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Complementary Role of Public and Private Hospitals for Utilizing Outpatient Services in a Hill District in Nepal

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ABSTRACT

Background: In Nepal, the private sector has prominently emerged as a provider of health services in recent years. The objective of this paper is to assess whether public and private hospitals are competing for patients with similar socioeconomic strata, or providing services to different segments of the patient population.

Methods: Data were collected prospectively from one public hospital and one private-for-profit hospital, both located in close proximity to one another in Tanahu district. A total of 384 and 389 patients presenting themselves for outpatient services available at the district public hospital and a private hospital, respectively, were systematically selected and interviewed using a survey form. The profiles of the patients were comparatively analyzed, and the reasons for using a particular hospital were assessed. Binary logistic regression was used for multivariate analysis.

Results: Compared to the patients using the public hospital, patients at the private hospital were younger, possessed a higher level of education, represented indigenous and disadvantaged ethnic groups, and belonged to business or agricultural occupations. The four prominent reasons for using the private hospital were: positive perception/prior experience, followed by recommendation/word-of-mouth, timely availability of services, and trustworthiness. Among the public hospital patients, the prominent reasons were: low fee for services or having insurance, positive perception/prior experience, and trustworthiness.

Conclusions: Public and private hospitals have played a complementary role in serving the health needs of different patient population segments in the study district.

Keywords: Nepal; private hospital; public hospital; reasons for use; users profile.

INTRODUCTION

The private sector remains an important source of health services in most low- and middle-income countries, although its relative contribution varies by country and by region.[1-10] The public sector services are known to be generally inadequate and insufficient,[11,12] and for this reason the private sector functions as a supplementary and complementary option to services offered by the public sector, and in some cases, may also compete with the public sector in the provision of services.[13]

In Nepal, the private sector has proliferated in the provision of health services, particularly after the change in the political system in 1991.[14,15] The challenge continues to be finding a complementary role for both the public and private sectors by keeping patient welfare at the center of services. Periodic assessments and evaluations serve to navigate the role of these two broad sectors, often thought of as two essential wheels of a liberal economy. This paper has two objectives: to compare the socioeconomic characteristics of the patients using public and private hospitals, and secondly, to explore the reasons associated with patients selecting to use public versus private hospitals.

METHODS

A prospective observational study was conducted in the district of Tanahu, a hill district located in the central part of Nepal. A highway connecting Kathmandu, Nepal's capital, with Pokhara, the second largest city in the country, runs through Tanahu's district headquarters. The district's estimated total population in 2016 was

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337,000.[16] The educational attainment of the residents of the district of Tanahu is higher than the national average.[17] As regards ethnicity, Brahman and Chhetri, generally more advantaged than many other ethnic groups in Nepal, constitute about one-fourth of the district's total population.[18] The district also belongs to a region where migration abroad for employment is higher than some other regions in the country, indicating a higher level of economic activities.[19] Tanahu belongs to the region that ranks as relatively better off according to the "Human Development Index" (comprised of life expectancy, educational attainment, and per capita income) among all of the 15 ecological-development regions in Nepal.[20]

The study sites were Damauli Hospital (DH), a government (public) hospital, and Apollo Hospital (AH), an independent, private-for-profit hospital; both located in close proximity to one other in the district's headquarters. These study sites were selected because the first two co-authors were working at the two hospitals at the time of the study. The study was designed to be prospective with two comparison groups – patients using outpatient services at the public hospital and the private hospital. Only the outpatient services provided at both the hospitals were included in the study. The other inclusion criteria were: patients aged 18-59, who were in stable physical and mental condition, and thus able to give consent and participate in the interview.

In the absence of prior data on the proportion of key indicators for estimating the sample size required for the study, we assumed a normal distribution of the variables of interest and estimated the sample size with the parameters of 95% confidence interval, 5% error margin, and a 5% non-response rate.[21] Accordingly, the sample size was determined to be 403 for each of the study sites. The interviews were terminated on the day the minimal number of cases required was achieved.

During the study period, outpatient services at the public hospital were usually attended by two doctors and two paramedics, and registration hours for the services were 10 am to 2 pm. The patients registered during this time were usually attended on the same day. In contrast, the outpatient department (OPD) service hours at AH were much longer (from 8am until 6pm), and the OPD was managed by one doctor and one nurse.

The eligible patients at the public and private hospitals averaged about 65 and 16 per day, respectively, during the study period. In view of the management of the patient flow and other logistics, we systematically sampled every second or third case (depending on the patient flow on a particular day) from among the eligible patients at the public and private hospitals. Among the eligible patients, on average each hospital had slightly more female OPD patients than male patients.

The survey form (printed in Nepali) included 26 questions; only two questions were semi-structured and one question was open-ended. The codes for the probable responses to these questions were developed during a formative part of the research. Most of the interviews were conducted by the first and second authors. It took about 12 minutes on average to conduct each interview. The survey was started on August 6 and spanned over the following three months in 2017. The overall response rate was 96%. The study protocol was approved by the national research ethics board – the Nepal Health Research Council.

The socio-economic differences between the two study groups were measured by the respondent's educational attainment, current occupation, ethnicity, and the primary source of livelihood for the family. The reasons for the choice of a particular hospital were ascertained in two ways: first by asking the respondent's subjective perception of the relative importance of several specific factors—physical distance from home, cost relating to the care and treatment, round-the-clock availability and convenient access to services, trust/confidence, and perception of overall quality of care and treatment. This was followed by a direct question asking what the most important reason was for the patient choosing a particular hospital. In cases where more than one reason was given, the respondent was further asked to identify the principle reason. In doing so, we only asked about the reasons for visiting the particular hospital, and did not inquire about reasons for not going to the other hospital of potential choice.

The bi-variate results are evaluated by using the chi-square test for the categorical variables and F-test for continuous variables. The outcome variable is a binary variable – use of a public or use of a private hospital. As such, we used the binary logistic regression for the multivariate analysis – '0' if use of the public hospital and '1' if use of the private hospital.[21]

RESULTS

There were proportionately more females than males (44% vs 56%) regardless of public or private hospital. The private hospital had more younger patients than the public sector hospital. While only 18% belonged to the ages 18-24 in the public sector hospital, it was 28% for the same age range in the private sector hospital. Similarly, the private sector had significantly more patients with a higher than primary level of educational attainment (73% vs 63%). The ethnic composition of the patients also differed between the two hospitals: the

private sector saw considerably more of the indigenous ethnic population than the public hospital (42% vs 29%). The public sector had proportionately more of the patients engaged in a service-based livelihood; and further, whereas only 37% of the patients at the public hospital reported not working (outside home), among the patients at the private hospital, 56% of patients reported not working (on account of being students or being tasked only with household work). The primary source of livelihood for either group was service followed by agriculture/manual sectors.

Table 1. Demographic and socioeconomic background characteristics of the patients who sought care and treatment from public and private hospitals.

	Public		Private		P-value
Variable	%	N	%	N	
Sex					0.449
Male	44.4	171	43.7	170	
Female	55.6	214	56.3	219	
Age group					<.000
18-24	17.9	69	27.8	108	
25-34	25.7	99	33.2	129	
35-44	23.9	92	18.5	72	
45-59	32.5	125	20.6	80	
Education					<.000
Illiterate	7.5	29	8.2	32	
Literate	14.8	57	5.4	21	
Primary (1-5 class)	14.8	57	13.1	51	
Higher than primary	62.9	242	73.3	285	
Ethnicity					<.000
Bahun	26.2	101	11.3	44	
Chhetry	15.6	60	18.5	72	
Newar	12.7	49	9.3	36	
Janajati (Indigenous)	28.8	111	42.4	165	
Dalit	16.6	64	18.5	72	
Current profession					<.000
Service	24.2	93	10.3	40	
Business	11.4	44	12.1	47	
Farming/Manual	27.3	105	21.3	83	
Not working	37.1	143	56.3	219	
Family's primary source of livelihood					0.020
Service	51.4	198	41.9	163	
Business	16.9	65	22.6	88	
Agriculture/ Manual	31.7	122	35.5	138	
Total	100.0	385	100.0	389	

*Note: In this and subsequent tables, the p value (*p<.05; **p<01; ***p<.001) for a given variable refers to test of significance between the public and private hospital samples*

Compared to those attending the private hospital, proportionately more of the patients attending the public hospital were from within a shorter distance (<1 hour). Whereas at the private hospital, 11% of patients had traveled at least two hours; among the patients at the public hospital, only 6% did so (Table 2). Those traveling a longer distance reported using private transport as well. Also, as indicated in Table 2, among the patients at the public hospital, two-thirds made the self-decision to attend the facility. In contrast, among the patients at the private hospital, more than half reported having consulted with others (family/friends, acquaintances).

Table 2. Decision-making and distance traveled by the patients who sought care and treatment from the public and private hospitals.

Variable	Public		Private		P-value
	%	N	%	N	
Distance traveled (in hours)					0.005
<1	76.6	295	67.4	262	
1 hour up to 2 hours	17.7	68	21.3	83	
2 or more hours	5.7	22	11.3	44	
Transportation used					0.001
On foot	35.8	138	25.2	98	
Public transport & on foot	51.7	199	55.0	214	
Private transport & on foot	12.5	48	19.8	77	
Decision maker as to which hospital to visit					<.000
Self	65.7	253	38.6	150	
Consulted with others	34.3	132	51.4	239	
Total	100.0	385	100.0	389	

Compared to the patients in the public hospital, a higher proportion of the patients attending the private sector had ever used any other hospitals (Table 3). Among the public hospital patients, more had used the same hospital in the past. In contrast, a larger percent of those at the private sector hospital had not visited the same hospital before. The particular health problems experienced by the two groups were also different. The four most common health problems among the patients attending the private hospital were ENT, respiratory,

gastrointestinal, and other. Among the problems reported at the public hospital, the common were ENT, skin, obstetrics, and "other." The "other" category (other than the six specified in the table) was the highest proportion (29%) among the public hospital patients. ENT cases comprised the largest percent among the private hospital patients.

Table 3. Previous use of the hospital and health problem experienced during this visit among the patients who sought care and treatment from public and private hospitals.

Variable	Public		Private		P- value
	%	N	%	N	
Ever use of any other hospitals in Damauli or elsewhere in Tanahu					0.009
Yes	61.3	236	69.7	271	
No	38.7	149	30.3	118	
Prior visit to this same hospital					<.000
Never	19.7	76	31.9	124	
Within the last six months	46.8	180	28.8	112	
Prior to the last six months	33.5	129	39.3	153	
Health problem experienced					<.000
Respiratory	7.3	28	10.4	40	
ENT	12.2	47	25.4	98	
Skin or STI	14.3	55	4.4	17	
Obstetrical/ Gynecological	11.2	43	5.4	21	
Orthopedic	14.3	55	17.4	67	
Gastrointestinal	11.9	46	18.4	71	
Other	28.8	111	18.7	72	
Total	100.0	385	100.0	386	

For purposes of estimating the net effect of the background factors associated with the use of either hospital, we applied logistic multiple regression technique to the data. Eight variables were included in the analysis, and the results are shown in Table 4. The dependent is a binary variable-coded as "1" if private hospital and "0" if public hospital. Of the variables, seven showed independent effect after simultaneously adjusting for the effects of other variables (cofactors) included in the analysis. The results essentially confirm what was found in the bivariate tables presented earlier. Compared to the patients using the public hospital, the patients visiting the private hospital are younger in age, possess a higher level of education, belong to the indigenous or Dalit ethnic groups, engage in a business or agriculture related occupation, are more likely to have used other hospitals in the past, and are less likely to have visited the hospital they are currently visiting. The private hospital patients are more likely to have consulted with other people before using the particular hospital.

Table 4. Net effects (as indicated by odds ratio, OR, based on logistic regression), of eight covariates on the probability of using private hospital compared to public hospital.

Covariate	OR	CI
Age Group		
18-24	0.93	0.59-1.45
25-34	1.00	
35-44	0.61*	0.39-0.96
45-59	0.56*	0.35-0.89
Education		
Primary or less	1.00	
Higher than primary	1.62*	1.07-2.44
Ethnicity		
Bahun/Chhetry/Newar	1.00	
Janajati (Indegenous)	2.21***	1.55-3.16
Dalit	1.71*	1.10-2.65
Source of livelihood		
Service	1.00	
Business	1.85**	1.21-2.82
Agriculture/Manual	1.51*	1.04-2.19
Decision		
Self-decision	1.00	
Consulted with others	2.76***	2.01-3.79
Any prior visit to any hospital		
Yes	1.43*	1.03-2.00
No	1.00	
Ever visited the same hospital		
Yes	0.65*	0.45-0.94
No	1.00	
Distance		
<1 hour	1.00	
1 hour or more	1.43	1.00-2.05

p<.05; **p<0.1; ***p<.001

As regards the primary reason for attending the particular hospital (Table 5) among the patients at the public hospital, the "reasonable or free" service fee was the most commonly reported (23%) followed by "positive perception or past experience" (20%) and "trustworthy" (16%). In contrast, among the private sector hospital's patients, the most commonly identified reason was "positive perception or past experience (39%) followed by "recommendation or word of mouth" (19%) and

"timely availability of service" (16%). The average waiting time (in minutes) for the public and private hospitals patients was 58.5 (±56.5) and 39.7 (±44.2), respectively (not shown in the table). The amount paid by the patients varied considerably between the two hospitals: Rs. 77 (±153) vs. Rs. 776 (±478) at the public and private hospitals, respectively. As regards the question of "overall satisfaction with the services received today," 55% and 30% of the private and public hospital patients, respectively, reported feeling "satisfied or very satisfied."

Table 5. Primary reason for having decided to use a particular public or private hospital for care and treatment, Tanahu.

Reason	Public		Private	
	%	N	%	N
Reasonable or free service fee	23.4	90	0.0	0
Timely availability of service	7.0	27	16.1	62
Trustworthy	15.6	60	12.2	47
Recommended by others/ Word of mouth	7.6	29	18.7	72
For follow up	3.9	15	1.3	5
Positive perception or actual experience	20.3	78	39.4	152
Close physical proximity	3.4	13	4.9	19
Availability of experienced, trained & female doctors	6.0	23	3.9	15
Referred by another place	1.6	6	0.5	2
Have insurance	7.6	29	0.0	0
Good & friendly staff	0.0	0	0.5	2
Other	3.6	14	2.6	10
Total	100.0	384	100.0	386

DISCUSSION

The Government of Nepal's 2014 National Health Policy,[22] which was built upon the 1991 Health Policy, and subsequent health policy documents[23,24] have clearly recognized and articulated the role of the private sector in expanding the availability and accessibility of health services in the country. Still, especially in a liberal (market-based) economy, there is no 'magic bullet' providing a guide as to how to establish a reasonable balance with regard to equity, pricing, affordability, accessibility, quality and satisfaction with services rendered and received is to be achieved. Many policy- and service-related issues remain,[1,4,7,8] and evidence based on existing practices and service use patterns aid towards modifying the situation through policy and program interventions.

Previous limited studies have documented that the private sector has been the dominant source for both urban and rural residents, and the private sector's role has increased over the years in Nepal.[25,26] More specific to the focus of this study, in a cross-national study undertaken in 2003, Saksena et al. reported that for Nepal the expenditures in the private sector paid by patients for outpatient services were considerably higher than for the outpatient services in the public sector.[27] Using the Demographic and Health Survey data collected in 57 countries (including Nepal) during the years 2000-2013, Campbell et al.[28] found that among the three services – family planning, antenatal care, and delivery – family planning services were utilized comparatively more than the other two services in the private sector. Further, the private sector services were primarily accessed by the wealthiest quintile, while the public sector services are used by both the richest and the poorest sub-groups. As of 2016, fully 30% of the current users nationally reported using private sector and non-governmental facilities for contraceptives in Nepal.[29] A 2010 study compared clients accessing abortion services at both a public clinic and a non-governmental clinic in Kathmandu, and found that the two clinics did not necessarily represent clients from different demographic and socio-economic backgrounds, but the private sector clinic served to expand access to services.[30]

The present study results clearly show that although the ratio of male to female population was similar in the public and private hospitals in the study district, the patients attending the two hospitals represented different socioeconomic strata. Overall, the patients using the private hospital were generally more educated and younger. These patients were also different with respect to ethnic representation. Also, they tended to have used other hospitals more so than those patients attending the public hospital. The study findings also challenge the notion that patients from the disadvantaged groups generally use the public hospital on account of the services being cheaper and more easily accessible. The use pattern in the present study could be related to the district representing a relatively better socio-economic condition, and also having experienced higher remittances from employment abroad as highlighted earlier.[19]

The amount paid by the private hospital patients was nearly seven times higher than the amount paid at the public hospital. Still, a considerably larger proportion of the private sector hospital's patients reported being 'satisfied or very satisfied' with services received. This most likely indicates that those attending the private

sector hospital anticipated the cost being higher, and probably felt that the services received met their expectation for the treatment provided. It should also be noted that the types of services obtained at the two types of hospitals could be different; however, the study did not conduct a comparison strictly between the same types of services being accessed and rendered at the two different facilities. Part of the differences in cost could be related to particular health issues.

The primary reason for using a particular hospital also differed somewhat between the two groups. For one-third of the patients at the public hospital, the low fee for services or health insurance was the primary reason. For nearly 40% of those patients visiting the private hospital, a 'positive perception or good experience from the prior visit' was the predominant reason for using the hospital. This same factor was an important one for 20% of those in the public hospital group. Similarly, for both groups, 'trustworthiness' was an important factor. This suggests that 'trustworthiness' and a 'positive perception' were particularly important for either group in their respective contexts. Low cost was a special factor for those using the public facility. On the other hand, 'timely and readily availability of services' and 'word-of-mouth/recommendation' were particularly valued by those visiting the private sector hospital. These findings indicate that while some of the reasons were unique to each group, others were similar.

First, the study is limited to one hill district in Nepal. As mentioned earlier, the study district belongs to a region that is relatively better off than many other ecological-development regions in Nepal. The data on the patients in other more remote and impoverished hill districts may, therefore, not be comparable to the patients in this study. Second, the data referred to patients who accessed the out-patient department at the selected hospitals for selective services only. By definition, the study excluded data on in-patients as well as out-patients seeking other types of services. We also excluded all patients under 18 and over 59 years of age. Third, the data do not capture variations due to seasonality; and the pattern of diseases and morbidities may be different during the peak summer or mid-winter seasons. Finally, the study was limited to patients who had already made a decision to use either of the hospitals based on whatever prior information they possessed, and presented themselves for the services. In this sense, the patients were self-selected for use of either type of hospital; they were not randomly assigned.

CONCLUSIONS

The study results indicate that those seeking care and treatment from the private hospital represent a different segment of the population than those seeking care at the public hospital. The two patient groups are different from each other along socioeconomic strata. Furthermore, some of the primary reasons for seeking care from a particular place are also different for the two groups of service users. Thus, these results lead us to conclude that the two types of hospitals actually function in a supplementary and complementary way in serving the health service needs of the different population segments in the study district. The results also lend stronger support to the government's policy of strengthening the partnership between the public and private sectors, especially in the health sector in Nepal.

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CONFLICT OF INTEREST

At the time of the study, PMK was a senior consultant physician at Apollo Hospital; PrakritiB was a medical officer at Damauli Hospital. All authors declare no conflict of interest in conducting this study.

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