

## Original Research Article

# Comparative analysis of performance of private and public healthcare systems in Nepal

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**Received:** 08 May 2020

**Accepted:** 11 June 2020

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## ABSTRACT

**Background:** Though government of every country has their own health delivery system, private sector in the delivery of health service is undeniable and same is true for Nepal. Private healthcare services in Nepal are making better efforts as compared to public health care services. The aim of the study was to compare the performance of private and public healthcare systems in Nepal.

**Methods:** A hospital based cross sectional study was conducted in which five hospitals each from private and public healthcare systems were chosen purposively from five developmental regions of Nepal. The patients visiting the healthcare systems were randomly chosen for the study from the admission registers of the hospitals. This study was approved from the Annamalai University, Tamil Nadu (India). Before data collection, permission was taken from corresponding hospital administration and written consent was taken from respondents of the study. Bivariate analysis was performed to compare the performance of the private and public hospitals.

**Results:** Most of the patients visiting the private hospitals were patients with higher education and income. Public hospitals were more accessible and transparent than the private hospital. Doctors' punctuality and responsibility were higher in public healthcare systems. Overall patient satisfaction and quality of services provided were significantly higher in the private healthcare systems. Fairness, responsiveness and behavior of the health personnel were almost equally satisfactory in both public and private healthcare systems.

**Conclusions:** The overall services quality and patient satisfaction is higher in private healthcare systems so Government of Nepal should focus on improving services quality, facilities of public healthcare systems so that patient can get easily accessible quality health services with better patient satisfaction.

**Keywords:** Hospital, Patient satisfaction, Public healthcare services, Private healthcare services, Quality

## INTRODUCTION

After the declaration of Alma Ata in 1978, access to healthcare improved significantly in Nepal.<sup>1</sup> Increase in accessible healthcare services in the last decades leading to rise in health indicators.<sup>2</sup> Despite the improvements, health system in Nepal faces daunting challenges like inequity in the distribution of health facilities.<sup>3</sup> The

National Health Policies of 1991 and 2014 have included the issues related to equitable distribution of health services to all the citizens of Nepal.<sup>4</sup> But poor implementation of policy always leads to problem in delivery of good health services. Healthcare services in Nepal are provided through public and private healthcare systems.<sup>5</sup> After the restoration of democracy in 1991, private health systems have increased massively specially

in the urban parts of the country.<sup>3,6</sup> The Public healthcare systems are mostly providing services in rural areas whereas, most of the private healthcare systems are located in urban areas of Nepal.<sup>6</sup>

It is believed that private sector provides more health service facilities and good care in comparison to public sector. Especially in case of low- and middle-income countries, private healthcare is sometimes claimed to be more effective, accountable, and sustainable than public sector healthcare delivery. On the contrary, the public sector is often regarded to be more equitable and providing evidence-based services. It is believed that healthcare services should be easily accessible to the people of a country.<sup>7</sup> There are the variable issues in the health services provided by private and government/public hospital. Hence, the study attempts to compare performance of private and public healthcare system in Nepal.

## METHODS

This was a descriptive cross-sectional study carried out from January 2016 to June 2016 to compare performance of private and public healthcare systems in Nepal. During the time of study, Nepal consisted of 5 development regions; one private and one public hospital were selected from each development region. A total of 5 private and 5 hospitals were selected purposively for the study.<sup>8</sup> Hospitals not having investigation facilities were not included in this study. The study was approved by the Annamalai University, Tamil Nadu (India). Before data collection, permission was taken from corresponding hospital administration and written consent was taken from respondents of the study.

In this research two independent samples had to be compared so that the sample size was calculated online using formula which is based on two proportions for two different variables.<sup>9</sup> Services of any hospital are mainly related to performance of hospital so a literature with comparative analysis of facilities of public and private healthcare system was taken into consideration to calculate sample size. As per this literature we have considered  $p_1$  (public hospital) = 0.648 (taken 0.6),  $p_2$  (private hospital) = 0.858 (taken 0.8); at 95% confidence,  $\alpha = 0.05$ , and desired power factor = 0.80.<sup>10</sup> Calculated sample size thus yielded was of 82 for each sample separately. Supposing 20% of total data will be incomplete the sample size was  $98.4 = 99$ . As the interview was to be taken at two different types of hospitals Public and Private; the calculated sample size was multiplied by 2 to obtain the sample size of 198. Twenty participants were selected randomly from four public and private hospitals each and nineteen participants from one public and private hospitals each. Out of the total samples, 3 from public and 4 from private hospitals were incomplete.

So, 191 data were taken into consideration for analysis. Any new, follow up or referred patient attending different

departments of purposively selected healthcare system were taken into consideration for this study. The patients with physical and mental deformities were excluded from the study.

A validated structured questionnaire was used to collect primary data from the respondents. In order to compare the performance, the domains like: accessibility, service quality, patient satisfaction, accountability, transparency, fairness and efficiency of public and private hospital were assessed in the study.<sup>7</sup> The face-to-face interviews were conducted in the healthcare systems in local language by the trained interviewers.

Collected data were entered in Microsoft Excel 2016 and calculated into SPSS version 23 (SPSS, Inc., Chicago, IL, USA) software for statistical analysis. For descriptive statistics percentage, proportion was calculated. For inferential statistics Chi-Square test was applied to bond at the significant difference between government and private healthcare service at 95% confidence interval where p-value less than 0.05 was considered significant.

## RESULTS

### *Socio-demographic characteristics*

Table 1 shows the socio-demographic characteristic of the participants visiting public and private healthcare systems. Almost half (49.7%) of the participants from both public and private healthcare systems of this study were of age below 30 years and visited private healthcare system more than the age above 30 years. Most of the participants of higher ages visited public hospitals. Age of the participants was not significantly associated ( $p = 0.215$ ) with type of healthcare systems.

Majorities (54.5%) of the participants were male and visited private healthcare centers more than the females. Regarding occupation of the participants, almost one-fourth (24.6%) had their own business followed by agriculture (19.4%), student (15.7%), employee and unemployed (14.7%) and home makers (11.0%). The participants with occupation as agriculture, student visited public hospitals more than others. Most (58.4%) of the participants had acquired secondary level of education. Proportion of visit to public and private healthcare systems was almost equal among the participants with all educational level. Two-third (67%) of the participants had monthly income of less than NPR 20000 and most of them visited public healthcare systems. The main attraction factor that motivate patient to visit private hospital was service quality (58.9%) and good health personnel (22.1%). The factors like location (39.6%) and price per service (25.0%) were the main attraction to the participants visiting public healthcare systems. Of the socio-demographic variables, only occupation ( $p = 0.014$ ), monthly income of the participants ( $p < 0.014$ ) and main attraction for motivation ( $p < 0.001$ ) were statistically significant with the type of healthcare systems.

**Table 1: Socio-demographic information of respondents.**

Characteristics	Categories	Type of healthcare system N (%)		Total	%	P value
		Public (n <sub>1</sub> =96)	Private (n <sub>2</sub> =95)			
Age groups in year	<30	43 (44.8)	52 (54.7)	95	49.7	0.215
	30-65	44 (45.8)	39 (45.1)	83	43.5	
	≥65	9 (9.4)	4 (4.2)	13	6.8	
Sex	Male	46 (47.9)	58 (61.1)	104	54.5	0.068
	Female	50 (52.1)	37 (38.9)	87	45.5	
Occupation	Employee	12 (12.5)	8 (8.4)	28	14.7	0.014*
	Own business	16 (16.7)	31 (32.6)	47	24.6	
	Home maker	11 (11.5)	10 (10.5)	21	11	
	Agriculture	19 (19.8)	11 (11.6)	37	19.4	
	Student	26 (27.1)	11 (11.6)	30	15.7	
	Unemployed	12 (12.5)	16 (16.8)	28	14.7	
Education	Primary level	24 (25.0)	20 (21.1)	44	23	0.639
	Secondary only	55 (57.3)	56 (58.9)	111	58.1	
	Higher secondary	12 (12.5)	10 (10.5)	22	11.5	
	University level	5 (5.2)	9 (9.5)	14	7.3	
Average monthly family income (NPR)	<20000	69 (71.9)	52 (54.7)	121	63.4	0.115
	≥20000	27 (28.1)	43 (45.3)	70	36.6	
Main attraction that motivate to bring the patient	Location	38 (39.6)	7 (7.4)	45	23.6	<0.001*
	Good health personnel	13 (13.5)	21 (22.1)	34	17.8	
	Service quality	21 (21.9)	56 (58.9)	77	40.3	
	Price per service	24 (25.0)	11 (11.6)	35	18.3	

\*P value &lt;0.05.

**Table 2: Accessibility and responsiveness.**

Characteristics	Categories	Type of healthcare system N (%)		Total	%	P value
		Public (n <sub>1</sub> =96)	Private (n <sub>2</sub> =95)			
Time to reach hospital (in minute)	<30	59 (61.5)	47 (49.5)	106	55.5	0.096
	≥30	37 (38.5)	48 (50.5)	85	44.5	
Accessibility	Accessible	61 (63.5)	49 (51.6)	110	57.6	<0.001*
	Satisfactory	26 (27.1)	13 (13.7)	39	20.4	
	Difficult to access	9 (9.4)	33 (34.7)	42	22.0	
Responsiveness	Poor	7 (7.3)	5 (5.3)	12	6.3	0.740
	Satisfactory	36 (37.5)	39 (41.1)	81	42.4	
	Good	47 (49.0)	51 (53.7)	98	51.3	

\*P value &lt;0.05.

**Table 3: Different dimensions of service quality.**

Characteristics	Categories	Type of healthcare systems N (%)		Total	%	P value
		Public (n <sub>1</sub> =96)	Private (n <sub>2</sub> =95)			
Proper patient care	Yes	92 (95.8)	93 (97.9)	185	96.9	0.414
	No	4 (4.2)	2 (2.1)	6	3.1	
Use of safety procedure	Yes	88 (91.7)	84 (88.4)	172	90.1	0.454
	No	8 (8.3)	11 (11.6)	19	9.9	
Behavior of health personnel	Bad	3 (3.1)	5 (5.3)	8	4.1	0.101
	Satisfactory	28 (29.2)	40 (42.1)	68	35.6	
	Good	65 (67.7)	50 (52.7)	115	60.2	

**Table 4: Patient satisfaction on different facilities.**

Categories		Type of healthcare systems N (%)		Total	%	P value
		Public (n <sub>1</sub> =96)	Private (n <sub>2</sub> =95)			
Physical facilities	Dissatisfied	21 (21.9)	3 (3.2)	24	12.6	<0.001*
	Neutral	16 (16.7)	21 (22.1)	37	19.4	
	Satisfied	59 (61.5)	71 (74.7)	130	68.0	
Registration	Dissatisfied	8 (8.3)	4 (4.2)	6	3.1	0.973
	Neutral	9 (9.4)	8 (8.4)	17	8.9	
	Satisfied	84 (87.5)	84 (88.4)	168	88.0	
Doctor's services	Dissatisfied	8 (8.3)	4 (4.2)	12	6.3	0.163
	Neutral	27 (28.1)	19 (20.0)	46	24.1	
	Satisfied	61 (63.5)	72 (75.8)	133	69.6	
Nurse's services	Dissatisfied	8 (8.3)	3 (3.2)	11	5.8	0.076
	Neutral	30 (31.3)	21 (22.1)	51	26.7	
	Satisfied	58 (60.4)	71 (74.7)	129	67.5	
Laboratory services	Dissatisfied	11 (11.5)	3 (3.2)	14	7.3	0.087
	Neutral	27 (28.1)	28 (29.5)	55	28.8	
	Satisfied	58 (60.4)	64 (67.3)	122	63.9	
Pharmacy services	Dissatisfied	22 (22.9)	4 (4.2)	26	13.6	< 0.001*
	Neutral	18 (18.8)	29 (30.5)	47	24.6	
	Satisfied	56 (58.3)	62 (65.3)	118	61.8	
Quality of service	Dissatisfied	12 (12.5)	3 (3.2)	15	7.9	0.003*
	Neutral	39 (40.6)	37 (38.9)	76	39.8	
	Satisfied	45 (46.9)	55 (57.9)	100	52.4	

\*P value &lt;0.05.

**Table 5: Different domains of accountability, transparency and regulation.**

Characteristics	Categories	Type of healthcare systems N (%)		Total	%	P value
		Public (n <sub>1</sub> =96)	Private (n <sub>2</sub> =95)			
Doctors' punctuality	Yes	86 (89.4)	69 (72.6)	153	80.1	0.003*
	No	10 (10.6)	26 (27.4)	36	18.8	
Proper availability of services	Yes	87 (90.6)	87 (91.6)	174	91.1	0.817
	No	9 (9.4)	8 (8.4)	17	8.9	
Responsibility	Yes	93 (96.9)	76 (80.0)	169	88.5	<0.001*
	No	3 (3.1)	19 (20.0)	22	11.5	
Trying to solve problem	Yes	84 (87.5)	79 (83.2)	163	85.3	0.396
	No	12 (12.5)	16 (16.8)	28	14.7	
Prior information	Yes	43 (44.8)	23 (24.2)	66	34.6	0.003*
	No	53 (55.2)	72 (75.8)	125	65.4	
Medical norm	Yes	68 (70.8)	91 (95.8)	159	83.2	<0.001*
	No	9 (9.4)	2 (2.1)	11	5.8	
	I don't know	19 (19.8)	2 (2.1)	21	11.0	
Transparency of hospital	Yes	57 (59.4)	32 (33.7)	89	46.6	<0.001*
	No	39 (40.6)	63 (66.3)	102	53.4	

\*P value &lt;0.05.

**Accessibility and responsiveness**

For most (61.5%) of the participants visiting public healthcare systems reported the centers as accessible and more than half (51.5%) visiting private healthcare centers reported the healthcare centers as accessible. More than one-third (34.7%) of the participants visiting private healthcare facilities reported the centers as difficult to

access. The time taken to reach public healthcare centers was slightly higher than the public health facilities. Both private as well as public healthcare centers were more responsive towards treatment of patient. Accessibility was significantly associated with type of healthcare centers with p value less than 0.001 (Table 2).

### Service quality

Table 3 refers to the service quality of the healthcare systems. Proper patient care and use of safety procedures were almost equal in both public and private healthcare centers and were statistically insignificant with p-value 0.414 and 0.454. The health personnel of Public healthcare systems treated patients better than the health personnel of private health systems but there was no significant difference between service quality of public and private healthcare systems (p=1.101).

### Patient satisfaction in different facilities of hospitals

Table 4 shows the Patient satisfaction in public and private healthcare systems. Patient satisfaction was totally based on participants' perception. Participants were more satisfied in the private healthcare systems with the services like physical facilities (74.7% vs 61.5%), doctors' services (75.8% vs 63.5%), nurses' services (74.7% vs 60.4%), laboratory services (67.3% vs 60.4%), pharmacy services (65.3% vs 58.3%) and quality services (57.9% vs 46.9%).

There was equal level of satisfaction regarding registration service. Among the services, physical facilities (p<0.001), pharmacy services (p<0.001) and quality of services (0.003) were statistically significant with the type of healthcare systems.

### Accountability, transparency and regulation

Table 5 shows the accountability, transparency and regulation in the public and private healthcare systems. The participants responding to the sub-domains of accountability were higher in public healthcare systems: doctors' punctuality (89.4% vs 72.6), taking responsibility (96.9% vs 80.0%) and trying to solve patients' problems (87.5% vs 83.2%). Of the domains, doctor punctuality and taking responsibility were statistically significant to the type of healthcare system. According to the participants, public healthcare facilities were transparent and informed prior to performing any services and were significantly associated with the type of healthcare systems. According to the participants, public healthcare systems were poor in following medical norms than the private healthcare facilities (70.8% vs 95.8%) and was statistically significant with the type of health care facilities (p<0.001).

### Fairness, equity and efficiency

Table 6 shows the participants' perception towards fairness, equity and efficiency according to the types of healthcare systems. According to the participants, both public and private healthcare systems were almost equally fair (89.6% vs 95.8%), the services were easily available (95.8% each) and were not statistically significant with the type of healthcare facilities.

**Table 6: Patients opinion on fairness, equity and efficiency.**

Characteristics	Categories	Type of healthcare systems N (%)		Total	%	P value
		Public (n <sub>1</sub> =96)	Private (n <sub>2</sub> =95)			
<b>Easiness of service availability</b>	Yes	92 (95.8)	91 (95.8)	183	95.8	0.988
	No	4 (4.2)	4 (4.2)	8	4.2	
<b>Fairness</b>	Yes	86 (89.6)	91 (95.8)	177	92.7	0.100
	No	10 (10.4)	4 (4.2)	14	7.3	
<b>Biasedness</b>	Yes	4 (4.2)	2 (2.1)	6	3.1	0.414
	No	92 (95.8)	93 (97.9)	185	96.9	
<b>Number of times of hospital visit</b>	First time	24 (25.0)	57 (60.0)	81	42.4	<0.001*
	Second time	7 (7.3)	9 (9.5)	16	8.4	
	Third time	3 (3.1)	2 (2.1)	5	2.6	
	Many times	62 (64.6)	27 (28.4)	89	46.6	

\*P value <0.05.

Almost all participants (more than 90%) of public and private healthcare systems did not face any biases regarding the health services. The table also shows that the public healthcare systems were many times visited by the participants than the private hospitals (64.6% vs 28.4%). Number of times of hospital visit was statistically significant with the type of healthcare systems (p<0.001).

## DISCUSSION

The comparative study on performance of public and private healthcare systems was an attempt to assess the patient satisfaction on different facilities and domains

like: accessibility, service quality, accountability, transparency, fairness and efficiency as given by WHO.<sup>7</sup>

“Performance” must be defined in relation to explicit goals reflecting the values of various stakeholders (such as patients, professions, insurers, regulators). In reality, however, very few performance measurement systems focus on health outcomes valued by customers.<sup>11</sup> So, in this study, the patients' opinion and services and outcome they received were focused.

Regarding socio-demographic variables of the participants visiting public and private healthcare systems

in Nepal, the patient with better occupation and with higher income visited private healthcare system significantly higher than the participants with lower income. The results are similar to the finding of study conducted in Spain and South Asia.<sup>12,13</sup>

As per Alma Ata declaration on Primary Health Care accessibility is one of the principal indicators of health services. Our result showed the public healthcare systems are very close to participants' residence compared to private facilities but due to transportation facilities time taken to reach private healthcare system in city were almost similar to that of public healthcare systems of village but in participants' opinion government hospitals were easily accessible. This finding is similar to study done in Lucknow, India with respect to time to reach the hospital (travelling time).<sup>14</sup>

According to our study service quality of both public and private healthcare systems were similar and on patient opinion it was satisfactory and good but it needs some improvement to become excellent as that is present in developed country. The result of this study regarding service quality was against the results obtained by a systematic review done by Bashu et al and a study conducted in Saudi Arabia in which the service quality of private healthcare systems were significantly good than the public facilities.<sup>7,15</sup>

In the study, most of the patient of private healthcare systems were satisfied with the different services of the healthcare system, contrarily patient of government/public healthcare systems were comparatively less satisfied and different studies support the finding of this study.<sup>14,16,17</sup>

Contrarily to belief, public healthcare systems were more accountable and responsible towards patient than that of private healthcare systems which is supported by sub-domains like doctor's punctuality, solving patient's problem where government health care centers performs better than private healthcare systems. The finding was supported by the outcome obtained by Bashu et al but according to another study conducted in Thailand, private healthcare systems were more accountable and responsible than the public healthcare systems.<sup>7,18</sup> Both public and private healthcare systems were equally fair and provide equitable health services among patients visiting those healthcare systems. Health personnel of both public and private healthcare systems did not bias with patient during treatment rather they followed medical ethics and give priority to emergency patient. A study conducted in Cambodia found that the patients trusted private hospitals.<sup>19</sup>

From result of this study we observed that public healthcare systems are more efficient than private hospitals but report of WHO shows no any conclusive evidence regarding efficiency of public and private healthcare systems rather the report suggested that private

healthcare systems have also major role in delivery of health service to patient in a country.<sup>20</sup>

## CONCLUSION

From the study, it was concluded that the patients visiting the private healthcare systems had higher education and higher income than the patients visiting public health systems. The accessibility, transparency, doctor punctuality and responsibility were higher in public healthcare systems whereas overall satisfaction, services provided, overall quality of services were higher in private healthcare systems. Based on the findings, the government of Nepal should focus on improving quality of services of public healthcare systems for the betterment of overall health status of people of the country with better satisfaction.

## ACKNOWLEDGEMENTS

Authors are grateful to Dr. Abanish Singh, Dr. Ujwal Gautam, Mr Dharnidhar Baral and Dr. Anand Agrahari whose valuable suggestions for preparing this article is significant.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: The study was approved by the Institutional Ethics Committee of Annamalai University*

The study was approved by the Annamalai University, Tamil Nadu (India). Before data collection, permission was taken from corresponding hospital administration and written/oral consent was taken from respondents of the study.

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**Cite this article as:** Sah MK, Sangroula RK, Arul Kumar S. Comparative analysis of performance of private and public healthcare systems in Nepal. *Int J Community Med Public Health* 2020;7:2462-8.