

Trends and Determinants of Continuity in the Government Health Insurance Program

Ramesh Prasad Adhikari,¹ Indra Prasad Tiwari,² Ajay Thapa,²

¹Provincial Health Training Center, Gandaki Province, Nepal, ²Pokhara University, Pokhara, Nepal

ABSTRACT

Background: Nepal Government Health Insurance enrollment has increased, and sustaining continuous coverage remains difficult. Health insurance continuity is changed by social, household, and service-related factors. This study assessed trends in continuity among insured households in Gandaki Province and the associated factors.

Methods: A cross-sectional survey was conducted among 411 insured individuals. Data was collected using a structured questionnaire. Participants' characteristics and continuity patterns were summarized using descriptive statistics. Determinants of continuity in health insurance program were investigated through bivariate and multivariate logistic regression analyses.

Results: The mean age of respondents was 46.4 years; most were Hindu and over half had a bachelor's degree or higher. While 92.5% intended to renew their insurance annually, only 16.3% discontinued enrollment. Discontinuation was primarily due to poor service quality, low perceived need, and limited awareness. Continuity of enrollment was significantly associated with ethnicity (AOR 3.63), source of drinking water (AOR 0.32), female involvement in household health decision-making (AOR 3.63), and use of private health facilities (AOR 0.12). No independent predictors of discontinuation were identified after adjustment.

Conclusion: The study identified a notable gap between high intentions to renew health insurance and actual continuity of enrollment in Gandaki Province. Although Most respondents intended to renew their insurance. Continuity was influenced by socio-cultural factors, household decision-making, and service utilization, while dropout is driven by system and service delivery challenges. Improving service quality, user experience, benefit alignment, and community awareness is essential for sustaining the program.

Keywords: Determinants; Enrollment Retention; Health Insurance; Healthcare Utilization; Insurance Continuity; Nepal

INTRODUCTION

Ensuring healthy, productive lives for all is a key agenda of the Sustainable Development Goals, with a specific focus on promoting well-being across all ages¹. The Health Insurance Program (HIP) aims to improve affordable and equitable access to quality healthcare, essential medicines, vaccines, and financial protection, thereby contributing to Universal Health Coverage (UHC). It highlights the need for coordinated and comprehensive health financing and social protection policies at both national and global levels.³

Nepal adopted a Public-Private Partnership model for health financing, with costs shared between the government and citizens. Introduced in 2016 and later institutionalized nationwide, the Health Insurance Program now covers about 28% of the population⁴. Despite

its implementation, the Health Insurance Program faces multiple challenges, including low health literacy, weak awareness and promotion, delayed reimbursements, adverse selection, low trust, poor coordination, limited human resources, substandard service delivery, weak political commitment, and issues with beneficiary identification and program duplication.⁵increase access and equality to quality health care, and as an approach to achieve Universal Health care (UHC

Despite promising enrollment figures, retention remains low, characterized by a significant dropout rate and limited policy renewals.⁶and is key to the Universal Health Coverage (UHC These issues are most prevalent in Pokhara Metropolitan City and Kaski, with more than one-fourth of households discontinuing their contributions to the Social Health Insurance Program.⁷which started in 2016, aims to achieve universal health coverage (UHC

Correspondence: Ramesh Prasad Adhikari, Provincial Health Training Center, pokhara
Email :rpa777@yahoo.com. Phone:+9779856025011.

High dropout rates and reliance on subsidized enrolment are the major challenges to the sustainability of Nepal's HIP.⁸ While some studies exist at national and district levels, evidence at the provincial level, particularly in Gandaki Province, is limited. Therefore, this study analyzes the trends and determinants of enrollment and continuation in the Government Health Insurance Program in Gandaki Province, Nepal.

METHODS

A cross-sectional quantitative study design was applied. The design focused on collecting measurable indicators from the insured population to assess the continuity of the Government Health Insurance Program and related associated factors.

This study was conducted in four districts of Gandaki Province, Nepal: Kaski, Baglung, Nawalparasi (East), and Mustang. These districts were selected to represent the Mountain, Hill, and Plain ecological belts. Kaski is an urban and semi-urban district with relatively advanced health infrastructure. Baglung is a mid-hill district with moderate access to healthcare. Nawalparasi (East) represents the Terai belt, characterized by high population density and mixed service coverage. Mustang is a remote, mountainous district with limited access to healthcare services. This selection ensured that the study reflected a diversity of geographic, demographic, and service delivery contexts.

The target study population was the insured population, and s/he must be the head of the household.

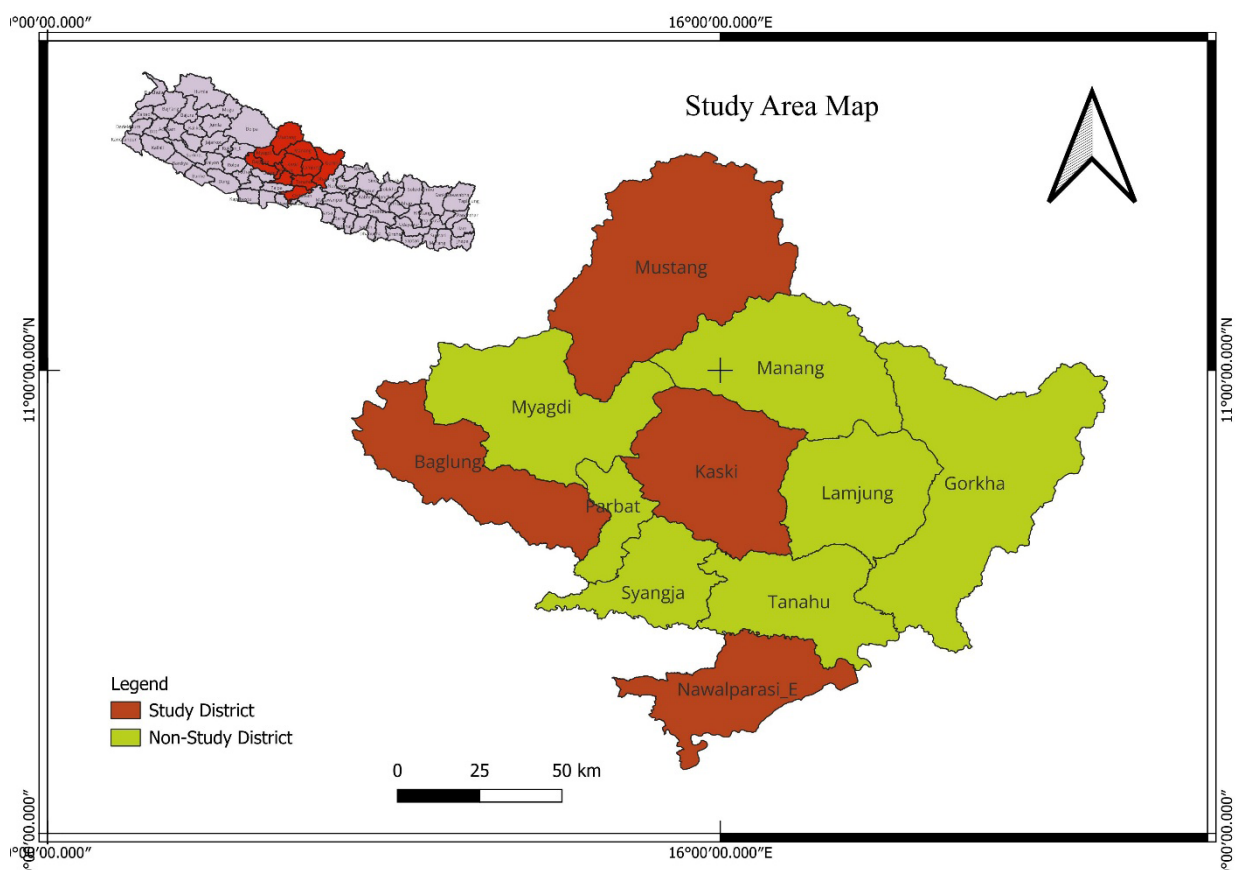


Figure 1 Map of the study area.

A multistage sampling technique was applied. First, the eleven districts where the Health Insurance Program was implemented were grouped into three clusters: Mountain, Hill, and Terai. Districts were purposively selected to

represent the province's mountain, hill, and terai ecological regions. Within each district, municipalities and rural municipalities were selected using random sampling. Subsequently, wards within the selected municipalities were randomly selected by lottery method to ensure equal probability of selection. From these wards, insured individuals were chosen systematically using separate lists provided by the Health Insurance Board. The sampling interval (k) was calculated by dividing the total number of insured individuals by the required sample size. The first individual was selected at random, and every k th individual thereafter was included until the required sample size was reached. This approach ensured adequate representation of diverse geographic and demographic settings within the province. The final distribution of the sample among insured respondents was as follows: 3 in Mustang, 35 in Baglung, 308 in Kaski, and 65 in Nawalparasi (East). The questionnaire was developed based on study objectives, literature review, and previous related studies. Data collection took place from January to February 2025. Enumerators were recruited and trained in the study objectives, sampling procedures, ethical considerations, questionnaire administration using KOBO tools, maintaining privacy, and adhering to ethical standards. A pretest of the structured questionnaire was carried out in a similar but non-study setting. Duplicate, repetitive, overlapping, and other irrelevant questionnaires were omitted from the study, and the questionnaire was clarified and validated through a pretest. A pre-test was conducted with 40 insured respondents from a population outside the selected study area but with characteristics similar to those of the study respondents to assess the questionnaire's clarity, consistency, and applicability. The reliability of six selected Likert-scale items related to satisfaction and perceived effectiveness of the health insurance program was assessed using Cronbach's alpha coefficient, which demonstrated acceptable internal consistency (Cronbach's $\alpha=0.721$). After pre-testing the questionnaire, expert opinion was sought on content validity. Responses were recorded directly on tablets using KoboToolbox, enabling real-time data capture and minimizing manual entry errors.

After collecting the data, the information was exported from KoboToolbox to SPSS version 27 for cleaning and analysis. Data cleaning involved checking for missing values, inconsistencies, and outliers. Descriptive statistics summarized participants' socio-demographic characteristics. Bivariate analysis was used to explore associations between independent variables and the outcomes of interest. All relevant variables were then included in a logistic regression model to determine

independent predictors. The results reported adjusted odds ratios (AOR) with 95% confidence intervals (CI), with p -values <0.05 considered statistically significant.

In the regression analysis, the moderate household expenditure category was used as the reference group because it represents typical household spending, allowing meaningful comparisons with lower- and higher-expenditure categories.

Household expenditure on essential goods and services was categorized into five levels: very low, low, moderate, high, and very high, based on the distribution of self-reported monthly spending in the study population. This categorization reflected relative economic status rather than absolute monetary thresholds. This approach is consistent with methods used in national and international household surveys.

Ethnicity was included in the multivariate logistic regression model as a socio-demographic variable, given its relevance to health service access in Nepal. Brahmin/Chhetri was used as the reference category.

Ethical approval was obtained from the Nepal Health Research Council (NHRC) under registration number 550/2024, dated 9 October 2024. Participation in the study was voluntary, and informed written consent was obtained from all respondents prior to interviews. Confidentiality was maintained by removing all personal identifiers, and respondents were informed of their right to withdraw from the interview at any time without adverse consequences.

Renewal status and continuity status are the dependent variables in this study. Both are binary categorical variables. Therefore, binary logistic regression models were applied.

RESULTS

The socio-demographic characteristics indicate that respondents had a mean age of 46.43 years (± 15.80), with the majority (41.8%) in the 25-44 age group, representing an economically active population that is more likely to enroll in health insurance. Males (58.4%) slightly outnumbered females, and most respondents were Hindu (92.2%), reflecting the general population structure.

Ethnically, Brahmin (37.0%) and Janajati (34.8%) were the dominant groups, suggesting diversity that may influence enrolment and continuation behavior. Educational status was relatively high, with 54.5%

having a bachelor's degree or higher, which likely supports better awareness and enrolment. However, the presence of illiterate (14.8%) and low-educated groups indicates potential barriers that may contribute to dropout or irregular continuation.

Table 1: Socio-demographic characteristics of respondents (N=411)

Characteristics	Frequency	Percent
Age Group (years)		
15-24 (Youth)	34	8.3
25-44 (Youth to Middle-aged adult)	172	41.8
45-59 (Middle to older working age)	108	26.3
60-74 (Early elderly)	75	18.2
≥75 (Late elderly)	22	5.4
Mean (±SD)	46.43 ± 15.80	
Median (Min-Max)	44 (20-88)	
Sex		
Male	240	58.4
Female	171	41.6
Religion		
Hindu	379	92.2
Buddhist	17	4.1
Christian	12	2.9
Others	3	0.7
Ethnicity		
Brahmin	152	37.0
Chhetri	71	17.3
Dalit	43	10.5
Janajati	143	34.8
Others	2	0.5
Education Level		
Illiterate	61	14.8
Literate (non-formal)	71	17.3
Basic (1-8)	22	5.4
Secondary (9-12)	33	8.0
Bachelor	153	37.2
Higher Education	71	17.3

Table 2: Economic characteristics of respondents (N=411)

Characteristics	Frequency	Percent
Main Source of Income		
Agriculture	96	23.4
Business/Enterprise	105	25.5
Private Job	81	19.7
Nonformal Services	38	9.2
Social Security	40	9.7
Others	51	12.4
Expenditure Level		
Very Low	18	4.4
Low	60	14.6
Moderate	104	25.3
High	113	27.5
Very High	116	28.2
Electricity Access		
Yes	410	99.8
No	1	0.2
Drinking Water Source		
Piped Water	234	56.9
Public Tap	133	32.4
Tube Well	42	10.2
Surface Water	2	0.5
Family Type		
Nuclear	219	53.3
Joint	190	46.2
Extended	2	0.5
Occupation Status		
Employed	251	61.1
Not Employed	160	38.9
Head of Household		
Male	70	17.0
Female	341	83.0
Decision Making		
Male	54	13.1
Female	69	16.8
Joint	288	70.1

The household and economic characteristics show that respondents primarily depended on business (25.5%) and agriculture (23.4%), with a majority being employed (61.1%), indicating financial capacity for enrolment. However, more than half of households reported high to very high expenditure (55.7%), suggesting financial pressure that may influence both continuation and dropout.

Access to basic services was high: 99.8% had electricity, and 56.9% used piped water, indicating stable living conditions that can support enrolment and continued participation. Family structure was nuclear (53.3%), and a

large proportion of households were female-headed (83.0%), with joint decision-making (70.1%), reflecting inclusive household dynamics that may positively influence continuation.

Overall, table 2 indicates that economic capacity, expenditure burden, and household decision-making patterns are key factors affecting enrolment and continuation in the health insurance program.

Table 3: Status of renewal and continuation among insured respondents in Health Insurance Program (N=411)

Characteristics	Frequency	Percent
Enrollment duration in health insurance program		
0-12 months	35	8.5
13-36 months	125	30.4
37-60 months	114	27.7
61 above months	137	33.3
Mean $\pm$ SD 48.16 $\pm$ 26.16		
Median (Min:Max) 42(1:114)		
Renewal intention status of health insurance		
No	31	7.5
Yes	380	92.5
Continuity status of the health insurance program		
Continuation	344	83.7
Discontinuation	67	16.3
Primary reasons for discontinuing the health insurance program=67		
No use	23	5.6
Poor Services delivery	30	7.3
Low awareness	18	4.4
Financial Burden	10	2.4
Administrative inefficiency	9	2.2
Others (workload and renewal time forgotten)	8	1.9

Table 3 presents the distribution of enrollment duration, renewal intention, continuity status, reasons for discontinuation, motivating factors for enrollment, and satisfaction with the enrollment process among respondents enrolled in the health insurance program.

Enrolment duration varied widely across respondents, with one-third (33.3%) enrolled for more than 61 months, followed by 30.4% for 13-36 months and 27.7% for 37-60 months. Only 8.5% had been enrolled for less than one year. The mean enrolment duration was 48.16 $\pm$ 26.16 months with a median of 42 months (range: 1-114 months), indicating substantial variation in program participation. Regarding annual renewal intentions, a large majority (92.5%) expressed intent to renew their insurance, while 7.5% did not. Regarding continuity status, 83.7% reported continuing at some point, whereas only 16.3% discontinued their enrolment. Among respondents who discontinued the program, the primary reasons were poor service delivery (7.3%), no use of services (5.6%), low awareness (4.4%), financial burden (2.4%), administrative inefficiency (2.2%), and other miscellaneous reasons (workload and forget renewal time) (1.9%).

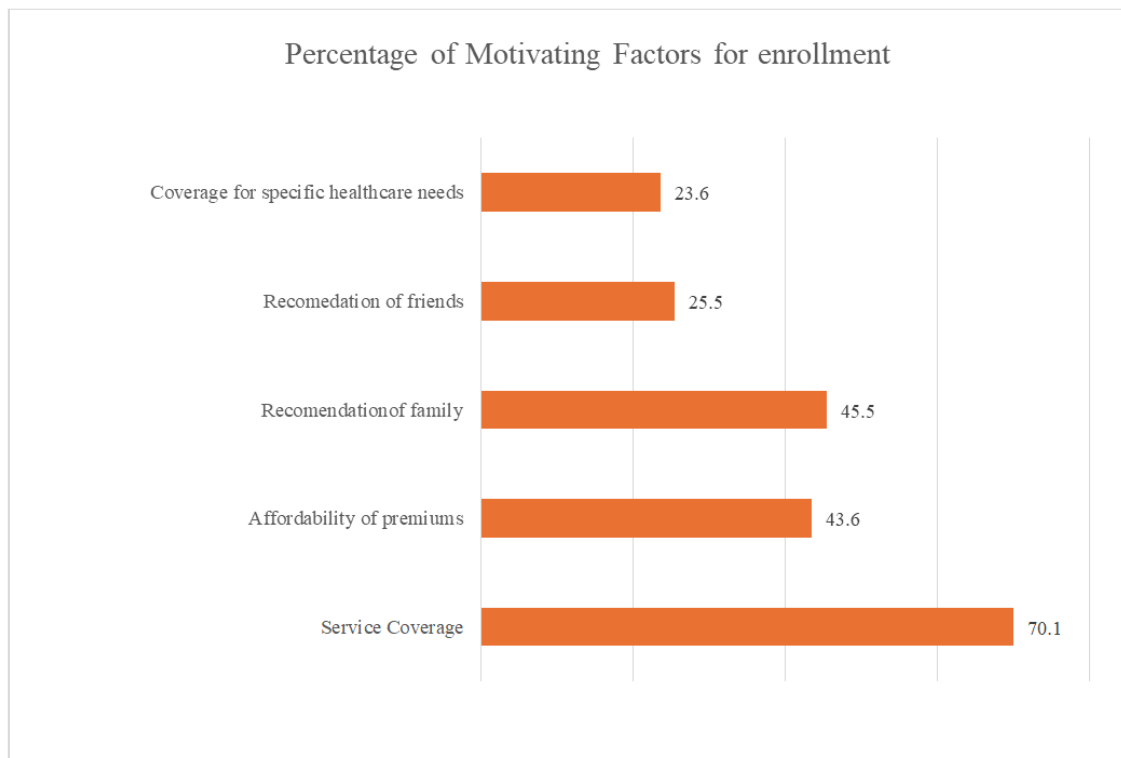


Figure 2: Percentage of Motivating factors for enrollment

Among 411 respondents, motivating factors for initial enrolment varied: 70.1% cited service coverage, while 43.6% cited premium affordability. Recommendations from family (45.5%) and friends (25.5%) also influenced enrolment. A smaller proportion (23.6%) enrolled due to coverage for specific health care needs, and only 0.7% reported other reasons.

Table 4: Socio-demographic and economic factors associated with renewal status (n = 411)

Factors	Total Samples	COR (95% CI)	P-value	AOR (95% CI)	P-value
Age Group			0.91		
Middle-aged	280	1.244 (0.246-6.304)	0.792	-	-
Children/Youth	34	0.942 (0.377-2.207)	0.838	-	-
Elderly	97	1	-	-	-
Sex			0.275		
Male	240	1	-	-	-
Female	171	1.544 (0.708-3.368)	-	-	-
Religion					
Hindu	379	1	-	-	-
Non-Hindu	32	1.862 (0.609-5.699)	0.276	-	-
Ethnicity			0.044*		0.309*
Brahmin	152	3.066 (1.202-7.787)	0.019	3.614 (0.699-18.688)	0.125
Chhetri	71	2.106 (0.697-6.387)	0.187	2.278 (0.001-23600)	0.998
Dalit/Janajati/Others	188	1	-	1	-

Table 4: Socio-demographic and economic factors associated with renewal status (n = 411)

Factors	Total Samples	COR (95% CI)	P-value	AOR (95% CI)	P-value
Education			0.314		
Illiterate/Literate	132	1.847 (0.763-4.471)	0.174	-	-
Basic/Secondary	55	1.793 (0.515-6.243)	0.359	-	-
Bachelor+	244	1	-	-	-
Main Source of Income			0.952		
Formal & Stable	201	1	-	-	-
Informal & Unstable	210	0.978 (0.470-2.034)	-	-	-
Expenditure Level			0.263		
Low	144	1	-	-	-
Moderate	89	2.606 (0.715-9.505)	0.147	-	-
High	178	0.920 (0.421-2.014)	0.920	-	-
Water Source			0.007*		0.270
Utility-based	367	3.324 (1.386-7.971)	-	2.497 (0.497-12.694)	-
Non-utility	44	1	-	1	-
Family Type			0.58		
Joint/Extended	192	1	-	-	-
Nuclear	219	1.233 (0.588-2.588)	-	-	-
Occupation Status			0.136		
No	160	1	-	-	-
Yes	251	1.748 (0.839-3.643)	-	-	-
Head of Household			0.889		
Male	70	1	-	-	-
Female	340	0.932 (0.345-2.517)	-	-	-

The bivariate analysis showed that most socio-demographic and economic variables, including age, sex, religion, education, income source, expenditure level, family type, occupation status, and head of household, were not significantly associated with renewal status ($p > 0.05$). However, ethnicity showed a statistically significant association in the bivariate analysis ($p = 0.044$). Respondents from the Brahmin group were more likely to renew than those from disadvantaged groups (Dalit/Janajati/Others) (COR = 3.066; 95% CI: 1.202-7.787). Despite this, ethnicity remained non-significant in the multivariate model ($p = 0.309$), suggesting that other variables confounded its effect. Similarly, the source of drinking water showed a significant association at the bivariate level (COR = 3.324; 95% CI: 1.386-7.971), suggesting that households with utility-based water supply were more likely to renew. However, this association was not statistically significant after adjustment (AOR = 2.497; $p > 0.05$). Overall, the findings indicate that socio-demographic and economic characteristics alone did not independently predict renewal status after controlling for other factors.

Table 5: Behavioral, health, and program-related factors associated with renewal status (n = 411)

Factors	Total Samples	COR (95% CI)	P-value	AOR (95% CI)	P-value
Decision Maker for HI			0.007*		0.039*
Male	54	1	-	1	-
Female	69	3.525 (0.546-4.260)	0.421	9.650 (1.085-85.845)	0.042
Joint	288	3.914 (1.600-9.577)	0.003	6.304 (1.382-28.762)	0.017
Chronic Illness			0.986		
Yes	185	1	-	-	-
No	226	1.007 (0.482-2.101)	-	-	-
Treatment Status			0.986		
Yes	185	1.007 (0.482-2.101)	-	-	-
No	226	1	-	-	-
Type of Health Facility Used			0.003*		0.002*
Government	166	6.230 (1.835-21.151)	-	10.081 (2.261-44.941)	-
Private	19	1	-	1	-
Satisfaction with Enrollment			0.764		
Dissatisfied	12	1	-	-	-
Satisfied	326	1.568 (0.160-15.360)	0.699	-	-
Neutral	73	1.049 (0.130-8.447)	0.964	-	-
Enrollment Duration			0.534		
Recent	35	3.104 (0.404-23.830)	0.276	-	-
Continuous	125	1.177 (0.522-2.651)	0.694	-	-
Long-term	251	1	-	-	-
Effectiveness of Information			0.028*		0.491
Effective	285	4.375 (1.446-13.233)	0.009	1.925 (0.234-15.813)	0.542
Neutral	105	4.375 (1.237-15.477)	0.022	4.796 (0.334-68.801)	0.200
Ineffective	21	1	-	1	-

In contrast, several behavioural and program-related variables showed significant associations with renewal status. The decision-maker for health insurance was a significant predictor in both bivariate ($p = 0.007$) and multivariate analyses ($p = 0.039$). Households where decisions were made jointly were significantly more likely to renew (AOR = 6.304; 95% CI: 1.382-28.762), followed by those where females were decision-makers (AOR = 9.650; 95% CI: 1.085-85.845), compared with male-only decision-making. This highlights the importance of inclusive household decision-making in sustaining enrolment. The type of health facility used was another strong predictor. Respondents utilising government health institutions were significantly more likely to renew than those using private facilities (AOR = 10.081; 95% CI: 2.261-44.941; $p = 0.002$). This suggests that positive experiences or reliance on public healthcare services encourage continuation in the insurance program. The perceived effectiveness of health insurance information was significant in the bivariate analysis ($p = 0.028$), indicating that better awareness may influence renewal. However, this factor was no longer significant after adjustment, suggesting it overlapped with effects of other variables. Other variables, including chronic illness, treatment status, satisfaction with enrolment, and duration of enrolment, were not significantly associated with renewal status in either analysis ($p > 0.05$).

Table 6: Socio-demographic and economic factors associated with continuity status (n = 411)

Factors	Total Samples	COR (95% CI)	P-value	AOR (95% CI)	P-value
Age Group			0.350		0.033*
Children/Youth	34	1	-	1	-
Middle-aged	280	1.979 (0.580-6.751)	0.276	1.437 (0.231-8.947)	0.697
Elderly	97	2.517 (0.695-9.115)	0.160	8.853 (0.811-42.251)	0.080
Sex			0.113		0.085
Male	240	1	-	1	-
Female	171	0.640 (0.368-1.112)	-	0.578 (0.310-1.078)	-
Religion			0.697		0.683
Hindu	379	1.203 (0.475-3.046)	-	1.503 (0.213-10.623)	-
Non-Hindu	32	1	-	1	-
Ethnicity			0.981		0.696
Brahmin	152	1	-	1	-
Chhetri	71	1.033 (0.486-2.197)	0.932	0.959 (0.434-2.119)	-
Others	188	0.965 (0.540-1.723)	0.903	0.763 (0.397-1.466)	-
Education			0.039*		0.029*
Illiterate/Literate	132	1	-	1	-
Basic/Secondary	280	0.725 (0.252-2.087)	0.551	0.532 (0.171-1.653)	0.275
Bachelor+	97	1.874 (1.013-3.466)	0.045	1.754 (0.926-3.321)	0.085
Income Source			0.551		0.574
Formal	201	1	-	1	-
Informal	210	1.173 (0.695-1.981)	-	0.745 (0.268-2.076)	-
Expenditure Level			0.179		0.019*
Low	144	1	-	1	-
Moderate	85	0.560 (0.249-1.273)	0.167	0.105 (0.018-0.613)	0.012
High	178	1.181 (0.664-2.100)	0.572	0.341 (0.121-0.962)	0.042
Water Source			0.103		0.283
Utility	367	1	-	1	-
Non-utility	44	1.851 (0.884-3.877)	-	1.538 (0.701-3.376)	-
Family Type			0.158		0.148
Nuclear	219	1	-	1	-
Joint/Extended	192	0.680 (0.398-1.161)	-	0.667 (0.385-1.154)	-

The bivariate analysis indicated that age and education were significantly associated with continuity. However, after adjustment, household expenditure remained a significant predictor. Households with moderate expenditure (50-74%) were significantly less likely to maintain continuity (AOR = 0.105; $p = 0.012$), and those with high expenditure ($\geq 75\%$) had lower odds of continuity (AOR = 0.341; $p = 0.042$) than low-expenditure households. Although education was significant in the bivariate analysis, it was no longer significant after adjustment, suggesting that its effect may be mediated by economic factors. Other socio-demographic variables, including age, sex, ethnicity, income source, water source, and family type, were not independently associated with continuity.

Table 7: Behavioural, health, and program-related factors associated with continuity status (n = 411)

<i>Factors</i>	<i>Total Samples</i>	<i>COR (95% CI)</i>	<i>P-value</i>	<i>AOR (95% CI)</i>	<i>P-value</i>
Decision Maker			0.222		0.521
Male	54	1.857 (0.918-3.757)	0.085	2.074 (0.554-7.772)	0.279
Female	69	1.233 (0.610-2.491)	0.559	-	-
Joint	288	1	-	1	-
Treatment Status			0.966		0.856
Yes	226	1.011 (0.598-1.712)	-	0.848 (0.145-4.974)	-
No	185	1	-	1	-
Health Facility Used			0.548		0.176
Government	166	1	-	1	-
Private	19	1.436 (0.441-4.671)	-	2.832 (0.628-12.766)	-
Enrollment Duration			0.204		0.222
Recent	35	1	-	1	-
Continuous	125	1.679 (0.463-6.095)	0.431	9.497 (0.701-128.722)	0.091
Long-term	251	2.458 (0.722-8.367)	0.150	5.869 (0.484-71.142)	0.164
Effectiveness of HI Information			0.056		0.195
Effective	285	1	-	1	-
Neutral	105	1.441 (0.798-2.602)	0.225	1.269 (0.448-3.596)	0.654
Ineffective	21	3.062 (1.165-8.054)	0.023	4.606 (0.879-24.128)	0.071

Among behavioural and program-related variables, the effectiveness of health insurance information showed a significant association in the bivariate analysis, indicating that respondents who perceived the information as ineffective were more likely to experience continuity issues (COR: 3.062; 95% CI: 1.65-8.054; $p=0.023$). However, this association was no longer significant in the multivariate analysis after adjustment for other variables (AOR: 4.606; 95% CI: 0.879-24.128; $p=0.071$). Similarly, decision-making patterns, treatment status, type of health facility used, and enrolment duration were not significantly associated with continuity in both bivariate and multivariate analyses.

DISCUSSION

This study examined socio-demographic factors, enrollment duration, renewal intention, continuity status, and the determinants of discontinuation in the Government Health Insurance Program of Gandaki Province, Nepal. The findings are significant for assessing enrollment behaviour and the operational challenges of HIP.

The socio-demographic analysis revealed that most respondents were middle-aged, relatively well educated, and from economically stable backgrounds.. This is consistent with previous findings that people who were more highly educated and came from high socioeconomic backgrounds.⁹ The significance of the presence of electricity access, cement housing structures, and asset ownership further reflect moderate living conditions, as indicated by national surveys.¹⁰

The study found a generally positive pattern of renewal intention and continuity among insured respondents, indicating sustained participation and acceptance of the Health Insurance Program. However, some respondents still experienced discontinuation, suggesting that service- and awareness-related, as well as administrative, challenges continue to influence long-term continuity in the program. In the current study, findings from studies conducted in Ethiopia, Ghana, and Nepal indicate that inadequate health care service delivery, administrative challenges, and low levels of awareness tend to inhibit continuation, even when initial intention is high.^{11 12} Although religion appeared significant, this should be interpreted with caution, as most participants were Hindu. The small number of non-Hindu respondents may have exaggerated the odds ratio.

“Poor service delivery” came top as a reason for discontinuation, supported by findings that service

availability, not availability of drugs, diagnostic limitations, and provider attitudes strongly influence retention in health insurance schemes.¹¹ Lack of awareness is another pivotal factor that ranks highest, resulting from insufficient initiative on the health insurance side, a concern in previous research on a community-based health insurance program in Nepal as well.¹³ to attain an equitable health outcome to all citizens by ensuring universal health coverage. This study aims to assess the factors associated with non-enrollment in National Health Insurance Scheme (NHIS). A few respondents stopped because of “no use”, implying that in households where there are no pressing health needs, a household might undervalue the insurance scheme because of value perception, which is common in other LMICs¹².

Factors that motivate people to seek health services include service coverage, affordability, and recommendations from relatives or friends. The factors identified are supported by research showing that perceived levels of service, protection, and social factors are fundamental in influencing individual insurance enrollment worldwide. Several international studies confirm that renewal decisions are often more strongly determined by perceived service value than by demographic characteristics.^{12,14} rural families in Ethiopia are exposed to a range of covariate and idiosyncratic risks. In 2005, to deal with the consequences of covariate risks, the government implemented the Productive Safety Net Program (PSNP).

Although ethnic disparities in health service utilization have been reported in Nepal, ethnicity did not show an independent association in the adjusted model. This suggests that service delivery characteristics and household decision-making factors may play a more prominent role in influencing program continuity than ethnicity alone.

In conclusion, although a high intention and continuity were observed, service-related challenges, limited awareness, administrative inefficiencies, and socio-cultural factors were also observed. Addressing these barriers is critical to improving retention and ensuring the sustainability of the Government Health Insurance Program in Gandaki Province, Nepal.

This study has several limitations. Its cross-sectional design limits causal inference, and reliance on self-reported data from selected districts may affect generalizability. Small sample sizes in some ethnic groups and a limited number of discontinuity cases may have

reduced statistical power. Potential information bias and recall bias may have occurred because the study relied on self-reported responses regarding health insurance experiences and service utilization. Respondents may not have accurately recalled past experiences, which could have affected the findings. Despite these limitations, the findings highlight that continuity is primarily driven by financial and service-related factors rather than socio-demographic characteristics, underscoring the importance of improving perceived value and reducing financial barriers.

CONCLUSIONS

The study shows that most insured individuals intended to renew their health insurance and remain in the program, indicating positive acceptance and sustained participation. Although continuity and renewal intention were generally high, some individuals still experienced discontinuity in the program. This gap suggests that problems in service delivery, administrative processes, and actual use of insurance discourage long-term participation. Staying enrolled for many years does not guarantee continuity if people are dissatisfied with their experience.

Renewal behavior was influenced by social and household factors. Higher renewal among marginalized ethnic groups and households where women make health-related decisions highlights the importance of inclusive and gender-sensitive approaches. Lower renewal among users of private facilities indicates limited alignment between insurance benefits and private service expectations. Improving user experience and addressing practical barriers are necessary to improve the sustainability of the health insurance program.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this manuscript.

REFERENCES:

1. SDG final report-nepal.pdf [Internet]. [cited 2025 Dec 17]. Available from: <https://www.undp.org/sites/g/files/zskgke326/files/publications/SDG%20final%20report-nepal.pdf>
2. SDGs_Report_Final (1).pdf [Internet]. [cited 2025 Dec 16]. Available from: http://elibrary.moest.gov.np/bitstream/123456789/266/1/SDGs_Report_Final%20%281%29.pdf
3. Bayarsaikhan D, Tessier L, Ron A. Universal Health Coverage and Social Health Protection: Policy relevance to health system financing reforms. *Int Soc Secur Rev* [Internet]. 2022 [cited 2025 Aug 22];75(2):75-95. Available from: <https://onlinelibrary.wiley.com/doi/abs/10.1111/issr.12295>
4. Annual_Report_of Health Insurance Board FY_2080_81.
5. Paudel B. Challenges for implementation of the health insurance program in Nepal: Implementer's perspectives [Internet] [Master thesis]. OsloMet-Storbyuniversitet; 2021 [cited 2025 Aug 22]. Available from: <https://oda.oslomet.no/oda-xmlui/handle/11250/2789535>
6. Paneru DP, Adhikari C, Poudel S, Adhikari LM, Neupane D, Bajracharya J, et al. Adopting social health insurance in Nepal: A mixed study. *Front Public Health* [Internet]. 2022 Dec 15 [cited 2025 Aug 20];10. Available from: <https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2022.978732/full>
7. Sharma P, Yadav DK, Shrestha N, Ghimire P. Dropout Analysis of a National Social Health Insurance Program at Pokhara Metropolitan City, Kaski, Nepal. *Int J Health Policy Manag* [Internet]. 2021 Dec 14 [cited 2025 Aug 22];11(11):2476-88. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9818104/>
8. Ranabhat CL, Subedi R, Karn S. Status and determinants of enrollment and dropout of health insurance in Nepal: an explorative study. *Cost Eff Resour Alloc* [Internet]. 2020 Oct 1 [cited 2025 Aug 20];18(1):40. Available from: <https://doi.org/10.1186/s12962-020-00227-7>
9. Acharya A, Vellakkal S, Taylor F, Masset E, Satija A, Burke M, et al. The Impact of Health Insurance Schemes for the Informal Sector in Low- and Middle-Income Countries: A Systematic Review. *World Bank Res Obs* [Internet]. 2013 Aug 1 [cited 2025 Aug 27];28(2):236-66. Available from: <https://academic.oup.com/wbro/article-lookup/doi/10.1093/wbro/lks009>
10. Nepal Demographic and Health Survey [Internet]. [cited 2025 Nov 18]. Available from: <https://dhsprogram.com/pubs/pdf/FR379/FR379.pdf>
11. Mebratie AD, Sparrow R, Yilma Z, Alemu G, Bedi AS. Dropping out of Ethiopia's community-based health insurance scheme. *Health Policy Plan* [Internet]. 2015 Dec 1 [cited 2025 Nov 18];30(10):1296-306. Available from: <https://doi.org/10.1093/heapol/czu142>
12. Fenny AP, Yates R, Thompson R. Social health insurance schemes in Africa leave out the poor. *Int Health* [Internet]. 2018 Jan 1 [cited 2025 Nov 18];10(1):1-3. Available from: <https://doi.org/10.1093/inthealth/ihx046>
13. Adhikari A, Gahatraj NR, Yadav DK. Factors Associated with Non-Enrollment in National Health Insurance Scheme in Kaski District, Nepal. *Nepal J Insur Soc Secur* [Internet]. 2020 Dec 1 [cited 2025 Aug 26];3(3):77-90. Available from: <https://nepjol.info/index.php/njiss/article/view/36464>
14. Shigute Z, Mebratie AD, Sparrow R, Yilma Z, Alemu G, Bedi AS. Uptake of health insurance and the productive safety net program in rural Ethiopia. *Soc Sci Med* [Internet]. 2017 Mar 1 [cited 2025 Nov 18]; 176:133-41. Available from: <https://www.sciencedirect.com/science/article/pii/S0277953617300424>