Factors affecting the Utilization of Social Health Insurance by the General Population in Bhaktapur Municipality

Punam Karanjit,[1] Prajita Mali,[1] Rakshya Khadka,[1] Lisasha Poudel[2]

[1]Department of Public Health, Om Health Campus, Chabahil, Kathmandu, Nepal
[2]Nepal Institute of Development Studies, Kathmandu, Nepal

ABSTRACT

Introduction: Lack of proper financing system puts the vulnerable population at health risk with high level in rural setting. For the reduction of financial burden and to achieve universal health care, Government of Nepal launched a security program called as Social Health Insurance Program. This study aimed to find the factors associated with the utilization of the social health insurance scheme.

Methods: Descriptive cross-sectional study was conducted in the Bhaktapur Municipality ward no 2. 422 households were chosen using systematic random sampling. Questionnaires were used to measure the factors affecting the utilization. The collected data was entered in Epidata and analyzed in SPSS version 16. The data were presented in the frequency and percentage. Bivariate analysis was done to identify factors utilizing social health insurance. Factors having p value less than 0.05 was taken as significantly associated. Multivariate analysis was done to examine the association between the outcome variables.

Results: Almost half of the general population (42.4 %) were utilizing social health insurance scheme and reason for not utilizing includes lack of confidence in the scheme and the services of the scheme, followed by high premium cost. Age (p=0.044), occupation (p= 0.049), wealth quintiles (p=<0.001) were found to be significantly associated with utilization of social health insurance. Logistic regression analysis showed that the odds of enrollment among very rich population group were lower than the medium (AOR 0.550, 95% CI 0.305-0.993) and rich population (AOR 0.557, 95% CI 0.316-0.981).

Conclusions: Multiple factors were found to be associated with the utilization of the health insurance scheme which includes age of the household head, occupation of the household head, economic status, availability of the drugs and charge paid during their visit in the health care services, behavior showed by the health care provider, confidence in the scheme, satisfaction in the services that have been providing and source of the information.

Keywords: *social health insurance; utilization; Nepal.*

INTRODUCTION

Health of the vulnerable population is at risk due to the lack of proper financing system. Out of pocket payments along with the lack of access to health care services, disease shift from communicable to non communicable disease puts the vulnerable population at health risk.[1] Only 2/3rd of population have easy access to health care facilities with 59% in rural setting and 86% in urban setting.[2] For the reduction of financial burden and to achieve universal health care, Government of Nepal launched a security program called as Social Health Insurance Program. The program was started as a pilot program in 2072/73 in Kailali, Baglung and Illam and in year 2073/09/01 it was started in Bhaktapur district.[3]

Correspondence:

Ms. Rakshya Khadka,
Department of Public Health, Om Health Campus, Chabahil, Kathmandu, Nepal.
Email: raks.khadka@gmail.com

Social health insurance is playing a crucial role in addressing the burden of sickness funds and helped to establish link between social stratification and insurance status.[4] Thus, the objective of this study was to identify the factors associated with utilization of social health insurance program by general population in Bhaktapur Municipality.

METHODS

Descriptive cross-sectional study was conducted among the general population of Ward no. 2, Bhaktapur Municipality, Nepal. Sample for the study includes population both insured and non insured population. Systematic random sampling was done using the sample frame of Bhaktapur Municipality.

Sample size was calculated using formula

$$n = \frac{z^2pq}{d^2}$$

where, Z (level of significance) = normal variate i.e. 1.96

p = 50% = 0.5

d = Allowable error i.e. 0.05

n = sample size

n = 384

now,

$$q = 1 - p = 1 - 0.5 = 0.5$$

$$\text{Sample size}(n) = \frac{z^2pq}{d^2} = \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.05)^2} = \frac{3.8416 \times 0.25}{0.002} = \frac{0.9604}{0.0025} = 384$$

Taking 10% of non-response rate, the total sample size was 422

Out of 2273 population 422 sample was collected. Household heads were the respondents of the study. Systematic random sampling was used where k value was taken using the sample frame of the Bhaktapur Municipality.

$$K^{th} \text{ item} = \frac{2273}{422} = 5.3 \sim 5$$

Literature review, research advisor, peer discussion was done to establish validity of the study. The tools were developed according to the study objectives. For maintaining the reliability of the study, pretesting was done in Changunarayan Municipality of Bhaktapur municipality of Bhaktapur district among 50 household.

Data was collected using a semi structured questionnaire with face to face interview technique. The data was then entered in Epidata 3.1 and exported to SPSS 16 for further analysis. First the data was presented in simple descriptive statistics. Then the association among different independent and outcome variable was identified using Chi-square test, Fisher exact test. Value of p value less than 0.05 was considered to be significantly associated with 95% CI. The association variables were then observed in multivariate analysis to control the possible confounder and to strengthen the association between the independent and dependent variables. Principle Component Analysis was done to calculate the wealth quintile.

Approval letter was taken from the BPH faculty of OM Health Campus. Then the ethical clearance was taken from NHRC Ethical Clearance Board having reference number 1699. Approval letter was taken from Bhaktapur Municipality having reference number 786. Informed and written consent was taken from the respondents.

RESULTS

About two out of five population (42.4%) had been utilizing the social health insurance scheme.

Table 1. Utilization of the scheme (n=422)

Utilization of social health insurance	Frequency	Percentage
Yes	179	42.4
No	243	57.6

Three out of four of the respondents (74.30%) had renewed their insurance scheme.

Table 2. Renewal of the services (n=179)

Renewal	Frequency	Percentage
Yes	133	74.30
No	46	25.70

It was found that one fifth of the respondents (21.81%) had less confidence in the scheme and the services the scheme had been providing followed by high premium cost of the scheme(20.16%). The main reason for renewal of the scheme was reduction of out of pocket payments (66.16%). Out of non-renewed population, almost half of the population did not renew the scheme due to the long queue (43.47%) and lack of care from the health care providers (39.13%).

Table 3. Reason for not utilizing social health insurance scheme, reason for renewal and non renewal of the scheme.

Variables	Frequency	Percentage
Reason for not enrolling in scheme(n=243)		
No confidence in scheme	53	21.81
High premium cost	49	20.16
Knew about it yet didn't know how to participate	24	9.87
Enrolled in other scheme	23	9.46
Spouse refusal	10	4.11
Others	79	32.51
Limited hospitals	5	2.08
Reason for renewal(n=133)		
OOPs reduction	88	66.16
Free medicine	10	7.51
Better services	35	26.33
Reason for non renewal(n=46)		
Refusal from spouse	3	6.52
Long queue	20	43.47
Lack of care	18	39.13
Others	5	10.88

Social health insurance utilization was significantly associated with age, occupation and wealth quintile.

Table 4. Association of social health insurance utilization with socio demographic characteristics

Socio demographic variables	Done health insurance		P-value (Chi-square test)
	Yes	No	
Age			**0.044***
Independent group (20-59)[a]	110(61.5%)	172(70.8%)	
Dependent group (60+)[b]	69(38.5%)	71(29.2%)	
Gender			
Male	97(54.2%)	136(56.0%)	
Female	82(45.8%)	107(44.0%)	0.717
Marital Status			
Married	152(84.9%)	217(89.3%)	0.246
Unmarried	2(1.1%)	4(1.6%)	(Fisher
Widow	25(14.0%)	22(9.1%)	exact test)
Ethnicity			
Dalit	1(0.6%)	0(0.00%)	0.143
Relatively Advantaged Janajati	164(91.6%)	232(95.5%)	(Fisher exact test)
Upper Caste group	14(7.8%)	11(4.5%)	
Religion			
Hindu	178(99.4%)	240(98.8%)	0.640
Buddhist	1(0.6%)	3(1.2%)	(Fisher exact test)

Socio demographic variables	Done health insurance		P-value (Chi-square test)
	Yes	No	
Occupation			
Agriculture	60(33.5%)	81(33.3%)	
Business	64(35.8%)	77(31.7%)	**0.049***
Foreign employment	1(0.6%)	2(0.8%)	(Fisher
Daily wages	8(4.5%)	31(12.8%)	exact test)
Office	21(11.7%)	29(11.9%)	
Housewife	14(7.8%)	17(7.0%)	
Government job	11(6.1%)	6(2.5%)	
Educational status			
Illiterate	84(46.9%)	106(43.6%)	
Literate	95(53.1%)	137(56.4%)	0.500
Family type			
Single	87(48.6%)	136(56.0%)	0.134
Joint	92(51.4%)	107(44.0%)	
Substance abuse			
Yes[c]	98(54.7%)	147(60.5%)	0.237
No[d]	81(45.3%)	96(39.5%)	
Wealth quintile			
Very poor	0(0.0%)	2(0.8%)	**0.001***
Poor	33(18.4%)	82(33.7%)	
Medium	40(22.3%)	55(22.6%)	
Rich	45(25.1%)	62(25.5%)	
Very rich	61(34.1%)	42(17.3%)	

[a]= 20-39 and 40-59 and [b]= 60+ age group population.
[c] includes use of both alcohol and smoking while [d] includes no use of smoking and alcohol.

Similarly, Social health insurance utilization was associated with availability of the services, charge paid during each visit, behaviour of health care provider, satisfaction of the services, confidence in services and source of information.

Table 5. Association of social health insurance renewal and their relative factors

Characteristics	Renewal		p-value
	No	Yes	
Accessibility			
No	0(0%)	1(0.8%)	1.000
Yes	46(100%)	132(99.2%)	(Fisher-exact test)
Availability of the services			
No	26(56.5%)	24(18.0%)	**<0.001***
Yes	20(43.5%)	109(82.0%)	
Charge paid during each visit			
More than 500	24(52.2%)	40(30.1%)	**0.007***
Less than 500	22(47.8%)	93(69.9%)	
Behaviour of health care provider			
Positive behaviore [e]	37(80.4%)	126(94.7%)	**0.003***
Negative Behaviour	9(19.6%)	7(5.3%)	
Knowledge of social health insurance			
Less knowledge	0(0%)	2(1.5%)	1.000
Better knowledge	46(100%)	131(98.5%)	(Fisher exact test)
Satisfaction of the services			
Not satisfied	43(93.5%)	0(0%)	**<0.001***
Satisfied	3(6.5%)	133(100%)	(Fisher exact test)
Confidence in services			
OPD	30(65.2%)	102(76.7%)	**0.006***
Emergency	0(0%)	10(7.5%)	(Fisher
Inpatient	9(19.6%)	16(12.0%)	exact test)
Never gone	7(15.2%)	5(3.8%)	
Mode of enrollment			
Easy	45(97.8%)	131(98.5%)	1.000
Difficult	1(2.2%)	2(1.5%)	(Fisher exact test)
Source of information**			
Radio	4	6	**0.025***
Television	12	12	
Family	39	104	
Others	27	65	
Decision making role			
Male dominant	4(8.7%)	5(3.8%)	0.238
Both decision making	42(91.3%)	128(96.2%)	

[e]= Polite, caring **= Multiple option question

The logistic regression analysis didn't show a significant association between age and occupation while there seemed to be a significant association between utilization of the social health insurance scheme and wealth

quintile of the participants. An estimate from the logistic regression analysis indicated that the odds of utilizing the social health insurance scheme among rich population group were halves than the odds of the very rich population group.

Table 6. Multivariate association between utilization of the services and sociodemographic variables

Independent Variables	Unadjusted p value	Adjusted p value	AOR(CI at 95%)
Age			
Independent	0.044	0.062	0.649(0.413-1.021)
Dependent	-	-	-
Occupation	**0.049**	**0.116**	
Agriculture			0.410(0.136-1.238)
Business			0.605(0.201-1.823)
Foreign employment			0.443(0.029-6.704)
Daily wages			0.183(0.049-0.683)
Office			0.510(0.154-1.692)
Housewife			0.577(0.157-2.120)
Government employee			-
Wealth quintile	**0.000**	**0.0016***	
Very poor			0.000(0.000-0)
Poor			0.286(0.159-0.513)
Medium			0.550(0.305-0.993)
Rich			0.557(0.316-0.981)
Very rich			–

DISCUSSION

The primary purpose of this study was to find the factors associated with the utilization of the social health insurance scheme among general population in Bhaktapur district. The studies found only half population (42.4%) were insured.

Taking account the age of the respondent, 61.5% of the independent age population (20-59) had done social health insurance. Age had shown association with utilization (p-value 0.044) because of the better knowledge about the services they had been providing. Similarly, a cross sectional study done by John SaitotiKipaseyia on May 2016 in Kenya among pastoralist having 246 households also showed the significant association(0.005) with age.[5]

Regarding the gender of the household head, out of the 422 heads of the households, 55.2% were male and showed no significant relationship between utilization of the social health insurance(p value=0.717). A study done in Burkina Faso by Donh H et.al in year 2004 among 800 households using a two stage cluster sampling also found similar results with our study.[6] Another cross sectional study done by Stephen Manoeteyet. al in year 2014 in Barekese sub district in Ashanti Region of Ghana including 3228 household showed that 64.65%were male and shows significant relationship between gender and utilization of the social health insurance scheme (p<0.001) which showed different results in comparison to our study.[7] This might be due to the male dominating society of our country.

In our study, 87.4% household heads were married and showed no significant relationship between utilization of social health insurance (p value=0.246). Similar study done by Eric Badu et.al on year 2017 in Upper Denkyira Municipality in Ghana using simple random technique showed different results than my study.

The study showed that the marital status plays significant role in utilizing social health insurance scheme and married household were more utilizing the schemes than the singles.[8]

Indicators like ethnicity, religion showed no

significant relationship in the enrollment of the social health insurance scheme as it basically focus on the household level than the individual level.

Educational status of the household head and family they had been residing plays no significant role in the utilization of the social health insurance (0.5 and 0.134) while other study done by Stephen Manortey on year 2014 in Barekese sub district in the Ashanti Region of Ghana showed that the utilization of the scheme increases with the highest level of education status accomplished by the household head(0.001) as well as the family type had no significant role in the utilization of the social health insurance (0.84).[7] This might be due to lack of education among the household head.

Taking account the occupation of the respondent, 33.4% of people doing agriculture as well as 33.4% of people doing business had utilized the social health insurance scheme and showed significantly associated with the utilization of the services(0.049) because of the reduction of the out of pocket payment which is similar to a cross sectional study done by MukhwanaEugine Sundays on year 2015 among the informal sector in Kenya that showed significant association (0.001).[9]

Looking over the economic status, 27.3% of the poor populations had been utilizing social health insurance with significant association (0.000) because of the OOPs reduction. Study established that odds of utilizing the social health insurance scheme among rich population group (0.557 OR with 95% CI: 0.316-0.981) were halves than the odds of the very rich population group. A similar study done in Kakamega country in Western Kenya with 400 participant showed that people with higher income are likely to register in the scheme (OR 2.21 with 95% CI:1.07 to 4.03) which reflects similarity with our study.[9]

My study showed that the source of information plays a significant role in the utilization of the scheme (0.025). Most of the participant had heard about the scheme from their family members (53.2%) yet this result contrast with a cross sectional study done by Macharia et al that showed no significant association among source of information (0.770).[10]

Lastly my study revealed, 72.06% of the services were available at free of cost and found that the renewal of social health insurance scheme was highly associated with availability of the services (0.000 at 95% CI), 64.25% of the population had been paying less than 500 during each visit which also showed significant association with charge paid during each visit (0.007 at 95% CI), 83.8% of the health care service provider were polite showing significant association between behaviour of the health care provider and utilization of the services (0.003 at 95% CI) and confidence in the services (0.006 at 95% CI). 76% were satisfied with the services they had been using which showed significant association between satisfaction with the services and utilization of health insurance scheme (0.000 at 95% CI).

CONCLUSIONS

According to study, almost half of the respondents were found to be utilizing the health insurance scheme. Utilization was found to be higher in population with poor wealth quintile. Association between utilization was found with age, occupation of the participant, wealth quintile, availability of the services, charge paid during each visit, behavior of the health care provider, confidence in the scheme, satisfaction in the services that had been providing and source of the information. Various reasons were found for the renewal and non renewal of the services. The reason for the renewal of the services includes reduction of out of pocket

payment, available of free services and better services. The reason for non renewal of the services were refusal from the spouse, long queue and lack of care were established by this study.

Hence, it could be concluded that utilization of the health insurance scheme could be increased by providing awareness to the general population regarding the services that have been providing by the health insurance scheme as well as proper management provision of continuous supply of medicine.

CONFLICT OF INTEREST: None

REFERENCES

1. World Health Organization. Report of regional expert group meeting In: Asia RofSe, editor. New Delhi,India. 2003.
2. Mishra SR, Khanal P, Karki DK, Kallestrup P, Enemark U. National health insurance policy in Nepal: challenges for implementation. *Glob Health Action*. 2015 Aug 21;8:28763.
3. Government of Nepal. Health Insurance Act In: System DoH, editor. Kathmandu Government of Nepal; 2072.
4. Abel T, Wysong J. Social status, health risk and sickness insurance: a comparative analysis between the FRD and the USA. Sozial-und Praventivmedizin. 1991;36(3):166-75.
5. Kipaseyia JS. Factors influencing membership uptake of National Hospital Insurance Fund among the poor: a pastoralist'perspective: Strathmore University. 2016.
6. Dong H, Kouyate B, Snow R, Mugisha F, Sauerborn R. Gender's effect on willingness-to-pay for community-based insurance in Burkina Faso. Health Policy. 2003;64(2):153-62.
7. Manortey S, Alder S, Crookston B, Dickerson T, VanDerslice J, Benson S. Social Deterministic Factors to Participation in the National Health Insurance Scheme in the Context of Rural Ghanaian Setting. J Public Health Afr. 2014 Apr 30;5(1):352.
8. Badu E, Agyei-Baffour P, Ofori Acheampong I, Preprah Opoku M, Addai-Donkor K. Households sociodemographic profile as predictors of health insurance uptake and service utilization: a cross-sectional study in a municipality of Ghana. Advances in Public Health. 2018 Oct;2018.
9. Sundays M, Ngaira J, Mutai C. Determinants of uptake and utilization of national hospital insurance fund medical cover by people in the informal sector in Kakamega County, Kenya. Universal Journal of Public Health. 2015;3(4):169-76.
10. Macharia G, Mwangi E, Oluoch M. Factors Influencing Uptake of Social Health Insurance In Kenya: A Case Of Nyeri County. 2017