

Vol III Issue II March 2013

Impact Factor : 0.2105

ISSN No : 2230-7850

---

Monthly Multidisciplinary  
Research Journal

*Indian Streams  
Research Journal*

Executive Editor

Ashok Yakkaldevi

Editor-in-chief

H.N.Jagtap

---

**IMPACT FACTOR : 0.2105**

**Welcome to ISRJ**

**RNI MAHMUL/2011/38595**

**ISSN No.2230-7850**

Indian Streams Research Journal is a multidisciplinary research journal, published monthly in English, Hindi & Marathi Language. All research papers submitted to the journal will be double - blind peer reviewed referred by members of the editorial Board readers will include investigator in universities, research institutes government and industry with research interest in the general subjects.

### ***International Advisory Board***

Flávio de São Pedro Filho Federal University of Rondonia, Brazil	Mohammad Hailat Dept. of Mathematical Sciences, University of South Carolina Aiken, Aiken SC 29801	Hasan Baktir English Language and Literature Department, Kayseri
Kamani Perera Regional Centre For Strategic Studies, Sri Lanka	Abdullah Sabbagh Engineering Studies, Sydney	Ghayoor Abbas Chotana Department of Chemistry, Lahore University of Management Sciences [ PK ]
Janaki Sinnasamy Librarian, University of Malaya [ Malaysia ]	Catalina Neculai University of Coventry, UK	Anna Maria Constantinovici AL. I. Cuza University, Romania
Romona Mihaila Spiru Haret University, Romania	Ecaterina Patrascu Spiru Haret University, Bucharest	Horia Patrascu Spiru Haret University, Bucharest, Romania
Delia Serbescu Spiru Haret University, Bucharest, Romania	Loredana Bosca Spiru Haret University, Romania	Ilie Pintea, Spiru Haret University, Romania
Anurag Misra DBS College, Kanpur	Fabricio Moraes de Almeida Federal University of Rondonia, Brazil	Xiaohua Yang PhD, USA
Titus Pop	George - Calin SERITAN Postdoctoral Researcher	Nawab Ali Khan College of Business Administration

### ***Editorial Board***

Pratap Vyamktrao Naikwade ASP College Devrukh,Ratnagiri,MS India	Iresh Swami Ex - VC. Solapur University, Solapur	Rajendra Shendge Director, B.C.U.D. Solapur University, Solapur
R. R. Patil Head Geology Department Solapur University, Solapur	N.S. Dhaygude Ex. Prin. Dayanand College, Solapur	R. R. Yaliker Director Managment Institute, Solapur
Rama Bhosale Prin. and Jt. Director Higher Education, Panvel	Narendra Kadu Jt. Director Higher Education, Pune	Umesh Rajderkar Head Humanities & Social Science YCMOU, Nashik
Salve R. N. Department of Sociology, Shivaji University, Kolhapur	K. M. Bhandarkar Praful Patel College of Education, Gondia	S. R. Pandya Head Education Dept. Mumbai University, Mumbai
Govind P. Shinde Bharati Vidyapeeth School of Distance Education Center, Navi Mumbai	Sonal Singh Vikram University, Ujjain	Alka Darshan Shrivastava Shaskiya Snatkottar Mahavidyalaya, Dhar
Chakane Sanjay Dnyaneshwar Arts, Science & Commerce College, Indapur, Pune	G. P. Patankar S. D. M. Degree College, Honavar, Karnataka	Rahul Shriram Sudke Devi Ahilya Vishwavidyalaya, Indore
Awadhesh Kumar Shirotriya Secretary, Play India Play (Trust),Meerut	Maj. S. Bakhtiar Choudhary Director,Hyderabad AP India.	S.KANNAN Ph.D , Annamalai University,TN
	S.Parvathi Devi Ph.D.-University of Allahabad	Satish Kumar Kalhotra
	Sonal Singh	

**Address:-Ashok Yakkaldevi 258/34, Raviwar Peth, Solapur - 413 005 Maharashtra, India  
Cell : 9595 359 435, Ph No: 02172372010 Email: ayisrj@yahoo.in Website: www.isrj.net**



## SPATIAL DISPARITIES OF HEALTH CARE FACILITIES IN MANIPUR

LUCKYSON R. PANMEI

Research Scholar, Geography Department, Manipur University, India.

### Abstract:

*Health care facilities are not evenly distributed and access to health care differs across countries, groups and individuals, largely influenced by social and economic conditions as well as the health policy of a place. The existing trends of development in the state show the sense of more urbanisation and better development of health care facilities mostly concentrated in the valley areas, where, there is high accessibility level, better road connectivity, better socio-economic status, etc. most of the hill districts are devoid of such facilities. The health care facilities of the valley and the hill districts are not the same as far as the quality and the order of services they deliver are concerned. Mere existence of healthcare facilities does not reflect the accessibility of the population to health care. The distance between the facilities and the population as well as the evenness in their distribution are also important factors affecting accessibility. The present study highlighted the imbalances in the availability of health care facilities in different region of the state. There is a wide gap in the functioning of the health care centre between hill and valley districts. Although considerable growth in health care facilities has been recorded, the uneven distribution and non-functioning of health centres in some districts resulted in disparities in the spatial distribution of healthcare facilities, which is more pronounced in the hill districts of Manipur. The present paper is an attempt to discuss and visualise the factors responsible for the disparities of health care facilities in the state.*

### KEYWORDS-

Health care, disparity, accessibility, distribution, facility.

### INTRODUCTION

Health care facilities are not evenly distributed and access to health care differs across countries, groups and individuals, largely influenced by social and economic conditions as well as the health policy of a place. Differential access to health care is one contributor to disparities in health care. Examining health care disparities is an integral part of improving health care quality. Health care disparities are the differences or gaps in care experienced by one population compared with one another population (Health Disparities Report US 2008).

The health care system in Manipur is based upon the Primary Health Care approach as envisaged by the National Health Policy of 1983 with the objective for attainment of "Health for All" and "All for Health". The health care delivery systems in the state is organised at three levels; primary care level, secondary care level and tertiary level, each level supported by a referral centre. Primary care level for the state comprises 80 PHC, 420 PHSC and 20 dispensaries. Essential basic health care is provided at this level. Secondary care level, comprising of 7 general district hospitals, 16 CHC and 2 UHC as referral centres where comparatively complex curative services are provided with basic specialist facilities. In the tertiary

care level, specialist and super specialist care are provided. It includes the State level hospitals JNIMS and RIMS (Administrative report 2011-12, Directorate of Health Manipur).

The health care facilities in Manipur are not spatially distributed equally. The state being a hilly state, most of the hill districts are characterised by hilly terrain and inaccessible remote regions, whereas, the plain areas in the valley districts particularly Imphal west, health care are easily accessible and there are numerous health institutions run by the state Government and private. To study the disparities of the healthcare facilities, the distribution of population and the distribution of the available health care centre (private and government) are examined. For analysing the spatial disparities of health care facilities in the state under study, hospital-population ratio, health care centre-population ratio, clinic-population ratio and dispensary-population ratio for the valley districts and the hill districts are considered. The present study attempts to examine the disparities of the available facilities of the state region wise.

### STUDY AREA

Manipur is a landlocked state lying in the easternmost part of India with a total geographical area of 22,327 sq. km. it extends from 23°50'N to 24°41'N latitudes and 93°20'E to 94°47'E longitude. It supports a total population of 27,21,756 (2011) and shares 0.22 % to the total population of India. The state is a gate way to the Southeast Asia and shares international boundaries of 353 km. in length accounting for 41.21% of the total length of the border with Myanmar. The state is linked with the mainland India through road transport via NH 37, 150 and 7, and airways with only one airport in the heart of the state. The state is predominantly a hill region and ninth-tenth of the total area is hilly, characterised by rugged terrain and inhospitable habitation. The Manipur valley occupies only 2238 sq. km. lying in the centre of the state which acts as a service provider to its surrounding hilly regions.

### DATA AND METHODOLOGY

The required data are obtained from the secondary sources of data under study from the report published by directorate of health Manipur. For analysing the disparities of the health care facilities in the state, the number of health care institution and the ratio of the population are considered. Spatial disparities of health care facilities are constructed on the basis of a composite index using ranking method by employing Kendall's method. Using Kendall's method (Mahmood, 2002), health care facilities of 9 districts (four valley districts and five hill districts) were ranked separately for each health facility in respect of hospital-population ratio, health centre-population ratio, clinic-population ratio (private nursing home and clinic) and dispensary-population ratio. The sum of the four ranks of all the districts will give the composite indices reflecting the state of health care facilities in each of the districts.

All the districts have been ranked four times according to their ratio in each facility. The district having the lowest population per health facility have been assigned the first rank, the next lowest has been assigned as the second rank and so on. There are certain cases when the ratios of some district have equal value. This problem of ties is common in any ranking procedure. The convention to avoid this complication is to give them a rank value equal to the average of the successive ranks given to them.

### HEALTH INFRASTRUCTURE OF MANIPUR

Hospitals and health centres: One State General Hospital at Porompat Imphal East, One State TB Hospital and One State Leprosy Hospital at Chingmeirong Imphal West District are functioning in the State under Health Department Manipur as Referral and Tertiary Level Health Care Hospitals. Seven General Hospitals (excluding Imphal East and West district), 16 CHCs and 2 Sub-District Hospitals/UHCs are also functioning under Health Department Manipur as secondary level Health Care Hospitals and Health Centres. 80 PHCs, 420 Health Sub Centres and 20 Medical Dispensaries are functioning under health Department Manipur. in addition, there are 22 Dispensaries under Autonomous District council Manipur, 9 TB units under RNTCP, 4 leprosy Units, 6 AYUSH units attached to State and District Hospitals and 1 AYUSH Centre at Konjeng Leikai Imphal West are also providing additional health care services to the entire population of the state (Administrative report 2011-12, Directorate of Health Manipur).

Bed components: Altogether 1609 beds are provided to all the Hospitals and health centres under health department of which 705 beds are provided to the hospitals (including 350 beds for JN hospitals Porompat), 364 beds are provided to CHCs/UHCs, 370 beds are provided to the PHCs, 100 beds for the specialized TB hospitals, 70 beds for the Specialized Leprosy hospitals at Chingmeirong and 10 beds each to LCU at Thoubal and Bishnupur are also provided (Administrative report 2011-12, Directorate of Health Manipur).

Health man power: The state health department has about 4380 employees of which 662 are doctors, 770 are nurses and 1100 are others are paramedics. The state has achieved doctor population ratio of 1 doctor per 2700 (including doctor under RIMS) and nurses population ration of 1 nurse per 2000 (Status report of health department Manipur, 2003).

**Table No. 1 Population of valley and hill served by one different health centre based on the Mid-year population 2011.**

Centres	Valley population 1628224	Hill population 1093532
One PHC	30375	24853
One CHC	162822	182255
One Sub-centre	8223	4925

Source: (Administrative report 2011-12, Directorate of Health Manipur).

The above table shows the population of health centre serving various sections of population in the valley and hill districts of the state. It is found that the number of population served by one PHC and Sub-centre are more in the valley, which is because, the valley districts has larger concentration of population for the existing health centre, whereas, in the hill population are lesser and scattered over the rugged topography. With the various existing health care centres, the state has almost achieved the National Norms for establishment of Health Institutions in the rural and hill areas 1 PHSC for every 3000-5000 population, 1 PHC for every 20,000-30,000 population and 1 CHC for every 80,000-1,20,000 population (Status of Health Department Manipur, July 2003. Planning Cell Medical Directorate Manipur).

## RESULTS AND DISCUSSIONS

The composite score of ranks given in the table 2 (a) and (b) shows the overall healthcare facilities of all the 9 districts based on aforementioned criteria. From the exercise, Imphal west district is the most developed district in terms of health care facilities, immediately followed by Bishnupur district. The other two districts i.e. Imphal East and Thoubal districts remain little less developed than the Imphal west and Bishnupur district of the valley districts in the state. Owing to its location in the heart of the state, and being one of the most developed region Imphal west district have better health care facilities run by Government as well as private firms. The type of health institution and private clinic that are existing in Imphal west district are well equipped with modern technologies and various specialist and super specialist in many disciplines. The presence of RIMS, which is the largest health institution in the district, provides adequate services to the entire people of the district in particular and to the people of the state as a whole. Besides, facilities such as Shija Hospital and Research Centre, Imphal Hospital and Research centre, Raj Polyclinic, etc are some of the major private hospitals, which are specialized in various disciplines and easily accessible to the people living in the Imphal valley.

Among the hill districts, Churachandpur district, situated in the south western part of the state is the most developed in respect of the health care facilities. The Churachandpur District Hospital is the biggest district hospital having 100 beds and provides services in various clinical disciplines. Ukhrul and Tamenglong district is the next better district regarding health care facilities. Chandel district remain the least developed in respect of health care facilities whose composite score recorded the highest.

Table No. 2 (a) Composite Index of Health Care Facilities Available in valley district of Manipur.

Table No. 2 (b) Composite Index of Health Care Facilities Available in hill district of Manipur.

District	Hospital Population Ratio	Rank	Health centre population Ratio	Rank	Dispensary population ratio	Rank	Clinic population ratio	Rank	Composite score
Imphal West	1:171561	2	1:8041.92	4	1:22377.52	1	1:22377.52	1	8
Imphal East	1:452661	4	1:7072.82	3	1:226330.5	2	1:226330.5	3	12
Thoubal	1:210258.5	3	1:5682.66	2	-	4	1:140172.33	2	11
Bishnupur	1:120181.5	1	1:5589.83	1	1:240363	3	1:240363	4	9

District	Hospital population ratio	Rank	Health centre population Ratio	Rank	Dispensary population ratio	Rank	Clinic population ratio	Rank	Composite score
Senapati	1:354972	5	1:4328.92	4	1:177486	2	1:354792	3	14
Tamenglong	1:140143	1	1:3892.86	1	-	4.5	-	4.5	11
Churachandpur	1:271274	4	1:3716.08	2	1:90424.60	1	1:90424.66	1	8
Ukhrul	1:183115	3	1:3737.04	3	1:183115	3	1:183115	2	11
Chandel	1:144028	2	1:4364.48	5	-	4.5	-	4.5	16

The composite index has also been plotted on a map to show the spatial variation of health care facilities in the state. The map (fig. 1) reveals the existence of better ratios of health care facility to population in the three districts of Imphal west, Bishnupur for the valley and Churachandpur for the hill districts respectively. The composite indices for these districts are between 0 to 10. Medium proportion of health care facilities are observed in the districts of Thoubal, Imphal east, Ukhrul, Senapati, Tamenglong with their composite indices varying from 10 to 15 in the valley and hill districts inadequate health care facilities respectively. Chandel district have higher composite index above 15, which is considered to have inadequate health care facilities.

However, the health care facilities of the valley and the hill districts are not the same as far as the quality and the order of services they deliver are concerned, so composite indices are prepared separately. The valley districts are smaller in area and homogenous in topography, health facilities are spread over rather evenly for all sections of the people. The existence of private health care centre like nursing homes and clinic, lab testing clinic and many other diagnostic centres provides adequate health care to the people residing in the valley, supported by well connectivity of roads and transport system. Whereas, in the hill districts, the important existing type of health care centre are general hospital and most of them are inaccessible to the people living in the remote areas, although CHC, PHC, PHSC are allotted for different sub-division and blocks, most of them are inefficiently functioning because of improper management and lack of doctors and staffs. So, major illnesses of the people are referred for treatment to RIMS or JNIMS and even private hospitals in the valley area, where there are more specialized doctors and technology.

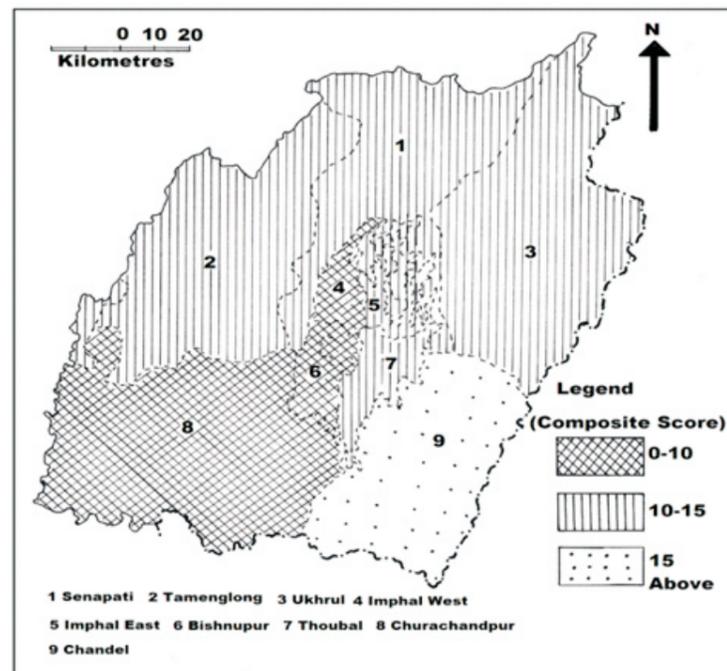


Fig. 1. Map showing spatial variation of Health Care Facilities in Manipur.

Thus, the health care facilities available in the valley particularly in the Imphal west district are more advanced and accessible in comparisons with the existing health centres in the hilly districts of the state. So, the physiographical background of a region plays a very important role in accessibility of the health care, and one cannot come to the conclusion that the facility available in a region is indicative of the real state of health care delivery, but the fact is that, some of the existing health centre of the state specially in the hill are non-functioning and there is a marked disparity between the hill and the valley.

#### CONCLUSION

Mere existence of healthcare facilities does not reflect the accessibility of the population to health care. The distance between the facilities and the population as well as the evenness in their distribution are also important factors affecting accessibility. The present study highlighted the imbalances in the availability of health care facilities in different region of the state. There is a wide gap in the functioning of the health care centre between hill and valley districts. Although considerable growth in health care facilities has been recorded, the uneven distribution and non-functioning of health centres in some districts resulted in disparities. In order to provide better health care to the people, proper management of the available facilities is required, it also needs to improve and modernise the facilities. A policy initiative to encourage migration of private sector health facilities in the hills and above all an effective health policy of the state is necessary.

#### REFERENCES

- Annual Administrative report 2011-2012, Directorate of Health and Family Services including NRHM and MACS, Manipur.
- Health Disparities Report US 2008, US Department of Health and Human Services, Agency for Health Care and Research, Gaither Rockvile, MD 20850, AHRQ publication no. 09-0002, March 2009.
- Mahmood Aslam, (1977): Statical methods in Geographical studies, Rajesh Publications, New Delhi.
- Srabani Bose and Ranjan Basu, (2009): "Spatial Disparities of Health Care Facilities- A Case Study of Bardhaman District, West Bengal", Geographical Review of India, Vol.71, No.4. pp. 391-395.
- Status of Health Department Manipur, July 2003. Planning Cell Medical Directorate Manipur.

## Publish Research Article International Level Multidisciplinary Research Journal For All Subjects

Dear Sir/Mam,

We invite unpublished research paper.Summary of Research Project,Theses,Books and Books Review of publication,you will be pleased to know that our journals are

### Associated and Indexed,India

- \* International Scientific Journal Consortium    Scientific
- \* OPEN J-GATE

### Associated and Indexed,USA

- Google Scholar
- EBSCO
- DOAJ
- Index Copernicus
- Publication Index
- Academic Journal Database
- Contemporary Research Index
- Academic Paper Databse
- Digital Journals Database
- Current Index to Scholarly Journals
- Elite Scientific Journal Archive
- Directory Of Academic Resources
- Scholar Journal Index
- Recent Science Index
- Scientific Resources Database

Indian Streams Research Journal  
258/34 Raviwar Peth Solapur-413005,Maharashtra  
Contact-9595359435  
E-Mail-ayisrj@yahoo.in/ayisrj2011@gmail.com  
Website : www.isrj.net