

UTILIZATION OF HEALTHCARE SERVICES & HEALTHCARE EXPENDITURE PATTERNS IN THE RURAL HOUSEHOLDS OF NEPAL

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ABSTRACT

BACKGROUND

Healthcare financing as a lever to move closer to universal health coverage. Financing health care has been identified as a barrier to access to health care and increases the likelihood of impoverishment of households. There is still limited study and information on healthcare service utilization in the rural community of Nepal. Our study aims to assess utilization of healthcare services & patterns of healthcare expenditure in the rural households of Nepal.

METHODS

A community-based research study was conducted among 341 rural households of Tanahun District, Nepal. A Chi-square test was used for assessing the associated factors with healthcare utilization.

RESULTS

The utilization of in-patient and out-patient health services was 89.9 % and 10.1 % respectively. The majority of households (88%) had in USD less than \$410 annual household healthcare expenditure. The mean annual healthcare expenditure was found to be \$279. Nearly three-fourths (71.4%) of households had annual expenditure on medicine more than \$40 with mostly on allopathic medicine (93.4%). The majority of participants (70%) mentioned that the healthcare expenditure was a burden to their household.

CONCLUSION

Despite the higher knowledge of health insurance, the involvement was found to be very low & poor. Educational status, knowledge about insurance, privileged ethnicity, religion, income source were the major factors associated with the utilization of healthcare services. Awareness & promotion programs focusing on rural communities should be implemented with affordable health services.

KEYWORDS

healthcare utilization, healthcare services, health insurance, healthcare expenditure, rural household

INTRODUCTION

Health financing levers to move closer to universal health coverage lie in three interrelated areas: raising funds for health, reducing financial barriers to access through prepayment and subsequent pooling of funds in preference to direct out-of-pocket payments and allocating or using funds in a way that promotes efficiency and equity. [1] In low-income countries, direct out-of-pocket (OOP) payments are the principal means of health system financing. [2] Public health expenditure to GDP ratio has remained low in developing countries and the general public has no choice but to seek healthcare from their own pocket, which has remained the dominant source of financing. [3] Significant Out of pocket expenditure may lead households to a “financial catastrophe” in the absence of risk and payment pooling mechanisms or insurance. [4]

Globally, approximately 44 million households or more than 150 million individuals face catastrophic health expenditure (CHE), and about 25 million households or more than 100 million individuals are pushed into poverty by the need to pay for services every year. In the South Asian region, this proportion has been estimated to reach up to 60%–70% of total expenditure due to poor public spending on health. In most of the low/middle-income countries, a large proportion of the money spent on healthcare comes from the out-of-pocket (OOP) expenditure of patients or their families. [22-28]

In Nepal, there has been estimated that 48–69% households can experience financial hardship and often impoverishment as a result of their spending on health care. In the long term, financial protection against the risk of catastrophic health expenditure at household level can be achieved through tax-based health financing systems or social health insurance schemes or a combination of both. [25] Nepal has committed to the global community to achieve universal health coverage by 2030. As the government moves to progressively realize Universal Health Coverage (UHC), it remains committed to expand health services, increase the population coverage and reduce financial burdens for the citizens. [5,6,16-20, 27-31] Almost 50% of the Nepali health budget is made up of international aid. [7] More than half of Nepali women visited traditional healers for healthcare as the first choice of treatment. [8,9] The study was carried out to determine the patterns of

health care expenditure among people of the rural municipality in Tanahun, Province No. 4 of Nepal.

MATERIALS AND METHODS

Study design & population

A quantitative, descriptive cross-sectional research study was carried out among 341 households of selected wards from the rural municipality in Tanahun, Province No. 4 of Nepal. Households that migrated into our study location since the time of less than one year were excluded from the study. The responsible person of the household who takes health care and other financial decisions were included for this study.

Sampling technique & sample size

Initially, three wards were selected randomly by using simple random method and 125, 126, 90 households from each ward were selected using proportionate sampling respectively. Then, the households from each ward were selected through systematic random sampling. Sample size was calculated using the formula,

$$n = \frac{Z^2pqN}{d^2(N-1) + Z^2pq}$$

Z = standard normal variable at 95% CI (1.96), N = Total number of households (4132) [21], p = estimated proportion of out of pocket expenditure (p = 0.68) based on the similar study [13], q = 1-p, d = desirable error (5%). With the application of 10% non-response rate, the sample size of this study was 341.

Data collection & management

To refine the developed data collection tools, precise and accurate information, the tools was tested. 10 % (n= 35) of defined sample size were used to conduct pretesting of designed tools. The reliability of tools was tested in SPSS using Cronbach's Alpha which calculated value was found to be greater than 0.8 in average. It was conducted in Bandipur municipality of Nepal because of neighboring rural municipality with similar characteristics. Data collection was from June to August 2019 through face to face interview technique with structured questionnaire. Data were entered and coded in EpiData 3.1 and further analyzed in IBM SPSS version 21. Descriptive analysis used frequency, mean, median and standard deviation. Bivariate analysis using Chi-square (χ^2) test to determine the association between independent and dependent variables was utilised.

Age, religion, ethnicity, location, family type, education, income source, occupation was assessed as socio-economic variables. Healthcare utilization & healthcare expenditure was considered as dependent variables for the study purpose. Approval for the study was taken from the ethical review board of Nepal Health Research Council (ERB No: 574/2019). Informed consent was taken from the respondents. The privacy of the information was maintained and used for the research purpose only.

RESULTS

As depicted in Table 1, most of the household members were Hindu. The majority of households were Janajati of the same race, language and customs (70.1%). Agriculture was the main source of income by covering 44% of all income sources.

TABLE 1: SOCIO-DEMOGRAPHIC INFORMATION AND PATTERNS ON UTILIZATION OF HEALTH CARE SERVICES

Socio-demographic information		
Variables	Frequency(n)	Percentage (%)
Religion		
Hindu	287	84.2
Buddhist	54	15.8
Caste		
Brahmin	27	7.9
Chhetri	27	7.9
Janajati	239	70.1
Dalit	48	14.1
Income Source		
Agriculture	150	44.0
Government employee	22	6.5
Service	26	7.6
Remittance	70	20.5
Business	73	21.4
Utilization of health care services & health insurance		
Visit to health care facility		
Yes	296	86.8
No	45	13.2
Types of services used		
Outpatient care	266	89.9
Inpatient care	30	10.1
Regularity of Medicine		
Yes	91	26.7
No	250	73.3
Types of medicine used		
Allopathy	85	93.4
Ayurveda	6	6.6

Annual mean expenditure on medicine: NRs 5,700 (41\$)		
Travelled abroad for medical treatment		
Yes	332	2.6
No	9	97.4
Heard about health insurance		
Yes	261	76.5
No	80	23.5
Have health insurance (n=262)		
Yes	94	36.0
No	167	64.0
Mean expenditure on abroad treatment: NRs 1,72,000 (\$1412\$)		

1USD = 119 Nepali rupees

The majority of household members were admitted or seen by doctors and among them, most of the household members (89.9%) used OPD Services and only 10.1% were admitted in health services. Most of the households (73.3%) didn't take any kind of medicine regularly. Among those who take medicine regularly, the mean expenditure was NRs 5,700 (\$41). The majority of households (93.4%) used the allopathy type of medicine. Most of the households had visited health post (27.9%) followed by private hospital

(23.2%), pharmacy (22.4%), government hospital (19.4%), Ayurveda centres (3.5%), primary health care centers (3%) and community hospitals (0.7%). The study shows that the majority of household members hadn't traveled abroad for medical treatment & the mean expenditure on abroad treatment was about NRs 1,72,000 (\$1412\$). Most of the households had heard about health insurance but only around one-third of households had health insurance.

TABLE 2: HOUSEHOLD EXPENDITURE PATTERNS ON VARIOUS MEDICAL SERVICES

SERVICES	DEPARTMENTS	EXPENDITURE (IN NRS)		
		TOTAL	MEAN	S. D.
Bed	OPD	23,500	1566.67	979.553
	IPD	1,36,500	5687.50	5042.88
	ICU	30,000	30,000	-
	Emergency	58,000	2900	2516.26
Medicine	OPD	9,95,000	7653.85	13,164.63
	IPD	4,16,500	16.660	11,128.71
	ICU	30,000	30,000	-
	Emergency	19,500	1500	1274.75
X-Ray	OPD	22,500	2812.50	2137.042
	IPD	71,500	3250	20333.93
	ICU	80,000	80,000	-
Eye Care	OPD	30,000	15,000	7071.068
Dental Care	OPD	35,000	8750	7071.068
Mean annual healthcare expenditure: NRs 34,000 (279\$)				

1USD = 119 Nepali rupees

The visit to health care services is significantly associated with socio-demographic variables such as family type ($\chi^2 = 7.446, p \leq 0.05$), educational level ($\chi^2 = 26.035, p \leq 0.01$), the main source of income ($\chi^2 = 14.241, p \leq 0.01$). It is found that involvement in health insurance was significantly associated with socio-demographic variables such as

ethnicity ($\chi^2 = 13.068, p \leq 0.01$), educational level ($\chi^2 = 33.192, p \leq 0.01$). Our study showed that type of utilized healthcare service was significantly associated with religion ($\chi^2 = 6.071, p \leq 0.05$), income source ($\chi^2 = 18.753, p \leq 0.01$) but ethnicity of participants wasn't found to be associated with healthcare service utilization.

TABLE 3: FACTORS ASSOCIATED WITH UTILIZATION OF HEALTHCARE SERVICES

Admitted or seen by doctors			χ^2 /Fisher Exact	df	p-value
Variables	No	Yes			
Family type					
Nuclear	17(11.6%)	130(88.4%)	7.446	2	0.024*
Joint	19(9%)	144(88.3%)			
Extended	9(29%)	22(71%)			
Educational level					
Illiterate	17(37%)	29(63%)	26.035	5	0.001**
Informal	12(17.9%)	55(82.1%)			
Basic	10(7.8%)	119(92.2%)			
Secondary	5(6.3%)	74(93.7%)			
Bachelor	1(5.6%)	17(94.4%)			
Masters or above	0(0.0%)	2(100%)			
Income Source					
Agriculture	30(20%)	120(80%)	14.241	4	0.001**
Government employee	0(0.0%)	22(100%)			
Service	0(0.0%)	26(100%)			
Remittance	7(10%)	63(90%)			
Business	8(11%)	65(89%)			
Involvement in health insurance					
Variables	No	Yes			
Ethnicity					
Brahmin	9(37.5%)	15(62.5%)	13.068	3	0.004**
Chettri	17(70.8%)	7(29.2%)			
Janajati	121(63.7%)	69(36.3%)			
Dalit	20(87%)	3(13%)			

Educational level					
Illiterate	15(71.4%)	6(28.6%)	33.192	5	0.001**
Informal	28(71.8%)	11(28.2%)			
Basic	79(75.2%)	26(24.8%)			
Secondary	43(55.8%)	34(44.2%)			
Bachelor	2(11.8%)	15(88.2%)			
Masters or above	0(0.0%)	2(100%)			
Types of health services					
Variables	Outpatient care	Inpatient care			
Religion					
Hindu	225(91.8%)	20(8.2%)	6.071	1	0.014*
Buddhist	41(80.4%)	10(19.6%)			
Ethnicity					
Brahmin	23(92%)	2(8.0%)	7.173	3	0.051
Chhetri	22(84.6%)	4(15.4%)			
Janajati	181(88.3%)	24(11.7%)			
Dalit	40(100%)	0(0.0%)			
Income Source					
Agriculture	117(97.5%)	3(2.5%)	18.752	4	0.001**
Government employee	21(95.5%)	1(2.2%)			
Service	23(88.5%)	3(11.5%)			
Remittance	50(79.4%)	13(20.6%)			
Business	55(84.6%)	10(15.4%)			

DISCUSSION

According to this study, the annual expenditure on medical health care was less than fifty thousand rupees which are similar to the findings of the study among industrial workers of Nepal in which annual expenditure was about thirty thousand rupees. [10] The main reason may be because Nepal is a developing country and most people cannot

invest enough budget for health care. But in the study conducted in low-income societies of Iran, the annual expenditure of healthcare was about eight thousand rupees as compared to the present study. [11] This may have occurred because of the existence of health insurance and free health care services in that study area and the context of the current study, where utilization of free health care services is not good.

In this study, the availability of medicine was found to be nearly three-fourth (71.2%) whereas in one of the studies from Nepal, a free health care scheme was found to be 92.4% which differs from present study findings. [12] It could be due to a lack of access and knowledge on free health services. In the present study, less than one-fourth (18.8%) of household members were admitted to health institutions. About 16% of household members were admitted to health institutions [10] which is similar to our findings. It may be due to the working power and healthy life of the respondents. The expenditure was mainly on beds, medicine, x-ray, eye care, and dental care. Regarding beds, the highest expenditure was on IPD (Mean= NRs 5687.50, S.D.= NRs 5042.88, Sum= NRs 1,36,500).

Only about fifteen percent (14.5%) of households didn't utilize health services to treat the above-mentioned diseases whereas, in the study done on Nepali older adults, more than one-fourth (30%) of participants didn't utilize health services to treat such diseases which are more than our findings. [13] In another study among industrial workers in Nepal, the utilization of out-patient and in-patient health services was 89.9% and 10% respectively which is similar to the present study that 87.5 and 14.6% respectively. [10] This may have occurred because the outpatient services are used commonly. According to the present study, the percentage of household traveling abroad for medical treatment remains very low (2.6%) and among them, most of the household spent about one lakh fifty thousand rupees to two lakh rupees (\$1228\$ ~\$1638) for the treatment which is low in comparison to the study conducted on low- and middle-income people of the Maldives. [14] It may have occurred because of the low annual household income of our study households.

In our study, more than half (76.5%) of households knew health insurance and among them only 36% of households were involved in such a scheme. In the social health insurance in implemented districts of Nepal, only very few (5%) of households had health insurance. [15] The huge difference occurred because there were many rural areas where many illiterate people lived and the people of those areas lacked information about health insurance. Among health insurance clients, nearly three-fourth (69.1%) of clients benefited from the services. Among involved households, about three-fourth of them were satisfied with health insurance services. The limitation of our study is focusing on the province 4 of Nepal. Studies focusing on the health utilization patterns in other provinces and in the nation may have more indepth picture of the health

service utilization in Nepal. However, this result supported the growing effectiveness of health insurance programs in the rural municipalities of Province No. 4 of Nepal.

CONCLUSION

The utilization of health care services was found to be inadequate. Rural community household involvement in health insurance service is still low & poor. In Nepal, limited study & facts are available on healthcare service utilization in rural households. Ethnicity, family type, educational level, and annual income were the major determinants for the utilization of health care services. The ayurvedic type of medicine should be promoted and the government should invest more in health care finance focusing on rural areas.

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This research study work was conducted without any funding. We declare that we don't have any conflicting interest.

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