Patient Perception and Travel Behaviour Pattern in Primary Health Care Center in Haripad Block - A Micro Geo-Medical Study

Dr. V. Saravanabavan

Haripad Block is located on the south-western part of Alappuzha District, Kerala. Geographically it extends from 9^014'to 9^021'North latitude and 76^024'to 76^031'East longitude. The major objectives of the study are 1. To analysis the spatial distribution of primary health centers in Haripad block 2. To analysis the the patients perception and satisfaction level who avail these health care services 3. To analyses the travel pattern and movement pattern of patients from their residence to the PHC with respect to their age and sex indicators 4. To derive a conceptual frame work towards strengthening the foundation for integrated health care delivery system in Haripad block.

The present study is based on both primary and secondary data source. The field work was designed with the help of a suitable scientific frame work of sampling, namely the stratified random sampling. There were totally 300 respondents who were interviewed by direct questionnaire method. It includes mapping of the study using the GIS software of Arc GIS. Factor analysis is used to identify the statistical associations between diseases, socio-economic characteristics, and health–care and transportation variables, among the patients. The result of the factor analysis may be synthesized and brought out in the form of tables by naming the dimensions suitably on the basis of high factor loading.

Key Words: PHC- Patients perception – Travel pattern- Factor analysis

Introduction

Primary health care is a multitude of services rendered to individuals, families and communities mainly in rural areas. Primary health care includes many characteristics. They are adequacy, availability, accessibility, affordability and facility.

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Primary health care includes, various primitive, curative and rehabilitative services provided through government. The primary health care services cover a wide range of activities, medical care, sanitation, infrastructural facilities, immunization, counseling health awareness education, social security and rehabilitation etc(Park,2009).The availability of such services is a must for attaining the goal 'Health for all'.

Study Area

Haripad Block is located on the south-western part of Alappuzha District and away from Alappuzha city at about 30kms on the NH-47 connecting Kanyakumari with Salem. Geographically it extends from $9^0$14'to $9^0$21'North latitude and $76^0$24'to $76^0$31'East longitude.

Aims & Objectives Of The Study

The main objectives of the study are:

1. To analyze the spatial distribution of primary health centers and patients perception in Haripad block and to map out them using GIS software
2. To analyze the travel pattern and movement pattern of patients from their residence to the PHC with respect to their age and sex indicators.
3. To derive a conceptual frame work towards strengthening the foundation for integrated health care delivery system in Haripad Block.

Methodology and Techniques Used

The data selected for the present study was based on both primary as well as secondary sources. For the purpose of this paper two important techniques used are statistical techniques and Cartographic Interpretation. It includes mapping of the study area, Overlay analysis and Buffering using the GIS software of Arc GIS. The primary survey conducted was based on the method of stratified random sampling and a total of 300 samples were collected. Apart from this the multi variant statistical technique factor

analysis is used to identify the statistical associations between diseases, socio-economic characteristics, and health–care among the patients

Discusssion and Analysis

Patients' Satisfaction Level

The factor analysis employed in the study identified 11 dimensions explaining a total variance of more than 64.81Percentage .The first six dimensions explained a total variance of more than 42% and Eigen value of above 1.57. The 29×29 correlation matrix of the present analysis has been grouped into 29×11 correlation matrix. Only 11 factors are taken for analysis of factor solution with reference to the dimensions

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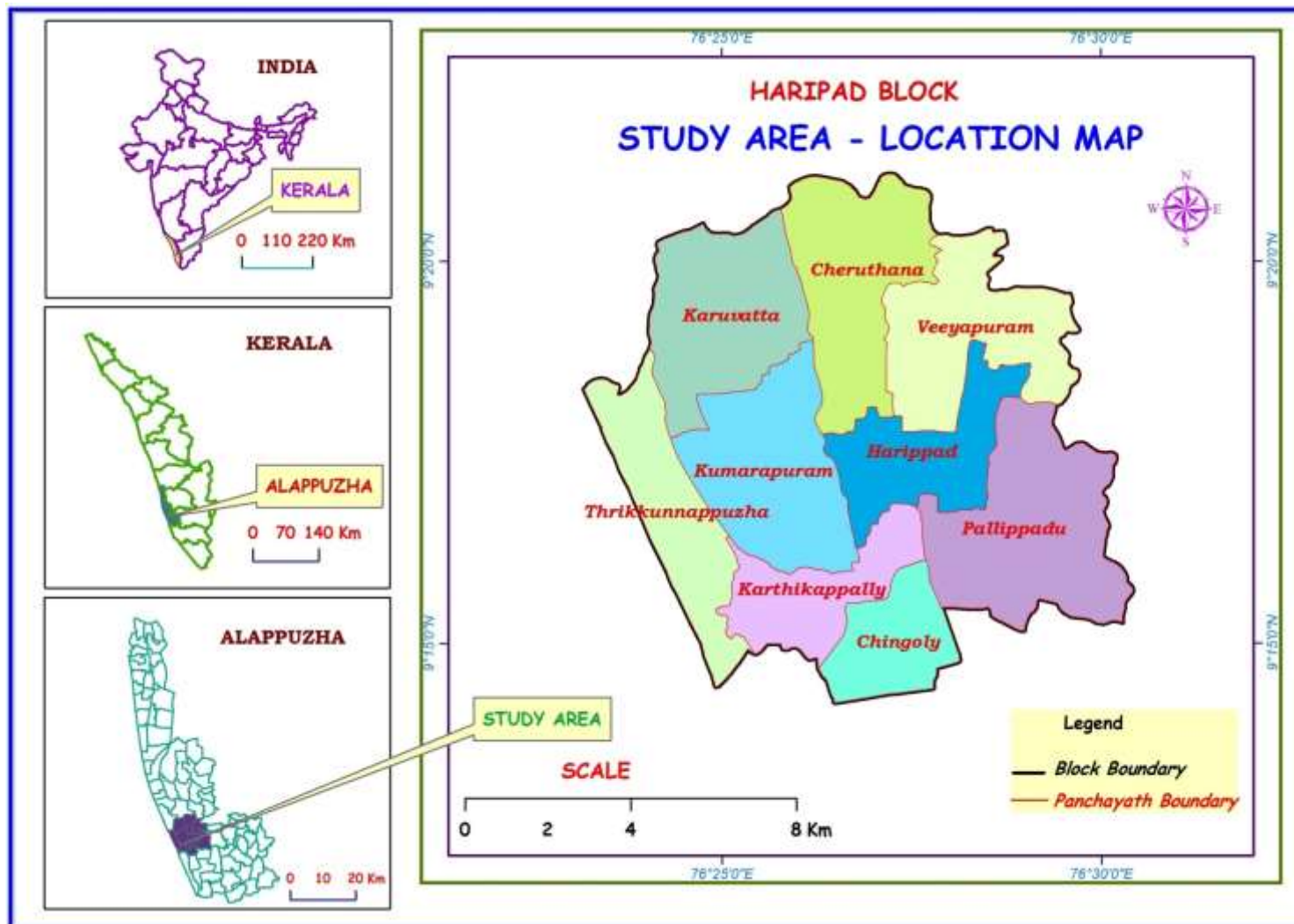Dr. V. Saravanabavan
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The table explains the Eigen value and the percentage variance explained by each factor. The 11 factors rotated explained by varimax procedure registered more than 77 % of total variance. Among these the first dimension alone account for 9.76% of the total variance and qualified as the primary factor with an Eigen value of 2.83. This primary dimension is essentially associated with socio-economic status of patients in Haripad Block. The second dimension with an eigen value of 2.25 explained a total variance of 7.78. The third factor with an eigen value of 1.94 explained a total variance of 6.71 %.

The table shows factor loading of each dimension with their respective loadings. The percentage of variance with respect to each dimension is also shown. The contribution of last 5 dimensions altogether account for only 6.66 percent of the total variance.

Factor solution: The Eigen Value and the Total Percentage Variance is Explained By Each of the Variables.

SL.NO	NAME OF THE DIMENSION	EIGEN VALUE	% OF VARIANCE	CUMULATIVE %
I	Socio-economic status of patients	2.83	9.76	9.76
II	Doctors quality	2.25	7.78	17.55
III	Medical personnel	1.94	6.71	24.27
IV	Surrounding environment of patients	1.83	6.34	30.61
V	Quality of water and diseases	1.64	5.66	36.28
VI	Accessibility to PHC	1.58	5.47	41.75
VII	Travelling distance	1.48	5.11	46.86
VIII	Health care delivery system	1.40	4.84	51.71
IX	Religious characteristics	1.35	4.68	56.39
X	Transportation	1.27	4.39	60.78

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	characteristics			
XI	Patients perception	1.16	4.02	64.81

Medical Services

Medical services are meant for the people who avail these facilities. In the Haripad Block about 73% of the Respondents are satisfied with the medical services in the PHC's, remaining 27% of them were not fully satisfied with the medical services.

Infrastructural Facilities

All the PHC'S in the Haripad Block lack Infrastructural facilities like, Inpatient facilities, lab, Injection Room, Chairs for sitting. About 90% of the respondents are not satisfied with the infrastructural facilities available in the PHC's and 10% of them are satisfied with these infrastructural facilities.

Sanitary Condition

All the primary health centers in the Haripad Block do not have toilet facilities. About 97% of the respondents were not satisfied with the sanitary conditions and only 3% of them are satisfied.

Availability of Medicine

Most of the PHC's itself provide all types of medicines for the patients. So 99% of the respondents are satisfied with the availability of medicines and only 1% of them are not fully satisfied.

Experience after Treatment

Most of them have an opinion that they have recovered from the disease. About 39% of the respondents have recovered and 22% of them have completely recovered. While 26% of the respondents have somewhat recovered and 7% of respondents have not at all recovered from the diseases and remaining 6% of respondents have an opinion that there is no improvement.

Waiting Time to See the Doctor

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The time taken to see the Doctor is an important problem in the functioning of a health Centre. Most of the people wait for a long time to see the doctor because of the less number of doctors in the PHC. In the case of Haripad Block, about 48% of the respondents stated that they have to wait for less than 15 minutes to see the doctor and 33% of them stated that they took 15-30 minutes to see the doctor. Likewise, 10% of them took 30 - 1hr and 09% of the respondents took more than 1 hr to see the doctor.

Perception on Treatment

Regarding the perception on treatment, about 50% of respondents state that it was satisfactory and 24% of them state that the treatment was excellent. Likewise, 20% of them state that the treatment in the PHC's of Haripad Block was highly satisfactory and the remaining 6% state that the treatment was not so satisfactory.

The treatment in the PHC's of Haripad Block is fully free, so there is no cost for treatment. All the medicine available in the PHC's are also free of cost.

Travelling Pattern of the Patients
Distance between PHC and House

Distance is an important factor in the traveling pattern of the patient's between the health centre and their houses. This affects the spatial interaction of the patients who usually chose shorter distance (Made, 2000).

In the sample survey conducted in Haripad block about 41% of the respondents come from a distance of 1-2km and 30% of them reside near the PHC's. Likewise 21% of them are 2-3kms away from the PHC's and the remaining 8% come from more than 3kms of distance.

The time required to reach the health centre is an important factor regarding the location of the health centre (Saravanabavan, 2006). About 62% of the respondents took 10-20 minutes to reach the health centre and 15% of them opinioned that they took only <10 minutes to reach the health centre .Likewise around 11% of respondents need 20-30minutes to reach the health centre,10% of them opinioned that they took 30-40 minutes to reach the health centre, and the remaining 2%of the respondents took >40 minutes to reach the health centre from their houses.

Travel Pattern

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Haripad Block consists of 7 PHC's and one community Health centre. Among these, 5 health centres are randomly selected for the present study. They are Haripad PHC, Karthikapally PHC, Karuvatta PHC, Kumarapuram PHC and Veeyapuram PHC. The fig shows the travel pattern of male and female from each PHC. In almost all PHCs, male patients travel more distance than female patients. In the case of number, male dominates female, the example is Kumarapuram PHC Where 7 patients are females and the remaining 18 patients are males.

Sex-wise Travel Behaviour of Patients

In Veeyapuram PHC most of the patients are came from western and southern part of the PHC and some patients come from the Eastern side of the PHC. In sample survey one or two patients come from the Western side of the PHC. The reason is that the number of households is less there. The western part of the PHC is agricultural land. Likewise south-east part also consists of agricultural lands and there are no settlements.
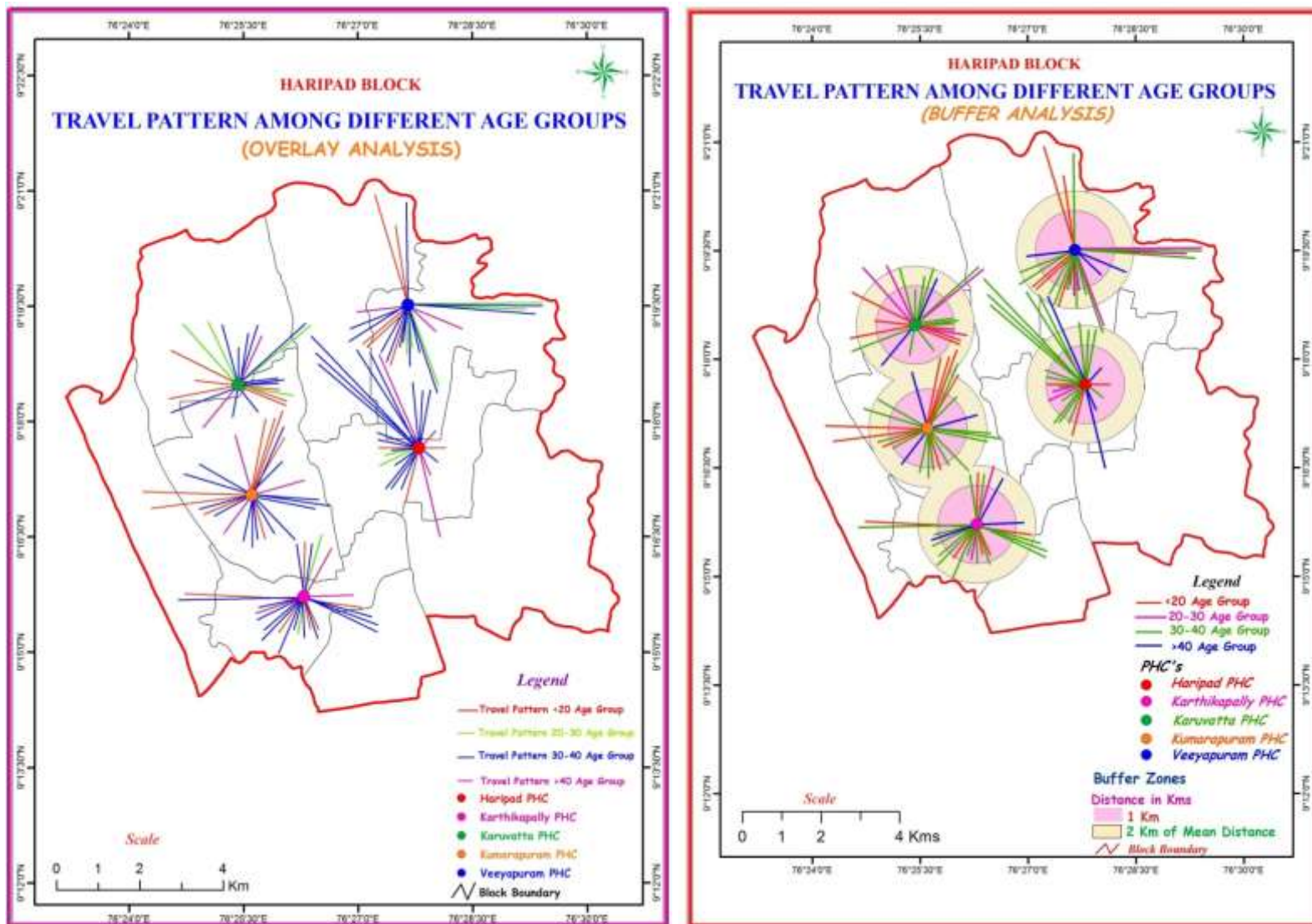
Haripad PHC is located in the north eastern side of the Haripad town. In this PHC, some patients are from other panchayaths also. This is due to the popularity of the Doctors. More patients are from North western, Western and Southern sides of PHC. The reason for fewer patients to the PHC from Southern side is due to the presence of Taluk Hospital and Private Hospitals in the town. From Eastern side also the number of patient is less because of the agricultural land present there.

In Karuvatta PHC more patients are from Northern side, western side and eastern side. From south the patient flow is less because of the presence of Kumarapuram PHC in the Southern side as shown in the fig .

In the case of Kumarapuram PHC, female patients are less. Patients are mainly from North West, North East and South Eastern side. From North, South and East patient flow is very less.

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From the Eastern side the patients flow is less because of the Taluk Hospital and from west the patient movement towards Kumarapuram PHC is controlled by the presence of the Thrikunnapuzha CHC.

In Karthikapally PHC the patients are mainly from Southern, Northern and South eastern part of the PHC. From the Eastern part of the PHC the patient flow is less because of the presence of Taluk Hospital and other private Hospitals in Haripad town.

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HARIPAD BLOCK
TRAVEL PATTERN AMONG DIFFERENT AGE GROUPS
(OVERLAY ANALYSIS)

HARIPAD BLOCK
TRAVEL PATTERN AMONG DIFFERENT AGE GROUPS
(BUFFER ANALYSIS)

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Male and Female Travel Patterns: Using Buffer Analysis

There are two buffer zones to show the travel pattern of each PHC in Haripad Block. The first Buffer zone extends from the health centre to 1.3kms. The second Buffer zone extends from 1.3kms to 2.3kms based on the mean distance . More number of patients are from the first Buffer zone. So it is more accessible than the second Buffer zone. Beyond the second buffer zone the area is inaccessible. In the second buffer zone female travelling is less compared to male travelling to the hospital.

Only few people are from Northern part of the block, because settlements are less due to paddy fields. So it is termed as un served areas for the PHC. The Eastern and Southern part of the block also falls under un served areas, because of the agricultural land and the presence of Taluk Hospital in Pallipad panchayath.

From the Western part of the block most of the people, choose to go to nearby CHC which is situated in the Thrikunnapuzha panchayath. Most of the female patients prefer short distance for travel. So only less number of them crosses the first and second buffer zone in each PHC's. In the case of Haripad PHC 3 female patients are from long distance. The reason behind that is popularity of the doctor.

Travel Pattern among Different Age Groups: Using Overlay Analysis
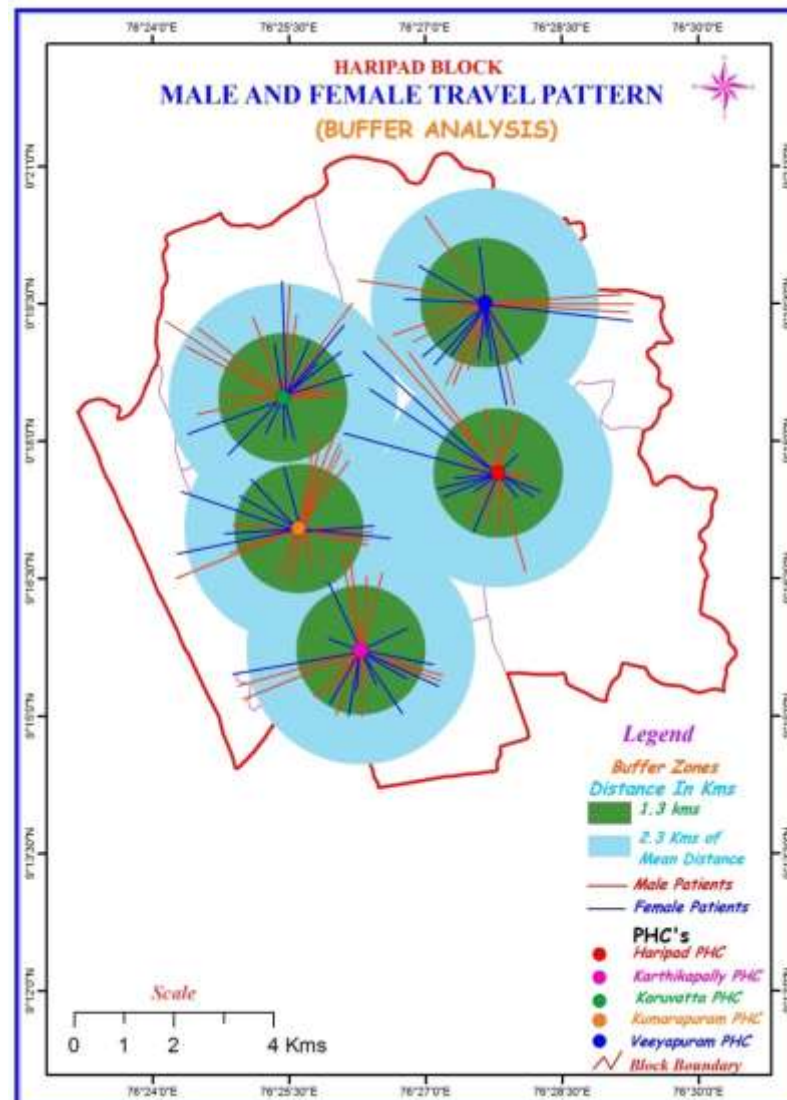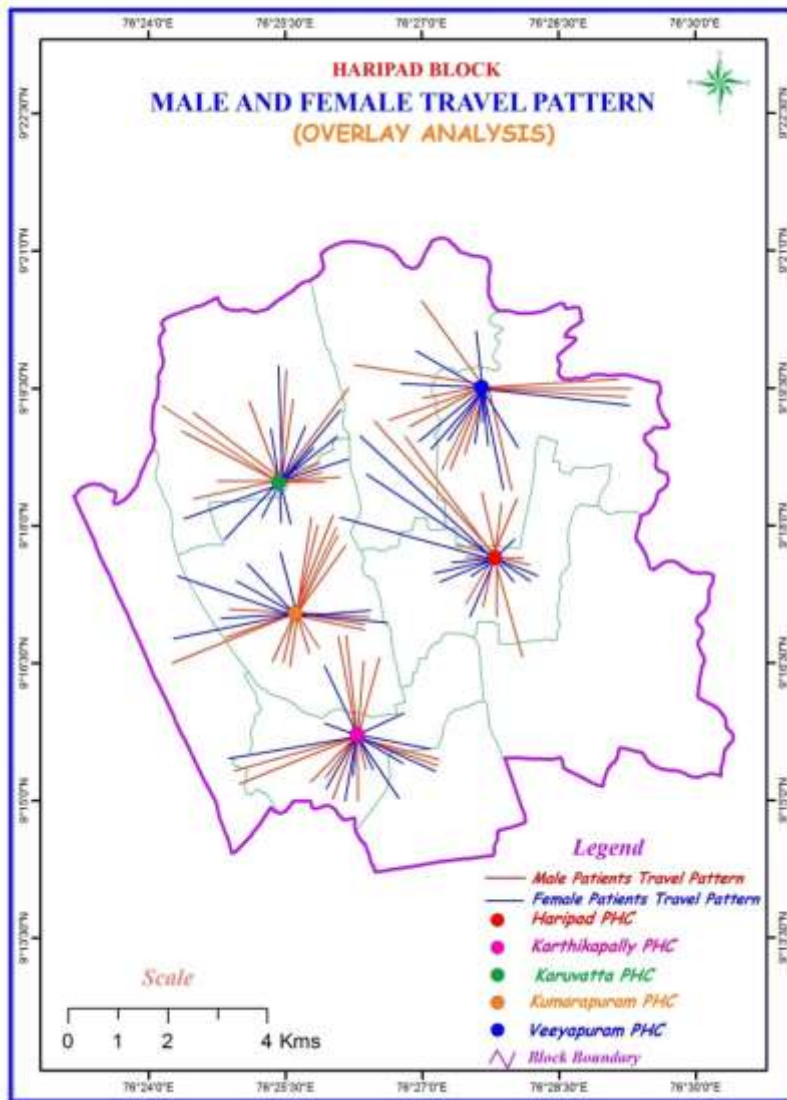
The figure shows the travel pattern among different age groups of Haripad block using overlay analysis. In this the four age groups are shown in an overlay mapping. Five PHC's from Haripad block are randomly selected for the present study. From the above figure it is easily understood that the age group 30 – 40 and 20 – 30 travel, more distance than < 20 age group and > 40 age group. Below20 age groups are children and above 40 age groups are old people. So they cannot travel long distance compared to the remaining age groups. They always choose short distance for travel. In the South-Eastern part of the block there is no PHC. This area falls in the Pallipad Panchayath. The authorities say that, since Taluk Hospital is situated in this panchayath there is no need of any PHC here. One sub –centre is already there, which is situated by the side of Haripad – Pallipad Road and this was recently inaugurated as a PHC. But still it is treated as a sub centre only. Karuvatta PHC and Haripad PHC are situated in

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remote areas. It is accessible only through Two-wheeler, three-wheeler and four-wheeler. Poor people cannot use these transportation facilities. So bus service should be introduced towards these centres. Construction a sub of centre in the South- Eastern part of Pallipad panchayath is essential as it is very far from nearby Health centres and accessible only through one road which is in a pathetic condition. This will reduce the travel distance of the patients.

Travel Pattern among Different Age Group: Using Buffer Analysis

There are two buffer zones. The first buffer zone extends up to 1km and second buffer zone extends up to 2km from the health centre. In almost all PHC's first buffer zone is more accessible and second buffer zone is less accessible. Only less number of people comes from the outer limit of the second buffer zone that is, un served areas. North, East and South-Eastern areas fall in Agricultural lands. It has scattered settlement and households are less in number. The Central, Western and Southern part of the Block seems to be un served by PHC's because of the presence of other PHC's and Hospitals.

Conclusion

Following findings are identified in the study 1.The primary healthcare delivery system are associated with the rural back ground of the study and are efficient in creating health services to all the population in Haripad Block.2.There exists a relationship between the incidence rates of various diseases with the level of sanitary conditions. Sanitary conditions and waste disposal are primary factors for the origin of many diseases.3.The movement patterns of the patients is highly influenced by the severity of the diseases and their behavior factors. 4. All the primary health centers in the block are not equally spaced and there are areas unserved by PHCs.5.In the traveling pattern of patients, males travel more distance than females.

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