Utilization of health care services in Varanasi District, India – A geographical analysis

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Abstract

People are not just spread unevenly across the Earth's surface; they also differ along many demographic and socio-economic lines that affect their accessibility to health care services with far reaching policy and planning implications. The main objective of this paper is to estimate the utilization pattern of health care services in the Varanasi district of India. Primary data pertaining to the utilization of health care facilities were collected from 800 respondents of 16 selected villages of rural Varanasi and analyzed with the SPSS statistical software. Varanasi City proper was not considered for this purpose because the presence and functioning of many private and government hospitals here meant that people were able to avail themselves of a fairly good range of healthcare facilities in comparison to people residing in the rural areas. Results of the findings revealed a high level of awareness among the local public of both the existence of the health care centres (78%) and the type of health services they provided (75% for vaccination; 70% mother-child health services; 62% family planning; and 52% general treatment) . Despite such high levels of awareness only 25% of them were satisfied with all the health care services provided by the centres (PHC), 60% were only partially satisfied and the remaining 14% were not satisfied at all. These findings thus underline the geographical disparities between urban and rural Varanasi.

Keywords: geographical disparities, health care facilities, primary health centres, public awareness, rural health services, urban health facilities

Introduction

Geographic variation in population, and population need for health care, provides the foundation for analysis and planning of health services. People are not spread evenly across the Earth's surface, and populations differ along many dimensions—including age, gender, culture, and economic status—that affect their need for health care, their ability to travel to obtain health care, and the types of services they are willing and able to utilize (Mclafferty, 2003).

The utilization levels and patterns of health care facilities indicate the awareness and attitude of people towards their health (Prakasam, 1995). Education, economy, sex and social status are major influencing factors for utilization of health care facilities. An educated person is more careful about his health than an illiterate. Females utilize these services less as compared to males (Sinha et. al., 1993). The geography of health care comprises the analysis of spatial organization (number sizes, types, and locations) of health services, how and why spatial organization changes over time, how people gain access to health services, and the impacts on health and well-being (Fortney et al., 1999). Health care providers are opening and closing, new forms of health care delivery are emerging, and the persistently high costs of health care are raising concerns about quality, effectiveness, and access.

Utilization of health services is a complex phenomenon which, on the hand, is influenced by the perception by an individual of the need for services thereby promoting him to take a decision to utilize

them and, on the other hand, by the availability, accessibility and organizational aspects of health services itself (Murali, 1981). Besides, successful utilization of health services depends on reliability, awareness, motivation and finally on the perception of the people about the services and the need about a particular service. Failing to which, by passing phenomenon may take place (Kumra & Singh, 1994).

In rural areas the health care services are provided through the network of primary health centres (PHC's) and sub-centres. If one looks at the existing availability heart centres, heart breaths with satisfaction. Despite, the country has not been able to achieve the target goal of 'health for all'. For satisfactory explanation, the utilization of health facilities is required to be probed in details (Singh & Singh, 1996).

The government provides curative, preventive and primitive health services facilities through PHC's and sub-centres. PHC's provide a variety of services while sub-centres only family welfare facilities and some primary treatment (McPhail et. al., 1963). The present investigation shows that immunization and vaccination facilities are more popular in public community. To bring out the pattern of health care utilization in the study area, in this paper an attempt has been made to analysis the utilization of health care facilities on the basis of government records and secondly it has been ascertained through opinions of 800 surveyed respondents.

Location of the study area

The study area is Varanasi district and it is eastern district of Uttar Pradesh state, India which is extending between 25°10′ N to 25°37′ N latitude and 82°39′ E to 83°10′ E longitudes. Its major portion is stretched towards west and north of Varanasi city spread over an area of 1454.11 sq. km (Fig.1). Administratively, the study area comprises two tahsils, namely, Pindra and Varanasi Sadar; which are further sub-divided into eight Development Blocks namely Baragaon, Pindra, Cholapur, Chiraigaon, Harhua, Sevapuri, Araziline and Kashi Vidapeeth, consisting of 1336 villages altogether.

Figure 1. *Geographical location of the study area (Varanasi district)*

Data used

A common problem regarding factors that influence health is the availability of data for geographical analysis. Secondary data related with vaccination and immunization, pulse polio vaccination are collected from chief medical officer (CMO), Varanasi district Primary data are collected from 800 respondents of 16 selected villages (2 villages from each development block) in the rural part of Varanasi district to know about the utilization of health care facilities and their results are analyzed with the help of SPSS software.

Result and discussion

1. Vaccination and immunization

It is used for the development of immunity power in human body. More than 20 different immunizations are not available in the world. But all of the immunization are not available in India. Immunization may be divided into two groups:

*Primary immunization***:** For the development of immunity power the body, one or more than one times vaccine is injected. After a certain interval immunity power becomes less, then comparatively better immunization is required.

*Secondary immunization or boosters***:** It is an extra dose of immunization. Generally many of the people who are familiar with primary immunization forget to take secondary immunization. But it is duty of the concerned and health workers to tell the immunized people about the booster's dose at definite intervals.

a. Infant immunization

Infant are more susceptible to diseases. So for the prevention of diseases and afterword's medical technology has invented many types of vaccines/solutions. Immunization may be divided into two parts. Vaccines immunoglobulin-BCG, typhoid, polio, measles, influenza, diphtheria, tetanus, rabiz, etc. such diseases may be prevented through immunizing infants. In rural areas people don't pay the required attention towards the mother and child health care. Pre and post precautions during and after the delivery is not satisfactory in rural areas due to ignorance, illiteracy and unaffordabiltiy. On account of poor knowledge among people, dejection of health workers and often unavailability of vaccines all children don't get vaccine at right time. Under the prevailing situation it becomes the responsibility of PHC's and sub-centres to take all sorts to save the lives of mother and child.

2. Extensive immunization programme from 2005-2006 to 2009-10 in Varanasi

Table 1 shows that surviving children different preventive does of vaccines at certain intervals for various purpose. Government is also paying due attention towards this direction. To substantiate, the data was collected for four consecutive years i.e. form 2005-06 to 2009-2010 (Table 1). The data show differential figures of given doses. In 2005-06 the target was set to immunize 51,204 children and achievement was 105.81%, 100.09% and 100.59% for DPT and OPV I, II and III doses respectively. The achievements for BCG and measles were 101.59% and 91.4% respectively. During 2005-06 to 2009-10 achievement has always been higher than the target. Only immunization of meseals show lesser achievement than the set target. But it also shows an increasing trend. These statistics reflect an increasing awareness of health care for their children in people of the study area (Table 1).

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a. Pulse polio immunization

This programme has gained wide popularity both in rural and urban areas. It is given to children of below five years of age. Aim of this programme is to get total control on polio. In winter season one dose of oral drop of polio is given to all the children below five years of age in the whole country. Many working booths are created for this purpose. It is remarkable to mention that target was fixed to cover 3,77,506 children under polio immunization programme in Varanasi district for the year 2009-2010. But I and II round immunization programme achievement data of 2009-10 were higher than the target in majority of the development blocks of the district (Table 2). The achievement of only two blocks, namely Chiraigaon (93.89%) and Harhua (93.78%) was less than the target set for I round. In IIIrd round many blocks of the district could not achieve their targets. Only two blocks namely Cholapur (102.34%) and Araziline (100.19%) could programme were recorded as 100.26%, 102.87% and 99.70% for I, II, III round respectively. For this purpose, altogether 977 teams were arranged at reasonable locations in the district.

Table 1. Immunization status in Varanasi District from year 2005-06 to 2009-10

Year	OPV (Children 0-1 Year)					DPT (Children 0-1 Year)					BCG		Meseals	
	Target	I	II	III	Booster	Target	I	II	III	Booster	Target	Achieve	Target	Achieve
2006-07	51204	54183	51255	51508	20266	51204	54183	51249	51498	20266	51204	52020	51204	46808
		105.8	100	100.59			105.81	100.08	100.57			101.59		91.41
2007-08	52125	55149	52768	52402	21765	52125	54659	52715	52366	21676	52124	52666	52125	48358
		105.8	101.32	100.53			104.86	101.13	100.46			101.03		92.77
2008-09	51640	59050	55607	55128	19596	51640	58954	55622	54979	19485	51640	57114	51640	51152
		114.34	107.68	106.75			114.16	107.71	106.46			110.6		99.05
2009-10	49793	54977	52577	53078	21893	49793	54977	52577	53078	21893	49793	5578	49793	49778
		110.4	105.59	106.59			110.4	105.59	106.46			111.61		99.96

Source: CMO Office, Varanasi District, 2009.

Table 2. Pulse polio immunization for below five years children's, year 2008-09

Development Block	I Round				II Round				III Round			
	Target	Achieve	% Achieve	No. of Team	Target	Achieve	% Achieve	No. of Team	Target	Achieve	% Achieve	No. of Team
Baranagaon	42488	44996	105.9	111	44996	45239	100.54	111	45239	45087	99.99	111
Pindra	405144	40686	100.42	106	40686	41142	101.12	106	41142	40563	98.59	106
Cholapur	40459	40465	100.01	106	40465	42232	104.36	106	42232	43222	102.34	106
Chiraigaon	53455	50191	93.86	140	50191	52360	104.32	140	52360	52325	99.93	140
Harhua	44844	42035	92.73	105	42035	45707	108.73	105	45707	45232	98.96	105
Sewapuri	41506	41584	100.18	109	41584	41628	100.1	109	41628	41620	99.98	109
Araziline	65553	66474	101.4	172	66474	67425	101.1	172	67425	57557	100.19	172
Kashi Vidyapith	48687	52085	106.97	128	52085	53648	103	128	53648	52608	98.06	128
Total	377506	378516	100.26	277	378516	389381	102.87	977	689381	388214	99.7	977

Source: CMO Office, Varanasi District, 2009.

b. Treatment

According to the data presented in different tables it is clear that immunization and contraception services rendered by PHC's and sub-centres are more popular in the district but clinical facilities are not good. People are not satisfied with available clinical facilities. Now a day's medical technologies have developed a lot but PHC's are running with traditional facilities. They are ill equipped terms of instruments, medicines and diagnostic technologies. There has been made a provision of two doctors for

each PHC. Only block level PHC's have blood test facilities and that too only for malaria parasite and sputum for AFB. There is no x-ray facility. In contrary majority of private hospitals are endowed with all sorts of Blood Test, X-ray, Ultrasonography, ECG, Echocardiogram and CT scanning etc. Before the start of treatment, doctors as well as patients both needs the through check up of the problem. As such the PHC's should be equipped with maximum possible labs for testing.

Table 3 shows the monthly treatment of patients at different PHC's in 2009. In 2009, the highest number of patients received treatment at Cholapur PHC (12,577 persons). There is not found any consistency in turn out of outdoor patients in different seasons/months of the year at block level (Table 3). Location of existing government health care units (primary health centre, community health centres, sub-centres etc.) have been surveyed through global positioning system (GPS) and it is shown in the fig.2. However, on the basis of turnout of patients, utilization level has been assessed in the following paragraphs.

(i) Poor Utilization: It is very interesting to note that the utilization of PHC's for treatment is poor at those PHC's which are lying either in the vicinity of Varanasi city or urban area. For example in the said year the lower utilization of PHC's services for treatment is found at PHC of Baragaon (2,703 patient), Kashi Vidyapith (3,280 patients), Harhua (3,851 patients) and Chiraigaon (6,469 patients). The reasons attributed to the poor utilization of PHC's services for clinical purposes are availability of better services at private hospitals and nursing homes at reasonable and affordable distances (Table 3).

(ii) Better Utilization: The PHC's located in remote and far flung areas have registered more crowds of patients. For instance, Pindra (9,279 patients), Sewapuri (8,869 patients) and Araziline (8,997 patients) PHC's shows better utilization. In the respective blocks there are no better private hospitals or clinics. So, the people have to go at PHC's. Secondly, poor income conditions of villagers do not permit to enjoy facilities at different places (Table 3).

Table 3. Primary health centres (PHC's) wise outdoor patient department (OPD) in each block in the different months, year 2009

Blocks	January	February	March	April	May	June	July	August	September	October	November	December	Total
Baragaon	120	145	278	334	334	252	389	491	104	105	53	98	2703
Pindra	520	413	567	550	590	840	1267	1677	960	982	562	351	9279
Cholapur	760	805	1030	998	1667	1112	1566	1543	1244	1133	431	288	12577
Chirai Gaon	340	268	338	445	445	621	876	811	895	700	445	285	6469
Harhua	224	234	229	334	334	413	432	434	350	341	280	246	3851
Sewapuri	433	567	778	667	776	988	1098	987	815	744	504	512	8869
Araziline	670	689	889	889	552	555	1036	1281	973	744	431	288	8997
Kashi Vidhyapith	210	186	377	223	226	414	323	349	268	253	230	221	3280

Source: CMO Office, Varanasi District, 2009.

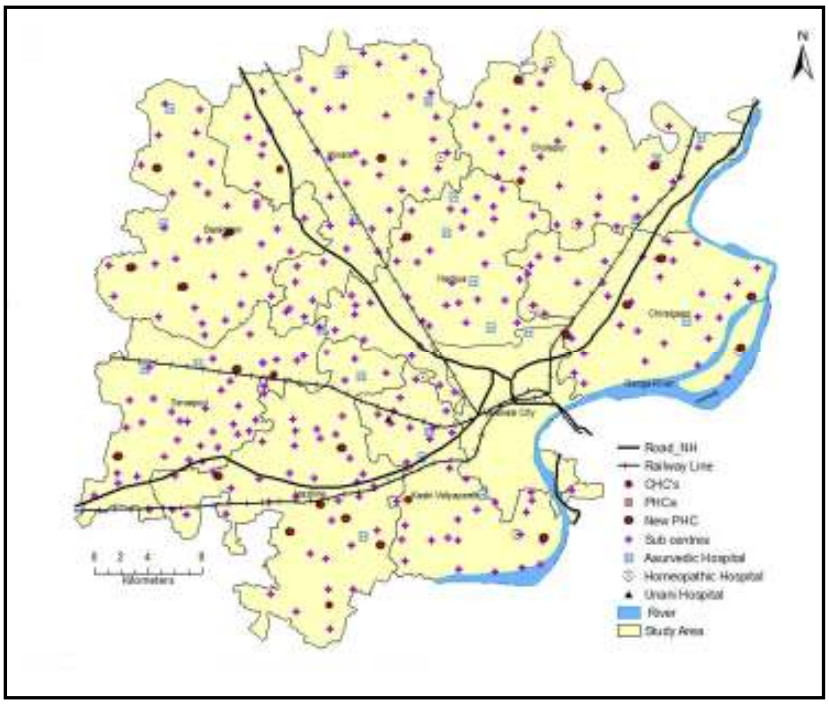

Figure 2. *Global positioning system (GPS) location of each government health care units*

From temporal point of view data show that the maximum utilization of health care services has been obtained in three months namely July, August and September. These months belong to rainy season and characterized by vertical scorching sunlight, adequate rainfall and high humidity which give birth to malaria, filarial, typhoid and bacterial and viral infections. During these months accessibility too becomes poor. December, January and February record minimum number of patients due to better weather conditions from disease point of view. If the patient is serious at PHC's or CHC's, doctors refer him to the district hospitals, Varanasi. Specialized facilities with specialist doctors are available over there along with x-rays, pathology, blood bank and gynaecological facilities. In addition, there is separate TB hospitals and TB control unit equipped with medicine, test facilities and indoor care. Leprosy control unit provides services through PHC's, New PHC's, CHC's, sub-centres and district hospitals.

3. Utilization of health care facilities on the basis of opinion of respondents

The basic issue regarding the utilization care facilities is to assess the popularity of primary health centres for providing desirable services to the nearby population. From this point of view, opinion of randomly selected 800 respondents representing all the blocks has been used and their results are analyzed with the help of SPSS software (Fig. 3). It is clear from the analysis that immunization and vaccination services are more popular than other services.

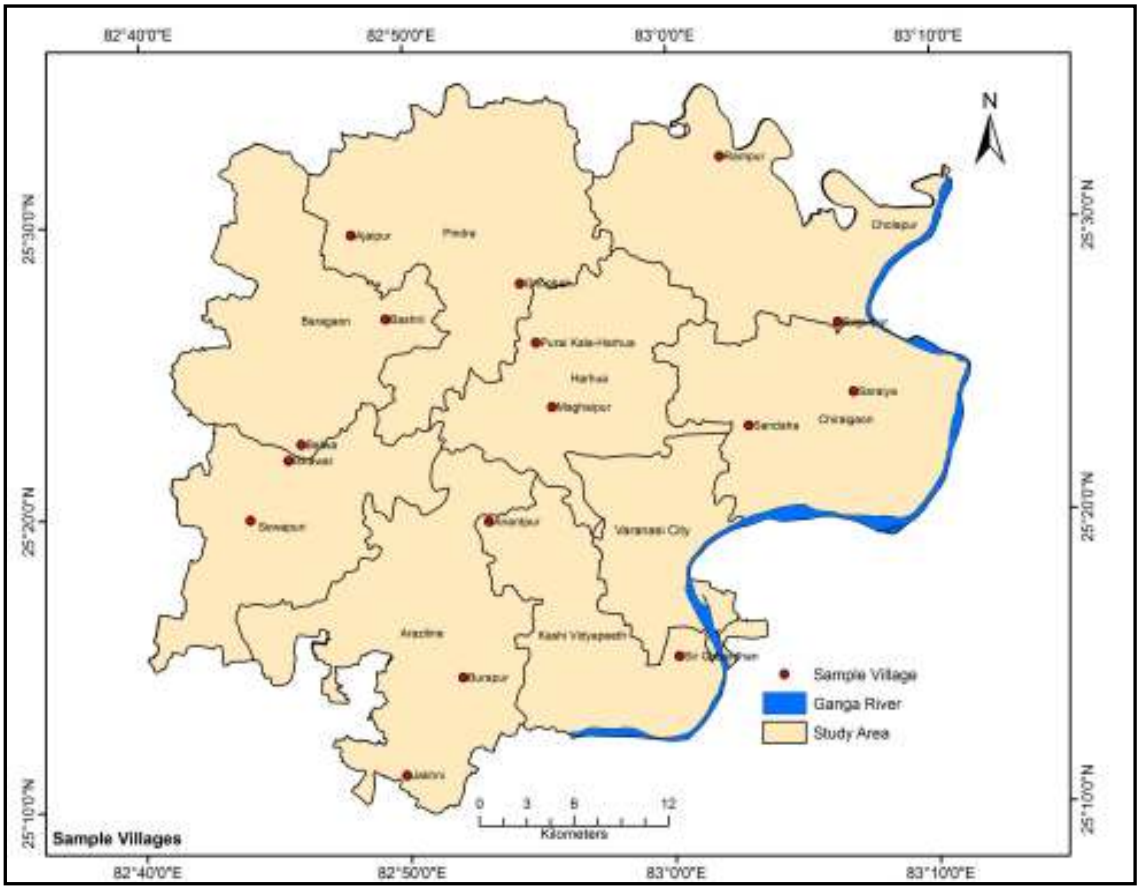

Figure 3. *Sample villages collected through GPS selected for survey in rural part of Varanasi District*

The utilization pattern of health care facilities indicates that the people of the study-area utilized vaccination and immunization in substantial proportion (74%). Next to this in popularity and usage stands mother and child health care followed by treatment and family planning services. Jakhini village (Araziline block) owing to high accessibility from Araziline PHC's as well as community centre come on top position with regard to utilization of vaccination and immunization services (Table 4). MCH facility has also been utilized maximumally by the respondants of Jakhini village. Highest number of respondents of Rampur village has visited Cholapur community health centre (CHC) for the treatment of their illness whereas the utilization of family welfare services is found maximum in Purai Kala-Harhua Village of Harhua development block PHC (Fig. 3).

The utilization of lab facilities is very poor. Out of the 800 respondents, only 14 persons (1.75%) have availed this facility (Table 4). Similarly, the diagnostic facilities have least attracted the villagers. Now a day's people want to become sure about the disease before treatment. Only block level PHC's are providing such test facilities. Additional PHC's are deprived from such type of facilities. Test facilities include only blood smear test malaria parasite and sputum test for AFB. Facilities for other pathological test, x-ray and USG are note available on PHC's. However, X-ray facilities are available at three CHC's (Cholapur, Araziline and Birawankot) of the study-area but looking the size and population of the study-area it is not sufficient. Only 17% surveyed respondents have visited their respective PHC's or New PHC's/CHC's for disease control.

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Table 4. Respondents opinion regarding utilization of health care facilities in selected villages in each development block

Development Blocks	Villages	Treatments	MCH	Family Planning	Disease Control	Vacci-nation	Total Respondents
Baragaon	Bashni	26	26	20	5	39	50
	Belwa	23	25	22	6	42	50
Pindra	Ajaipur	23	24	23	10	45	50
	Goghri	20	23	21	7	39	50
Cholapur	Sugulpur	18	20	18	5	36	50
	Rampur	36	31	25	15	28	50
Chirai Gaon	Sandaha	30	28	30	12	37	50
	Bankat	16	20	17	6	26	50
Harhua	Purai Kala Harhua	31	31	35	15	43	50
	Maghaipur	17	19	20	4	41	50
Sewapuri	Sakalpur	16	19	20	7	39	50
	Ishawar	25	27	25	10	40	50
Araziline	Jakhini	31	35	27	11	46	50
	Burapur	19	20	19	8	30	50
Kashi Vidhyapith	Anantpur	29	29	24	10	34	50
	Sir Gobardhan	20	22	18	5	27	50
Total		380 (47.5%)	399 (50%)	364 (45.5%)	136 (17%)	592 (74%)	800

Source: Based on personal survey & self computed, 2010.

4. Distance wise respondent's opinion regarding health care facilities

It has been reported by the academician, administrators and policy makers that the distance and accessibility affect the magnitude and frequency of utilization of health care facilities. As such it becomes important to analyze health care facilities. As such it becomes important to analyze health care utilization pattern in relation to distance. For this purpose samples have been derived from the villages lying within 1 km, 1-3 km, 3-5 km and more than 5 km distances (Fig. 4). Table 5 exhibits distance-wise respondent's opinion regarding utilization of health care facilities. It reveals that maximum utilization of health care facilities is found in the case of those villages which lie within less than 1 km distance from PHC's.

Table 5. Distance wise respondent's opinion regarding utilization of health care facilities

Distance (km)	Treatment	MCH	Family Planning	Disease Control	Vaccination	Laboratory	Total Respondents
<1	161	190	144	70	198	10	200
1 to 3	119	120	112	39	180	3	200
3 to 5	78	80	74	21	124	1	200
>5	22	10	34	6	90	-	200
Total	380	400	364	136	592	14	800

Source: Based on personal survey & self computed, 2010.

For example, about 99% respondents of these villages have utilized vaccination facilities, 95 % for MCH, 80.5 % for treatment, 72% for family planning and 35% for disease control (Table 5). In contrast the minimum planning utilization of health care facilities is found in the case of those villages which lie at a distance of more than 5 km from their respective PHC's. For example, form this distance range only 45% respondents have utilized vaccination facilities, 5%: taken facility MCH, 11% visited for treatment, 13% for family planning and 3% for disease control.

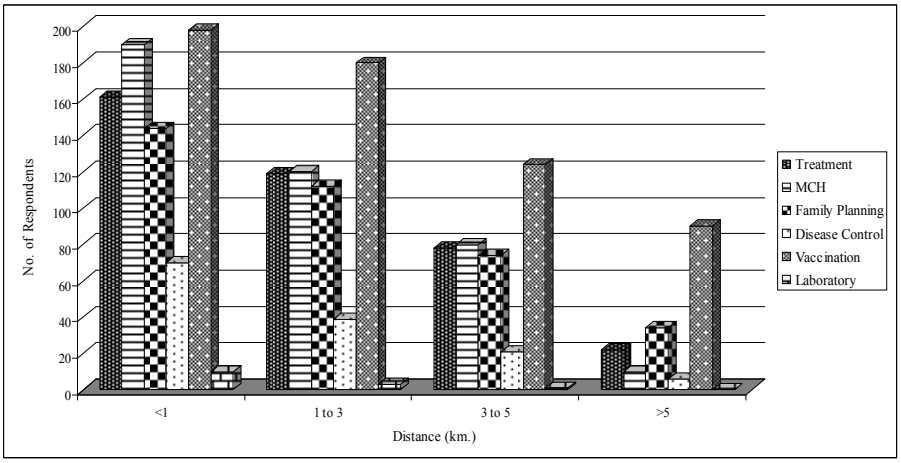

Figure 4. *Distance-wise respondents opinion in rural Area of Varanasi district regarding utilization of health care facilities, 2010.*

a. Distance and treatment facilities

From the foregoing analysis it is clear that distance decide the frequency of visits for availing various health care facilities available at PHC's/CHS's. Table 6 evinces that 42.36% of the total surveyed respondents come from long distances (>5 km) could have made their visit for availing treatment at PHC's. The respondents belonging to 1-3 km range shows 31.31% utilization while the respondents of 3-5 km range shows 31.31% utilization while the respondents of 3-5 km range marks 21.4% utilization. It shows that with every increase in distance, there will be decreasing rate of utilization of health care facilities (Fig. 5). The treatment at PHC includes treatment for fever, diarrhoea, injury and other seasonal problems. In all the cases of treatment the number of patients goes on decreasing with an increase in distance. Non availability of specialist doctors and poor diagnostic facilities also contribute much in taking decision, especially by long distance comers.

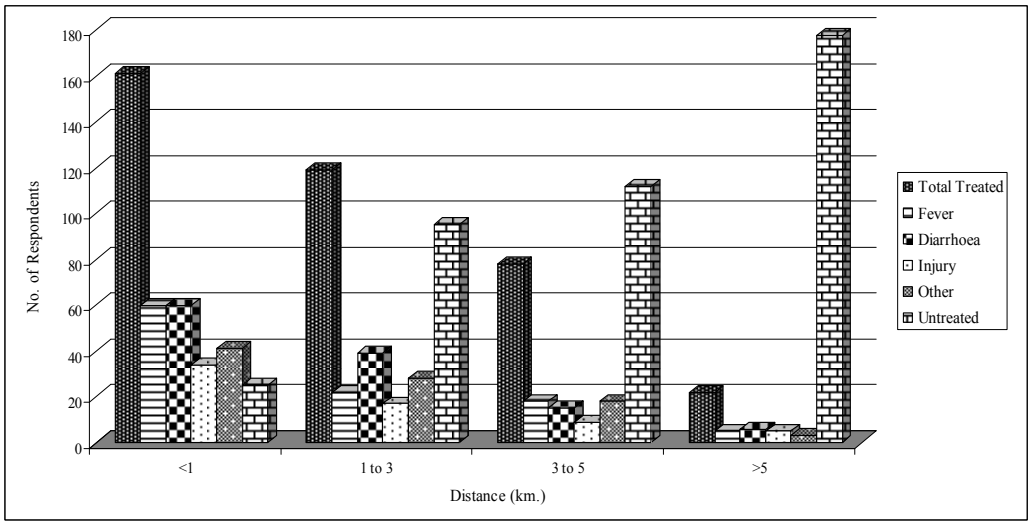

Figure 5. *Distance-wise respondent's opinion in rural area of Varanasi district regarding utilization of treatment facilities, 2010.*

Table 6. Distance wise respondent's opinion regarding utilization of treatment facilities

Distance (km)	Total Treated	Fever	Diarrhoea	Injury	Other	Untreated	Total Respondents
<1	161	60	60	34	41	25	200
1 to 3	119	22	39	17	28	95	200
3 to 5	78	18	15	9	18	112	200
>5	22	5	6	5	3	178	200
Total	380	105	120	65	90	420	800

Source: Based on personal survey & self computed, 2010.

b. Distance and mother child health (MCH) facilities

Distance wise respondents opinion regarding utilization of MCH facilities is given in Table 7. Out of 800 surveyed respondents, 50% have utilized this facility. Among these, 47.5% respondents were from within 1 km, 30% from 1-3 km, 20% from 3-5 km and 2.5% users had come after travelling more than 5 km distance from PHC's and sub-centres. Pre natal first time cases for medical advice and injection were found more (49.50%) from less than 1 km distances whereas 37.12% such users had come from 1.3 km range, 9.9% were from 3-5 and only 3.46% cases were found from more than 5 km distance from PHC's. Pre-natal second times cases are recorded less than Pre-natal first time cases. Out of 400 users, only 133 cases were noted for the pre-natal second time medical check up. In this 48.87% cases were recorded form less than 1 km distance from PHC's/sub-centres, 36.87% from 1-3 km, 10.52% form 3.5 km and 3.75% respond ants travelled more than 5 km distance. Further, out of 400 medical advice seekers 145 cases of delivery were performed at PHC's and sub-centres. In this 53.10% delivery cases had travelled less than 1 km distance, 27.58% 1-3 km, 16.55% 3-5 km and 2.75% users travelled more than 5 km distance form PHC's and sub-centres. Post-natal first time help data show that maximum utilization has been made by the respondents belonging to less than 1 km range from PHC's. In all 163 registered cases for post-natal first time help, 50.92% had come from within 1 km distance, 31.905 from 1-3 km, 12.26% from 3-5 km and 4.90% from more than 5 km distance from their respective PHC's/sub-centres.

Post-natal second time help were received by less number of respondents in all the distance ranges. Here too distance factor has affected the number of medical advice seekers. For instance, out of 400 registered cases for MCH only 16.75% cases from noted distance ranges had paid their visits for post-natal second time help. The frequency of non-users increase with increasing distance from PHC's. It is apparent from Table 7 that number of medical advice seekers in second stage of pre and post-natal cases are less as distance increase. It shows that they are serious about the mother and child health care. It requires due attention.

Table 7. Distance wise respondent's opinion regarding utilization of MCH facilities

Distance (km)	Total No. of MCH Cases	Pre-Natal First Time	Pre-Natal Second Time	Delivery Time	Post-Natal First Time	Post-Natal Second Time	Non Adopters	Total
<1	190	100	65	77	83	36	10	200
1 to 3	120	75	49	40	52	18	80	200
3 to 5	80	20	14	24	20	10	120	200
>5	10	7	5	4	8	3	190	200
Total	400	202	133	145	163	67	400	800

Source: Based on personal survey & self computed, 2010.

c. Distance and vaccination

The vaccination facility is most popular among the PHC's services. As such maximum respondents avail this facility. However, the role of distance cannot be completely ruled out on the use of vaccination facilities. Out of 800 respondents, 592 persons (74%) have used this facility. Among them maximum (198 persons: 33%) are from less than 1 km distance followed by 1-3 km (180), 3-5 km (124) and above 5 km (90) distance ranges.

d. Distance and disease control

Among the surveyed respondents only 136 respondents (17%) from have visited PHC's in relation to disease control facility. In which maximum cases (70) had come from less than 1 km distance, 39 from 1-3 km, 21 from 3-5 km and only 6 cases had come after travelling more than 5 km distance.

5. Caste/religion-wise respondent's opinion regarding health care facilities

a. Caste/religion-wise Respondent's opinion regarding utilization of health care facilities in primary and community health centres

The caste and religion are also considered important factors in affecting the utilization of health care facilities. In Indian set-up, caste not only reflects the social status but it also reveals economic status which is turn affect the user's interest compulsions in availing the facilities. The area is inhabited by mainly two religious groups i.e. Hindu and Muslim. For the sake of convenience here, Hindus have been broadly classified into three major castes such as upper caste, backward caste and SC/ST. The caste/religion wise utilization pattern is presented in table 8 which shows that the Hindus have adopted family planning service in higher proportion than their Muslim counterpart. The utilization of MCH facility in Muslim is also found in lower proportion (Fig. 6).

Table 8. Respondent's opinion regarding utilization of health care facilities according to castes/religions

Religion/Caste	Treatment	MCH	Family Planning	Disease Control	Vaccination	Laboratory	Total Respondents
Hindu							
Upper Caste	42	48	39	174	128	2	176
Backward	180	205	198	41	265	3	324
SC/ST	113	119	117	54	149	8	215
Muslim	45	28	10	24	50	1	85
Total	380	400	364	136	592	14	800

Source: Based on personal survey & self computed, 2010.

Among the health care services, the utilization of vaccination ranks at number one in all the castes/religion. In upper caste and backward caste respondents MCH occupies second place after vaccination. But in Schedule Caste/Schedule Tribes (SC/ST's) and Muslim treatment is second choice. Detailed pattern of caste/religion wise utilization of different services rendered by PHC's is given in sequel.

b. Treatment facilities at the PHC and CHC according to castes/religions

Treatment facilities are provided only by PHC's/CHC's due to the sequence of qualified doctors. Doctors are found only on PHC's and district hospitals. From the view point of caste the maximum utilization of treatment facility is found in SC/ST (52.55%) and backward caste (55.55%). It shows that the poor people visit PHC's/CHC's more frequently for utilization of facilities available there in (Table 9 and Fig. 7). Poor people cannot afford the fees of private doctors and medicines prescribed by them and so they depend more on PHC's.

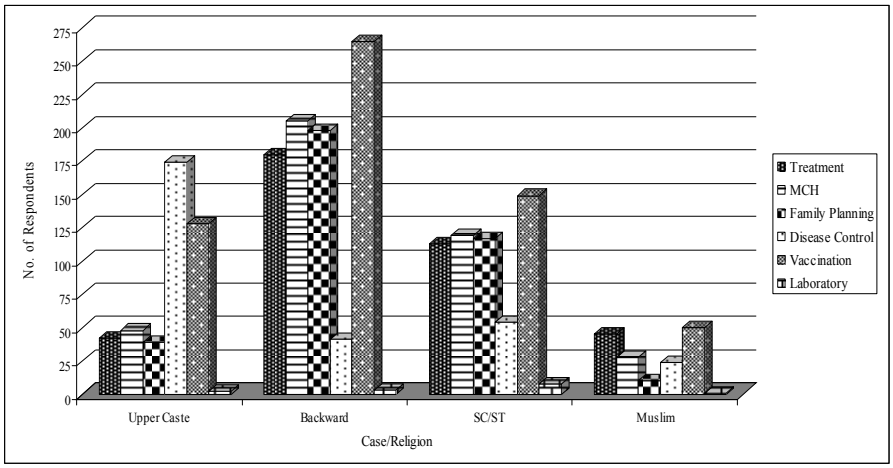

Figure 6. *Respondent's opinion in rural area of Varanasi district regarding utilization of health care facilities according to castes/religions, 2010.*

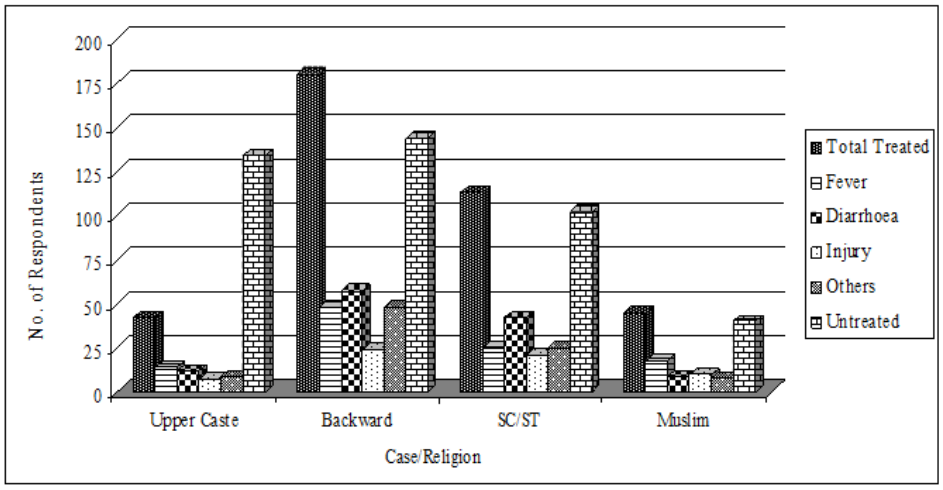

Figure 7. *Respondent's opinion in rural area of Varanasi district regarding utilization of treatment facilities according to castes/religions, 2010.*

Table 9. Respondent's opinion regarding utilization of treatments facilities according to castes/religions

Religion/Caste	Total Treated	Fever	Diarrhoea	Injury	Others	Untreated	Total Respondents
Hindu							
Upper Caste	42	14	12	7	9	134	176
Backward	180	48	57	24	48	144	324
SC/ST	113	25	42	21	25	102	215
Muslim	45	18	9	10	8	40	85
Total	380	105	120	65	90	420	800

Source: Based on personal survey & self computed, 2010.

c. Caste/religion-wise utilization of Mother Child Health (MCH) facilities

The people belonging to different castes and religions receive MCH facilities in different ratio provided by PHC/CHC and their sub-centres (Table 10). It shows that backward caste (64.81%) people have utilized MCH facility more than other castes. It is found in very low proportion in Muslim Community (32.94%). It indicates that in Muslim society the substantial care is not given on the health of mothers. Looking at the caste/religion-wise data of pre-natal (before birth) and post-natal (after birth) first and second visit, it becomes clear that there is not found consistency in utilization of MCH facilities. It is remarkable to mention here that upper caste people given more preferences to PHC's/CHC's for delivery as compared to other castes. But in overall use of MCH facilities including pre-natal and post-natal consultation, it is found lowest in Muslim (32.94%) than Hindu (52.02%). Among Hindus it is observed lowest in upper caste followed by SC/ST. The reason of lower use of MCH facility by upper caste people is not their bad intention towards mother and child health care; instead they use better facility available in urban area or in private hospital to this end.

Table 10. Respondents opinion regarding utilization of MCH facilities according to castes/religions

Religion/Caste	Total No. of MCH Cases	Pre - Natal First Time	Pre- Natal Second Time	Delivery Time	Post - Natal First time	Post - Natal Second Time	Non Adopters	Total Respondents
Hindu								
Upper Caste	48	10	35	25	18	9	128	176
Backward	210	112	60	81	96	32	114	324
SC/ST	114	64	27	29	35	21	101	215
Muslim	28	16	11	10	14	5	57	85
Total	400	202	133	145	163	67	400	800

Source: Based on personal survey & self computed, 2010.

d. Caste/religion and vaccination facility

Generally utilization of vaccination facility is found higher in all the castes/religious groups. Among the Hindus backward caste people have shown (81.79% of total respondents) more interest in taking the benefit of comparison to other castes. It shows that vaccination programmes are more popular among the masses. It also indicates that people are well aware of pros and cons of the various vaccination schemes.

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e. Caste/religion and disease control

The utilization of disease control facilities is found maximum among Muslim and SC/ST. The use of this facility is found in lesser proportion in upper and backward caste. The social-economic condition of these castes is better than the Muslim and SC/ST people. Besides, they are more conscious towards health.

6. Education–wise respondents opinion regarding health care facilities

a. Education-wise utilization of health care facilities

Education inculcates the awareness and awareness decides the level of utilization of a particular facility. With this view it is attempted to see the effect of education (level of literacy) on adoption pattern. Out of 800 respondents whose views have been sought, 22.5% (180) are illiterate. It is evident from the Table 11 that majority of the respondents (97.4%) have utilized the services of PHC's/CHC's and sub-centres from vaccination facility. Among the percentage of illiterate's users have been 40.55%, 47.77% and 37.77% respectively (Fig. 8).

Table 11. Respondent's opinion regarding utilization of health care facilities according to educational attainment

Education	Treatment	MCH	Family Planning	Disease Control	Vaccination	Laboratory	Total Respondents
Illiterate	86	73	68	44	112	8	180
Literate							
Primary	106	82	64	62	152	4	206
Middle/Intermediate	164	174	180	18	242	2	310
Higher Education	24	71	52	12	86	0	104
Total	380	400	364	136	592	14	800

Source: Based on personal survey & self computed, 2010.

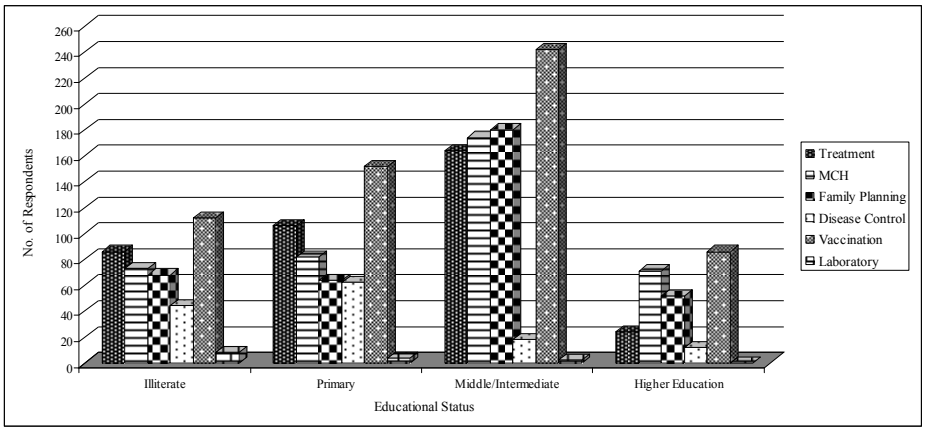

Figure 8. *Respondents opinion in rural Area of Varanasi District regarding utilization of health care facilities according to educational attainment, 2010.*

The literates adoption rate was 77.41% in context to MCH, treatment and family planning. The percentage of literate respondents using MCH, treatment and family planning programmes comes about 81.79%, 77.36% and 81.31% respectively. Further, the result of the survey evinces another interesting fact that higher the level of literacy more the use of vaccination having primary, middle and higher

education account for 73.78%, 78.06% and 82.06% respectively. It may be noted here that the high percentage of utilization of health care services by the respondents educated up to intermediate level is due to only their larger share in the sample.

Table 12. Respondent's opinion regarding utilization of treatment facilities according to educational attainment

Education	Total Treated	Fever	Diarrhoea	Injury	Other	Untreated	Total Respondents
Illiterate	86	22	29	15	20	94	180
Literate							
Primary	106	29	31	17	29	100	206
Middle/Intermediate	164	49	55	28	35	146	310
Higher Education	24	8	5	6	6	80	104
Total	380	105	120	65	90	420	800

Source: Based on personal survey & self computed, 2010.

Table 13. Respondent's opinion regarding utilization of MCH facilities according to educational attainment

Education	Total No. of MCH Cases	Pre Natal First Time	Pre Natal Second Time	Delivery Time	Post Natal First Time	Post Natal Second Time	Non Adopters	Total Respondents
Illiterate	73	33	4	13	9	5	107	180
Literate								
Primary	82	58	22	22	26	10	124	206
Middle/Intermediate	174	94	71	58	80	31	136	310
Higher Education	71	17	36	52	48	21	33	104
Total	400	202	133	145	163	67	400	800

Source: Based on personal survey & self computed, 2010.

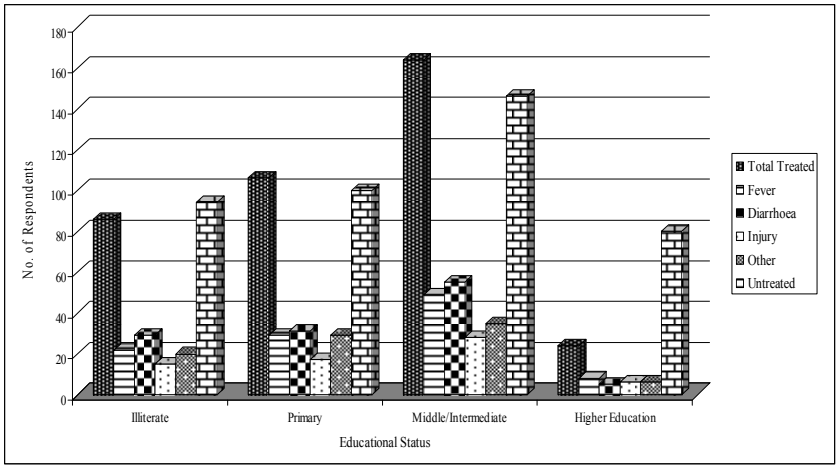

Figure 9. *Respondent's opinion in rural area of Varanasi district regarding utilization of treatment facilities according to educational attainment, 2010.*

b. Utilization of treatment facilities according to educational attainment

Table 12 shows the education-wise utilization of treatment facility. Among illiterates maximum use of PHC's/CHC's and sub-centres services has been made for treatment followed by fever (Fig. 9). The similar trend is also noticed in the case of literate respondents. Table 13. brings forth the education wise utilization pattern of MCH facilities. This facility is used for check up before (pre-natal) and after birth (post-natal) as well as advice and delivery. Normally the respondents of the study area have utilized MCH facility available at PHC's and sub-centres twice before and after birth.

c. Education-wise utilization of mother child health (MCH) facilities

Table 13 clearly reveals that first pre and post-natal check-up and advice are seen more common than second time pre and post-natal advice. This trend is not healthy for the health of both mother and child. The services of PHC's/CHC's and sub-centres have also been availed for delivery but in low proportion. The percentage users is only 18.12%, which is much more below from the expectation because PHC's and sub-centres have been meant to fulfil the objective of safe delivery in rural areas. Therefore, it requires due to attention and propagation.

7. Respondent's opinion regarding utilization of health care services according to occupation

Occupation of a person provides an idea about the income status as well educational status. As such occupation wise respondent's opinion regarding utilization of health care services have been sought. The results have been presented in Table 14 and Fig. 10. It is very remarkable to note that those who are either in services or supervise agriculture along with services they use less health care services available at PHC's and sub-centres. The reason is very simple. They are economically better so they can afford private doctor's services as well as specialized medical facilities available in urban areas, Varanasi city. Besides, they are conscious enough in utilizing better health services for their illness/disease.

Table 14. Respondents' opinion regarding utilization of health care facilities according to occupation

Occupation	Treatment	MCH	Family Planning	Disease Control	Vaccination	Laboratory	Total Respondents
Labourers	146	124	114	66	224	8	250
Cultivators	130	128	126	28	238	3	266
Agriculture based Cottage Industry	59	97	61	16	62	1	130
Agriculture with Service	31	20	69	14	40	2	89
Others	14	31	24	12	28	-	65
Total	380	400	364	136	592	14	800

Source: Based on personal survey & self computed, 2010.

Their percentage for treatment MCH, family planning, disease control and vaccination amount to 11.84%, 10.25%, 17.30%, 19.17% and 11.48% respectively. Against this, labourers and poor cultivators depend more on health care services available at PHC's. For the foregoing analysis it is observed that due to various reasons the pace of utilization of health care facilities in the study area is sluggish and in some cases it is quite low. Besides, poor people depend more on PHC's and their sub-centres. Therefore, more attention should be made to equip them well effectively.

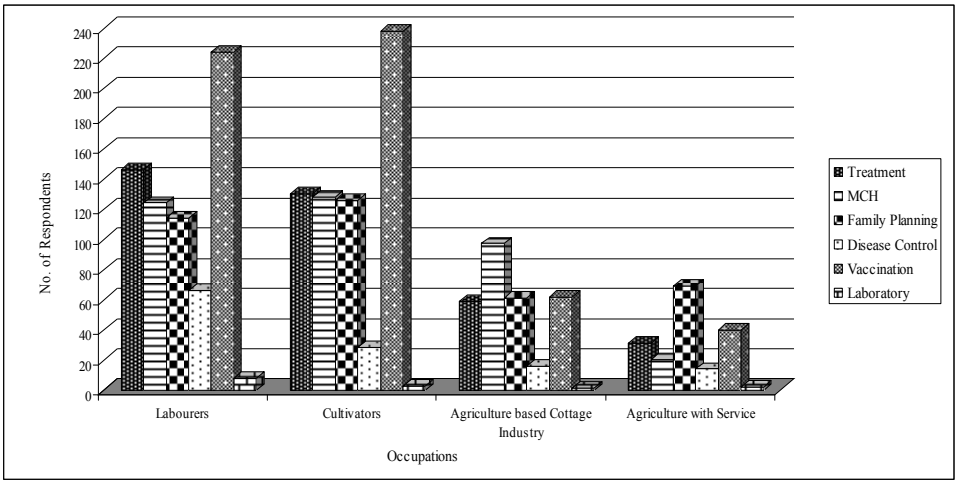

Figure 10. *Respondent's opinion in rural area of Varanasi district regarding utilization of health care facilities according to occupation, 2010.*

8. Nature of health care facilities and their availability

Utilization pattern of health facilities varies on a number of factors like travelling distance to avail the health services, cost of treatment, popularity of resource persons working there etc. To know the order of preference towards availing a particular health care facility, respondents were requested to give their preferential order and result so obtained is presented in Table 15 and Fig. 10.

Table 15. Utilization pattern of the health care facilities

Health Care Facility	No. of Respondents Availing the Facility	%
Private Practitioners	327	40.88
Government Hospital (PHC and CHC)	313	39.12
Traditional Practitioners	83	10.37
Home Remedy	45	5.63
Others	32	4.0
Total	800	100.00

Source: Based on personal survey & self computed, 2010.

Table 15 reveals that maximum numbers of respondents (40.88%) are utilizing the services rendered by private medical practitioners. It is perhaps due to facilities available there and proper care and interest taken by private doctors. About 39.12 of the total respondents mostly belonging to low income group visit to government hospital. Out of the total respondents nearly 10.37% avail the traditional practitioners while 5.63% people believe in home-remedy.

9. Reasons for giving preference to PHC/ CHC/Health Sub-Centres

With huge investment and availability of qualified and specialized doctors at PHC's and Government hospitals these were ranked at second order of preference. Therefore, it is essential to evaluate people's attitude towards functioning of government hospitals or PHC's/New PHC's/CHC's/Sub Centres. Table 16

reveals that maximum number of respondents (42.5%) makes visit to PHC's/CHC's for immunization of their children or with pregnant women, because these services are provided by the government hospitals free of costs. About 25.25% of respondents visit government hospitals on account of very low costs of treatment while 11.63% people come to these centres due to distance factor. Further, a very low proportion of respondents i.e. 5.87% visit to PHC's /CHC's due to availability of free medicines.

Table 16. Reason for giving preference to PHC/CHC or government hospitals

Reason	No. of Respondents	%
Easiest Source of Immunization	340	42.5
Near	93	11.63
Cheap	202	25.25
Near/Cheap	118	14.75
Free Medicine	47	5.87
Total	800	100

Source: Based on personal survey & self computed, 2010.

From the above analysis it is clear that health care facilities provided by the Government like PHC's or Hospitals are not still utilized properly because of the several, reason mentioned by respondents like irregularity in the availability of doctors, poor maintenance and non-availability of prescribed medicines.

10. Causes for not coming to PHC's/CHC's/sub centres

To find out the respondents attitude towards not coming to PHC's/CHC's and other Government Hospitals responses were tabulated. Table 18 shows that maximum number of respondents (35%) do not prefer to visit PHC's/New PHC's/CHC's or Government Hospitals for treatment because of non-availability of proper medicines. About 24.05% of respondents do not avail the services provided by government at PHC's/New PHC's/CHC's and hospitals because of distance factor.

Out of the total respondents nearly 25.95% prefer to go their health services to private medical practitioners because of their good services and availability for all the time. Pathological and essential services are not properly maintained at these Government hospitals therefore nearly 15% of the respondents do not visit these centres (Table 17). They prefer to go at PHC's/New PHC's/CHC's only for specific services like immunization, MCH etc.

Table 17. Reasons for not coming to PHC's/CHC's/sub centres for treatment

Reason	No. of Respondents	%
Distance	101	24.05
Non-Availability of Medicine	147	35.00
Not Good facilities	63	15.00
Good facilities in Private Hospital Services	109	25.95
Total	420	100.00

Source: Based on personal survey & self computed, 2010.

11. Level of respondents' satisfaction

To find out the level of satisfaction from efficiency and services provided by government PHC's/CHC's and hospitals respondents were again requested to give their response particularly on this issue. Their

responses were categorized into three level of satisfaction i.e. satisfied, partially satisfied and not satisfied. Frequency of respondents with these levels of satisfaction is presented in the Table 18. This table shows that a large number of respondents (60%) are partially satisfied with efficiency and medical services available at PHC's and Government Hospitals.

Table 18. Level of satisfaction of respondents

Level of Satisfaction	No. of Respondents	%
Satisfied	203	25.38
Partially Satisfied	480	60.00
Not Satisfied	117	14.62
Total	800	100.00

Source: Based on personal survey & self computed, 2010.

It means that services rendered by PHC's/CHC's are neither poor nor so good. About 25.38% respondents are fully satisfied with the facilities available at these PHC's. Out of the total 800 respondents 117 (14.62%) are not satisfied with the functioning of PHC's. Most of them have complaint towards the non-availability of doctors and medicines both at the PHC's and Government hospitals because of their engagement in private practices elsewhere (Table 18). Thus there is need to develop better facilities of health care at PHC's /CHC' and sub-centres of rural area of Varanasi district.

Conclusion

In this paper an attempt has been made to examine the utilization of health care facilities in the rural area of Varanasi district on the basis of existing government records and the perception of 800 surveyed respondents. It was found that the majority of the respondents (97.4%) have utilized the services of PHC/CHC and sub-centres for vaccination facility. Within this the utilisation percentage of among illiterate users ranged between 40.5%, 47.7% and 37.7% for PHC, CHC and sub-centres respectively. By comparison, the literate users' adoption rate was 77.4% for mother-child health (MCH), treatment and family planning while their utilisation rate for MCH, general treatment and family planning programmes stood at 81.7%, 77.3% and 81.3% respectively.

It is to be noted that those who worked in the services sectors (40.8%) tended to use less health care services available at the PHCs and sub-centres. This could be due to the fact that being economically better off they can afford private and specialist doctor's services available in the urban areas of the Varanasi city. In contrast, some 39 % of the total respondents who mostly belonged to low income groups visited the government hospital because here the services were provided free of charge. However, as many as 24% of respondents did not avail themselves of the services provided by government at the PHCs/new PHCs/CHCs and hospitals because of distance factor.

Finally, it is revealing that only 25% of them were satisfied with all the health care services provided by the centres (PHC), 60% were only partially satisfied and the remaining 14% were not satisfied at all. These findings thus underline the geographical disparities between urban and rural Varanasi.

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