblis, the highest population is concentrated in Hunsur hobli (84858). The health workforce comprises of 10 doctors, 4 nurses, 36 ANM’s with the ratio of 1:8485, 1:21214, 1:2357.

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respectively. Hunsur hobli is followed by Hanagodu hobli having the population of 64326. The health workforce of this hobli includes 8 doctors, 8 nurses and 15 ANM’s with the ratio of 1:7147, 1:8040, and 1:4288 respectively. Bilikere hobli is at 3rd rank in terms of population (64051), the health workforce of this hobli includes 5 doctors, 5 nurses, 10 ANM’s with the ratio of 1:12810, 1:12810, 1:6405 respectively. Gawdagere hobli having smallest area with the population of 40691. The health workforce includes 5 doctors, 5 nurses, 10 ANM’s with the ratio of 1:10712, 1:10712 and 1:4069 respectively.

**Figure-3 Population Served By Health Workforce in Hunsur Taluk**

![Population Served By Health Workforce in Hunsur Taluk](image)

**SUGGESTIONS AND CONCLUSION**

By analyzing in the study area we can identify some difficulties in the distribution of medical system and the availability of services. Healthcare facilities are not increasing with the population, this creates gap between the ratio of population and healthcare facilities.

Though, in general the ratio of healthcare facilities and health workforce fit according to NRHM norms, but the ratio of healthcare facilities and health workforce varies from hobli to hobli.

The healthcare facilities in Hunsur hobli serving more population while as Hanagodu hobli serving less population. The health workforce in Bilikere hobli serving more population while as Hunsur hobli serving less population.

There is problem of deficiency in the modern technologies for the emergency services in the taluk hospital. There is no single blood bank in entire taluk. For this people mainly depend on K.R. Hospital of Mysore taluk.

Healthcare facilities in Hunsur taluk should be upgraded by providing basic facilities to the taluk hospital increase the services to the people, providing modern medical techniques, appointment of experienced doctors, increase in the number of nurses, appointment of lab technicians etc...

If all the above suggestions are come into force, it is possible to turn Hunsur taluk as a best health service providing taluk.

**REFERENCES**

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