International Journal of Management (IJM)
Volume 12, Issue 1, January 2021, pp. 673-681. Article ID: IJM_12_01_057
Available online at http://www.iaeme.com/ijm/issues.asp?JType=IJM&VType=12&IType=1
Journal Impact Factor (2020): 10.1471 (Calculated by GISI) www.jifactor.com
ISSN Print: 0976-6502 and ISSN Online: 0976-6510
DOI: 10.34218/IJM.12.1.2021.057

UNDERSTANDING DIMENSIONS OF ACCESS TO HEALTH INSURANCE IN RURAL INDIA: STUDY OF GAUTAM BUDH NAGAR AND ALAPPUZHA DISTRICTS

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ABSTRACT

This study is an attempt to understand the importance of different dimensions of access to health insurance in rural India. The dimensions of access to health insurance are affordability, (geographic) accessibility, accommodation, acceptability, availability and awareness. To understand these dimensions of access primary data have been collected in Alappuzha and Gautam Budh districts of Kerala and Uttar Pradesh states of India respectively. The results show that in rural areas health insurance suffers from the supply side problems namely, availability, accommodation, accessibility. There is enough demand among rural households as can be seen from the empirical results for awareness, affordability and acceptability. The results also signify that there is scope for private participation/public private partnership (PPP) in enhancing access of health insurance in rural areas.

Key words: Rural health Insurance, Health policy, Healthcare access, Dimensions of access, Public private partnership, Community Participation

Cite this Article: Amrendra Pandey and Abhijit Chattoraj, Understanding Dimensions of Access to Health Insurance in Rural India: Study of Gautam Budh Nagar and Alappuzha Districts, *International Journal of Management,* 12(1), 2021, pp 673-681.
http://www.iaeme.com/IJM/issues.asp?JType=IJM&VType=12&IType=1

1. INTRODUCTION

Health is one of the most important determinants of human welfare. It also guarantees sustained economic and social growth. However promoting and protecting health is a big challenge for most of the countries of the world. The lofty expectation that everyone should be able to access health services without facing financial constraints is a distant in India as well . The healthcare coverage gap between rich and poor; rural and urban has been widening day by day.

Every year, all over the world around 150 million people suffer financial catastrophe arising out of healthcare interventions. Approximately 100 million are pushed below the poverty line and fall prey to debt. The scenario in India is no different. Out of pocket expenditure (OOPE) accounts for more than 87.2% of all health expenses. It is a bane for a country like India where a large segment of the population lives in rural areas and is poor. Nearly, 63 million people plunge into poverty trap each year as there is virtually no financial protection for their healthcare needs (World Health Organization, 2017).

In a country where most people, particularly the under privileged and marginalized have little or no social protection, it is therefore surprising to note a very small number of people are actually insured. Health insurance may be described as a potent device to reduce financial risk arising out of health expenses. Under the plan of insurance, a large number of people associate themselves by sharing risk that they are exposed to. However, this association or pool fails to materialize largely due to problems of access and the absence of solidarity and community cohesiveness. As per Central Bureau of Health Intelligence (2019) in India only around 37.2% of the total population were covered under any health insurance in the year 2017-18. Out of which 80% were covered with insurance falling under Government sponsored schemes. Private expenditure to health accounts for 69.5 % of the total health care expenditure in India. In fact public expenditure on health in India is only 1.17% of its Gross Domestic Product (GDP), whereas for the other lower middle income countries the average is 2.43%.

Health care access which is defined as presence of enabling health care resources, its utilization and improvement in health status of population (Anderson,1995; Khan & Bhardwaj, 1994; Penchansky & Thomas, 1981) is essential for providing quality health care to all. Hence, this paper aims to understand the importance of different dimensions of access to health insurance in India. The dimensions of access to health insurance are *affordability, (geographic) accessibility, accommodation, acceptability, availability and awareness* (Penchansky & Thomas, 1981; Saurman, 2016).

To understand these dimensions of access primary data have been collected in Alappuzha and Gautam Budh districts of Kerala and Uttar Pradesh states of India respectively. The criteria for selecting these two districts is their contrasting health insurance status. As per Ministry of Health and Family Welfare (2016) while in Alappuzha 55% of rural households are covered with any type of health insurance, the number is only 9.3% in Gautam Budh Nagar rural households. This is despite the fact that Kerala spends only 0.93% of its state gross domestic product (SGDP) on health whereas, Uttar Pradesh (UP) spends around 1.42%.

This paper is further divided into four sections. In section 2 empirical research related to access to health insurance and their findings have been discussed. Section 3 elaborates methodology and source of data. This has been followed by results and conclusion in sections 4 and 5 respectively.

2. LITERATURE REVIEW

Health insurance and its access to populace is very important for a country like India where per capital income is very low and out of pocket expenditure is very high. Some of the important studies related to the dimensions of access to health care are discussed below.

Access to health care is a widely researched topic. Penchansky and Thomas (1981) were among the first researchers to give a model for access to health care. According to their framework, accessibility had five dimensions, namely, *affordability, (geographic) accessibility, accommodation, acceptability and availability*. These dimensions were further used in several other studies (Aberdein & Zimmerman, 2015; Mould-Millman et al., 2015). Recently Saurman had identified additional dimension - awareness- for evaluating degree of accessibility (Saurman, 2016).

The *affordability* dimension of access is related to price of service, income level and perceived value (Young, Dobson, & Byles, 2000). This dimension is also known as financial barrier to accessibility. It includes not only the direct cost of health care but also indirect cost such as transportation, accommodation and in case of poor lost wages due to absenteeism as well (Ahmed, Lemkau, Nealeigh, & Mann, 2001; Higgs, Bayne, & Murphy, 2001). World Health Organization (2010) has observed that millions of people cannot use health services because they have to pay for them at the time they receive them. And many of those who do use services suffer financial hardship, or are even impoverished, because they have to pay.

The *accessibility* to health care access is associated with location of health care service. Geographical aspect of accessibility reflects spatial feature of health care supply chain. Its constructs can be distance of hospital, health insurance distributor, hostile terrain, or lack of transportation (Bull, Krout, Rathbone-McCuan, & Shreffler, 2001).

Accommodation can be viewed as the manner in which resources are organized (Andrews, Simmons, Long, & Wilson, 2002). In other words it is related to increasing the efficiency of existing health care eco-system, *e.g.*, efficient use of existing capacity or failure to design services around the need of the community (Gulzar, 1999).

Acceptability is related to psycho social aspects relating to understanding and degree of communication between community and service provider (Cable, 2002). This dimension encompasses factors like, patients' ethnic background, class, culture and diagnosis. Similarly, Friedman (1994) had found that being a member of minority group itself can be a barrier to access.

Availability can be defined as, *volume and range of services to the client need* (Young et al., 2000). This dimension of access is most directly influenced by the policies of governments (Andersen, 1995). This is also considered most proximate synonym of access in the literature. For example Chapman, Carter, Abbott, Bryar, and Congdon (2002) had concluded that one way of improving access to primary care is to enlarge capacity. In other words availability is seen as a supply side measure in the health care system. It is related to delivery system of the health resources.

According to Saurman (2016) awareness is an important dimension of access to health care as it greatly improves the understanding between client and the service provider. Pugh, Castleden, Giesbrecht, Davison, and Crooks (2019) have found that awareness is particularly an important component of access to health care in rural areas.

This research paper will study all the six dimension of access to health insurance in rural India. Rural area has been selected because access to health care is specially challenging in those areas (Weinhold & Gurtner, 2014).

3. DATA AND METHOD

The research methodology adopted for this project is structured questionnaire based with stratified sampling for generating representative samples. Sample districts, villages and households had formed the first, second and third sample units respectively for selection of rural samples. Sampling has been done independently between two selected districts *i.e.*, Gautam Budh Nagar in Uttar Pradesh and Alappuzha in Kerala. 534 samples have been

collected from 20 villages -10 each from both the states. The two states have been chosen for their contrasting health status. We collected primary data through a structured questionnaire. Ten sample villages were selected according to socio economic diversity each in Gautam Budh Nagar in Uttar Pradesh and Alapuzha in Kerala. The primary data were collected from households from 10 villages of Alappuzha (Alleppey) district of Kerala. In all, 263 samples were collected. The villages are as follows- Aroor, Cherthala, Ezhupunna, Eramallor, Kayamkullam, Kuttanadu, Harippad, Mavelikkara, Karuvatta and Ambalapuzha (Table 1).

Similarly 271 samples were collected from 10 villages of Gautam Budh Nagar district of UP. The villages are as follows- Mohabalipur, Garhi, Neemka, Chavna, Khajpur, Luksar, Dadha, Bisrakh, Tilapta, Bankapur (Table 2).

The questionnaire was administered to head of the families or someone advised by him/her. It was divided in three parts (Annexure 1) . First part dealt with questions related to socio economic details of the family. Questions in the second part were related to health and health related burden profiling of the family. In the third part, questions were based on the likert scale to measure degree of importance to different dimensions of access to health care *namely*, affrodrability, (geographic) acccessibility, accommodation, acceptability, availability and awareness. In total 534 questionnaire were filled, out of which 28 were dropped because of omissions and error.

Table 1 Household respondents in Alappuzha

Taluka	Village	Household units
Cherthala	Aroor	27
Cherthala	Chandthroor	26
Cherthala	Chemmanadu	26
Cherthala	Eramallor	26
Cherthala	Ezhapunna	26
Cherthala	Kodamthuruthu	26
Cherthala	Kuthiyathodu	26
Karthikappally	Kandallor	27
Kayamkulam	Pattanakkadu	26
Kuttanad	Vembanad	27

Table 2 Household respondents in Gautam Budh Nagar

Taluka	Village	Household units
Dankaur	Dadha	28
Dankaur	Luksar	27
Bisrakh	Bisrakh	28
Dadri	Tilapta	30
Dadra	Chavna	27
Jewar	Garhi	26
Jewar	Neemka	30
Jewar	Khajpur	27
Jewar	Bankapur	26

Analysis have been carried out using *Pearson Chi-square* and *one sample t-test*. Chi-square test has been used to analyse group differences among nominally measured variables. Richness of results of Chi- square allows researcher to derive detailed information regarding a phenomena (Agresti, 2018). Similarly, one sample t-test which compares mean of a sample to

a priori score (or population mean) has been used to test the hypotheses related to a particular district's average score on the likert scale (Ross & Willson, 2017).

4. RESULT

4.1. Descriptive Analysis

Descriptive analysis helps us in building hypotheses for analysis. Important description of the data is as follows:-

- The total number of households having any type of insurance (like motor, life, health or household) was 78% and 63% in Alappuzha and Gautam Budh Nagar respectively. But, out of the total households surveyed only 8 households in Alappuzha and 3 in Gautam Budh Nagar had private voluntary medical insurance (PVMI). This shows staggering protection gap of health coverage of the households.
- From the data collected we also drew inferences to understand the health care needs of the families. In both Alappuzha and Gautam Budh Nagar around 30.00% of sampled households suffered from ailments in the last 15 days.
- Only around 11.00% of sampled households in Alappuzha suffered from any ailment in the last 3 months whereas, this number was 30.00% in Gautam Budh Nagar.
- 12% of sample households in Alappuzha suffered from major ailment in the last three years. The number for Gautam Budh Nagar households suffering from major ailment in the last three years was 25.00%.
- In Alappuzha 60.00% of expenditure on illness in the last three years was met by health insurance protection under Rashtriya Swasthya Bima Yojana- Comprehensive Health Insurance Agency of Kerala (RSBY-CHIS), whereas, in Gautam Budh Nagar only 4.30% was met by government health schemes. Majority of expenditure (95.70%) in Gautam Budh Nagar was met by own pockets or borrowing.
- When we look at the response of why households did not seek treatment of 15 days prior ailment, we found in Gautam Budh Nagar non-financial (issues like, no medical facility, lack of faith, distance, ignorance etc) was the major reason. 92% of households listed non financial as the major reason. In, Alappuzha also non-financial was major reason for not seeking treatment but it was not as high as in Gautam Budh Nagar. There, 30.10% of respondents listed financial as reason for not seeking treatment.

4.2. Empirical Results

To understand the importance of each dimension of access in the two districts chi-square and one-sample t-test has been conducted. The results for Pearson Chi-square test is shown in Table 3.

The first hypothesis related to *affordability* is, *family income and having a health insurance are independent of each other*. From the result it can be seen that in Gautam Budh Nagar having health insurance is dependent on income, *i.e.*, people may buy health insurance if income increases. But, in Alappuzha district income and having health insurance are independent of each other, *i.e.*, respondents believed that income is not a sole criterion in deciding to buy health insurance.

Whereas, in case of second hypothesis which is also related to *affordability* dimension, it can be seen that in both the districts *willingness to pay different premiums are dependent on income of the respondents*.

Similarly, in case of *awareness* it can be concluded that, *in both the districts willingness to purchase health policy is independent of the educational qualification of the respondents.*

Again in case of *awareness* it can be concluded that, *in Alappuzha district people are aware about the health insurance irrespective of being approached by any agent, whereas in Gautam*

Budh Nagar people are aware about health insurance primarily because of insurance agents. This may be because of the well functioning community centers in Alappuzha, as these centers themselves disseminate these information to the people.

Table 3 Pearson Chi-sqaure test

S. No.	Dimension	Hypotheses	Gautam Budh Nagar(p value)	Alappuzha (p value)	Conclusion
1	Affordability	Family income and having a health insurance are independent of each other	0.006	0.5784	In Gautam Budh Nagar family income and having health insurance are independent to each other, whereas in Alappuzha district income and having health insurance are independent to each other.
2	Affordability	Family income and willing to pay different premium are independent of each other	0.03	7.519E-07	In both the districts family income and willingness to pay different premiums are dependent of each other.
3	Awareness	educational qualification and going for a health insurance are independent of each other	0.21	0.82	Educational qualification are not the determinant of having health insurance in any of the two states.
4	Awareness	Awareness of any health insurance policy/plan and approached for purchasing a health policy are independent of each other	3.482E-11	0.90	In Alappuzha district people are aware about the health insurance irrespective of being approached by any agent, whereas in Gautam Budh Nagar people are aware about health insurance primarily because of insurance agents.

Some of the hypotheses are tested using one sample t-test. Results of which are shown in Table 4. The first hypothesis is related to the dimension *accommodation*. This dimension has been tested by asking questions related to other benefits included in the health insurance. From the results it can be seen that in both the districts the households would prefer health insurance policies which come with wellness components attached to it. In other words, *accommodation* is an important dimension of access in both the districts.

The second hypothesis is related to *availability*. It has been tested by asking questions related to cashless facilities provided by the insurance companies. It can be seen from the results that in both the districts *availability* is an important dimension of access.

The third and fourth hypotheses in the table are related to the dimension *accessibility*, which has been tested by asking to rate on likert scale the following statements, *rural households would be indifferent to health insurance if it comes with better networking with hospitals* and *rural respondents are indifferent to buy health insurance because of poor services rendered by government hospitals* respectively. From the results it is clear that in both the districts rural households are unsatisfied with the services of government hospitals and would prefer health insurance which comes with better networking with hospitals.

Acceptability as a dimension of access has been tested by asking to rate the following statement, *rural population are indifferent to buy health insurance to deal with huge healthcare expenditure*. In both the districts this null hypothesis is rejected and it is concluded that in the households health insurance is accepted as a medium to deal with high health care expenditure.

Table 4 One sample T-test

S. No.	Dimension	Hypotheses	Gautam Budh Nagar(p value, mean)	Alappuzha (p value, mean)	Conclusion
1	Accommodation	A health insurance product accompanied by wellness components/health education would not propel people to go for health insurance	2.2e-16, 3.96	2.2e-16, 4.75	In both the districts health insurance products accompanied by wellness components would be preferred. But, in Alappuzha the strength of association is more than in Gautam Budh Nagar
2	Availability	I am indifferent to cashless facility provided by the health insurance company	2.2e-16, 4.16	2.2e-16, 4.43	In both the districts health insurance products accompanied by cashless would be preferred. But, in Alappuzha the strength of association is more than in Gautam Budh Nagar
3	Accessibility	Rural population would be indifferent to health insurance if it comes with better networking with hospitals	2.2e-16, 4.16	2.2e-16, 4.53	In both the districts health insurance products accompanied by better hospital networking would be preferred. But, in Alappuzha the strength of association is more than in Gautam Budh Nagar
4	Accessibility	Rural population are indifferent to buy health insurance because of poor services rendered by government hospitals	2.2e-16, 3.91	2.2e-16, 4.38	In both the districts people would prefer health insurance because of poor services rendered by gov. hospitals. But, in Alappuzha the strength of association is more than in Gautam Budh Nagar
5	Acceptability	Rural population are indifferent to buy health insurance to deal with huge healthcare expenditure	2.2e-16, 4.28	2.2e-16, 3.98	In both the districts health insurance products would be preferred to meet catastrophic health needs But, in Gautam Budh Nagar the strength of association is more than in Alappuzha district.

5. CONCLUSION

The paper started with discussing the dire condition of health care in India and how health insurance is an important instrument to fill health care protection gap. The researchers had identified two districts for the study namely, Gautam Budh Nagar and Alappuzha in the states of Uttar Pradesh and Kerala respectively.

To understand access of health insurance to rural households, six dimensions of access were identified through literature. These six dimensions are *affordability, (geographic) accessibility, accommodation, acceptability, availability and awareness*. A comparative study on the basis of the dimensions of access were carried out in the two districts.

A structured questionnaire - in which demographic information as well as likert scale information on the dimensions of access - was administered in these two districts using stratified sampling. A total of 263 responses in Alappuzha and 271 in Gautam Budh Nagar Districts collected.

To test hypotheses related to each of the dimensions of access two tests, *i.e.*, Pearson's Chi-square test and one sample t-test were used. The results show that despite having contrasting health care status of these two districts all the dimensions of access are valid in both the districts.

From the study it emerged that financial reasons were significant for not seeking treatment in both the districts. In Gautam Budh Nagar it was as high as 92.00% but even in Alappuzha it was 30.10%.

When it came to *awareness*, insurance agents played a major role in Gautam Budh Nagar, but in Alappuzha people were aware of health insurance irrespective of health insurance agents approaching them. This may be because of the well functioning community centers in Alappuzha, as these centers themselves disseminated these information to the people.

It was also seen that in both the districts rural households would prefer health insurance because of poor health care services provided by the public healthcare facilities. This signifies that there is scope for private participation/public private partnership (PPP) model.

For the policy makers the results show that in rural areas health insurance suffers from the supply side problems namely, *availability, accommodation, accessibility*. There is enough demand among rural households as can be seen from the empirical results for *awareness, affordability and acceptability*. Out of these, *accommodation* is very important as it is related to the way resources are organized.

From the results it can be seen that the respondents had low faith in government health services and wanted insurance products which also included wellness component. So the policy makers can make an effort to penetrate the rural health insurance market through mutuals, cooperatives and community based organizations. NGOs and such other bodies like cooperatives and mutuals can play an important role in enhancing the access to health care in rural India.

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