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Determinants of Choice of Healthcare Services Utilization: Empirical Evidence from India

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Abstract

Background: In order to improve the condition of the health care services in India, public healthcare services can play a very important role. However, the domination of private health care services and low utilization of public healthcare services in India is a matter of concern for the policy makers. **Objective:** The objective of the present study is to examine the determinants that lead an individual to choose between public and private healthcare service providers in India. **Methods:** For this purpose, a national level health survey data National Family Health Survey – 3 (NFHS – 3) is used. The determinants considered are age, gender, education, income, access, caste, marital status and exposure to mass media. Logistic regression analyses are carried out. Total, urban and rural samples are studied separately. **Results:** Findings reveal that people with increasing age, females, lower income group people, uneducated, weaker sections of society and those having access to primary public health care are more likely to utilize public healthcare services as compared to private ones in India. **Conclusion:** The government and policy makers should keep these findings in perspective to improve utilization of public healthcare services.

Key Words

Healthcare Choice; Healthcare Services; Private Healthcare; Public Healthcare; Healthcare Utilization

Introduction

Post-independence era in India witnessed growth and development initiatives that were predominantly driven by state agencies and were spread across all key sectors such as health, education, and infrastructure. While public sector has been instrumental in the rebuilding process, recent decades have seen an increasing contribution of private sector in the country's gross domestic product. Particularly, in healthcare services where the general population has the choice of public and private health care service providers, it is reported that private health care services have grown tremendously when compared to public health care services [1]. The data from National Family Health Survey – 3 [2-3] shows that 65 percent of households in India utilized private sources of health care. These findings do not augur well for a welfare state such as India. The central and various state governments in India via their respective ministries and other agencies are making an effort to raise the health status of this country by trying to reduce incidences of illnesses and mortality rates through various schemes and related investments made in providing public health care services. However, in spite of their best efforts, the faith of general population in public health care services seems to be declining. This clearly reflects that regardless of the best intentions and efforts, there is a mismatch between design and execution of policies related to utilization of public health care services in India. In the light of such facts,

there is an urgent need for a study to understand the reasons behind the choice of public versus private healthcare services by the general population of India.

This study is an attempt in such a direction. It tries to understand the choice of a health care service provider made by an individual and is therefore different from earlier attempts made in this regard. Previous studies that have tried to venture into this field restricted themselves on two accounts. First, majority of these studies have focused on households as a unit of study. This means that the focus was on the collective rather than the individual. Second, amongst a few studies that have focused on individuals, there has predominantly been no attempt to evaluate the representativeness of the respondent with respect to the objectives of the study. This study takes into consideration individuals as its study unit. For this study the National Family Health Survey – 3 (NFHS – 3) data that was collected during the time period of 2005 – 06 is used [2-3]. Further, the study tries to understand the differences that exist in making the choice for a health care service provider at the macro level as well as the micro (with regards to residential surroundings) level. For macro level the total sample of urban and rural respondents are taken together whereas for micro level the study conducts separate analyses of rural and urban data.

Theoretical Context: The literature on choice of health care services is mostly derived from the studies on health care services utilization. As a result the theoretical foundations for studies concerning choice of health care services provider is based upon the previous researchers' theories and empirical studies on health care services utilization.

Scholars from different streams of economics, anthropology, epidemiology, public policy and management have explored the reasons behind utilization of healthcare services by an individual. There are different models to explain healthcare services utilization for instance, a psychological model based on social structure and individual medical orientation of an individual [4], the health belief model based on the various perceptions and motivations of the individual [5], and utility driven healthcare seeking decision steps model [6].

When it comes to the actual behavior of an individual in the state of illness the focus is on contextual elements concerning the socio economic conditions of the individual and the prevailing health system characteristics. An individual's choice of health care service provider gets influenced by the economic and social factors surrounding that person. This is clearly evident from the Andersen & Newman model [7]. This model emphasizes three factors that affect an individual's utilization of health care services. The predisposing factor is primarily concerned with demographic and social elements in an individual's life, the enabling factor is related to family and community characteristics and illness level factor is related with perceived and actual illness levels of an individual. This model has been applied extensively across various countries in different cultural contexts to study health care service utilization by an individual [8-14].

Empirical investigations using the aforementioned models highlight a number of key determinants of an individual's healthcare service utilization behavior. Age was found to have a positive relationship with health care service utilization [15]. Females have been found to utilize health care services more than the males in developed nations [12] and less as compared to their male counterparts in the developing nations [16]. This has been attributed to the social structure in these developing nations that is mostly male dominated and biased against female freedom. Income of an individual has been found to extensively influence the health care service utilization patterns of individuals [17]. With an increase in income, it has been reported across studies conducted, that the utilization of health care services increase. Additionally, in countries where governments provide either free or subsidized health treatments, it has been found that the tendency to utilize these treatments is higher among citizens belonging to the poor households [18]. On the other hand, the expensive treatments offered by the private providers are generally utilized by affluent members of the society. Education has an important role too in utilization of health care services by an individual. Studies have shown that educated individuals are more likely to utilize health care services as compared to uneducated ones [19-21]. Access to health care has been pointed out as one of the important factors in health care service utilizations by a number of studies [18]. The importance of access to information has also been considered as an important factor in studies related to utilization of health care services in developing nations [20].

Aims & Objectives

Research Questions: The literature review provides guidance on various streams of investigation that have helped explain the phenomenon of health care services utilization both in the context of developed and developing countries. Although, the health care services utilization have been the focus of many studies, the choice of a health care services provider made by an individual still remains unexplained to a greater extent. There are a limited numbers of studies that have made an effort to explore the factors that make an individual to choose a particular type of health care services provider. This is a pertinent question, especially from an Indian perspective, given the fact that an individual has a choice between public or private health care service providers. Therefore, the focal research question of this study is:

RQ1: What are the key determinants that make an individual to opt between a public and a private health care services provider in India?

Studies have reported that individuals belonging to urban and rural areas show different patterns of healthcare services utilization [19,22]. In the context of developing nations, it has been reported that people residing in urban areas have wider accessibility to healthcare services. Those living in rural societies of developing nations are faced with wider challenges in terms of options available for healthcare services as well as accessing them. In the light of the fact that urban and rural settings play an important part in the way healthcare services are utilized, the second research question investigated in the current study is:

RQ2: How do the determinants for making the choice of health care provider by individuals diverge for those who reside in rural/ urban areas?

Material and Methods

Study Design, Settings and Participants: For the purpose of this study, the data from the National Family Health Surveys-3 (NFHS-3) [2-3] is utilized. It is the latest in the series of NFHS conducted by the Ministry of Health and Family Welfare (MoHFW), Government of India (GOI) in coordination with International Institute for Population Sciences (IIPS), Mumbai, India and Macro International, Maryland, USA. This survey was conducted in the year 2005-06 and it covered all the 29 states of India. This survey was cross sectional in nature. The survey collected information from a sample of 124,385 women age 15-49, and 74,369 men age 15-54. Informed consent for the survey was obtained from the respondent at the start of the individual interview. Since, the focus of the present study is on identifying the determinants of healthcare services choice made by an individual, the sample for this study is chosen from NFHS-3 data as follows. Only those individuals were considered who had utilized any type of healthcare services for curative purpose for their own treatment in the past three months from the date of the interview. This reduced the eligible sample size to 32,865 individuals considering males and females together. After eliminating missing data points (2262) the final sample size available for analysis is 30603.

Variables: The dependent variable for this study consists of the choice of health care service provider made by an individual. This choice is either a private or public health care service provider. Thus, the dependent variable used for this study is categorical in nature.

The determinants thought of influencing an individual's choice of health care service provider is selected from the extant literature on healthcare utilization. The determinants chosen for this study are: age, gender, education, income, exposure to mass media, marital status, caste and access to public health care service. Since, NFHS – 3 did not collect direct information on income, hence standard of living index (SLI) is used as the proxy. The same approach has been used by previous authors who have used NFHS-3 data [13]. Similarly, access to public health care service was not measure directly in NFHS -3. In fact, data was not available for sub center or field workers level as well. As a result, availability of Anganwadi or Integrated Child Development services (ICDS) in the area of residence of the respondent is used as the proxy for access to public health care services since these is the next best possible alternative available in the data used.

Data Measurement: This survey used standardized questionnaires and employed a face to face interview technique with adults for collection of data. This survey was aimed to primarily collect data pertaining to the health care, reproductive and nutrition issues of Indian citizens. Additionally it collected demographic and other socially relevant information of respondents for aiding in policy decisions. Table 1 provides details regarding the regarding the measurement and coding of the variables.

Statistical Methods: Since, the dependent variable is categorical in nature; hence multiple logistic regressions are used in performing data analyses. The sample is categorized into three parts i.e. total, rural and urban sample. Multiple logistic regressions are performed on all the three categories of samples using SAS (version Base SAS 9.2®) software.

Results

From NFHS – 3 data for individuals, only those were considered for this study who had utilized some form of curative care for themselves in the past three months from the date on which interview was conducted. This reduced the eligible sample size to 32,865 individuals considering males and females together. After eliminating missing data points (2262) the final sample size available for analysis is 30603.

The descriptive data in percentage wise figures for the different variables used in the study are given in table 2. Majority of the sample used private health care services for themselves. The figures for private health care service providers' utilization are higher for urban areas (74.23%) when compared with rural areas (61.2%). Females have a majority representation in the sample for all the three categories (>60%).

The results of the three logistic regression analyses carried out are shown in table 3. It is found that with an increase in age, the odds of utilizing public health care services are likely to increase. This is true for the total data as well as rural and urban data. Similarly, females are more likely to use public health care services as compared to their male counterparts irrespective of their area of residence. Individual with higher than secondary education are more likely to utilize private health care services as compared to public health care services for the total and urban samples. On the other hand, those having primary or secondary education are more likely to utilize public health care services as compared to private health care services. These comparisons are with respect to those having no education. Those individuals who are having Anganwadi or ICDS coverage in their areas of residence are more likely to utilize public health care services as compared to private health care services. This phenomenon is observed for the total and rural sample. It is found that individuals belonging to lower standard of living index are more likely to utilize public health care services when compared to those who belong to middle or high standard of living index across the three sample categories. Similarly, people belonging to the scheduled caste (SC) or tribes' (ST) categories are more likely to utilize public health care services when compared to rest of the caste categories across the three sample categories.

Discussion

Public health care services are an integral part of Indian society [23]. It is the responsibility of those who are governing to provide quality affordable treatment to each and every citizen in need. This study is an attempt to guide the policy makers in that pursuit. On the whole, the study found a strong association of the variables that are proposed as determinants with the utilization of public health care services as compared to private health care services. From the policy makers perspective these findings can play an important part in fulfilling the objectives of improving the public health care services utilization aspects. The preference for public health care services with an increase in age [11], points to the need for providing higher number of public health care services touch points for the general population. Hence, other than maintaining the current services, there is an utmost latent demand among the population for new public health care facilities. The preference of females for public health care facilities over private services is most encouraging in terms of the response for various ongoing schemes. It further reinforces the importance of gender in healthcare services utilization [13]. Hence, policy makers are hereby requested to take note of the acceptance of public health care facilities by females and are encouraged to keep coming up with promotional schemes in future along with maintaining the existing ones. The greater utilization of public health care services by people belonging to the lower economic strata of the society is similar to some of the other findings [11, 15]. It is an important reminder to the policy makers that in this age of inflation and higher costs of treatment, public health care services are extremely critical for achieving the objective of universal healthcare. The importance of public healthcare services for those belonging to lower standard of living index imply that subsidized public healthcare services are a reality and a life line for majority of population. Policy makers must make efforts to ensure that budgetary allocations suffice the need for those who want to avail public healthcare

services and are not left to abandon treatment or get into financial stress situations to meet healthcare costs.

Rural and urban areas have different policy needs to improve the balance of public and private healthcare services utilization. As the study finds, there is a need to focus on education levels of rural people when healthcare services policies are being devised. This is similar to findings of earlier research that emphasized on importance of education in healthcare services utilization [22, 24]. Keeping into consideration that rural population who are having secondary education or less than secondary education, have a preference for public healthcare services, agencies should devise policies that improve both the quality and the perception of public healthcare services and promote its adoption amongst more educated people. This is particularly important because affordability of public healthcare service is higher and income of individuals is less in rural areas. Similar opportunity is present in urban areas which also indicate a preference for private healthcare services amongst the higher educated urban individuals.

Recommendation

Based on current study we recommend the need for providing higher number of public health care services touch points for the general population. There is an utmost demand among the population for new public health care facilities and it should be systematically supported by relevant government agencies. Policy makers should take note of the utilization of public health care facilities by females and are encouraged to continue promotional schemes for maternal and child healthcare services utilization. The study establishes that in this age of inflation and higher costs of treatment, subsidized public health care services are extremely critical for achieving the objective of universal healthcare. Policy makers must make efforts to ensure that budgetary allocations suffice the need for those who want to avail public healthcare services and are not left to abandon treatment or get into financial stress situations to meet healthcare costs.

Limitation of the study

The use of NFHS – 3 data has its various advantages due to its reach, scope and size. Although, since it is a secondary data, it is not entirely free from a few inherent drawbacks. The present study is restricted to the determinants that were a function of data collected via NFHS – 3. As a result, a few more important variables such as condition of health, service availability, distance, availability of medicines can always be added that will increase the depth of the explanation. Additionally, the NFHS – 3 data is cross sectional in nature and even though, given the coverage, the results of the relationship between independent and dependent variables should hold true, a longitudinal study will help us have a greater faith in the causal relationships observed in this study.

Relevance of the study

Since, the study uses NFHS – 3 data that was a national level survey, hence the findings of the study can be generalized for the entire population of India. As a result, the study performed can claim to possess a high external validity.

Authors Contribution

Both authors has contributed equally in the study.

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Tables

TABLE 1MEASUREMENT AND CODING OF THE VARIABLE

Variable	Label	NFHS-3 Codes	Recoding
Age	Current age - respondent	None	NA
Gender	Gender	0:Male 1:Female	0:Male; 1:Female
Education	Highest educational level	0:No Education 1:Primary 2:Secondary 3:Higher	0:No Education 1:Primary 2:Secondary 3:Higher
Exposure to Mass Media	Frequency of reading newspaper or magazine	0:Not at all 1: < once a week 2: atleast once a week 3: almost every day	0: No/Less mass media exposure; 1: High mass media exposure
	Frequency of listening to radio	0:Not at all 1: < once a week 2: atleast once a week 3: almost every day	
	Frequency of watching television	0:Not at all 1: < once a week 2: atleast once a week 3: almost every day	
Marital Status	Current marital status	0: Never married, 1: Married 2:Living together 3: Widowed 4: Divorced 5: Not living together	0:Unmarried &Others; 1:married
Anganwadi Coverage (Access)	PSU covered by Anganwadi/ICDS centre	0: No, not covered 1:Yes covered	0: Not covered 1:Yes covered

Standard of Living Index (Income)	Standard of Living Index	1:Low; 2:Medium; 3:High	0:High/Medium 1:Low
Caste type	Type of caste or tribe	1:SC, 2:ST, 3:OBC, 4: None of them,	0:General Category/OBC 1:SC/ST
Facility Type (Usage)	Type of facility visited	11:Government/municipal hospital, 12:Govtdispensary, 13: UHC,UHP,UFWC, 14: CHC/Rural Hosp/PHC, 15:Subcenter 16: Govt mob clinic, 17: Camp 18:Anganwadi/ICDS 19:Other public, 21: Pvt hospital/clinic, 22: Private mobile clinic 26: drugstore 28: other private medical 43: NGO/Trust Hosp/Clinic 96:Other	0:Private 1:Public

TABLE 2 FREQUENCY PERCENTAGE OF VARIABLES FOR THE THREE SAMPLE CATEGORIES

Percentage Distribution of Sample				
	Rural Sample	**Urban Sample**	**Total Sample**	**Chi Square Value (p-Value)**
Health Care Service Utilized				596.21(<0.001)
Public	38.81	25.77	31.68	
Private	61.19	74.23	68.32	
Gender				4.377(0.0364)
Male	33.91	35.05	34.53	
Female	66.09	64.95	65.47	
Education				2472.43(<0.001)
No Education	31.45	14.02	21.92	
Primary	18.19	12.08	14.85	
Secondary	44.94	54.98	50.43	
Higher than secondary	5.42	18.92	12.8	
Marital Status				249.54(<0.001)
Other than married	29.79	38.41	34.5	
Married	70.21	61.59	65.5	
Mass Media Exposure				2409.37(<0.001)
No or Low Exposure	32.36	9.8	20.03	
High Exposure	67.64	90.2	79.97	
Anganwadi/ICDS Coverage				5727.77(<0.001)
No	8.73	48.78	30.62	
Yes	91.27	51.22	69.38	
Standard of Living Index				1197.38 (<0.001)
Medium/High	77.49	94.78	86.94	
Low	22.51	5.22	13.06	
Caste				336.39 (<0.001)
General/OBC	69	78.23	74.05	
SC/ST	31	21.77	25.95	

TABLE 3 ESTIMATED ODDS RATIOS OF UTILIZATION OF PUBLIC VS. PRIVATE HEALTH CARE SERVICE

Odds Ratios for National Family Health Survey – 3 data for individuals who utilized public health care vs. private (reference) healthcare services			
Variables	**Rural Sample**	**Urban Sample**	**Total Sample**
Age	1.011***	1.014***	1.011***
Gender			
Male	1.00 (Ref)	1.00 (Ref)	1.00 (Ref)

Female	1.090***	1.152***	1.027***
Education			
No Education	1.00 (Ref)	1.00 (Ref)	1.00 (Ref)
Primary	1.277***	1.208*	1.248***
Secondary	1.286***	0.971	1.084***
Higher than secondary	0.983	0.566***	0.625***
Mass Media Exposure			
No/Low Exposure	1.00 (Ref)	1.00 (Ref)	1.00 (Ref)
High Exposure	1.052	0.972	0.958
Marital Status			
Unmarried/Other	1.00 (Ref)	1.00 (Ref)	1.00 (Ref)
Married	0.919	0.926	1.016
Anganwadi/ICDS Coverage			
No Coverage	1.00 (Ref)	1.00 (Ref)	1.00 (Ref)
Yes Covered	1.786***	1.037	1.199***
Standard of Living			
High/Medium	1.00 (Ref)	1.00 (Ref)	1.00 (Ref)
Low	1.363***	1.745***	1.532***
Caste			
General/Other Backward Castes	1.00 (Ref)	1.00 (Ref)	1.00 (Ref)
Scheduled Caste/Tribe	1.502***	1.590***	1.563***
Likelihood Ratio	240.96***	465.24***	939.72***
Pseudo R-Square	0.0172	0.0274	0.0302
***** indicates significance at 1% LOS, ** indicates significance at 5% LOS, * indicates significance at 10% LOS**			