

# **Health Care Utilization and Its Associated Factors and Health Care Expenditure Among Elderly Population of Banepa Municipality**

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# Background

- The Senior Citizen Acts of Nepal 2063 defines the senior citizen as “people who are 60 and above”.<sup>1</sup>
- **Rapidly Aging Population:** Nepal’s elderly population (60 years and above) rose from 5.8% (1991) to 8.1% (2011), surpassing the national growth rate.<sup>2</sup>

- **Global Context:** By 2050, 79% of the world's 2 billion elderly will reside in less developed regions like Nepal.<sup>3</sup>
- **National and Local Context:** In Nepal 6.8% of the population is  $\geq 60$  years and within Kavrepalanchok district the number is 7.4%.<sup>4</sup>
- Banepa Municipality has population of 11,603 with  $\geq 60$  years population of 1,842.

- **Health Vulnerability:** Aging is an independent risk factor for CVD, diabetes, and respiratory diseases, leading to increased health service demands.<sup>5</sup>
- Vulnerable with regards to both over- and under-utilization of healthcare services leading to financial harm.<sup>6</sup>
- **Economic Barrier:** High out-of-pocket (OOP) spending and limited awareness of government insurance schemes hinder access to care.

- **Health Care Utilization:** Health Care Utilization is the quantification or description of the use of services by persons for the purpose of preventing and curing health problems, promoting maintenance of health and well-being, or obtaining information about one's health status and prognosis. <sup>7</sup>

- **Health Care Expenditure:** Health care expenditures refers to the participants' direct expenses on health care such as expenditure on the registration fee, emergency cost, medicine cost, laboratory fee, surgical cost, consultation fee, and accessories cost; and the indirect expenses on transportation cost and accommodation.<sup>8</sup>

# Objectives

- **General Objective:** To assess health care utilization and expenditure among elderly people in Banepa Municipality.
- **Specific Objectives:**
  - To assess the utilization of health care facilities.
  - To identify facilitators and barriers associated with health-seeking behavior.
  - To estimate the out-of-pocket expenditure on health care.

# METHODOLOGY

## Study design

Cross-sectional study

Mixed Method

## Setting

Banepa Municipality

## Study period

1<sup>st</sup>  
September,  
2020 to 15<sup>th</sup>  
April, 2021

## Inclusion Criteria

All elderly people  
over 60 years of age  
residing in Banepa  
Municipality for at  
least a year.

All participants  
who give consent  
to participate.

## Exclusion Criteria

Those who do  
not want to  
participate in the  
study.

Those who  
cannot respond  
due to cognitive  
dysfunction or  
severely ill.

# Sampling Technique- Multistage Random Sampling

## Stage 1

- Wards selected via simple random sampling (Lottery method)
- 7 out of 14 wards selected

## Stage 2

- 150 households selected via systematic random sampling
- 10th interval

## Stage 3

- One eligible elderly participant per household
- Eldest if multiple

# Sample Size

Sample size (N) =  $(Z)^2 pq/L^2$   
=80  
(p= 68%<sup>7</sup>, 85% power)

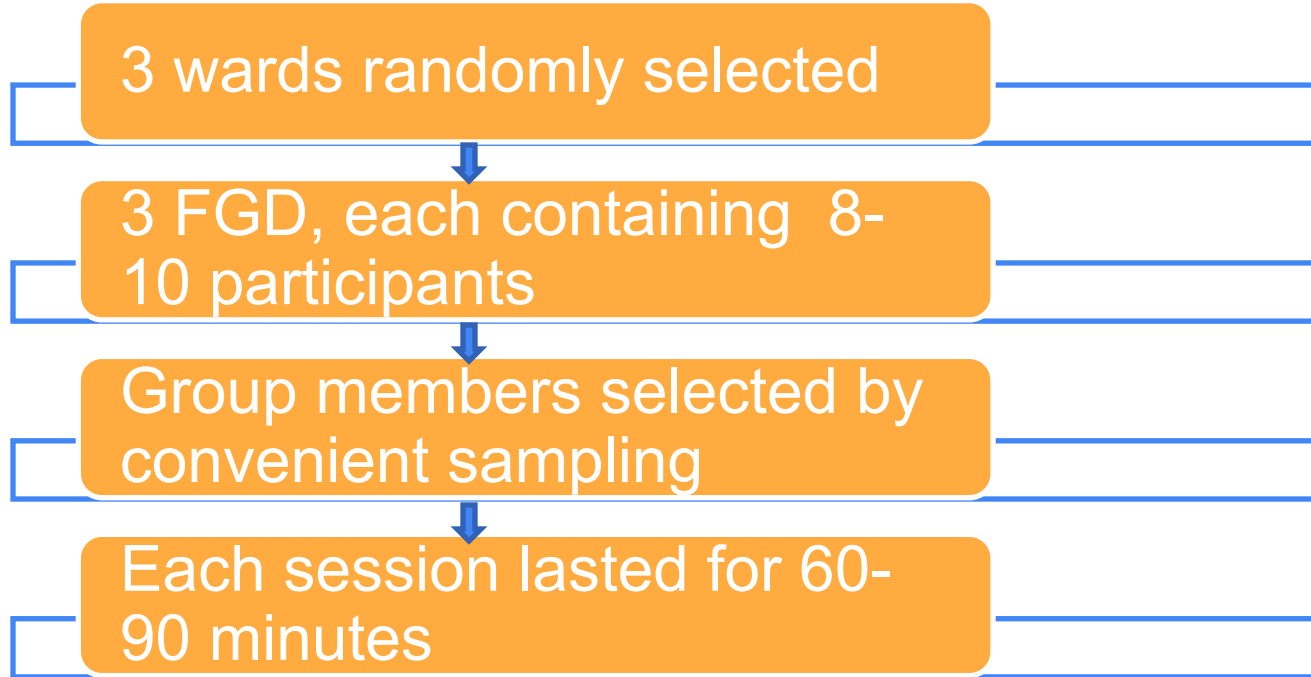


Design effect of 1.5  
=120



20% non-response rate  
=150

# Focus Group Discussion



# Results

## Socio-Demographic Highlights (n=150)

- **Average Age:** 70.2 years (Range: 60–93).
- **Gender:** Majority Female (**59.3%**).
- **Ethnicity:** Primarily Newar (**66.7%**).
- **Education:** High Illiteracy rate (**64.7%**).
- **Economic Status:** **68%** have no current personal source of income.
  - 32% with current income- median annual income was NRS. 1,79,568 (US\$ 1,548)

## Health Status & Chronic Illness

- **Self-Rated Health: 47.3%** report "**Good**" health. (No known chronic illness requiring medicine)
- **Chronic Disease Prevalence: 62%** suffer from chronic illness.
  - **Hypertension: 65.5%** (Leading condition).
  - Diabetes: 32%
  - COPD: 10.8%
  - Hypertension and Diabetes : 14%
- **Health Concern: 60.2%** of those with chronic illness perceived it as a "**serious problem**" for daily living.

**Figure 1: Health Care Utilization among elderly population of Banepa Municipality (n=150)**

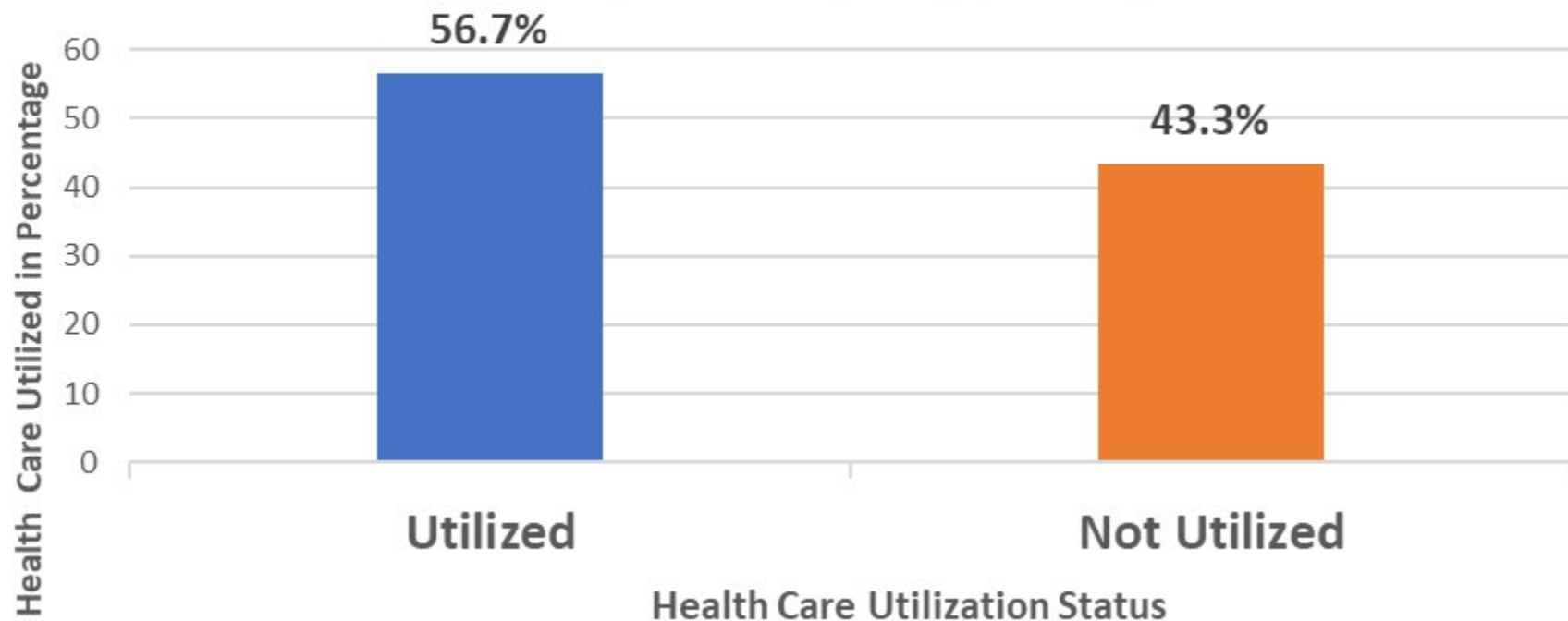
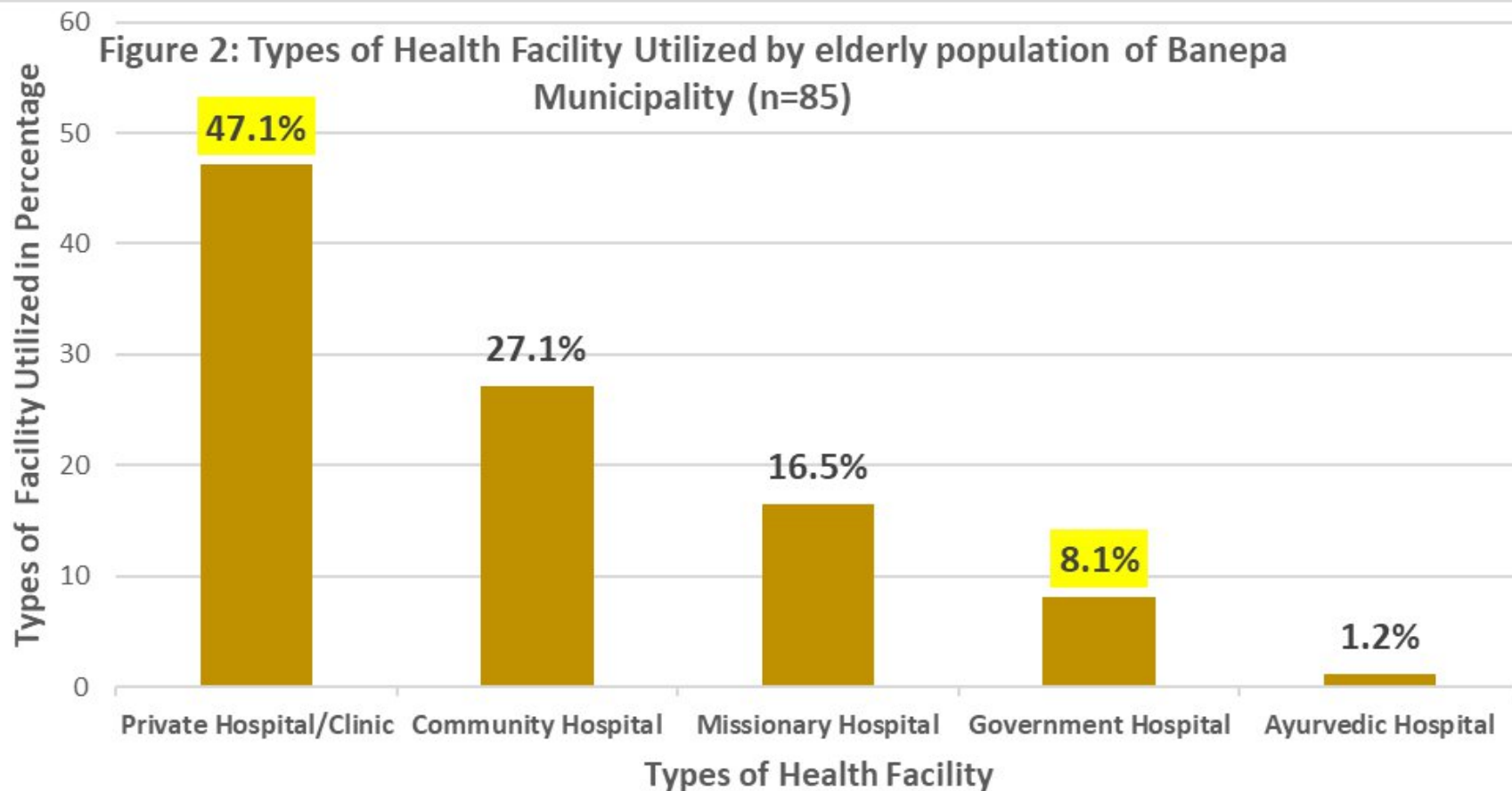
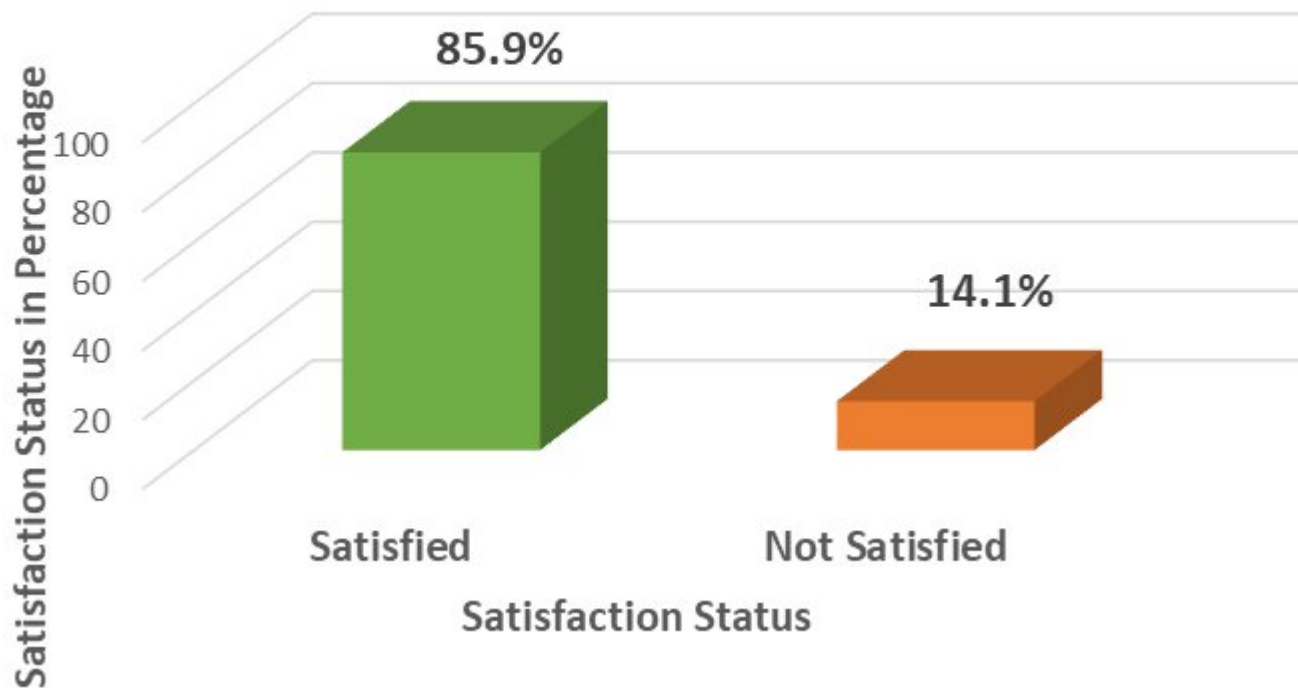


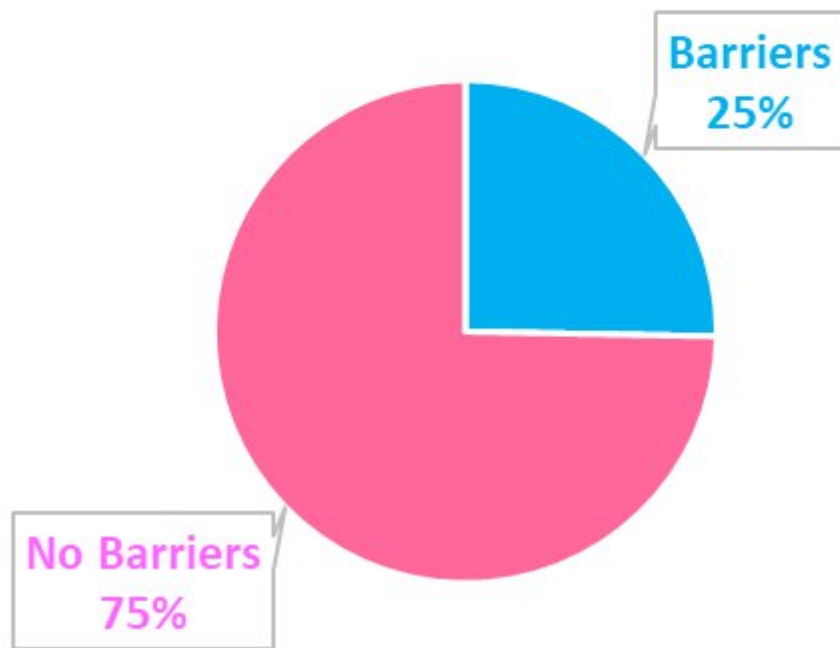
Figure 2: Types of Health Facility Utilized by elderly population of Banepa Municipality (n=85)



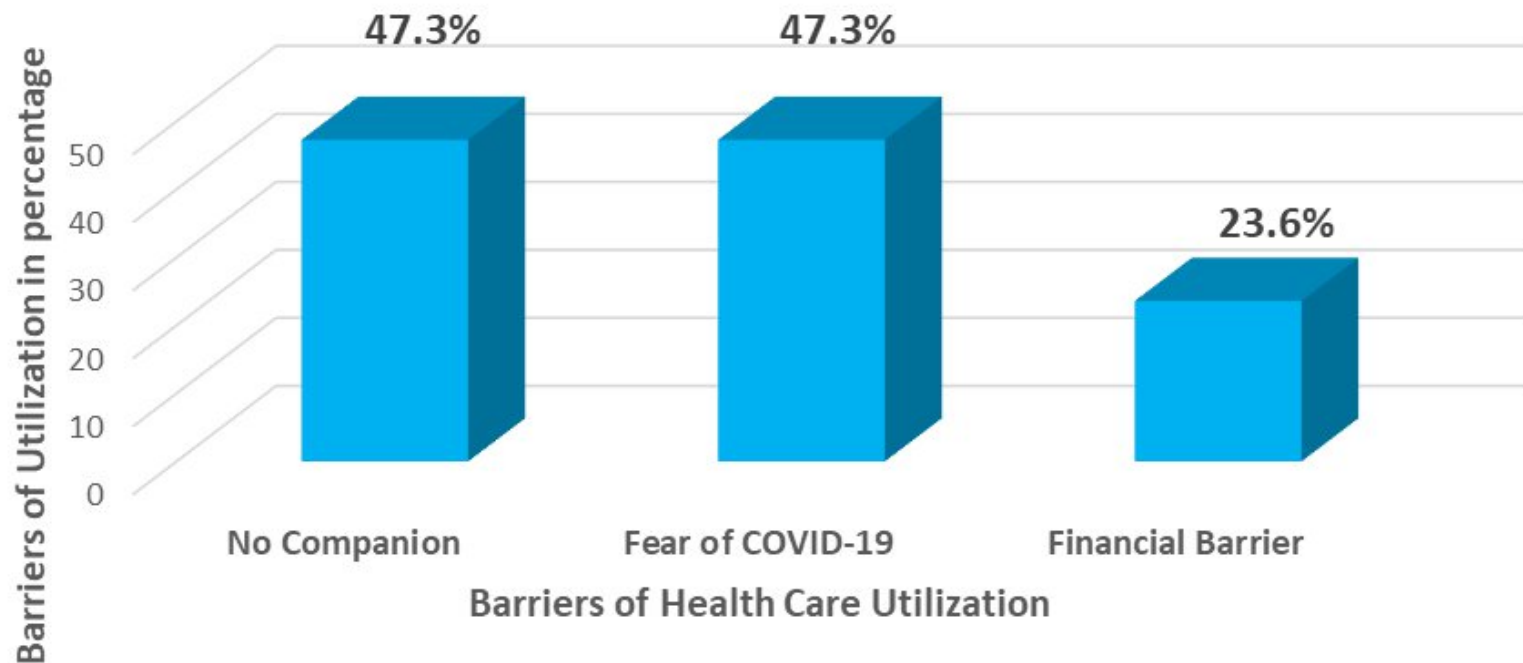
**Figure 3: Satisfaction with the Service Received among elderly population of Banepa Municipality (n=85)**



**Figure 4: Perceived Barriers in Health Care Utilization  
among elderly population of Banepa Municipality  
(n=150)**



**Figure 5: Barriers of Health Care Utilization among elderly people of Banepa Municipality (n=38, Multiple response)**



**Figure 6: Health Insurance Awareness among elderly population of Banepa Municipality (n=150)**

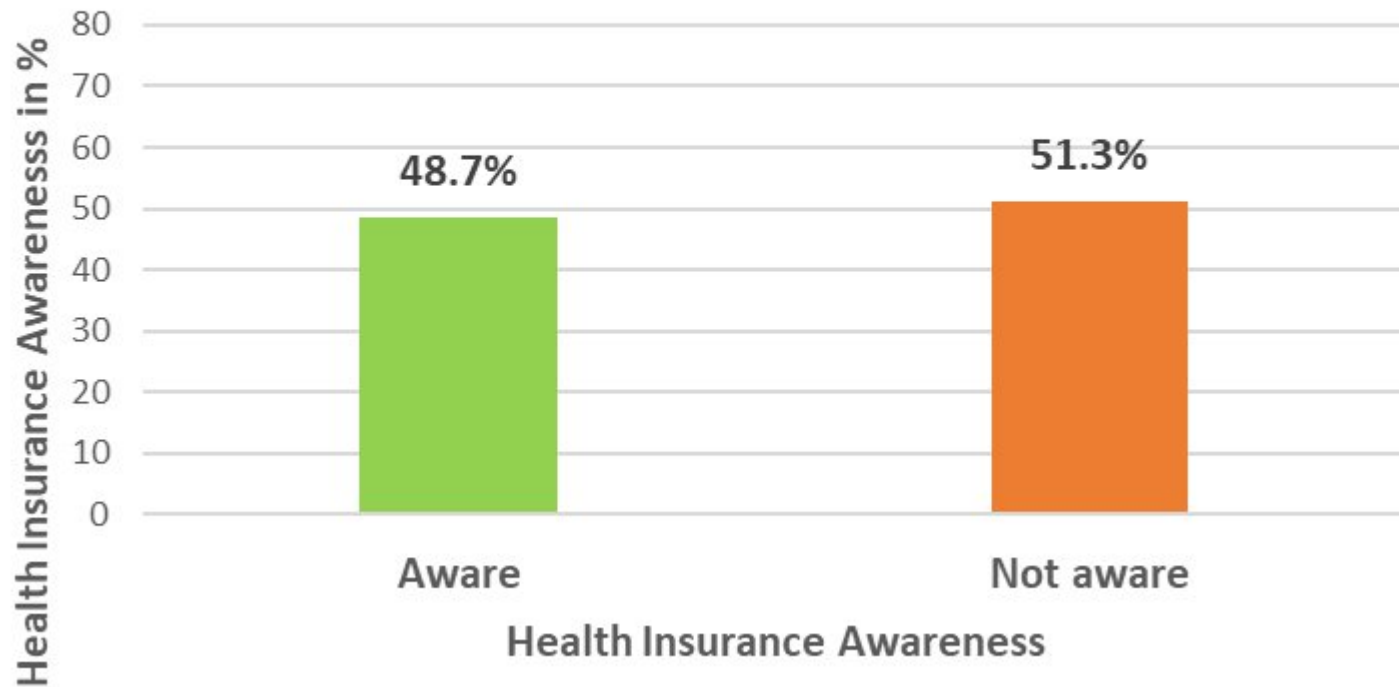
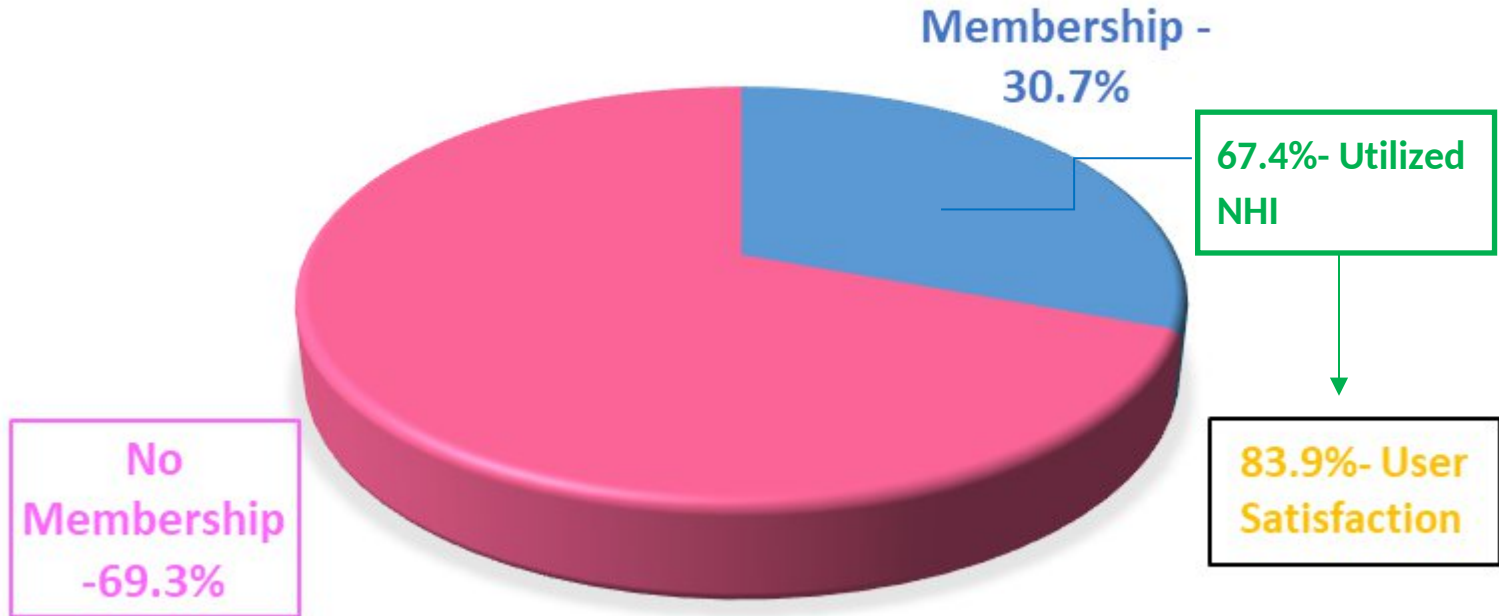


Figure 7: Membership of National Health Insurance (NHI) Card (n=150)



**Figure 8: Awareness about Geriatric Health Card among elderly population of Banepa Municipality (n=150)**

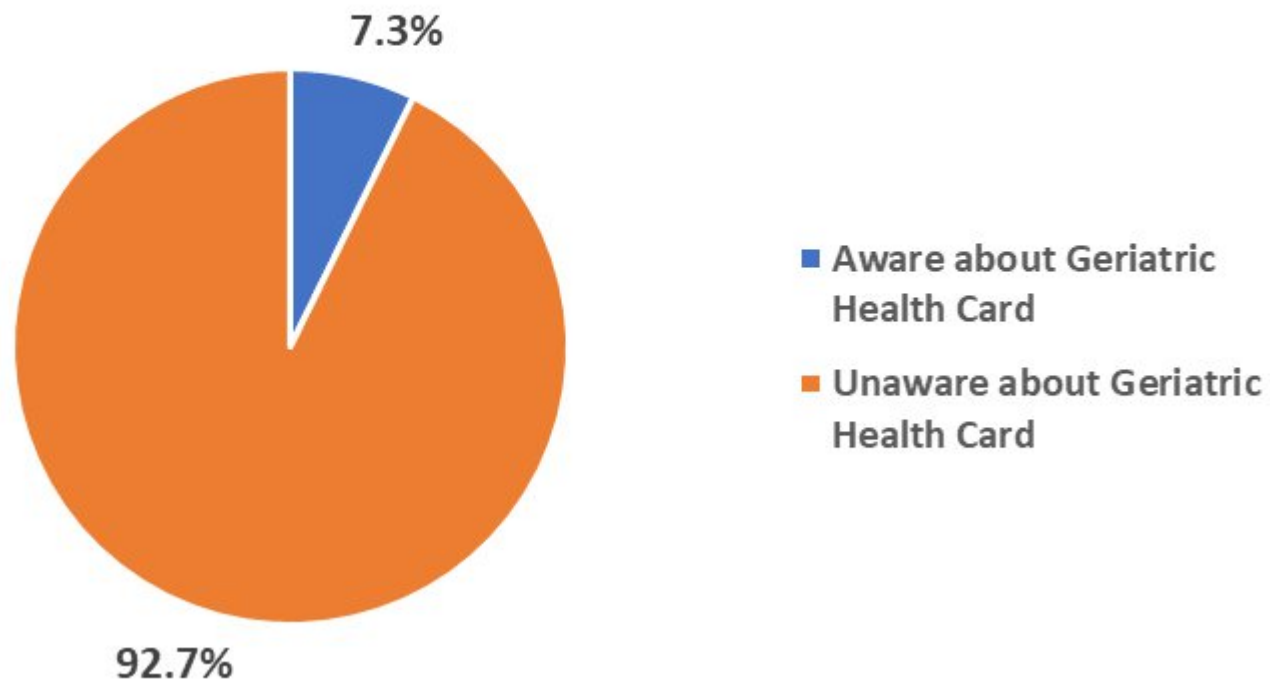
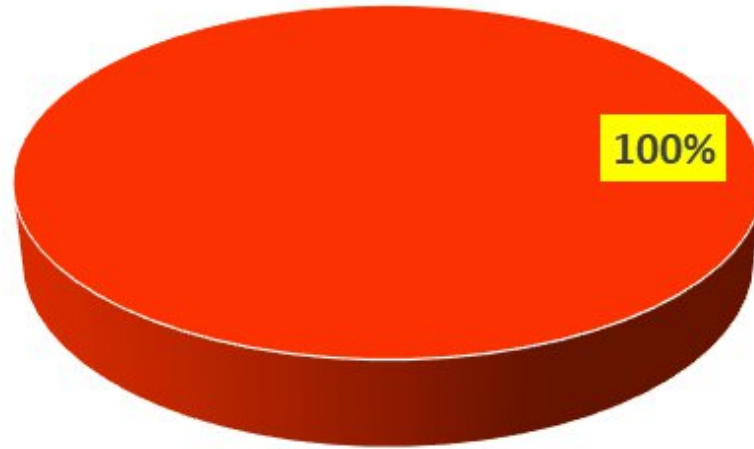


Figure 9: Awareness of Bipanna Nagarik Kosh among elderly population of Banepa Municipality (n=150)



■ Unaware

**Table 1: Association between various characteristics and utilization of health services (n=150)**

Characteristics	Visited Health Facility		Total	OR 95%CI	p-value
	YES	NO			
<b>Previous Occupation</b>					
Agriculture	39(60.9%)	25(39.1%)	64	4.16 (1.0-17.18)	<b>0.049*</b>
Shop And Market Sales Workers	29(69.1%)	13(30.9%)	42	5.94 (1.3-26.11)	<b>0.018*</b>
Homemaker	14(42.4%)	19(57.6%)	33	1.96 (0.44-8.76)	0.376
Professionals	3(27.3%)	8(72.7%)	11	<b>REF</b>	
<b>Health Concern</b>					
Extremely	28(63.6%)	16(36.4%)	44	4.55 (1.37-15.11)	<b>0.013*</b>
Moderately	52(59.1%)	36(40.9%)	88	3.75 (1.23-11.49)	<b>0.020*</b>
Not at all	5(27.8%)	13(72.2%)	18	<b>REF</b>	
<b>Chronic Disease</b>					
Yes	70(75.3%)	23(24.7%)	93	8.52 (4.0-18.12)	<b>&lt;0.001*</b>
No	15(26.3%)	42(73.7%)	57	<b>REF</b>	
<b>Awareness of National health Insurance</b>					
Yes	48(65.7%)	25(34.2%)	73	2.07 (1.07-4.01)	<b>0.029*</b>
NO	37(48.1%)	40(51.9%)	77	<b>REF</b>	

**REF: Reference group, \*: Significant at p<0.05**

**Table 2 : Binary Logistic Regression to determine factors associated with health care utilization of elderly population of Banepa Municipality (n=150)**

Categories	$\beta$ – COEFFICIENT	P-VALUE	ODDS RATIO	95% CI for ODDS RATIO	
				Lower	Upper
<b>Ethnicity</b>					
Newar	0.32	0.705	1.38	0.26	7.33
Brahamin/ Chettri	-0.75	0.471	0.47	0.06	3.63
Dalit	<b>REF</b>				
<b>Occupation</b>					
Professionals	-1.96	0.092	0.14	0.01	1.37
Shop and Market Sales Workers	0.05	0.938	1.06	0.23	4.70
Agriculture	1.32	<b>0.044*</b>	3.74	1.03	13.56
Homemakers	<b>REF</b>				
<b>Personal Income</b>					
>\$1500(>5,80,000)	1.47	0.053	4.38	0.97	19.60
≤\$1500(≤5,80,000)	<b>REF</b>				

**Table 2 (Continued) :Binary Logistic Regression to determine factors associated with health care utilization of elderly population of Banepa Municipality (n=150)**

Categories	$\beta$ – COEFFICIENT	P-VALUE	ODDS RATIO	95% CI for ODDS RATIO	
				Lower	Upper
<b>Chronic Disease</b>					
More Than One	3.90	<0.001*	49.74	7.60	325.54
One	3.33	<0.001*	27.97	8.23	94.98
None	REF				
<b>Health Concern</b>					
Extremely	1.14	0.182	3.14	0.58	16.88
Moderately	1.06	0.156	2.90	0.66	12.68
Not At All	REF				
<b>Insurance Awareness</b>					
Yes	0.65	0.168	1.92	0.75	4.89
No	REF				
<b>Barriers of Health Service Utilization</b>					
No	2.59	<0.001*	13.37	3.79	47.12
Yes	REF				

## Health Expenditure

- **Median Cost per visit:** NRS. 513.88 (~US\$ 4.43).
- **Financial Dependency:** **68%** of elderly rely on **family members** to pay for healthcare.
- Participants **without a partner** were more likely to have **more** health expenditure than those who had a partner.  
(p -value : **0.027**)

# Qualitative Component-Themes

1. Health Problems faced by elderly
2. Relationship dynamics with family and friends
3. Facilities visited during health problems
4. Healthcare providers
5. Senior Social Security Scheme
6. Barriers of Health Care Utilization
7. Expectation from Government

# Discussion

- **Utilization Gap (56.7%):** Notably **lower than** Pokhara (69.8%)<sup>1</sup> and Dhulikhel (68%)<sup>8</sup> and and Butwal (84.4%).<sup>9</sup>
- **Private Preference (47.1%):** **aligns with** studies from Nepal and other Asian countries<sup>8,10,11</sup> – increases the risk of **Out-of-Pocket (OOP) expenditure, supported by** qualitative findings
- **Satisfaction (85.9%):** **consistent** with national trends- studies in Butwal (87.7%)<sup>9</sup> and Pokhara (89.3% )<sup>1</sup> - supported by qualitative findings.

- **The “ No Companion” Barrier (36.8%): lower in other study(16.9%).<sup>12</sup>**
- The odds of **high healthcare expenditure** among participants **without a partner : contradictory** to the other studies <sup>9,13,14</sup>
- **The Information Gap: Low awareness** (51.3% unaware of insurance; >90% unaware of geriatric schemes - **consistent** with previous study.<sup>9</sup>

- Average Health Care Expenditure/ Visit (NRS.513.8) - **much lesser than** in Pokhara (NRS.4,790.8)<sup>9</sup>
- The positive association between awareness of national health insurance and healthcare utilization: **consistent** with previous study.<sup>9</sup> –supported by qualitative findings.
- **The Multi-morbidity (AOR: 49.7): strongest predictor** of utilization, **consistent** with national and global geriatric trends.<sup>1,8</sup>

# Conclusion

- **Low Utilization:** Only **56.7%** of the elderly utilized health services, with a heavy reliance on **private healthcare facilities (47.1%)**
- **Major Barriers:** High out-of-pocket (OOP) costs and "social barriers" like **lack of a companion (47.3%)**

- **The Information Gap:** A staggering **0% awareness of Bipanna Nagarik Kosh** and **92.7% unawareness of Geriatric Cards** highlight a massive failure in health communication.
- **Economic Fragility:** **68%** are financially dependent on children; those **without partners** face significantly higher healthcare costs.

# Takeaway Messages

Aligned with Nepal Health Sector Strategic Plan (NHSSP)  
2023-2030 goals of Health Equity and Quality.

- **Communication:** Scale up awareness of **Social Health Insurance** and **Geriatric Schemes** through local Ward enrollment drivers (NHSSP: Demand Generation).
- **Geriatric Integration:** Hospitals should establish **dedicated Geriatric Clinics/Wards** to provide "elder-friendly" one-stop services (NHSSP: Quality of Care).

- **Financial Protection:** Strengthen the public health system to reduce the **47.1% private sector dependency** and prevent catastrophic out of pocket expenditure (NHSSP: Universal Health Coverage).
- **Community Support:** Develop volunteer-based "Companion Programs" at the local level to assist elderly navigation of health facilities.

# Acknowledgments

- The participants of Banepa Municipality.
- My Chief Guide (Prof. Dr. Surya Raj Niraula), Co-Guides (Prof. Dr. Nilambar Jha, and Assistant Prof. Ms. Laxmi Subedi), and the Institutional Review Committee (IRC, BPKIHS).

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- Research Coordinator at Dhulikhel Hospital with over five years of experience in clinical practice, academia, and community-based health programs.
- Dedicated public health researcher focusing on geriatric health and health economics, and committed to improving health equity and financial protection for the elderly through data-driven policy recommendations.
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THANK YOU.