International Journal of Public Health Asia Pacific

Open Access: e-Journal
ISSN: 2822-0587(Online)

Comparative analysis of healthcare responsiveness between insured and uninsured patients: A cross-sectional study in a tertiary hospital of Nepal

Pratibha Oli[1], Sony Pandey[2], Manju Poudel[1], Prativa Regmi[3], Amod Kumar Poudyal[1]

[1]Central Department of Public Health, Institute of Medicine, Tribhuvan University
[2]Manmohan Memorial Institute of Health Sciences, Tribhuvan University
[3]School of Health and Allied Sciences, Pokhara University

*Corresponding author: Pratibha Oli, olipratibha01@gmail.com

ABSTRACT

Background: The responsiveness of a health system is considered to be an intrinsic goal of health systems and an essential aspect in performance assessment. This highlights the non-medical aspects of patients depend upon how health care facilities acknowledge patients' demands.

Objectives: This study assesses perceptions of insured and uninsured patients regarding the responsiveness of inpatient services at a tertiary hospital in Nepal.

Methods: Using a cross-sectional, hospital-based design, quantitative research was conducted at the National Academy of Medical Sciences, Bir Hospital. A total of 228 participants were selected through simple random sampling. Data were collected via interviews. Associations between variables were identified through bivariate and multivariable logistic regression.

Results: The mean age of patients was 46.63 years with standard deviation (SD) of 16.33 years. Most patients perceived their health status as poor (93.9%), and 74.1% reported insufficient availability of medicines. Both insured and uninsured patient groups experienced poor responsiveness for three out of eight domains. Based on inpatient's importance and experience, responsive domain can be classified into three priority groups to enhance responsiveness: 1st priority: Prompt attention and clarity of communication; 2nd priority: dignity, choice and quality of amenities; and 3rd priority: autonomy, confidentiality and social support.

Conclusion: The hospital should improve the degree of responsiveness in all domains, with priority given to prompt attention and clarity of communication. More attention should be given to patients who stay for longer durations in the hospital as Nepal expands national health insurance coverage.

Keywords: Health system, Health insurance, Responsiveness

1. Introduction

The assessment of healthcare system performance in developing countries often prioritizes delivery, access, and affordability over patient perspectives and experiences [1]. Despite the government's ambitious plans for universal health coverage, challenges persist, with around 24% of enrolled members dropping out of the health insurance program [2]. Studies highlight issues with health service utilization and patient satisfaction, with significant proportions reporting difficulties accessing care and dissatisfaction with treatment quality [3, 4]. Long waiting times exacerbate these challenges, delaying needed care and potentially leading to adverse health outcomes [5]. Understanding patient perceptions of health system responsiveness is crucial for increasing healthcare utilization and improving overall service quality [6].

While much attention has been given to the delivery and affordability of healthcare, little research has explored patients' experiences and expectations regarding responsiveness. By examining responsiveness domains such as prompt attention, dignity, communication, and autonomy, this study seeks to shed light on patients' perspectives and contribute to a better understanding of healthcare system performance [7, 8]. Moreover, as Nepal transitions towards health insurance coverage, understanding demand-side perspectives becomes increasingly critical [9]. By identifying areas of improvement in responsiveness, this study aims to inform policy decisions and resource allocation, ultimately enhancing the quality and accessibility of healthcare services [10, 11] . This research not only contributes to the broader discourse on health system responsiveness but also underscores the importance of patient-centered care in achieving universal health coverage and sustainable development goals [9].

This study aims to identify both insured and uninsured patients' perceptions and experiences regarding the responsiveness of inpatient services at a tertiary hospital in Kathmandu, Nepal, measure the importance they attribute to various responsiveness domains, and determine the associated factors with these experiences.

2. Methods

2.1 Study Area

Study was conducted at the National Academy of Medical Science, Bir Hospital,

in Kathmandu District. Bir Hospital is one of the oldest and busiest hospitals providing a wide range of specialty services. The hospital has a capacity of 460 beds and a bed occupancy rate of 79%. Since 2016, it has implemented the National Health Insurance Scheme under the Government of Nepal.

2.2 Study Design

This study utilized a cross-sectional descriptive design with quantitative methods to capture a single, comprehensive view of healthcare experiences among insured and uninsured patients at Bir Hospital. Through a standardized, structured questionnaire, the study gathered quantitative data to describe patient demographics, perceived healthcare quality, and responsiveness. The cross-sectional approach allowed for simultaneous data collection, enabling comparative analysis without follow-up, while the descriptive focus aimed to quantify the prevalence and distribution of patient experiences

2.3 Sample Size and Sampling

The sample size was calculated by using the following formula (N4 Studies software);

$$n_1 = \left[Z_{1-\frac{\alpha}{2}} \sqrt{\bar{p}\bar{q}\left(1+\frac{1}{r}\right)} + Z_1 - \beta\sqrt{p_1 q_1} + \frac{p_2 q_2}{r} \right]$$

Where,

$r = \frac{n_1}{n_2}, q_1 = 1 - p_1, q_2 = 1 - p_2$

$\bar{p} = \frac{p_1 + p_2 r}{1+r}, \bar{q} = 1 - \bar{p}$

$p_1 = 0.28$ (8)

$$p_2 = 0.5$$

$$n_1 = n_2$$

$$z = 1.96 \; at \; 95\% \; levelofconfidence$$

n_1=114,n_2=114

Total sample size was 114 for insured patients and 114 for uninsured patients. In this study, there was 100% response rate from the respondents.

2.4 Data Collection

Data were collected through face-to-face interviews using a structured questionnaire. The questionnaire, adapted from the WHO responsiveness questionnaire, comprises three parts. The first part covered participants' demographics, perceived health status, health insurance status, and the use of healthcare services. The second part

addressed non-therapeutic aspects of healthcare that influence patients' experiences, including prompt attention, dignity, communication, autonomy, confidentiality, and choice, quality of amenities, and access to social support. The third part assessed the perceived importance of these responsiveness domains, dignity, communication, autonomy; respect for the right, confidentiality, choice, quality of amenities, and access to social support.

2.5 Data Analysis

Descriptive analysis was conducted using frequency, percent, mean, and standard deviation. Categorical variables were summarized with frequencies and percentages, while continuous variables were described using mean, standard deviation, and range. The mean and standard deviation were calculated for each domain of perceived experiences and importance regarding responsiveness, and the total mean score of responsiveness was also computed. Chi-square tests were used to examine associations between sociodemographic variables and perceived responsiveness among insured and uninsured patients. A P-value of less than 0.05 was considered statistically significant.

3. Results

Table 1 presents the demographic characteristics of the study participants. The mean age of patients was 46.63 years (SD = 16.33), ranging from 18 to 88 years. Insured patients had a mean age of 45.94 years (SD = 17), while uninsured patients were slightly younger at 43.08 years. The majority were male (57.9%) and urban residents (67.5%). A significant portion had no formal education (28.1%), while 55.7% had completed secondary education. Insured patients generally reported lower income levels, with many earning below 30,000 NRs. The majority of patients, regardless of insurance status, had hospital stays of less than 10 days. Most patients rated their health status as poor. On average, insured patients visited the hospital 10.9 times per year, while uninsured patients visited 10.6 times. The majority of patients (74.1%) reported that medicines were not available in the hospital pharmacy. Chronic diseases prompted hospital visits for 36.8% of insured patients and 28.9% of uninsured patients. Additionally, 67.1% of patients expressed dissatisfaction with the service received during their last hospital visit, and only two in five were satisfied with the insurance scheme.

Table 1: Socio-demographic characteristics of the respondents (n=228)

Characteristics	Total n (%)	Insurance Status		P-value
		Insured n (%)	Uninsured n (%)	
Age (years)				
15-45	110 (48.2)	50 (43.9)	60 (52.6)	0.421
46-59	40 (17.5)	21 (18.4)	19 (16.7)	
60+	78 (34.2)	43 (37.7)	35 (30.7)	
Sex				
Female	96 (42.1)	51 (47.7)	45 (39.5)	0.353
Male	132 (57.9)	63 (52.3)	69 (60.5)	
Place of residence				
Urban	151 (66.2)	77 (67.5)	77 (67.5)	0.124
Rural	77 (33.8)	37 (32.5)	33 (32.5)	
Religion				
Hindu	183 (80.3)	90 (78.9)	93 (81.6)	0.618
Others	45 (19.7)	24 (21.1)	21 (18.4)	
Education				
Illiterate and no formal	64 (28.1)	34 (29.8)	30 (26.3)	0.644
Below secondary level	37 (16.2)	20 (17.6)	17 (14.9)	
Above secondary level	127 (55.7)	60 (52.6)	67 (58.8)	
Monthly Income (NPR)				
≤30,000	108 (47.4)	63 (55.3)	45 (39.5)	0.048*
>30,000	120 (52.6)	51 (44.7)	69 (60.5)	
Duration of stay				
≤ 10 days	155 (68.0)	86 (75.4)	92 (80.7)	0.670
>10days	73 (32.0)	28 (24.6)	22 (19.3)	
Perceived health status				
Poor	214 (93.9)	108 (94.7)	106 (93.0)	0.581
Good	14 (6.1)	6 (5.3)	8 (7.0)	
Frequency of visit (Per Year)				
≤10 times	121 (53.1)	59 (51.8)	62 (54.4)	0.289
>10 times	107 (46.9)	55 (48.2)	52 (45.6)	
Got services as expected				
Yes	75 (32.9)	32 (28.1)	43 (37.7)	0.121
No	153 (67.1)	82 (71.9)	71 (62.3)	
Enough medicines				
Yes	59 (25.9)	22 (19.3)	37 (32.5)	0.023
No	169 (74.1)	92 (80.7)	77 (67.5)	
Satisfied with insurance				
Yes	NA	53 (46.5)	NA	NA
No	NA	61 (53.5)	NA	NA

Tables 2 showed that concentrating on the pre-dominant responses for each domain, prompt attention and communication were considered extremely important by overall patients which is similar when categorizing the responses for insured and uninsured patients. Likewise, dignity, autonomy, confidentiality and quality of amenities were considered very important by overall patients. Choice of provider and access to social support was identified as moderately important by overall patients.

Table 2: Importance attributed towards responsiveness (n=228)

Domains/ Responses	Prompt Attention n (%)	Dignity n (%)	Communication n (%)	Autonomy n (%)	Confidentiality n (%)	Choice of provider n (%)	Quality of amenities n (%)	Social support n (%)
Extremely Important	98 (42.9)	53 (23.3)	97 (42.5)	63 (27.6)	34 (14.9)	41 (18.4)	78 (34.3)	19 (8.3)
Very Important	84 (36.8)	103 (45.2)	96 (42.5)	70 (30.7)	100 (43.9)	93 (40.4)	90 (39.4)	93 (40.8)
Moderately Important	43 (18.9)	62 (27.2)	32 (14.0)	77 (33.8)	79 (34.6)	80 (35.1)	52 (22.8)	91 (39.9)
Slightly Important	3 (1.4)	10 (4.3)	3 (1.0)	16 (7.0)	15 (6.6)	14 (6.1)	8 (3.5)	25 (11.0)
Not Important	-	-	-	2 (0.9)	-	-	-	

Poor experience was reported for prompt attention, clarity of communication, and quality of basic amenities by both insured and uninsured groups of patients. Similarly, good responsiveness was experienced by both insured and uninsured groups of patients for dignity, access to social support and confidentiality (Table 3).

Table 3: Patients' experiences of responsiveness domains (n=228)

Domains	Poor responsiveness n (%)	Good responsiveness n (%)
Prompt Attention	172 (75.4)	56 (24.6)
Dignity	87 (38.2)	141 (61.8)
Clarity of communication	88 (38.6)	140 (61.4)
Autonomy	72 (31.6)	156 (68.4)
Confidentiality	27 (11.8)	201 (88.2)
Choice of service provider	93 (40.8)	135 (59.2)
Quality of basic amenities	152 (66.7)	76 (33.3)
Access to social support	23 (10.1)	205 (89.9)

The association of socio-demographic characteristics with perceived responsiveness. Age, sex, marital status, residence, ethnicity, and religion were not significantly associated with perceived responsiveness among insured and uninsured patients. However, monthly income was significantly associated with perceived responsiveness in the insured group. Insured patients, perceived responsiveness was significantly associated with receiving expected services, availability of sufficient medicine in the hospital pharmacy, duration of stay, and satisfaction with insurance. For uninsured patients, perceived responsiveness was significantly associated with receiving expected services, availability of sufficient medicine in the hospital pharmacy, and duration of stay (Table 4).

Table 4: Association between socio-demographic characteristics and perceived responsiveness among insured and uninsured patients

Characteristics	Insured (n=114)		P-value	Uninsured (n=114)		P-value
	Poor n (%)	Good n (%)		Poor n (%)	Good n (%)	
Age (Years)						
45 and below 45	30 (44.8)	37 (55.2)	0.376	29 (36.7)	50 (63.3)	0.804
Above 45	25 (53.2)	22 (46.8)		12 (34.3)	23 (65.7)	
Sex						
Male	31 (49.2)	32 (50.8)	0.820	28 (40.6)	41 (59.4)	0.204
Female	24 (47.1)	27 (52.9)		13 (28.9)	32 (71.1)	
Place of residence						
Urban	40 (54.1)	34 (45.9)	0.091	29 (37.7)	48 (62.3)	0.586
Rural	15 (37.5)	25 (62.5)		12 (34.4)	25 (67.6)	
Education						
Above Secondary	29 (48.3)	30 (51.7)	0.644	19 (30.0)	21 (70.0)	0.503
Below secondary	9 (45.0)	11 (55.0)		8 (47.1)	9 (52.9)	
Illiterate and no formal education	17 (50)	17 (50.0)		24 (35.8)	43 (64.2)	
Monthly Income (NPR)						
Below 30,000	33 (52.4)	30 (47.6)	0.048*	16 (35.6)	29 (64.4)	0.390
Above 30,000	22 (43.1)	29 (56.9)		9 (26.5)	25 (73.5)	
Got service as expected						
Yes	10 (31.2)	22 (68.8)	0.023*	7 (16.3)	30 (83.7)	0.001*
No	45 (54.9)	37 (45.1)		34 (47.9)	37 (52.1)	
Enough medicine						
Yes	5 (22.7)	17 (77.3)	0.008*	5 (13.5)	32 (86.5)	0.008*
No	50 (54.3)	42 (45.7)		36 (46.8)	41 (53.2)	
Duration of stay						
≤10days	29 (38.2)	47 (61.8)	0.002*	20 (25.3)	59 (74.7)	0.032*
>10days	26 (68.4)	12 (31.6)		21 (60)	14 (40.0)	
Perceived health status						
Poor	-	-	-	38 (35.8)	68 (64.2)	0.925#
Good				3 (37.5)	5 (62.5)	
Satisfied with insurance						
Yes	20 (37.7)	33 (62.3)	0.023*			
No	35 (57.4)	26 (46.6)				
Duration of enrolment						
≤2 year	38(46.3)	44(53.7)	0.023*			
>2 year	17(53.1)	15(46.9)				

*Statistically significant (P< 0.05), # Fisher's exact test value

4. Discussion

The results of this study provide valuable insights into the perceptions and experiences of insured and uninsured patients regarding the responsiveness of inpatient services at a tertiary hospital in Kathmandu, Nepal. These findings have several significant implications for healthcare policy and practice.

Study highlighted that both insured and uninsured patients consider prompt attention and clarity of communication as extremely important domains of healthcare responsiveness. However, both groups report

poor experiences in these areas, indicating a need for improved administrative processes and communication strategies within the hospital.

This study showed that insured and uninsured patients had a similar experience when receiving services. This was consistent with previous studies [8, 12, 13] found that there was no significant difference in perception of general quality of care between insured and uninsured patients regarding perceived responsiveness. This may be due to same perception of responsiveness and similar type of services for both groups irrespective of their insurance status.

Perceived importance and experience on responsiveness domains varied among patients, shedding light on key aspects of healthcare delivery. Prompt attention emerged as a critical domain, with nearly half of the patients considering it extremely important. However, a significant proportion experienced poor responsiveness in this area, potentially due to delays in administrative processes and insurance claim settlements, impacting patient encounters with healthcare services [6, 14]. Similarly, dignity was deemed important by a considerable number of patients, and while the majority reported being treated with respect, a notable percentage experienced poor responsiveness. Provider-patient asymmetry in health information might contribute to this discrepancy [14].

Communication was identified as extremely important by most patients, aligning with findings from studies in Iran. Despite its significance, a sizable proportion reported poor responsiveness in communication. Interestingly, uninsured patients reported slightly higher communication clarity compared to insured patients, possibly due to the lengthy process of claiming insurance services, which might hinder providers from adequately addressing patient concerns [6, 14]. Autonomy, though considered important by around half of the patients, received satisfactory responsiveness scores. This underscores the need for healthcare workers to involve patients and caretakers in treatment decision-making, ensuring their rights are upheld [14].

Choice of provider emerged as the least valued domain, yet patients experienced suboptimal responsiveness in this area. While uninsured patients reported slightly better experiences, the overall responsiveness remained concerning. Provider awareness of patient choice tends to correlate with higher quality care provision, indicating a potential

area for improvement [15]. Confidentiality received high responsiveness scores, indicating patients felt their information was kept confidential. However, challenges persist in other areas, such as the quality of basic amenities, where dissatisfaction was notable. Access to social support was reported positively, highlighting the importance of this aspect in healthcare delivery, consistent with findings from other studies [6, 7]. These findings underscore the complex interplay of various responsiveness domains and emphasize the need for targeted interventions to address shortcomings and enhance overall healthcare quality.

Associated factors like educational level, age, residence, gender, marital status, and occupation didn't significantly impact perceived responsiveness, possibly due to similarities in age and education across patient groups. While some studies found associations with these factors, variations in respondent types and perceptions may explain the differences observed [16, 17]. Similarly, satisfaction with insurance didn't significantly correlate with perceived responsiveness in multivariate analysis, contrary to findings suggesting higher odds of poor responsiveness among satisfied insurance users [12, 18]. Availability of enough medicine in hospital pharmacies showed a significant difference in perceived responsiveness, consistent with findings from Ghana where pharmacy services caused dissatisfaction. This underscores the importance of medication availability in shaping perceptions of healthcare service quality [8]. However, while enough medicine was associated with perceived responsiveness in bivariate analysis, this association wasn't significant in multivariate analysis among uninsured patients, likely due to differences in insurance coverage and medication access. Moreover, duration of enrolment in the National Health Insurance Scheme didn't significantly affect perceived responsiveness, differing from findings in Nigeria suggesting shorter enrolments were associated with better responsiveness. These differences may stem from incomplete NHIS implementation and information asymmetry between insurers and patients [8]. Conversely, satisfaction with the insurance scheme significantly associated with perceived responsiveness, with only two in five patients expressing satisfaction. This contrasts with studies from Iran, Ethiopia, China, and Thailand, suggesting possible reasons such as lengthy insurance claim processes and unfulfilled expectations

contributing to lower satisfaction levels [12, 19, 20].

5. Conclusion

The study reveals no significant difference in perceived responsiveness between insured and uninsured patients. However, both groups experienced poor responsiveness in critical areas like prompt attention and basic amenities. Policymakers must address these issues to improve patient satisfaction and support the expansion of national health insurance coverage.

Acknowledgement

I express my sincere gratitude to my thesis supervisor, *Associate Professor Dr. Amod Kumar Poudyal* for the invaluable guidance and support. Thanks to *Assistant Professor Sushan Man Shrestha* and all Central Department of Public Health faculties for their assistance. Grateful to Nepal Health Research Council for the research grant. Heartfelt thanks to the respondents for the support in the study. Deep appreciation to my friends, family, and MPH 21st batch colleagues for their unwavering support.

Author contributions

PO: Conceptualization, data curation, formal analysis, methodology, writing original draft, writing review and editing. SP: methodology, supervision, writing original draft, writing review and editing. MP: Conceptualization, methodology, supervision, writing original draft, writing review and editing. PR: Conceptualization, supervision, writing review and editing. AKP: Conceptualization, methodology, supervision, writing original draft, writing review and editing.

Declaration

Ethics approval and consent to participate

Ethical approval was obtained from the Institutional Review Board of Institute of Medicine (261(6-11) 076/077 and Nepal Health Research Council (33/2020 MT). Participants were fully informed about the study's purpose, and their autonomy to withdraw at any time was respected without any harms. Privacy and confidentiality were ensured throughout data collection period.

Competing interests

The authors declare no competing interests.

Funding

This study was supported by a postgraduate grant from the Nepal Health Research Council.

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Received 04/10/2024
Received in revised form 13/11/2024
Accepted 12/12/2024