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# CHOICE OF HEALTHCARE FACILITIES AMONG THE RURAL PEOPLE OF ASSAM: AN ANALYSIS

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## ABSTRACT

**BACKGROUND:** One of the key objectives of National Health Mission which was implemented in Assam in 2005 was to make health services more accessible, affordable and equitable for the rural vulnerable population.

**METHODS:** On the basis of four mortality indicators of health viz. Maternal Mortality Rate, Infant Mortality Rate, Crude Death Rate and Under 5 Mortality Rate, two districts of Assam are selected purposefully for the present study, namely, Sivasagar and Kamrup (Rural). The sample population is constituted of those members of the households who have suffered from any kind of illness and visited any health facility for treatment. Both acute and chronic morbidity is considered for the present study. A pooled binary logistic regression analysis is used to test statistically the choice of healthcare facility by the respondents.

**RESULTS and CONCLUSION:** The analysis results that the people of elder age group, with lower income, with less education and having large family size are generally seeking treatment from public health facilities. A higher proportion of private health care facilities possess with regular doctors' availability, very good counselling of doctors and highly

satisfactory infrastructure and basic amenities. On the contrary, despite of having less satisfactory infrastructure facilities and irregular presence of doctors, a significantly large number of respondents choose public health facilities for treatment.

**KEYWORDS:** Choice of healthcare, Rural population, poor, National health Mission

**Year of study**: 2019-20

## BACKGROUND

The Government of India has adopted various strategies and policies in order to address the inequality in accessing to healthcare utilization by all section of people from time to time. In 1990's the government health sector expenditure was only 1.3% of India's total GDP which declined to 0.9% in year 1999. The private sector grew, but that growth was uneven and concentrated among only urban population. Again, the share of public health expenditure as a percentage of social service sector expenditure also declined from 16% in 1990-91 to 10% in 2005-06. Under such circumstances Govt. health sector reform in the form of 'National Rural Health Mission' has brought a new revolution in public health sector, particularly in rural areas. The main aim of this mission was to provide accessible, equitable, affordable and quality health care services among the rural and vulnerable sections of the society. The mission is implemented in 18 states of the country with poor health indicators, including Assam too. In Assam, Primary Health Centres (PHCs) and Sub- Centres (SCs) offer grass roots primary care and public health services in rural areas. At present the number of functioning SCs and PHCs in the state are 4662 and 1001 respectively as on March, 2019 increasing from 1711 and 237 in

1981-85 (Ministry of Health and Family Welfare, India). There are 503 hospitals in private sector against 1226 in public sector in Assam (Kapoor et.al., 2020). However, the supply- side growth of health care continues to be overcome by the growth of demand, specially for higher level hospitals (Wang et.al, 2016). The patients are free to choose healthcare providers without being restricted by any gatekeeping mechanism. The effectiveness and efficiency of a health system can be addressed by increased participation, increased welfare, expanded health insurance coverage, aging of the population etc. (Menget.al, 2012). Many studies have been done on patient choice for other states of India, but limited studies were done in Assam, particularly at micro level. Therefore, the present study tries to review the factors that influence the patient's choice of health care access level. Identifying factors that influence patient's choice of a healthcare facility helps the policymakers to understand what their potential patients view as important to their healthcare.

## METHODS

On the basis of four mortality indicators of health viz. Maternal Mortality Rate, Infant Mortality Rate, Crude Death Rate and Under 5 Mortality Rate, two districts of Assam are selected purposefully for the present study. Sivasagar is found to be had highest mortality rate whereas Kamrup (Rural) is in the bottom of the list as per data provided in Annual Health Survey Report (2013). One block from each selected district has been chosen randomly. Thus from Sivasagar district, Gaurisagar block and from Kamrup (rural), Hajo block have been selected. From each chosen block two villages have been selected randomly. The sample population is

constituted of those members of the family or households who have suffered from any kind of illness and visited any health facility for treatment. Both acute and chronic morbidity is considered for the present study. Acute morbidity refers to those illnesses which are lasting for a short duration, i.e., for a period of 30 days whereas chronic morbidity is of long duration constituting for a period of more than 30 days (NSSO, 2015). The sample population is determined by using Yamane formula (1967):

$$n=N/(1+Ne^2)$$

Where, n= corrected sample size, N= population size, e= Margin of error (MoE), e=0.05

Thus, the total size of sample population in both districts becomes 311. A **pooled binary logistic regression analysis** is used to test statistically the choice of healthcare facility by the respondents i.e. whether a respondent visited a government health facility or private health facility and what are the socio-economic and health predictors which impact on their decision to seek healthcare from a particular health facility in the event of an illness. The description of selected explanatory variables for the regression analysis are given below-

***Age*:** Age is one of the important factors which affects on choosing health facilities. Some studies have shown that the probability of using public health facilities is more among the elders (Kang JT et. al, 1993; Doghaither A, et.al, 2003; Manzambi et. al, 2000) but another studies have

revealed that using of private health facilities is more among the elder persons (Ghosh, 2014).

***Gender:***Gender is another important factor influencing on choosing health facilities. In some empirical studies, it has been found that the male individuals are more likely to utilise private hospitals (Doghaither A, et.al, 2003; Keene 2005). But another study revealed that women are more likely to visit private health facilities in compared to men (Ghosh, 2014).

***Education:*** Education also exhibits a significant association with choice of health care provider. Empirical studies have shown that the individuals with higher education are more likely to seek health care from private health facilities thus indicating a negative association between educations and choosing public health facilities for treatment (Ghosh, 2014)

***Family size*:** Family size is another significant factor which positively impact on choosing public health facilities. In other words higher the number of family members, the higher will be the probability of choosing public health facilities by the respondents (Uchendu et. al, 2013)

***Household monthly income:*** It has been found from various studies that there exists a negative association between income growth and utilizing the services from public health care providers (Uchendu et. al, 2014; Ghosh 2014). In other words, as income grows, people are more likely to access health care from private health care providers.

Besides these socio-economic factors, literature has revealed that some other factors which are associated with the perceptions of respondents about the facilities available in health centres also impact on choosing

health care providers for treatment. Among these, **availability of doctors** in health centres and **counselling** and guidance of doctors are some important factors (Natarajan T, 2012; Wellay T, et.al, 2018; Uchenduett.al, 2013).***Infrastructure and basic amenities***available in health facilities (including waiting time, hygiene, medicines, behaviour etc.) is identified as significant positive predictor on choosing public health facilities by various empirical studies (Uchenduett.al, 2013; Essendi, et. al, 2015). In the present study, infrastructure and basic amenities includes availability of beds, medicines, injections etc; diagnostic facilities; water provision, electric supply, sitting provisions and toilet facilities in the health centres.

***Awareness campaign*** is another factor which may impact on choosing health facilities. It helps to establish a bridge between the healthcare providers and the patient (Behera BK, 2018). Awareness campaigns under NHM include community mobilization by ASHA/AWW/ panchayat members; SMS services, banners, posters, newspaper appeal/advertisement, miking, radio jingle, wall painting etc. on various health issues and health care services provided by the public health centres. Such campaigns may have a positive impact on choosing public health facilities.

## RESULTS

### Socio-demographic factors of respondents affecting on choosing between public and private health facilities in sample areas

The statistics of some socio-demographic factors associated with respondents' choice of usual health care providers is shown in table 1. The higher proportion of respondents from each age group usually access health care from public facilities with the largest share is belonging to (86% respondents) the 15-59 years age group. Gender-wise, a large proportion of both males (80%) and females (81%) utilize public health facilities. Again, the illiterate and less educated respondents (having only primary education) use public health facilities more in compared to respondents with more educational qualification (p=.003). A significantly higher proportion of population who are belonging to BPL family (92%) access care from public facilities compared to those who use private health care facilities (p=.000). A higher proportion of respondents from families consisting of more than 4 members (83%) received treatment from public health facilities while a higher proportion of respondents with 4 or less members in the family (22%) usually access care from private health facilities.

**Table 1: Some background characteristics associated with respondents' choosing health facilities**

| **Variables** | **Choosing between health care facilities** | | **Total** | **P value*** |
|---|---|---|---|---|
| | **Public health facility** | **Private health facility** | | |
| **Age** | | | | **.021** |
| 0-5 years | 21 (66%) | 11 (34%) | 32 | |
| 6-14 years | 43 (80%) | 11 (20%) | 54 | |
| 15-59 years | 138 (86%) | 22 (14%) | 160 | |
| 60 years and above | 48 (74%) | 17 (26%) | 65 | |
| **Gender** | | | | **.748** |
| Male | 146 (80%) | 37 (20%) | 183 | |
| Female | 104 (81%) | 24 (19%) | 128 | |

| | | | | |
|---|---|---|---|---|
| **Education** | | | | **.001** |
| Above secondary | 85 (71%) | 35 (29%) | 120 | |
| Below secondary | 66 (80%) | 17 (20%) | 83 | |
| Primary | 62 (94%) | 4 (6%) | 66 | |
| Illiterate | 37 (88%) | 5 (12%) | 42 | |
| **BPL** | | | | **.000** |
| Yes | 142 (92%) | 13 (8%) | 155 | |
| No | 108 (69%) | 48 (31%) | 156 | |
| **Family size** | | | | **.000** |
| Less than or equal to 4 | 104 (70%) | 44 (30%) | 148 | |
| 5 to 6 members | 118 (89%) | 15 (11%) | 133 | |
| More than 6 members | 28(93%) | 2 (7%) | 30 | |

Source: primary data, p-value is computed for chi-square test

**Choosing health care facilities on the basis of quality of services provided by the health facilities**

Table 2 shows the association between quality of service provided by the health facilities and choice of the health facility by the respondents in the study area. It is seen that among the respondents who used public health facilities for treatment, although a high proportion of public health facilities are reported to have regular presence of doctors (59%) but the proportion of regular availability of doctors in private health facilities is comparatively more (70%) among the respondents who visited private health facilities. A significantly higher proportion of public facilities were reported to have good quality of service in the area of counselling (65%, p=.000) and less satisfactory infrastructure facilities (56%, p=.000) by the respondents who chose public health facilities. Conversely, a higher proportion of private health care facilities possess with regular doctors' availability (70%, not significant p value), very good counselling of

doctors (48%, p=.000) and highly satisfactory infrastructure and basic amenities (47%, p=.000). Again, a large proportion of respondents (85%, p=.000) who aware of various health services available in public health facilities under NHM have been seeking treatment from the same while a large proportion of respondents who visited private health facilities for treatment (75%) were not aware of these services.

**Table 2: Association between choice of health facility and perceived quality of service provided by the health facilities**

| **Variables** | **Choosing between health care facilities** | | **Total** | **p-value** |
|---|---|---|---|---|
| | **Public health facility** | **Private health facility** | | |
| **Doctors' availability** | | | | **.117** |
| Regular | 149 (59%) | 43 (70%) | 192 | |
| Irregular | 101 (41%) | 18 (30%) | 119 | |
| **Infrastructure and basic amenities** | | | | **.000** |
| Highly satisfactory | 89 (36%) | 29 (47%) | 118 | |
| Less satisfactory | 139 (56%) | 18 (30%) | 157 | |
| Not satisfactory | 22 (8%) | 14 (23%) | 36 | |
| **Counseling** | | | | **.000** |
| Very good | 80 (32%) | 32 (48%) | 112 | |
| Good | 162 (65%) | 21 (34%) | 183 | |
| Poor | 8 (3%) | 8 (13%) | 16 | |
| **Awareness campaigns under NHM through various means** | | | | **.000** |
| Yes | 213 (85%) | 15 (25%) | 228 | |
| No | 37 (15%) | 46 (75%) | 83 | |

Source: primary data, p-value is computed for chi-square test

**Statistical Analysis of health seeking behaviour in study areas: Logistic regression model analysis**

The probability of choice of treatment from public or private health facilities is modelled using logistic regression. The analysis has shown a significant effect of age on choice f provider. The children of 0-5 years have higher odds of receiving treatment from private health facilities in

compared to older age group i.e. respondents with age 60 years and above. In case of illness of infants or small children, the parents of the study areas prefer to visit child specialists who are available in private hospitals or chambers, but not available in all nearby public health facilities. On the other hand on the basis of previous experience of health care services that they received in the past, easily accessible or due to distance considerations, people of older age prefer to use public health facilities. Small sized family is emerged as a significant and negative factor affecting the visit of public health facility (b= -2.516, p= .025). The households having members equal to or less than 4 have higher odds of visiting private health facilities in compared to those households having more than 6 household's members. The household monthly income is found to an important determinant for the choice of private health facilities for treatment (b=-1.972, p=.000). The analysis shows that as the household income increases, the odds of choosing private health providers will also increase by a factor of 0.139. This is due to the fact that the respondents with higher income level generally expect and afford more satisfying health care services which may be available in private health facilities as their perceptions. Again, type of illness is emerged as a significant factor for choosing between health care providers. In case of acute illness, the odds of choosing government health facilities is increased whereas in case of chronic illness the odds of choosing private health facilities will increase (OR= 9.988, p=.001). From my observation it was found that the required healthcare facilities for chronic diseases are not available in all nearby government hospitals.

Quality of medical care, as judged by counselling of doctors and nurses is emerged as significant factor choosing health facility. If the counselling of physicians and nurses is very satisfactory i.e. to fulfil their level of perceptions, then the odds of choosing public health facilities will be increased significantly (OR= 11.342, p= .014) by the respondents. Even if the counselling of physicians and nurses of public health facilities is comparatively less satisfactory too, then the odds of choosing public health facilities will be increased significantly (OR= 11.543, p= .014) by the respondents. Respondents who described the quality of medical care with less satisfactory infrastructure and basic amenities available in health facilities (refer table) are 4.244 times more likely to have government health facilities as their chosen health care providing facility (OR= 4.244, p= .043).

Awareness of various health facilities available in public health facilities under NHM has significantly impact on visiting public health care providers by 18.404 times more than the respondents who are not aware of this (OR= 18.404, p= .000). The various IEC and BCC activities under NHM help the respondents to aware of health services available in public health facilities.

**Table 3: Binary logistic regression results for pooled regression for choice of healthcare providers**

| Variables | B | Sig. | Odds Ratio | VIF |
|---|---|---|---|---|
| **Age (ref. 60 years and above)** | | | | 1.204 |
| 0-5 years | -3.136*** | .007 | .043 | |
| 6-14 years | -1.245 | .137 | .288 | |
| 15-59 years | .617 | .351 | 1.853 | |
| **Gender (ref. female)** | -.168 | .754 | .845 | 1.037 |
| **Education (ref. illiterate)** | | | | 1.054 |
| Secondary and above | -1.120 | .419 | .326 | |
| Above primary but below secondary | .106 | .941 | 1.112 | |
| Primary and below | .852 | .584 | 2.345 | |
| **Family Size (ref. more than 6 members)** | | | | 1.055 |
| Less than or equal to 4 | -2.516** | .018 | .081 | |
| 5 to 6 | -1.387 | .221 | .250 | |
| **Household Monthly Income** | -1.972*** | .000 | .139 | 1.222 |
| **Doctor's Availability (Ref. No)** | -.401 | .470 | .670 | 1.022 |
| **Counseling (ref. not satisfactory)** | | | | 1.114 |
| Highly satisfactory | 1.456* | .054 | 5.643 | |
| Less satisfactory | 2.143** | .014 | 11.342 | |
| **Type of illness (Ref. Chronic)** | 2.301*** | .001 | 9.988 | 1.196 |
| **Infrastructure (Ref. not satisfactory)** | | | | 1.101 |

| | | | | |
|---|---|---|---|---|
| Highly satisfactory | 1.349 | .188 | 3.855 | |
| Less satisfactory | 1.445** | .043 | 4.244 | |
| **Awareness (Ref. not aware)** | 2.913*** | .000 | 18.404 | 1.215 |
| **Village dummy (Ref. Gorobari)** | -.196 | .770 | .822 | 1.514 |
| Constant | 18.367 | .000 | 9.477E7 | |

Pseudo R-Square= .724

Omnibus Likelihood ratio = 188.869***

Log likelihood ratio = -119.026

Source: Author's calculation.

Note: *, ** and *** indicate significant p value at 10%, 5% and 1% level respectively.

Dependent variable: whether the person visited a public health facility or a private health facility for treatment (coded 1= public health facility, 0= private health facility), where the "private health facility" is the reference category and "public health facility" is the target category.

## DISCUSSION

The findings of the study clearly pointed out that the people of elder age group, with lower income, having large family size are generally seeking treatment from public health facilities. The findings that public health facilities are utilized by a major share of population, particularly by the poor, is heartening if it can be ensured that they receive good quality healthcare at public facilities and reduce catastrophic health expenditure (Ghosh, 2014). However, in my study areas, it is found that some good quality of services in the area of counselling, behaviour or communication skills motivate the respondents to seek treatment from public health

facilities. Despite of lacking highly satisfactory infrastructure facilities and basic amenities in government health facilities and irregular presence of doctors, a significant proportion of respondents chose public health facilities. Therefore, measures to be taken to ensure infrastructural development in each public health facility by making larger public investment through the Government. Moreover, steps should be taken to ensure regular availability of doctors and supporting staffs for the patients in the public health centres.

On the other hand, regular availability of doctors, clean and hygienic environment of private hospitals and lack of awareness about health care services available in govt health facilities, a considerable proportion of the respondents choose private health facilities for seeking treatment. In case of private health facilities, measures should be taken to ensure that people receiving treatment from private providers are of acceptable standard. Issues relating to large price variations in receiving treatment, moral hazard behaviour of providers etc. also need to be addressed in case of private health facilities.

**KEY MESSAGES**

- The study results that the public health facilities are utilized mostly by the senior citizens and poor people. Thus, for ensuring good and quality health care to them at public health facilities, larger investment in public sector is required.

- Measures should be taken to ensure infrastructural development in each public health facility by making larger public investment under National Health Mission. Steps need be taken to ensure regular availability of doctors and supporting staffs for the patients in the public health centers.
- In case of private health facilities, measures should be taken to ensure that people receiving treatment from private providers are of acceptable standard. Issues relating to large price variations in receiving treatment, moral hazard behaviour of providers etc. also need to be addressed in case of private health facilities.

**(Year of Study: 2019-20)**

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