# UTILIZATION, SATISFACTION AND OUT-OF-POCKET EXPENDITURE ASSOCIATED WITH NATIONAL HEALTH INSURANCE SCHEME AMONG PATIENTS ATTENDING LUMBINI MEDICAL COLLEGE

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## ABSTRACT

Health insurance is a method to finance healthcare with coverage that pays off medical expenses that arise due to an illness, injury or accidents. The National Health Insurance Scheme was introduced by the Government of Nepal in April 2016. Initially roll-out in three districts, social health insurance has been gradually expanded and is now available in all 77 districts of Nepal. The government of Nepal aims to provide quality health care services without imposing a financial burden on its citizens through the health insurance policy scheme. The study intends to assess utilization, and satisfaction of the national health insurance scheme among patients visiting Lumbini medical college teaching hospital. This is a cross-sectional analytical study done in 411 patients visiting Lumbini Medical College Teaching Hospital, Palpa using simple random sampling method. The selected patients were interviewed regarding socio-demographic details, utilization status and satisfaction level of the NHIS using a pre-structured questionnaire with a face-to-face patient exit interview technique. Data was entered in SPSS-16 for analysis. The data was presented in frequency, percentage, and, figures to express the results. The NHIS was utilized by 88.3% of insured respondents and 46.8% of insured spend above the optimum amount of insurance to cover all their health expenditures. Satisfaction with the NHIS was reported by 66.6% of the participants. The study revealed that majority of patients are utilizing NHIS with satisfaction.

## KEYWORDS

National health insurance scheme, utilization, satisfaction, out of pocket expenditure

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## INTRODUCTION

Health insurance is a financial mechanism designed to protect individuals from the high cost of medical care by covering a substantial portion of expenses thereby minimizing the need for out-of-pocket payments and reducing the risk of catastrophic financial hardship. The escalating cost of health care poses a barrier to seeking health care, particularly among the poor. In a low-income country, out-of-pocket is a main mode of payment for health care service utilization.[1]

The constitution of Nepal of the year 2072 B.S. in article 35 under segment 3 has mentioned the right to health as a fundamental part of human rights.[2] Moreover, Nepal aims to meet its commitment to reaching Goal 3 of the United Nations Sustainable Development Goals, which strives to ensure good health and well-being of people by 2030 AD. [3]

The World Bank and WHO developed a framework that includes financial risk protection as one of its components to attempt and speed up universal health coverage (UHC).[3] Most of European nations and Asian nations like Japan, South Korea have an established universal health insurance and a nations like Mexico, Turkey health coverage rate exceeding 90%.[4] The provision of health insurance is still in its infancy in South Asia, with the majority of the nations limited to subsidizing treatment for the poor.[5] The government launched the Social Health Security program in February 2015 to promote pre-payment and risk pooling in healthcare, providing financial protection.[6] The national health insurance scheme (NHIS) was introduced in 2016 initially in three districts of Nepal.

The Ministry of Health has expanded the NHIS as an alternate financing scheme throughout the country to provide affordable, accessible and quality health care to all.[7] The study was intended to find out the level of utilization and satisfaction among patients utilizing NHIS.

## MATERIALS AND METHODS

A cross-sectional analytical study was conducted at Lumbini Medical College Teaching Hospital (LMCTH) between October 2021 and May 2023. The study population included both insured and uninsured adult patients age 18 and above visiting LMCTH from Palpa, and neighboring districts. Simple random sampling method was used to choose the sample. The LMCTH pharmacy's token-based system was utilized to select participants for data collection. An estimated sample size of 411 was calculated using Cochrane's formula according to a study with 42.4% utilization of social health insurance within 95.0% confidence limits, 5.0% margin of error and 10.0% increment. After getting IRC approval and informed written consent from the participants of the study data was collected using a pretested standardized proforma with face to face patient exit interview technique. The proforma was reviewed multiple times and was translated to local language (Nepali) and back and through translation was done. The pre-tested data was not included in the study. All information collected were kept confidential. The collected data was entered in Excel sheet and analyzed with SPSS-16. The data was presented in frequency, percentage, and, figures to express the results for socio-demographic data, NHIS utilization and satisfaction of study population.

Out-of-pocket expenditure refers to the direct payments for health care services at the time of use that are not reimbursed by the NHIS. The amount of money spent in health care in the last one year by the insured and non-insured respondents. With the amount of capital ranging from less than NRs. 25,000 to more than NRs. 1,00,000. Satisfaction with the NHIS refers to the degree to which insured participants feel that the services, and costs of the scheme are met. Satisfaction levels was classified as satisfied, partially satisfied and not satisfied. Respondents' perception of the annual premium (NRs. 3,500 per family per year) was also recorded as expensive, satisfactory and cheap.

## RESULTS

The respondents' ages ranged from 18 years and above, with a mean age of 36.5 years and a standard deviation of ±13.63. Majority of the respondents (60.1%) were female. Most of the respondents belonged to the age group 26-40 years. The respondents in our study were the patients from Palpa and neighboring districts. Majority of the respondents (53.5%) belong to Palpa District, where the hospital of our study is located. It is followed by 14.8% from Gulmi District. Majority of the respondent's family size of less than 5 members was 57.9% (Table 1).

Out of 411 participants 378 (91.97%) were insured among them 88.36% had utilized the NHIS (Table-2). The respondents who were involved national health insurance program and had to travel more than 60 minutes in seeking health service was 40.71% (Fig. 1). The

respondents who were enrolled national health insurance program for 1-5 years were 67.73% (Table 3).

The insured respondents who spent more than NRs. 1,00,000/- were 46.8% which when compared to not-insured was 12.1% followed by 25.3% of patients who spent NRs. 50,001-75,000 among insured respondents and 27.2% among not insured. The p-value of 0.00, indicating a statistically significant difference in expenditure between insured and non-insured patients. This shows that insured individuals spent a higher amount on healthcare compared to non-insured individuals, who incurred out-of-pocket expenditures (Table 4).

The median expenditure was NRs. 87,500 (IQR: 62,500–125,000) among insured patients and NRs. 62,500 (IQR: 37,500–87,500) among non-insured patients. This shows insured households incurred higher costs with a quarter exceeding the NRs. 100,000 coverage limit while non-

**Table 1: Distribution of socio-demographic profile of the respondents (n=411)**

| Age group (years) | n | % |
|---|---|---|
| Young adult (18-25) | 87 | 21.2 |
| Adulthood (26-40) | 195 | 47.2 |
| Middle age (41-60) | 94 | 22.8 |
| Elderly (>60) | 35 | 8.7 |
| **Gender** | | |
| Female | 247 | 60.0 |
| Male | 164 | 39.9 |
| **Districts** | | |
| Palpa | 220 | 53.5 |
| Gulmi | 61 | 14.8 |
| Syangja | 53 | 12.8 |
| Argakhachi | 14 | 3.4 |
| Rupandehi | 18 | 4.3 |
| Baglung | 25 | 6.0 |
| Others | 20 | 4.8 |
| **Number of family members** | | |
| Less than or equal to five | 238 | 57.9 |
| More than five | 173 | 42.0 |

**Table 2: Utilization of NHIS (n=378)**

| Utilization of NHIS | n of respondents | % |
|---|---|---|
| Yes | 334 | 88.3 |
| No | 44 | 11.6 |

**Table 3: Duration of subscription to NHIS (N=378)**

| Duration | n | % |
|---|---|---|
| 1-5 years | 256 | 67.7 |
| Less than 1 year | 65 | 17.1 |
| More than 5 years | 57 | 15.0 |

**Table 4: Expenditure of the insured and non-insured patients**

| Amount spent (NRs.) | Insured & utilized patients | Non-insured patients | P value |
|---|---|---|---|
| | n (%) | n (%) | |
| < Rs. 25,000 | 10 (2.6) | 8 (24.2) | 0.00* |
| Rs. 25,000-50,000 | 69 (20.8) | 7 (21.2) | |
| Rs. 50,001-75,000 | 96 (25.3) | 9 (27.2) | |
| Rs. 75,001-1,00,000 | 26 (6.8) | 5 (15.1) | |
| > Rs. 1,00,000 | 177 (46.8) | 4 (12.1) | |

Corrected Chi-square; p-value <0.05 statistically significant*

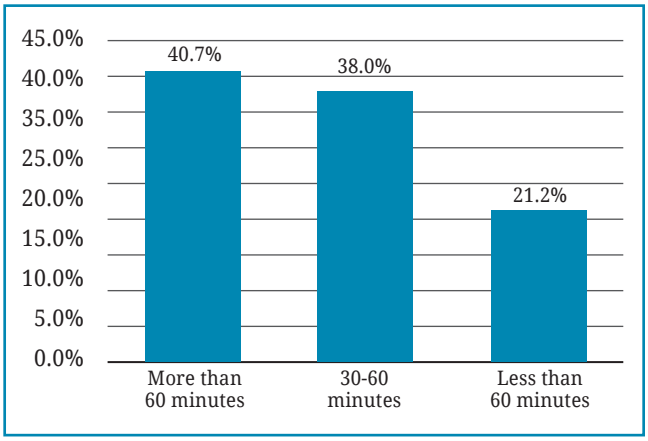


**Fig. 1:** Distance from health facility

**Table 5: Mann–Whitney (U) test comparisons of insured and non-insured**

| | Median expenditure | (IQR) | N | Mean rank | Sum of ranks | Mann-Whitney U test | Z | p-value |
|---|---|---|---|---|---|---|---|---|
| Insured | 87,500 | 62,500 – 125,000 | 378 | 207.7 | 78522.5 | 5582.5 | -1.0 | 0.28 |
| Non- insured | 62,500 | 37,500 – 87,500 | 33 | 186.1 | 6143.5 | | | |

insured households spent less, because they bore the entire cost out-of-pocket, they likely faced greater risk of financial hardship as monthly incomes in Nepal typically range from NRs. 15,000–25,000.[8] However the difference in expenditure between the two groups was not statistically significant (Mann–Whitney U = 5582.5, Z = –1.00, p = 0.28) (Table 5).

Overall, out of 378 respondents, a majority (66.6%) reported at least some level of satisfaction (fully or partially), while one-third expressed dissatisfaction (Table 6).

Upon asking the respondents their opinion on the premium paid for NHIS majority

**Table 6: Level of satisfaction with national health insurance (n=378)**

| Level of satisfaction | n of respondents | % |
|---|---|---|
| Fully satisfied | 68 | 17.9 |
| Partially satisfied | 184 | 48.6 |
| Not satisfied | 126 | 33.3 |

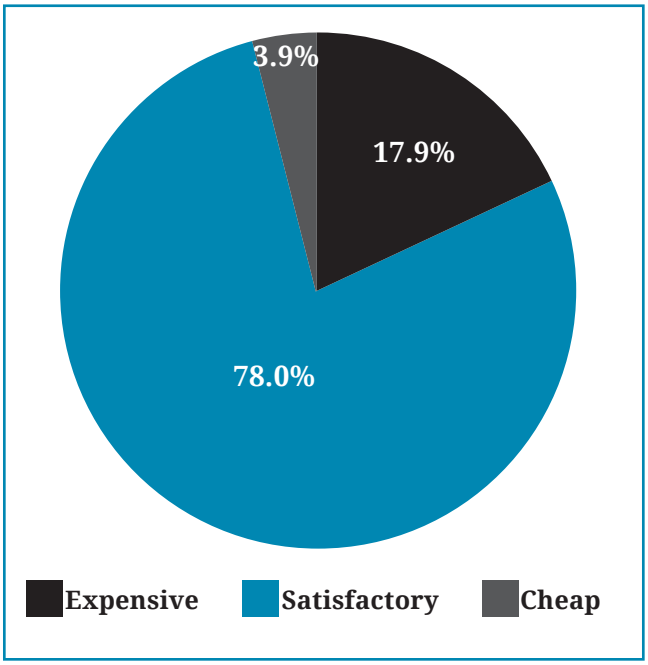


**Fig. 2:** Opinion on the premium paid for NHIS

of respondents (78.0%) perceived the cost as satisfactory, while 17.9% considered it expensive, and only 3.9% regarded it as cheap. Suggesting that most respondents found the premium amount acceptable while a notable minority found it to be expensive which indicates the variability in affordability perception (Fig. 2).

## DISCUSSION

WHO marks 12th December as Universal Health Coverage day, to remind world leaders and citizens of the world to deliver on promises to achieve universal health coverage.[9] All citizens should, at the very least, have informed opinions on the subject of national health insurance. This study is an effort in the area of health insurance to assess the utilization status and satisfaction level of health insurance among the patients visiting LMCTH seeking health services.

In this study, the majority of the respondents were in the adulthood age group (26-40 years) i.e. 47.2% was similar to a hospital based study done in regional tertiary care hospital situated in one of the states of North East India by Manika *et al*,[10] and another studies done by Thapa *et al*,[11] Sharma *et al*.[9] Likewise, it varied in other studies conducted by Bhatt *et al*,[12] Adhikari *et al*[13] and Ghimire *et al*.[14]

In the study females constituted the majority (60.09%) of the respondents which was similar to other hospital based study done by Luke *et al*[15] i.e 55.2%. Contrary to this study of Karanjit *et al*,[16] Bhatt *et al*,[12] this ratio was reverse and male constituted 54.2% and females were 45.8%. The reason is that migration for employment is higher in males than females in this setting, which may be one of the factors responsible for more female respondents in the study. Majority of the respondents (53.5%) belong to Palpa, where study hospital is located. It is followed by 14.8% from Gulmi District. It is probably so because Palpa District was selected as one of the districts for the second phase of the national health insurance program which started registering in 2073 BS. earlier than other districts.[17] The respondents with family members of five or less than five (57.9%) was similar to the studies by Acharya *et al*[18] and Shah *et al*.[19]

In the study respondents who were insured and had utilized the insurance scheme was 81.2% which is in line with the studies done in Baglung and Ilam by Bhatt *et al*[12] and Shah *et al*[19] where the overall health service utilization was found 77.8%. and 88.7%, respectively. On the contrary to the study done by annual report HIB, the service utilization rate was 45% nationally and in the Lumbini Province was 39.0%.[20] The respondents who were enrolled in the national health insurance program and had to travel more than 60 minutes to seek health service was 40.7% followed by 30-60 min for 38.0% and within 30 min for rest of 21.0% to have access to health facilities. Contrary to

this study, a study done by Mishra *et al*,[21] it was found 61.8% had access to health facilities within 30 min impanel NHIS nearby. This may be because of barriers of transportation, long distance, inadequate infrastructure and monsoon rain causing landslides are the challenges for individuals reaching tertiary health facilities where NHIS is empaneled.

Among the insured 46.8% spent more than NRs.1,00,000/- whereas among uninsured was 12.1%. This was unlike the study done by Netra *et al*[22] where only 8.8% of the insured families have spent more than NRs.1,00,000/- rupees whereas among uninsured, 34.2% of the families have spent more than NRs.1,00,000/-. The findings of this study highlight a paradoxical financial burden among insured households. The median expenditure among insured patients was NRs. 87,500 (IQR: 62,500–125,000). Notably, half of the insured households spent more than NRs. 87,500, and one-fourth exceeded NRs. 125,000, surpassing the maximum annual insurance coverage ceiling of NRs. 100,000. This indicates that despite being enrolled in the insurance scheme, a considerable proportion of patients still faced substantial out-of-pocket expenses, undermining the intended financial protection of health insurance.

In contrast, the median expenditure among non-insured households was lower, at NRs. 62,500 (IQR: 37,500–87,500). Although their direct spending was less in absolute terms, the absence of any reimbursement meant that these households bore the full burden out-of-pocket. Given that average monthly household incomes in Nepal typically range from NRs. 15,000 to 25,000, such expenditures represent a significant financial shock, likely pushing many families toward catastrophic health expenditure and financial hardship. The study reveals that the out of pocket expenditure was high among the uninsured families compared to the insured. The study's findings also show significant proportion (46.8%) of insured respondents had to make out-of-pocket payments due to the inadequacy of the NHIS's benefit package. The beneficial package, which includes NRs. 1,00,000 for a family of five, has been insufficient to cover healthcare services fully.

Regarding the overall satisfaction level of participants in the study, among 378 respondents who had utilized the scheme, 2/3rd (66.6%) respondents were satisfied either partially (48.6%) or fully (18.0%). Thus, in this study higher percentage of respondents was satisfied than the studies done by Olamuyiwa *et al*[23] and Ghimire *et al*,[14] where found out that about half 50.9% and 52.5% of the respondents were satisfied respectively. Another study done in Nepal found that the most of the participants (90.6%) who had insurance were satisfied with their insurance scheme.[24] In the current study the 33.3% of them users were not satisfied at all with the national health care insurance scheme. The most common reason for no satisfaction was complex and tiring process to get the health services which showed the similar results as in the study done by Ghimire *et al*[14] where the most common barriers faced by the participants while utilizing the national health insurance scheme are unavailability of necessary drugs, long waiting times, limited opening hours, and complex process for insurance patients.[14]

In conclusion, most of the patients visiting LMCTH were insured; among them the vast majority (88.3%) utilizes the NHIS. Two-third of the utilizers are more or less satisfied while one –third are not satisfied at all due to complex process to get health services. The insured has more health seeking behavior and the celling amount is not enough for almost half of the insured patients.

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