

Health Service Utilization and Out-of-Pocket Expenditure among the Social Health Insurance Policy Holders in Kaski District, Nepal

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ABSTRACT

Introduction: Nepal has a low health service utilization among the people where ten percent of people face the burden of catastrophic health expenditure and spends more than 10.71% of the total household on health facilities. To reduce Out-of-Pocket expenditure (OOPE) and to improve the access and utilization of health services, Social Health Insurance Program could be a vital health financing mechanism. This study aims to assess the status of health service utilization and percent of household expenditure of respondents (OOPE) insured through the Social Health Insurance Program in Kaski district.

Methods: A descriptive cross-sectional survey was conducted among 210 sampled people of Kaski district who were enrolled in National Social Health Insurance. The study was conducted from June to December 2018 to assess the level of health service utilization and out-of-pocket expenditure among the insured population.

Results: Out of 210 participants enrolled in the Social Health Insurance program, four-fifth (80.5%) participants had utilized the services. Out-of-pocket expenditure for healthcare was 69 percent despite being insured through SHI. There was no statistical relationship observed between socio-demographic characteristics and health service utilization. However, socio-demographic variables such as sex, types of family, number of elderly members in the family were significantly associated with out-of-pocket expenditure among participants.

Conclusion: Majority of participants had utilized health services after buying SHI. Out-of-pocket expenditures have been decreased in the treatment and diagnosis of the diseases but not in medicine cost. There is a need for further study with larger sample size and population coverage to have a better understanding of the effectiveness and effect of the Social Health Insurance Program over Health Service Utilization and Out-of-Pocket expenditure.

Keywords: Social health insurance, Health service utilization, Health insurance, Out-of-pocket expenditure

INTRODUCTION

Health insurance is defined as raising and pooling of the funds to health services, to reduce the out-of-pocket expenditure and to uplift the health status of the poor and vulnerable people.¹ Health insurance program is essential for the utilization of the local resources to reduce the inequalities, through the means of the spending and facilitating effective, efficient addressable and accountable manipulation.²

In the context of developing countries, there are higher out-of-pocket-expenditures which creates a financial barrier to assess and utilize the health services. In the Southeast Asia Region (SEAR) there is the highest Out-of-pocket expenditure (OOPE) than other regions which is around 38% of the total expenditure.³ Nepal Social Health Security Development Committee report of 2015, reported that the Out-of-Pocket expenditure accounts for almost half (55 percent) of health care cost in 2015.⁴ There is low health service utilization among the people where 10% people

face the burden of catastrophic health expenditure and spends more than 10.71% of the total household on health facilities.³ In an attempt to reduce Out-of-Pocket (OOP) expenditure and to improve the access and utilization of health services, the Social Health Insurance Program was initiated on 2003 initially in two districts and later extended in four additional districts in 2005/06.^{5,6} This helps to bring the universal health coverage with the reduction of the Catastrophic and OOP of the patients. So this type of study is very relevant to know the effective ness of Social Health insurance and to know the gap between the health care due to lack the study in this areas. This study helps to envision whether insurance status and socio-economic status influence to access the care.

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In this light, this study aimed to assess status of health service utilization and percentage of Out-of-Pocket expenditure (OOP) among the population enrolled in the Social Health Insurance Program at Kaski District.

METHODS

A cross-sectional study was conducted among the insured population under the Social Health Insurance program of Kaski District from June to December 2018.

The sample size of 210 was estimated using the infinite population formula as the population was infinite. A cluster sampling technique was used with the help of Epi cluster of KPC manual.⁷ In total there are one metropolitan and four rural municipalities in Kaski District namely, Pokhara Metropolitan, Machhapuchhre Rural Municipality, Annapurna Rural Municipality, Madhi Rural Municipality, and the Rupa Rural Municipality where the SHI program was just introduced. Based on the proportion of the population enrolled in the social health insurance program, 27 wards from the Metropolitan and one ward from each Rural-Municipality, except Rupa Municipality using the KPC manual were selected. In each ward 7 households were taken. To select the households, bottle was spun on the ground at the junction of the roads in the middle of each ward and the direction of the tip of bottle was followed to find the houses when it stopped. The houses were taken by visiting and asking about the SHI done. If not, then the house was taken from the next to that house in which get the 'yes' answer for SHI done towards the same direction till the required house holds for each ward were obtained. The respondents were taken head of the selected households or the person referred by the head, who have knowledge of SHI.

The data were collected through the face to face interview using the KPC survey questionnaire. The interview schedule was divided into two sections. The first section consisted of demographic characteristics of the participants with questions regarding their age, gender, education, and socio-economic status assessed by International Wealth Index.⁸ The second section consisted of the participant's health care utilization pattern and expenditures. Tools were developed in the English language and were translated into simple and clear Nepali language and further back-translated into English assuring that the meaning of questions remains unchanged. The tool was pretested in 10% (i.e. 21) of the estimated sample size in the ward number 13, other than the study area to ensure the validity of the study.

The study was executed after acquiring ethical approval from the Institutional Review Committee (IRC,60-075-

076) of Pokhara University. The written informed consent was obtained from participants prior to data collection. The collected data were compiled, cleared, and checked on a daily basis and were entered in Epi-data (3.1 version) to control them beyond limit errors. The entered data were exported into SPSS (version 20). The statistical relationship between the independent and dependent variables was analyzed through chi-square test at $p < 0.05$.

RESULTS

Of the total sampled participants, all 210 participants contributed to the study yielding a response rate of 100 percent. The age of the participants ranged from 18 years to 73 years with a mean of 40.62 ± 13.31 . There was almost equal participation of male and female in this study at 45.2 percent and 54.8 percent, respectively. Majority of the participants had completed at least a secondary or higher-secondary level of education and were well off with a score of more than 85 in the International Wealth Index (Table 1).

Table 1: Socio-demographic variables

Variables	Frequency (n=210)	Percentage (%)
Age		
Early working population (18-24 years)	23	10.9
Prime working population (25-54 years)	148	70.5
Mature working population (55-64 years)	30	14.3
Elderly population (≥ 65 years)	9	4.3
Mean \pm SD [Min, Max]	40.62 \pm 13.31 [18, 73]	
Sex		
Female	115	54.8
Male	95	45.2
Types of family		
Joint	123	58.6
Nuclear	87	41.4
No. of family member		
≤ 5 members	150	71.4
> 5 members	60	28.6
Total number of U-5 children		
No U-5 children	151	71.9
1 child	52	24.8
2 or 3 children	5	3.4
Total member above 60 years of age		
No member above 60 years	99	47.1
1 member above 60 years	64	30.5
2 members above 60 years	47	22.4
Education of participant		
Illiterate	10	4.8
Primary education	60	28.6
Secondary and higher-secondary	100	47.6
Undergraduate and above	40	19.0

Employment Status		
Employed	162	77.1
Unemployed	48	22.9
International Wealth Index (IWI)		
IWI Score <85	114	54.3
IWI score ≥85	96	45.7
Mean ±SD [Min, Max]: Median	78.79 ±11.89 [44.01, 100]: 84	

It was found that there were only a few newly enrolled participants (i.e. 8.6%) who were enrolled in the fiscal year of 2075 B.S (2018 A.D), so the majority of the participants has already renewed their Social Health Insurance program once or twice. Moreover, almost 80.5 percent of them had utilized the health services after being enrolled in the Social Health Insurance program. Although the current SHI does not provide the services directly through the private sectors still almost a quarter of the participants were found to have preferred private healthcare markets over public healthcare providers. It was also noted that despite being enrolled in this Social Health Insurance Program, more than half (69%) of the participant's family had bared certain Out-of-Pocket expenditures. However, the majority of the cost was the cost for medicine, which is mostly less than ten thousand Nepalese Rupees per visit/year based on the health conditions. More than three-fourth (76.9%) were satisfied with the health services received through the Social Health Insurance, two-fifth (41.4%) people get the medicines and three-fourth (85.7%) people wants to renew it again (Table 2).

Table 2: Healthcare variables of the participants enrolled in the SHI program

Variables	Frequency (n=210)	Percentage (%)
Date of enrollment		
2073 B.S.(2016 A.D)	65	30.9
2074 B.S.(2017 A.D)	127	60.5
2075 B.S.(2018 A.D)	18	8.6
Utilized Health services after enrollment		
Yes	169	80.5
No	41	19.5
Place of choice to utilize health insurance services		
Public	149	71.0
Private	61	29.0
Total travel time to reach service point (in minutes)		
≤ 30 minutes	90	42.9
31-60 minutes	93	44.3
≥61 minutes	27	12.9

Waiting hours to receive health services (in minutes)

≤ 30 minutes	92	43.8
31-60 minutes	42	20.0
≥61 minutes	76	36.2

Family member suffer from chronic diseases

Yes	92	43.8
No	118	56.2

People living with disability in family

Yes	9	4.3
No	201	95.7

Disease treated through SHI in the family (n=274)

Non-communicable	245	89.4
Communicable	29	10.6

Out of pocket expenditure account to any family member (n=274)

Yes	189	69
No	85	31

Cost for medicines (in Nrs)

< 10000	111	82.8
10000 – 20000	18	13.6
20000 – 30000	3	2.2
30000 – 40000	1	0.7
>40000	1	0.7

Satisfaction with health services received through SHI program

Not Satisfied	39	23.1
Satisfied	130	76.9

Availability of medicines

No	123	58.6
Yes	87	41.4

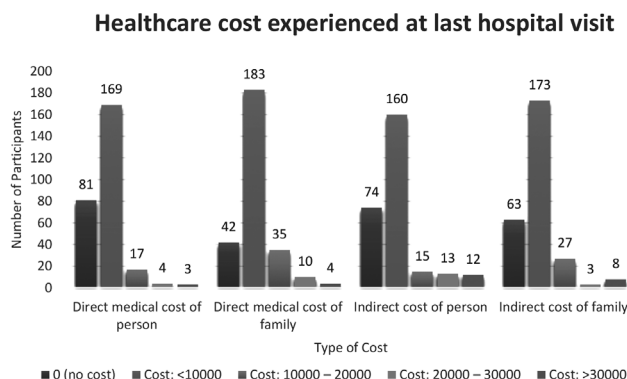
Want to renew SHI

Yes	180	85.7
No	30	14.3

Moreover, there was also some direct and indirect cost that the participants reported to have managed to pay for the healthcare of their family in a single past visit to the hospital. This cost includes direct cost such as the costs associated with the health care services utilization which includes the consumption of inpatient, outpatient, laboratory services and pharmaceutical products, whereas the indirect costs include the expenses incurred from the cessation or reduction of work productivity as a result of the morbidity and mortality associated with a health care utilization. Indirect costs typically consist of travel cost of the ill people and his/her friends lodging and for food. The cost range from less than ten thousand to more than

thirty thousand despite being under the Social health insurance program (Figure 1).

Figure 1: Health expenditure of (n=274) of 210 participants in the last hospital visit.



Different potential factors that could influence the participant's health service utilization practice through the SHI program were analyzed. Interestingly, no statistically significant relationship was observed between the participants' socio-demographic characteristics and health service utilization practice. In terms of factors related to the insurance program, people who were rolled one or two years ago had utilized more health services and it has a statistically significant at $p < 0.05$ (Table 3).

Table 1: Factors influencing health service utilization among people enrolled in SHI

Variable	Service utilization		Total	Chi-square	p-value
	No	Yes			
Age (in years)					
18-24 years	4 (17.4%)	19 (82.6%)	23	0.113#	0.990
25-54 years	29 (19.6%)	119 (80.4%)	148		
55-64 years	6 (20.0%)	24 (80.0%)	30		
≥65 years	2 (22.2%)	7 (77.8%)	9		
Sex					
Male	16(16.8%)	79(83.2%)	95	0.794	0.373
Female	25(21.7%)	90(78.3%)	115		
Types of family					
Nuclear	18(20.7%)	69(79.3%)	87	0.128	0.720
Joint	23(18.7%)	100(81.3%)	123		
Education of Participant					

Illiterate	3 (30.0%)	7 (70.0%)	10	1.921	0.589
Primary education	10 (16.7%)	50 (83.3)	60		
Higher-secondary	22 (22.0%)	78 (78.%)	100		
Undergraduate and above	6 (15.0%)	34 (85.0%)	40		

Employment Status

Employed	32 (19.8%)	130 (80.2%)	162	0.024	0.878
Unemployed	9 (18.8%)	39 (81.3%)	48		

International Wealth Index (IWI)

IWI Score <85	18 (15.8%)	96 (84.25)	114	2.213	0.137
IWI score ≥85	23 (24.0%)	73 (76.0%)	96		

Date of enrollment in SHI program

2073/74	33(17.2%)	159(82.8%)	192	7.782#	0.010*
2075	8(44.4%)	10(55.6%)	18		

Healthcare institution of choice to use health insurance

Public	30(20.1%)	119 (79.9%)	149	0.122	0.727
Private	11(18.0%)	50 (82.0%)	61		

Total time to reach to take services (in minutes)

≤ 30 min.	16 (17.8%)	74 (82.2%)	90	0.424	0.809
31-60 min.	20 (21.5%)	73 (78.5%)	93		
≥61 min.	5 (18.5%)	22 (81.5%)	27		

Family member suffer from chronic diseases

No	27(22.9%)	91(77.1%)	118	1.933	0.164
Yes	14(15.2%)	78(84.8%)	92		

Differently able people in family member

No	38(18.9%)	163(81.1%)	201	1.141#	0.382
Yes	3(33.3%)	6(66.7%)	9		

#Likelihood Ratio, *p-value significant at < 0.05

Similarly, despite being on the social health insurance program still more than half of the participants had Out-of-Pocket payment so the factors contributing to these OPP of 274 family members of 210 selected participants were also analyzed. In reference to males, it was observed that the female had 2.96 (95% CI: 1.74-5.04) times more odds of experiencing Out-of-Pocket expenditure. Likewise, those living in a joint family were 0.45 (Chi-square: 9.147; UOR: 0.45; 95% CI: 0.26-0.78) times less likely to have OPP than those who live in a nuclear family. The number of the elderly population in the family also seems to contribute to OPP, as a family with two elderly members were found to have twice the odds (UOR: 2.15; 95% CI: 1.09-4.25) of having OPP. In the same way, the participants who selected the private healthcare providers over public healthcare services were found to have experienced a higher rate of OPP which was also statistically significant ($p < 0.05$). Moreover, the travel time to reach the healthcare provider and the level of satisfaction with the services were

also found to have a certain statistical relationship with Out-of-Pocket payment (Table 4).

Table 4: Factors contributing to OPP for health among the family of the insured population.

Table 1: Factors contributing to OOP for health among the family of the insured population.						
Variables	Out-of-Pocket		Total	Chi-square	p-value	UOR (95% CI)
	No	Yes				
Gender						
Male (Ref)	54(43.5%)	70(56.5%)	124	16.61	0.001**	96(1.74-5.04)
Female	31(20.7%)	119(79.3%)	150			
Types of Family						
Nuclear (Ref)	24(21.45)	88(78.6%)	112	9.147	0.004*	0.45 (0.26-0.78)
Joint	61(37.7%)	101(62.3%)	162			
Total no. of U-5 children						
Only 1 child	18(40.9%)	26(59.1%)	44	3.516	0.061	
2 or 3 children	52(26.75)	143(73.3%)	195			
Total member above 60 years						
1 member (Ref)	37(46.2%)	43(53.8%)	80	4.952	0.026*	2.15 (1.09-4.25)
2 Member	20(28.6%)	50(71.45)	70			
Occupation of participants						
Unemployment	60(29.6%)	143(70.4%)	203	9.884	0.002*	0.416(0.239-0.724)
Employment	25(41.7%)	35(58.3%)	60			
Place of choice to utilize health insurance services						
Private (Ref)	34(45.3%)	41 (54.75%)	75	9.884	0.002*	0.416(0.239-0.724)
Public	51(25.6%)	148(74.4%)	199			
Total time to reach to take services (in minutes)						
≤ 30 min. (Ref)	57(39.9%)	86(60.1%)	143	10.919	0.001**	2.438(1.427-4.164)
>30 min.	28(21.4%)	103(78.6%)	131			
Members with Chronic diseases						
No	37(26.2%)	104(73.8%)	141	3.103	0.078	
Yes	48(36.1)	85(63.9%)	133			
People living with disability						
No	82 (30.7%)	185(69.3%)	267	0.129	0.681	
Yes	3 (42.9%)	4 (57.1%)	7			
With whom used to visit						
Alone	6(17.6%)	28(82.4%)	34	3.245	0.072	
Someone else	79(32.9%)	161(67.1%)	240			
Satisfied with services						
Yes (Ref)	56(25.9%)	160(74.1%)	216	12.394	<0.001***	0.35(0.19-0.64)
No	29(50%)	29(50%)	58			

*p-value statistically significant at <0.05, **p-value <0.01, ***p-value <0.001

DISCUSSION

In this study, we found that almost 80.5 percent of the enrolled participants had utilized the healthcare services through SHI which is higher in percentage than the estimate provided by the Health Insurance Board which estimates the service utilization for Kaski district lies at 38 percent of the total enrolled population of Kaski District.⁹ The mean age of participants of this study were

41±20.5. It was observed that no statistically significant relationship exists between the participant's age group and their healthcare utilization pattern in the case when they have social health insurance as the health care utilization was high in each age group. In contrast to this finding, a study conducted in the Republic of Korea showed that the age group 20-28 utilized the lowest health services, and the age group 60 or older utilized higher health services.

10 The reason might be elderly people are more likely to suffer from diseases, but in the case of our study as the participant was insured, they seek healthcare for the whole body checkup to know the health condition of the body without feeling sick also.

Interestingly, in our study, it was found that the male pay higher amount for healthcare services through the Social Health Insurance program than that of female, but females were much more likely to experience out-of-pocket expenditure. This finding was in line with a study conducted in China where males utilized higher healthcare services.¹¹ However, a Korean study found slightly opposite results where females were seeking more healthcare services i.e. 59.5 percent of OPD service and 58.2 percent of IPD services.¹⁰ These slight variances in the findings could be due to the contribution of multiple social and cultural factors such as the empowerment status of women, social norms, and preference to a particular gender.

It was also found that there was no statistical relationship between the level of education and healthcare utilization pattern among the insured population. This contrasts with the finding shared by a study from China, where the educated elderly aged population was more likely to seek health care.¹² In general, it is thought that the people who had higher education had more knowledge about the benefits of insurance packages so they will utilize the services more often than a less educated population. However, in the case of Nepal, the Social Health Insurance operates through the community health volunteers who not just enroll the population, but also educate them about the services as being a part of their community. This might be the reason the level of education did not have any effect on health care utilization through the SHI program.

In this study majority of the participants utilized health services for non-communicable diseases and among total insured family members of 274; 89.4 percent utilized health services due to non-communicable diseases. The major health care cost accounted for IPD, OPD, lab expenses, Metabolic diseases (Stone, blood pressure, sugar, thyroid, etc) cardiovascular problems, abdominal problems including appendicitis, injuries, accidental cases, dental cases, skin problems, etc. while 10.6 percent utilized health services due to communicable diseases and cost were accounted for the common cold, viral fever, conjunctivitis, etc. This is lined with studies from Ghana, where it was observed that the higher health services are utilized through health insurance accounts for IPD, injuries, emergencies, surgery, antenatal care, eye care, and lab expenses.^{13,14}

In this study, the majority of the participants (71 percent) utilized their health insurance services through public healthcare providers and only almost a quarter of the participant seek for private healthcare institutions. These findings contrast with a study from Chhattisgarh, India where higher proportion that is (95.1 percent) people were found to have utilized healthcare services through private sectors.¹⁵ This variation might be because the Government of Nepal has stressed the promotion of public healthcare institutions and currently, the SHI cannot directly operate through private healthcare institutions without any referral. However, Social Health Security Development Committee reports that in Nepal the private health expenditure accounts 60.5%, whereas the government expenditure accounts only 21% health expenditure and 19% have donor charity in 2012.⁵

Furthermore, in this study, although the participants were insured more than half (68 percent) still had paid certain expenditure through an out-of-pocket mechanism to cover direct and indirect medical cost during the time of health service utilization which is slightly higher to the Social Health Security Development Committee (SHSDC) report of 2015.⁴ Thus the social health insurance program has been considered as an important health financing mechanism and is needed to reduce OOP and to achieve universal health coverage in Nepal.⁵ According to the National Health Insurance Board of Nepal, out of a total population of 2,64,94,504 based on 2011 Census data, 16 only 9,80,544 have been enrolled in Social health insurance which is 3.7% of the whole population.⁵ In the context of household, out of 54,23,297 households throughout the country, only 2,41,534 households have been enrolled in SHI which represent only 4.45 percent of the household.⁵ Furthermore, among the total enrolled population, 2,58,093 populations have utilized the services provided by the SHI which is 26.32 percent.⁵

This descriptive cross-sectional study has its limitations as it fails to cover a larger population enrolled at the Social Health Insurance program in other districts of Nepal so the result cannot be generalized to the entire Nepalese community and SHI program as a whole. There is a need for further study with larger sample size and population coverage, which could represent the entire country to seek the effectiveness of SHI and its feat in promotion of healthcare utilization and quality.

CONCLUSION

Almost eight out of ten participants had utilized the health services provided under the National Health Insurance Program. More than two-thirds of participants

had chosen public health facilities for health insurance service utilization. In this study, almost, seven out of ten participants had Out-of-Pocket expenditure at the time of health insurance service utilization. This study showed that direct medical cost was higher than that of the indirect medical cost by five times. There was no statistical relationship observed between socio-demographic characteristics and health service utilization. However, socio-demographic variables such as sex, types of family, number of elderly members of the family were significantly associated with out-of-pocket expenditure among participants. Along with these healthcare-related variables such as the choice of the health institution, travel time to the health institution, and satisfaction with services were also associated with out-of-pocket expenditures. It is also noted that there is a need for further study with larger sample size and population coverage to have a better understanding of the effectiveness and effect of the Social Health Insurance Program over Health Service Utilization and Out-of-Pocket expenditure.

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