

A GEOGRAPHICAL ANALYSIS OF MEDICAL CENTRES IN SALCETE TALUKA-GOA

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Abstract

Geographers are much concerned about the environment. The unhygienic conditions have been prevailing in the environment influenced by the man's activities. As a result, the health care concept has created much awareness in the society. Therefore, the attempt has been made in this paper to study the distributional pattern of medical centres their locational characteristics and threshold of area served by the medical facilities in the Salcete Taluka of Goa. Directorate of Health Services (DHS) has played an important role in the provision and administration of health services. In order to raise the quality, extend accountability and deliver the services fairly, effectively and courteously, Citizen's Charter for the Directorate of Health Services has been prepared. Geographical considerations play a crucial role in influencing health. Geography may directly affect an individual's health status, through environment or less tangible geographical effects such as an area's social capital; geography may play an important role in the nature of health care delivered, through historical and cultural inheritances and regional price variations; and the geographical distribution of health care facilities may affect utilisation, through differential opportunity of access to services. The present paper aims to study infrastructural facilities and hierarchical order of medical centres in Salcete Taluka of Goa. The attempt has been made in the present paper is to study the functions of rural and urban medical centres. The spatial distributions and their functions are responsible for spatial movement and organization. Higher population size centres provides more complex facilities.

Key words: Hierarchy, Tangible, Health, Spatial Distribution and Infrastructure,

Introduction

Recently, the infrastructural facilities are gaining much significance in the modern world under globalization, liberalization and privatization. Infrastructural facilities are a boon in any geographical regions. Modernisation, computerisation, industrialisation, urbanisation and migration have also become key factors for development of infrastructural facilities. This type of process has been going on in many countries in the world. Even India is also not an exception in this respect. The infrastructural facilities are largely depends upon the economic growth. Today, Goa is making an effort to provide the required infrastructural facilities and to make all settlements leading ones. The availability of resources and feasibility are also taken into account as per the needs of the people in the respective regions.

All human activity requires input of energy in some form or the other. As industry, trade and commerce develop the demand for energy and means of transport grows rapidly. In recent decades, there have been dramatic advances in information technology and telecommunications, which have become essential requirements of the business and finance sector in a modern economy. Good infrastructural facilities help raise productivity and lower productions cost.

The term *infrastructure* has different connotations. Broadly, it has two components-economic and social. The economic component includes energy, transport and telecommunication. The social component which is aimed at improving the quality of human capital includes education, health, basic requirements, like water, sanitation, marketing, and others.

Investment in the former has an almost immediate impact whereas human resource development requires a longer time frame.

The analysis of spatial distribution of social infrastructural facilities according to the size of settlements helps to identify the spatial gaps. This is an important aspect of their locational studies as the human settlements produce a certain degree of order in their distributional pattern over the space and this in some way reflects the conditions and functional relations among settlements. The analysis of existing spatial organisation of social amenities is necessary for the area under study. The nature of infrastructural facilities required for social well-being varies according to the level of general development of the region in general and of the settlement in particular.

Objectives of the study

The specific objectives for the present study area are:- to identify health care facilities in the Taluka. to trace out the historic evidences pertaining to origin and evolution of health care facilities in the Taluka. to discern the distributional pattern of health care facilities in the Taluka.

Hypothesis

The following hypotheses have been formulated to give a direction to the research and to make the conclusions more effective. It is hypothesized that..... the distributional pattern of health care facilities are the outcome from geo-socio-economic characteristics. the health care facilities provide not only an awareness but also help for quality life. the functions of health care facilities are largely depends upon of infrastrucral facilities.

Data base and methodology

It is needless to mention that, a strong data base is necessary for any systematic study; where in the validity of many of the theoretical considerations are tested. Therefore, the attempt has been made here to bring out spatial distribution dimensions of the health care facilities of the Salcete Taluka. The confined work is an outcome of exhaustive primary and secondary data, reference studies, case studies discussion with concerned authorities, and more over by geography scholars. Data related to medical facilities were collected from Directorate of Health Services, District Hospital, Urban Centres, etc. The *Centrality Index* is also employed to determine the hierarchy of medical facilities with the help of the weightages and accordingly the analysis has been made.

Study area

Salcete Taluka comes under the jurisdiction of South Goa district of Goa State. It is bounded by turbulent Zuari on the East, Marmagoa bay on the North, the foam filled water of the Arabian Sea on the Western front and foot hills of the Sahayadries on the South. It covers an area of 292.9 sq km and is located along coast of Arabian Sea. Its adjoining talukas are Marmagoa, Ponda and Quepem, it is also the headquarters of South Goa district. People from this area practice various economic activities like fishing, cultivation, livestock, manufacturing trade and commerce construction and other services.

Demographic characteristics of the study area

Konkani is the Local Language. People also speak Marathi, Hindi, and English & Portuguese. Total population of Salcete Taluka is 2, 94,464 living in 71,717 Houses, Spread across total 35 villages and 30 2 Municipalities, in all 30 Panchyats are seen the taluka.

Total Males are 1, 45,448 and Females are 1, 49,016, total 2, 12,464 people's lives in towns and 82,000 lives in Villages (2011).

The decadal growth rate is a vital part of Census operations. This gives an overview of the percentage of total population growth in a particular decade. Hence, it is termed as "Decadal Growth Rate".

Table 1. Growth of population of Salcete taluka

Year	Total Population	Absolute Growth	Percentage Growth
1900	98740	-	-
1910	101581	2841	2.87
1921	100842	-739	-0.72
1930	109447	8605	8.53
1940	115508	6061	5.53
1950	118585	3077	2.66
1960	117994	-591	-0.49
1971	155676	37682	31.55
1981	193755	38079	24.46
1991	219897	26142	13.49
2001	259787	39890	18.14
2011	294464	34677	13.34

Source: Census of India 1900-2011

The table 1 shows that, in the initial decades, the population growth for Salcete was low and inconsistent. 1900-1910 decade recorded an increase of 2,841 persons giving a percentage of 2.87. During 1921 and 1960 there was sudden decrease of population showing negative growth. In 1950's there was mass exodus economic blockade by the Indian Union and economic crisis. The Post liberation era i.e. 1971 and 1981 witnessed a sudden surge in population growth. Slowly but surely the decadal growth rate of Population in Salcete is declining for the Census year 2001-2011. There is not variation as compared to previous data. In the post liberation era, government initiatives of socio-economic development acted as centrifugal force for immigration. Therefore the urban growth rate exceeded 30% and thereafter it has been consistent above 20%. Today, Salcete is a composite as urban agglomeration of Margao and many small towns like Navelim, Cuncolim, Benaulim, Chinchinim, and Varca etc. Studies concerned with occupational structure especially in Goa and study area, have received a greater important in recent year. At 2011 census there has been a 3 fold classification of the population namely Main workers, Marginal worker and Non-worker.

This classification is based on nature of productive and economic activity and the extent of participation in work. Salcete Taluka is still dominated by primary activities, in this region noted for the production of Paddy, Cashew Nut, Sugarcane etc.

Table 2. distribution of economic activities of Salcete taluka

Year	Primary activity	Secondary activity	Tertiary activity
1971	35.63	13.97	50.08
1981	17	12	71
1991	8.02	16.43	75.06
2001	5.88	10.46	83.53
2011	3.64	8.79	87.57

Source: Census of India 1971-2011

The occupation of 1971 and 2011 shows variation in 1971 nearly half the population were engaged in primary and secondary occupation and 50 percent of the population were engaged in tertiary activities but there was increase in the level of urbanization in 2011 there was shift from primary and secondary occupation to tertiary and 80 percent of the population were engaged in tertiary activities. Transportation plays an important role in rapid socio-economic development of region. Improved and effective transportation is indispensable for economic progress. The Salcete Taluka transport map shows that almost all the villages are connected with kaccha road or pakka road. Salcete Taluka has a good network of roads which connects all villages of Salcete Taluka. The National Highway, State Highway, District Roads, Other Road and Railways have well connected. The National highway 17 passes through the Taluka connecting villages of Nagoa, Verna, Nuvem, Margao, Navelim, Chinchinim, Cuncolim and straight to Panjim. Salcete Taluka has a total length of 488.3 km out of which 206.5 km are surfaced roads and 281.8 km are of unsurfaced roads of which 150.10 km consists of motorable and 131.70 km of unmotorable roads. The south Central railway connects Salcete to Mormugao taluka in North and Sanguem taluka in East. Konkan Railway is passes through the taluka. Margao is the main railway junction in the taluka. There is a good network of bus transport, both private and govt bus services are available on these routes.

Spatial distribution of health care facilities in Saclete taluka

The Infrastructure is a broad concept linked to every facet of the economy and human life. One aspect of infrastructure development is to build new assets and maintain the existing ones; another is to deliver infrastructure services. Health, transport, telecommunications, energy, and water have become part and parcel of human existence. These are central to the household life and economic production. It is difficult to imagine a modern world without them. Lack of such infrastructure facilities is considered to be a major structural weakness that holds back economic growth and development. It is often said that infrastructure can be considered the “wheels” of economic growth. Furthermore, infrastructure also helps to spread the benefits of growth, which makes the development process more inclusive.

Today, the attention has been paid to improve the infrastructures which were the possibility and feasibility by the government. As results, it is quite but natural that there will be an improvement and it may lead to enhance the socio-economic conditions supported by the resources and locational aspects. The spatial distribution of these facilities is mainly the outcome of the physio-cultural aspects of the region. Hence, it is noticed that variations in the existing environment result into changing the socio-economic conditions of the people. The population size and functional levels are responsible for urban and rural settlements, and are determining the occupations based on the available resources. A brief account of the function provided as public utility services will be of great use in understanding their importance and distribution in medical facilities of settlements of varying sizes and functional base.

Medical facilities

Health is important in terms of its association with energy or efficiency of human beings; it is a basic human right. These facilities play a vital role in maintaining the body of human resources and these facilities can be regarded as an important indicator of social and economic well being. In terms of availability of health facilities in the study region, government has tried its level best to provide these facilities to every citizen. Health is an important aspect of the social development of any region. The easy availability of medical

facilities is an indicator of relatively better level of development. The suffering of human beings is related more to diseases than to other medical facilities that reduce physical suffering and enhance longevity of life. The quantity and quality of medical care facilities available in the State vary from Sub Centres to organised, sophisticated and advanced health care units. The facilities of health units determine the quality of people as well as the advancement of the State. The medical facilities selected for the research are, Health Service Sub-centre, Rural Medical Dispensary, Maternity and Child Welfare Centre, Child Welfare Centre, Maternity Home, Dispensaries, Nursing Home, Primary Health Centre, Urban Health Centre, TB Clinic and District Hospital.

Concept of hierarchy

Basically, the concept of hierarchy was introduced by Walter Christaller (1933), a German Economic Geographer in his well known Central Place Theory. The word "Hierarchy" is not a geographical term. Hierarchy is a universal phenomenon due to variation in size and functions. The gradation and grouping the settlement centres into the size of classes is termed as hierarchy. The concept of hierarchy is fundamental to the central place theory. In India, different scholars have employed several methods to identify growth centers, using various central functions in a place. Jain (1971) studied 'urban hierarchy and telephone services in Vidarbha (Maharashtra). The method may be correct theoretically, but it does not serve the purpose of dealing with growth centres and integrated area development where the single indicator tends to make the role of other indicators particularly centrality in the region. Sen (1971) identified growth centres in Raichur District of Karnataka and (1975) used the population size and amenities for Vidarbha region. Bhat (1976) considered social amenities for Karnal District, Jana and Bagechi (1978) identified services and growth centres in Silabati basin.

Hierarchical order of medical facilities

Settlements are differing in size and functions based upon physio-historic and socio-economic conditions, but they can be graded and grouped in the hierarchical order in any regional set up. The spatial organisation of medical facilities and their orders distributed in geographic space is the main consideration in the present study. Hence, the gradation and re-grouping of the medical facilities into of size classes is termed as hierarchy. There are number of scholars who have used different parameters for determining the hierarchy of medical facilities. The multiplicity of several methods that have been used in determining the hierarchy of medical facilities necessitated a brief review in the Indian Context. Hence, an attempt is made here to discuss some of the methods which are relevant to the present study. Further, there were some studies based on extensive field work and the reliability of the data was always questionable.

Note; HSC=Health Sub-Centre, RMD=Rural Medical Dispensary, MCW=Maternity and Child Welfare, CWC=Child Welfare Centre, MH=Maternity Home, D=Dispensary, NH=Nursing Home, PHC=Primary Health Centre, UHC=Urban Health Centre, OTH=Others, DH=District Hospital.

Determination of hierarchy

To determine the hierarchy of any settlement, it is essential to adopt the concept of centrality of places. The centrality of settlement as growth centre is indicated by the number of services it provides and proportion of these services supported by the population. Davis

(1962) highlighted four techniques of measuring the centrality of service centers and has been measured by the different scholars in different geographical regions. As for the convenience of the researcher, classifications of health centres various medical facilities were taken into consideration in the present study. The selected parameters have been assigned the weightages as per the Christaller's Central Place theory. Accordingly, each function of all settlements weightages has been calculated. On the basis of this the Composite Index has been calculated, the hierarchy is determined to know the level of hierarchical order of settlements.

Table 3. Medical facilities in Salcete taluka

S.No	Village settlement	1 HSC	2 RMD	3 MCW	4 CWC	5 MH	6 D	7 NH	8 PHC	9 UHC	10 OTH	11 DH
1	Adsulim	0	0	0	0	0	0	0	0	0	0	0
2	Ambelim	1	0	0	0	0	1	0	0	0	0	0
3	Aquem	1	0	0	0	0	10	0	0	0	0	0
4	Assolna	0	0	0	0	0	3	0	0	0	0	0
5	Benaulim	0	0	0	0	0	2	0	0	0	1	0
6	Betalbatim	0	0	0	1	0	1	0	0	0	0	0
7	Calata	0	0	0	0	0	1	0	0	0	0	0
8	Camurlim	0	0	0	0	0	1	0	0	0	0	0
9	Cana	0	0	0	0	0	0	0	0	0	0	0
10	Carmona	1	0	0	0	0	4	0	0	0	0	0
11	Cavelossim	1	0	0	0	1	3	0	0	0	0	0
12	Cavorim	0	0	0	0	0	2	0	0	0	0	0
13	Chandor	1	0	0	0	0	3	0	0	0	0	0
14	Chinchinim	1	0	0	0	0	3	1	1	0	0	0
15	Colva	0	0	0	0	0	2	0	0	0	0	0
16	Cuncolim	0	0	0	0	0	6	0	0	0	1	0
17	Curtorim	0	0	1	0	1	1	0	1	0	2	0
18	Davorlim	1	0	0	0	0	8	0	0	0	0	0
19	Deussua	0	0	0	0	0	1	0	0	0	0	0
20	Dicarpale	0	0	0	0	0	4	0	0	0	0	0
21	Dramapur	1	0	0	0	0	1	0	0	0	0	0
22	Duncolim	0	0	0	0	0	1	0	0	0	0	0
23	Gandaulim	0	0	0	0	0	0	0	0	0	0	0
24	Gonsua	0	0	0	0	0	0	0	0	0	0	0
25	Guirdaulim	0	0	0	0	0	3	0	0	0	0	0
26	Loutulim	1	0	0	0	0	3	0	1	0	2	0
27	Macazana	1	0	0	0	0	2	0	0	0	1	0
28	Majorda	0	0	0	0	0	2	0	0	0	0	0
29	Margao	0	0	0	0	0	68	6	0	1	18	1
30	Mulem	0	0	0	0	0	3	0	0	0	0	0
31	Nagao	0	0	0	0	0	1	0	0	0	0	0
32	Navelim	1	0	0	0	0	9	0	0	0	1	0
33	Nuvem	1	0	0	0	0	1	0	0	0	0	0
34	Orlim	0	0	0	0	0	2	0	0	0	0	0
35	Paroda	0	0	0	0	0	0	0	0	0	0	0
36	Rachol	1	0	0	0	0	2	0	0	0	0	0
37	Raia	1	0	0	0	0	6	0	0	0	0	0
38	Sao jose de areal	1	0	0	0	0	8	0	0	0	0	0
39	Sarzora	1	0	0	0	0	0	0	0	0	0	0
40	Seraulim	0	0	0	0	0	3	0	0	0	0	0
41	Sernabatim	0	0	0	0	0	1	0	0	0	0	0
42	Sirlim	0	0	0	0	0	1	0	0	0	0	0
43	Talaulim	0	0	0	0	0	2	0	0	0	0	0
44	Utorda	0	0	0	0	0	1	0	0	0	0	0
45	Vanelim	0	0	0	0	0	1	0	0	0	0	0
46	Varca	1	0	0	0	0	3	0	0	0	0	0
47	Velim	0	0	0	0	0	2	0	0	0	0	0
48	Verna	0	0	0	0	0	3	0	0	0	1	0
	Total	17	0	1	1	2	185	7	3	1	27	1

Source; Personal Computation, 2014

Table 4. Weightages.

S.No	Particulars	Weightages
1	Health Sub-Centre	1
2	Rural Medical Dispensary	2
3	Maternity Child Welfare	3
4	Child Welfare Centre	4
5	Maternity Home	5
6	Dispensary	6
7	Nursing Home	7
8	Primary Health Centre	8
9	Urban Health Centre	9
10	Other Hospitals	10
11	District Hospital	11

The mathematical expression to calculate the centrality index is as follows:

$CI = \frac{Os}{Mx} \times 100$ whereas, CI=Centrality Index of Settlement, Os=Observed or weighted composite score, Mx=Maximum weighted score.

By using the above mentioned expression, the centrality index was calculated for all the settlements of the study region and they were classified into five groups or orders by considering the suitable breaks (Table 3)

The presence of medical facilities and medical activities are of prime concern to depict the proportion of economic activities and limited people involved in medical activities. Except Margao, other settlements do not contribute for the medical activities in the study area. Even though other municipal council and other census towns also do not compete with Margao, it is due to easy accessibility and the other factors that, people can afford to visit nearer District Head Quarter i.e. Margao.

In the present study in all four categories of hierarchical order of the settlements are noticed, the Composite Index values are falls between 0.00 and 100.00. Margao is the 1st Order Settlement, followed by Navelim (IInd Order). In all 41 (85.42%) settlements fall in the IIIrd category, and remaining 5 (10.42%) settlements falls under the last category i.e. IVth category. The settlements which are in the last category witnessed no medical infrastructural facilities, here Government and NGO's should take care about the local people, and provide minimum medical services. The above statement does not mean that, people of these settlements are not deprived by health care facilities, because Margao is easily accessible to all the people of the taluka, people from other taluka are getting service from the Margao.

Planning strategy

To propose a future plan for further plan for future development, it requires a planning strategy. A strategic plan is a tool that provides guidance in fulfilling a mission with maximum efficiency and impact. If it is to be effective and useful, it should articulate specific goals and describe the action steps and resources needed to accomplish them. There is no proper model to prepare a planning strategy, which is applicable to each and every geographical region either at the micro level or at the macro level. Therefore, an attempt has been made in this study to have an effective spatial planning strategy.

Strategic planning is the core of the work of an organisation. Without a strategic framework it is very difficult to develop any region. As authorities cannot take measures to overall development. Every country/state needs to plan strategically as well as operationally and to make a distinction between the two. One really needs some ideas to help to develop the region in all aspects, which involves a plan of strategic planning process.

To achieve the goal of the study, the planning strategy is very much essential. A strategy is an overall approach, based on an understanding of the broader context in which regions positive and negative infrastructure study involves the problems that t Planning is about preparing for the future perspective point of view, to achieve them by designing strategy with resources base. Salcete taluka is well endowed with manpower resources, urbanization, industrialisation; mostly settlements are well connected with good transport connectivity, known for tourism industry, because of few famous beaches which attract domestic as well as international tourist. Hence, a planning strategy is prepared in the following table.

Table 5. Salcete: medical hierarchy (2011) weightages on parameters

S.No	Name of the Settlement	CI	COI	HO
1	Adsulim	00.00	00.00	IV
2	Ambelim	07.00	1.08	III
3	Aquem	61.00	9.38	III
4	Assolna	18.00	2.76	III
5	Betalbatim	22.00	3.38	III
6	Benaulim	10.00	1.53	III
7	Calata	06.00	0.92	III
8	Camurlim	06.00	0.92	III
9	Cana	00.00	00.00	IV
10	Carmona	25.00	3.84	III
11	Cavelossim	24.00	3.69	III
12	Cavorim	12.00	1.84	III
13	Chandor	19.00	2.92	III
14	Colva	34.00	5.23	III
15	Curtorim	12.00	1.84	III
16	Chinchinim	46.00	7.07	III
17	Cuncolim	42.00	6.46	III
18	Deussua	49.00	7.53	III
19	Dicarpale	06.00	0.92	III
20	Dramapur	24.00	3.69	III
21	Duncolim	07.00	1.07	III
22	Davorlim	06.00	0.92	III
23	Gandaulim	00.00	00.00	IV
24	Gonsua	00.00	00.00	IV
25	Guirdolim	18.00	2.76	III
26	Loutulim	47.00	7.23	III
27	Macazana	23.00	3.53	III
28	Majorda	12.00	1.84	III
29	Margao	650.00	100.00	I
30	Mulem	18.00	2.76	III
31	Nuven	06.00	0.92	III
32	Navelim	65.00	10.00	II
33	Nagoa	07.00	1.07	III
34	Orlim	12.00	1.84	III
35	Paroda	00.00	00.00	IV
36	Rachol	13.00	2.00	III
37	Raia	37.00	5.69	III
38	Sarzora	49.00	7.53	III
39	Savo Jose de Areal	01.00	0.15	III
40	Seraulim	18.00	2.76	III
41	Sernabatim	06.00	0.92	III
42	Sirlim	06.00	0.92	III
43	Talaulim	12.00	1.84	III
44	Utorda	06.00	0.92	III
45	Varca	06.00	0.92	III
46	Velim	19.00	2.92	III
47	Vanelim	12.00	1.84	III
48	Verna	28.00	4.30	III

Source; Personal Computation, 2014

Table 5. Strategic Planning

Level of Hierarchy	Name of the Settlement	Existing Facilities	Proposed Facilities.
IV	Adsulim	Not available.	RMD, D,
IV	Ambelim	SSC,D	OTH
IV	Aquem	SSC,D	OTH
IV	Assolna	D	SSC,OTH
IV	Betalbatim	CWC,D	SSC,OTH
IV	Benaulim	D,OTH	SSC,NH
IV	Calata	D	CWC,MH
IV	Camurlim	D	NH,OTH
IV	Cana	No available	D,SSC
IV	Carmona	SSC,D	NH,OTH
IV	Cavelossim	SSC,MH,D	OTH
IV	Cavorim	D	OTH
IV	Chandor	SSC,D	NH
IV	Colva	D	MH
IV	Curtorim	MCW,MH,D,PHC,OTH	SSC
IV	Chinchinim	SSC,D, NH, PHC	OTH
III	Cuncolim	D,OTH	RMD
IV	Deussua	D	NH,SSC
IV	Dicarpale	Not available	SSC,D
IV	Dramapur	SSC,D	RMD
IV	Duncolim	D	SSC
IV	Davorlim	SSC,D	RMD,MH
IV	Gandaulim	D	SSC
IV	Gonsua	Not available	D,SSC, NH
IV	Guirdolim	Not available	D,SSC
IV	Loutulim	SSC,D,PHC,OTH	RMD
IV	Macazana	SSC,D,OTH	NH,CWC
IV	Majorda	D	OTH
I	Margao	NH,UHC,OTH,DH	Multiply the existing facilities
IV	Mulem	D	SSC
IV	Nuvem	SSC,D	OTH,RMD
II	Navelim	SSC,D,OTH	Hi Fi Medical Facilities
IV	Nagoa	D	SSC
IV	Orlim	D	SSC
IV	Paroda	Not available	SSC,D,
IV	Rachol	SSC,D	OTH
IV	Raia	SSC,D	OTH,NH,RMD
IV	Sarzora	SSC	D,OTH
IV	Savo Jose de Areal	SSC,D	OTH,CWC
IV	Seraulim	D	SSC
IV	Sernabatim	D	SSC,OTH
IV	Sirlim	D	SSC,RMD
IV	Talaulim	D	SSC,OTH
IV	Utorda	D	SSC
IV	Varca	SSC,D	OTH,NH
IV	Velim	D	SSC,RMD
IV	Vanelim	Not available	SSC,D
IV	Verna	D	SSC,OTH

Source; Personal Computation, 2014

Features of hierarchy

The hierarchical order does not agree with the natural breaks of population ranking. Mulimani (2006) observed a similar phenomenon his studies on Raichur district of Karnatak. But in the study area, Margao being taluka as well as district headquarter, and stood first in the total weightages. Hence, it is first order settlement, followed by Navelim, which is second order settlement, since Navelim is close proximity of District Headquarter, i.e. Margao. Though Cuncolim Municipal Council is second number in terms of population, but stand third order settlement. Majority of the settlement i.e. 41 (forty one) are third order settlements;

remaining 5 (five) are fourth order settlements. However, the hierarchy of that evolved in the study area is an outcome of combined effects of geographical, historical, socio-economic and political factors related to administration and religious aspects.

Findings and Conclusion

During the research time many things were noticed to researchers, they are listed as follows; Margao being taluka as well as district head quarter all medical facilities are concentrated within this municipal council. In terms of hospitals, medical shops, availability of doctors. Study area required still more Primary Health Centres, because the ration is 1:16, it should be reduced to 1:8, (another 3 more PHC's should be added). Though the availability of medical shops ratio is 1:3.25, As for as specialised hospitals are concerned, taluka is still lagging behind, Poor sanitation is the major problem in all the medical institutions.

Conclusion

It is often said that infrastructure can be considered the “wheels” of economic growth. In terms of health care facilities, taluka has made considerable progress in the last five decades (after liberation in 1961). As a result, high economic growth and improved living standards were realized. Health, transport, telecommunications, energy, and water have become part and parcel of human existence. Furthermore, infrastructure also helps to spread the benefits of growth, which makes the development process more inclusive.

References

- Angle P.S.**, 2001., Goa: an Economic Update, The Goa Hindu,
Akhtar and Izhar., 1978., The availability of health care facilities in Rajasthan
Bhat L.S., 1976., Micro-level planning; A case study of Karnal, Haryana. K.B. Publication, New Delhi
Census of India., 2011., District Census Hand Books, Directorate of Census Operations, Goa.
Chattarjee., 1988., Unequal distribution of health services in Indian States.
Deshmukh P.W., 1985., The Location of Science Activities, A study of Central Places in Upper Krishna Valley, Ajab Pustakalaya, Kolhapur.
Lear month., 1961., Geography of Health Care.
Mulimani A.A., 2006., Integration of Periodic Markets and Rural Development of Raichur District, *The Deccan Geographer*, Vol, 44, No, 2. Pp.67- 72
Sen L.K., 1971., Planning for rural Growth Centres for Integrated Area Development-A study in Miryalguda Taluka, NICD, Hyderabad, pp.80.
Shinde., 1988., The regional disparities in the medical facilities available in Maharashtra.
Strassburge., 1973., The availability of Health Care Facilities in a South Indian State of Tamil Nadu,
Zurbrigg., 1984., Inequality in Indian health care system by taking distribution health resources