

# Patient satisfaction about services obtained from a teaching hospital, Port Blair: A cross-sectional study

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## ABSTRACT

**Background:** Periodic evaluation of health services delivered to the community is a part of total quality management of health care delivery system in developing countries. **Objective:** To assess the level of satisfaction among outdoor patients toward health care services available at teaching hospital, Port Blair. **Methodology:** The study included exit interview of 500 patients, sampled from 8 service delivery points of the health facility. Predesigned and pretested questionnaire based on PSQ-18 scale developed by Marshall and Hays was used as a study tool. Data entry was done in Microsoft excel sheet and analysis was done using IBM SPSS software version 21. **Results:** It has been observed that the majority of patients (62%) were from urban area. The highest number (32.40%) of respondents was in the age group of 30–39 years category. Mean satisfaction was the highest for communication (3.94 out of 5), followed by general satisfaction (3.69), technical quality (3.46), time spent with doctor (3.41), interpersonal manner (3.35), and least in accessibility and convenience (2.96). **Conclusion:** Our study showed a good level of satisfaction of patients with services obtained from the referral center. Among the different domains of measurements of patient satisfaction, only accessibility and convenience score was low. Findings of this study would serve as a baseline data for improving the quality of services and making them more clients centered.

**Keywords:** Cross-sectional study, patient satisfaction, teaching hospital

## Introduction

As the health care delivery services in India are evolving at a rapid pace, the quality of assured services became a core component of management both for the government and private health sectors. In this scenario, emphasis should be given to gauge the patient satisfaction level toward these services. Patient satisfaction signifies the extent to which general health care needs and expectations of the clients are met to their requirements.

It is more pertinent in the sense that they will follow the treatment advised, keep on utilizing the health services including referrals, and thereby improve the outcome of care and health-seeking behavior.

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Private health sector is already using a variety of maneuvers to improve patient care and organization's efficiency to make a welcoming ambiance for the attending patients. To improve the public health sector in this aspect, we need to evaluate the factors which hold the patient's expectation to be met.

Patient's perception about health care services is generally ignored due to overburdened health facilities, poor management, dissatisfied health care providers, and quick delivery of care, although it is a crucial tool for improving the quality of health care services. Better understanding of factors relevant to patient satisfaction would help the administrators to take appropriate decisions as well as in framing the services.<sup>[1]</sup> With this background, we had conducted a study to find out the patient satisfaction level about hospital services in GB pant Hospital, Port Blair.

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## Materials and Methods

### Setting

Andaman and Nicobar group of islands is a union territory under the Government of India, consisting of 516 islands. The GB pant Hospital situated in Port Blair is a 500 bedded secondary care hospital which has been upgraded to Medical College in the year 2015.

The hospital receives patients from all walks of life including local population, the Nicobar tribes, and the indigenous population like the Jarawa, Ongese, Sentinelese, etc., and many national and international tourists who visit the islands.

The hospital provides outpatient consultations and inpatient services to patients presenting to the hospital from other levels of care or on self-referral.

### Study design

It is a cross-sectional and descriptive type of study.

### Sample size

The sample size was calculated using the formula,  $n = Z^2 \frac{pq}{d^2}$ , where  $Z_{(1-\alpha/2)} = 1.96$  at 95% confidence,  $P$  = prevalence of patient satisfaction,  $q = 1-p$ , and  $d$  = absolute allowable error. For this study, we presumed maximum variability; hence,  $P = 0.5$ ,  $q = 0.5$ , and  $d = 5\%$ . Thus, the sample size obtained was 385. The minimum sample size was inflated by 10% to take care of non-response, incomplete responses, and refusals. The total number came out to be 422 but we had interviewed 500 patients.

### Sampling technique

A multistage sampling technique was used to select representative patients. In the first stage, 10 most frequented OPDs (General Medicine, General Surgery, Obstetrics and Gynecology, Pediatrics, Orthopedics, Otorhinolaryngology, Ophthalmology, Tuberculosis and Chest Disease, Dermatology, and Psychiatry) were selected using balloting. In the second stage, a stratified sampling technique with proportionate allocation was used to select 66, 60, 54, 53, 79, 51, 3, 9, 7, 75, and 16 patients from these respective departments. Last, systematic sampling technique was used to select respondents from outpatients in the sampled clinical departments.

### Inclusion criteria

A new or referred patient more than 18 years attending the OPD of the Respective Departments.

### Exclusion criteria

Patients who were too ill to participate in the interview or patients who had come for follow-up visit were excluded from the study.

### Study tool

A pretested structured questionnaire was used to record information regarding patient satisfaction, based on PSQ-18

developed by Marshall and Hays<sup>[2]</sup> with some modification along with sociodemographic characteristics. The questionnaire comprehensively measures patient satisfaction with the 16 items which yields six domains of patient satisfaction, by five response categories from strongly agree, agree, uncertain, and disagree to strongly disagree. One domain of financial aspects having two questions has not been included because in these islands all the health care services are provided free of cost to each and every person irrespective of their status. Later on, some items of scale were worded so that agreement reflected satisfaction with health care, whereas other items were worded so that the agreement reflected dissatisfaction with the health care.

Prior to the study, ethical approval was obtained from the Institutional Ethics Committee approval has been obtained on 11<sup>th</sup> March 2019.

### Analysis

Data entry was done in Microsoft excel sheet on a regular basis and wherever appropriate, data are presented in the form of bar chart. The final analysis was done using IBM SPSS software version 21. Mean scores were calculated to determine satisfaction level and significance was tested using *t*-test. Relationship of patient satisfaction level with other independent variables was checked using linear regression analysis.

### Method used for scoring

The modified PSQ-18 scale used here yielded separate scores for each domains: General satisfaction (Items 3 and 17), Technical quality (Items 2, 4, 6, and 14), Interpersonal manner (Items 10 and 11), Communication (Items 1 and 13), Time spent with doctor (Items 12 and 15), and Accessibility and convenience (items 8, 9, 16, and 18). All items were scored on an ordinal scale from one to five so that high scores reflect satisfaction with health care [Table 1].

After item scoring, items within each subscale were averaged together to create the six subscale scores excluding the scores for financial aspects (Items 5 and 7). Scale score represents the average for all items in the scale that were answered.

## Results

Table 2 shows the sociodemographic characteristics of the study participants. Major proportion (62%) was contributed by urban respondents. The table reveals that the highest number (32.40%) of respondents was in the age group of 30–39 years category. Out of all, 5.80% respondents were in geriatric age group which is quite similar to the percentage of geriatric population nationally. Study findings show almost equal representation from both the sexes in the entire age category [Figure 1].

Table 3 shows the mean score of patient satisfaction in each domain. Mean satisfaction is the highest for communication (3.94 out of 5), followed by general satisfaction (3.69), technical

**Table 1: Calculation of level of satisfaction in terms of different domains of patient satisfaction**

	Items	Maximum possible score	Maximum mean	Level of Satisfaction in percentage
General Satisfaction	3+17 (A)	10	5	A/10 100
Technical Quality	2+4+6+14 (B)	20	5	B/20 100
Interpersonal Manner	10+11 (C)	10	5	C/10 100
Communication	1+13 (D)	10	5	D/10 100
Time spent with doctor	12+15 (F)	10	5	F/10 100
Accessibility and convenience	8+9+16+18 (G)	20	5	G/20 100
OSAT	All 16 scales	80	5	OSAT/80 100

**Table 2: Demographic information of respondents**

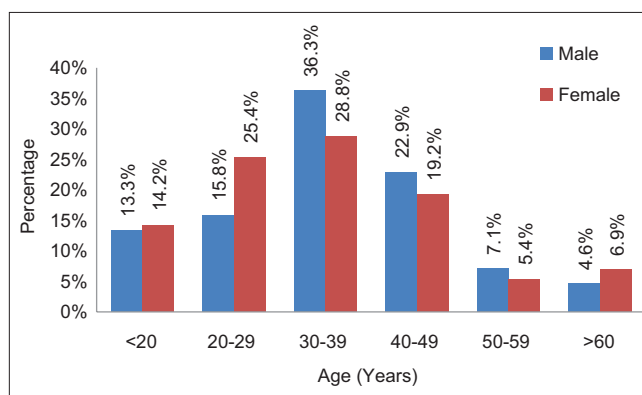
	Frequency	Percent
Gender		
Male	240	48.00%
Female	260	52.00%
Residence		
Urban	311	62.20%
Rural	189	37.80%
Age (Years)		
<20	69	13.80%
20-29	104	20.80%
30-39	162	32.40%
40-49	105	21.00%
50-59	31	6.20%
>60	29	5.80%
Occupation		
Employed	268	53.60%
Unemployed	232	46.40%
Education		
Non-formal	96	19.20%
Primary	147	29.40%
Secondary	181	36.20%
Tertiary	76	15.20%

**Table 3: Distribution of study population according to their satisfaction**

	Max possible Score	Satisfaction in percentage
General Satisfaction	3.69±0.60	73.80%
Technical Quality	3.46±0.50	69.20%
Interpersonal Manner	3.35±0.58	67.00%
Communication	3.94±0.66	78.80%
Time spent with doctor	3.41±0.81	68.20%
Accessibility and convenience	2.96±0.46	59.20%
OSAT	3.17±0.21	63.40%

quality (3.46), time spent with doctor (3.41), interpersonal manner (3.35), and least in accessibility and convenience (2.96). Overall satisfaction was 63.40% with a mean value of 3.17.

Table 4 shows mean scores of 6 domains of patient satisfaction and overall satisfaction in relation to sociodemographic variables. Table 5 shows linear regression analysis between overall satisfaction of patients as the dependent variable and independent variables such as age, gender, residence, occupation, and education.



**Figure 1: Age and Sex distribution of study participants**

Linear regression equation was overall satisfaction (OSAT) = 3.410–0.016 × Gender -0.093 × Residence -0.015 × Age + 0.013 × Occupation –0.021 × Education. Model explains 0.9% variation in the dependent variable OSAT.

## Discussion

There is always a need to provide quality health services irrespective of the level of care be it a primary, secondary, or tertiary and one of the determinants to assess the quality of health care is patient’s satisfaction. In the public health sector, this aspect is not concerned much due to overburdened health facilities with limited resources. In addition, compliance to treatment modality and service utilization to some extent also depends on patient satisfaction toward the services rendered by the health care system.

In the present study, patient satisfaction was calculated using PSQ-18 questionnaires schedule with some modifications. It was found that overall patient satisfaction about services was 63.40% with mean score of 3.17 ± 0.21. The level of satisfaction in this study was similar to the findings of studies done by Holikatti *et al.*<sup>[3]</sup> (55.3%), Mahapatra *et al.*<sup>[4]</sup> in Andra Pradesh (63%), and Asraf *et al.*<sup>[5]</sup> (satisfaction 61%); however, the satisfaction level was low in comparison to studies done by Deva *et al.*<sup>[6]</sup> in Kashmir 80%, Solanki *et al.*,<sup>[7]</sup> Kumari *et al.*<sup>[8]</sup> in Lucknow 81.6%, and Ziaei *et al.*<sup>[9]</sup> (mean 4.0).

Similarly, studies conducted by Khatun *et al.* in Dhaka and Abbasi-Moghaddam *et al.* in Tehran also reported the satisfaction level of 65.8% and 57.5%, respectively, among outdoor patients which is close to the findings of this study.<sup>[10,11]</sup>

**Table 4: Distribution of study population according to sociodemographic variables and different domains of patient satisfaction (n=500)**

Variable	Frequency n (%)	Mean±SD						
		General satisfaction	Technical quality	Interpersonal manner	Communication	Time spent with doctor	Accessibility and convenience	OSAT
Gender								
Male	240 (48)	3.73±0.603	3.49±0.50	3.34±0.54	3.94±0.66	3.41±0.75	2.97±0.47	3.19±0.20
Female	260 (52)	3.65±0.599	3.43±0.51	3.35±0.62	3.93±0.65	3.41±0.86	2.96±0.44	3.17±0.21
Age groups (in years)								
<20	69 (13.80)	3.55±0.56	3.49±0.51	3.28±0.59	3.80±0.68	3.38±0.84	3.10±0.49	3.18±0.22
20-29	104 (20.80)	3.68±0.63	3.55±0.52	3.38±0.64	3.91±0.63	3.39±0.78	2.97±0.47	3.20±0.22
30-39	162 (32.40)	3.67±0.61	3.46±0.50	3.30±0.58	3.96±0.69	3.37±0.85	2.93±0.50	3.16±0.20
40-49	105 (21.00)	3.77±0.559	3.38±0.49	3.44±0.55	4.02±0.65	3.43±0.83	2.95±0.377	3.20±0.20
50-59	31 (6.20)	3.81±0.54	3.39±0.49	3.23±0.43	4.00±0.45	3.58±0.72	2.90±0.30	3.19±0.18
>60	29 (5.80)	3.79±0.73	3.41±0.51	3.41±0.57	3.86±0.69	3.48±0.69	2.90±0.41	3.12±0.18
Residence								
Urban	311 (62.20)	3.65±0.62	3.49±0.51	3.28±0.58	3.96±0.68	3.41±0.83	2.94±0.48	3.17±0.21
Rural	189 (37.80)	3.77±0.56	3.42±0.49	3.45±0.57	3.90±0.62	2.94±0.48	3.00±0.41	3.19±0.19
Education								
Non-formal	96 (19.20)	3.78±0.62	3.51±0.50	3.29±0.50	3.92±0.68	3.42±0.88	2.92±0.40	3.17±0.20
Primary	147 (29.40)	3.69±0.62	3.46±0.50	3.40±0.63	3.89±0.62	3.45±0.83	2.96±0.45	3.18±0.20
Secondary	181 (36.20)	3.67±0.58	3.40±0.50	3.33±0.58	3.97±0.66	3.38±0.75	2.99±0.48	3.18±0.22
Tertiary	76 (15.20)	3.62±0.61	3.55±0.50	3.34±0.60	3.97±0.69	3.38±0.45	2.97±0.46	3.19±0.19
Occupation								
Unemployed	232 (46.40)	3.63±0.63	3.43±0.50	3.35±0.63	3.90±0.66	3.41±0.85	2.99±0.46	3.16±0.38
Employed	268 (53.60)	3.74±0.59	3.49±0.50	3.34±0.54	3.97±0.65	3.40±0.78	2.94±0.45	3.18±0.38

**Table 5: Linear regression analysis showing relation of overall satisfaction with other variables**

Variables	Unstandardized coefficients		t	Sig.	R <sup>2</sup>
	B	SE			
(Constant)	3.141	0.065	48.355	0.000	R=0.103,
Gender	-0.007	0.022	-0.328	0.743	adjusted
Residence	0.33	0.019	1.675	0.095	R <sup>2</sup> =0.011
Age	-0.007	0.008	-0.808	0.419	
Occupation	0.023	0.022	1.027	0.305	
Education	-0.005	0.011	0.447	0.655	

The mean score of communication was the highest ( $3.94 \pm 0.66$ ) among the six domains of patient satisfaction. When compared with the study conducted by Holikatti *et al.*,<sup>[3]</sup> it was found that all the domains (general satisfaction, technical quality, communication, time spent with doctor, accessibility, convenience) except interpersonal aspects had higher scores.

The pattern of satisfaction in different domains according to sociodemographic variables does not show any particular trend. This is contrary to the findings of the studies done by Lolovska *et al.*,<sup>[12]</sup> AlQatri *et al.*,<sup>[13]</sup> Ahmad *et al.*,<sup>[14]</sup> Quintana *et al.*,<sup>[15]</sup> and Galhotra *et al.*,<sup>[16]</sup> which showed age, gender, the level of education, and marital status as the predictors of patient satisfaction with hospital health care.

Studies done by Young *et al.* and Dullie *et al.* also found that demographic characteristics like age, race, and health status had a statistically significant effect on satisfaction scores<sup>[17,18]</sup>

Linear regression with overall satisfaction with sociodemographic variables showed no significant association and this is similar to the finding of studies conducted by Crow *et al.*,<sup>[19]</sup> Hall and Dornan,<sup>[20]</sup> which revealed that there was no significant association between the patient satisfaction with sociodemographic variables. Contrary to this, a study done by Bahramoour and Zolala<sup>[21]</sup> in Iran revealed significant association between religion and patient satisfaction.

The reasons for dissatisfaction were long queue at registration counter, long waiting hour to consult doctor, difficult to get specialist services, and poor quality of facility in hospital area.<sup>[22]</sup>

Mean score of accessibility was the lowest among all the domains of patient satisfaction and reason for this is difficulty faced by people travelled from different islands to reach this only referral center with specialized services. Similar findings have been reported in a study done at Uganda in which only 13% of those referred to the district hospital attended because of the distance to the referral hospital.<sup>[23]</sup>

This health facility is having large influx of patients from within and outside the district as this hospital caters to three districts. This leads to over-stretching of the personnel and available facilities. Therefore, patients have to wait for long period before being seen, especially in the outpatient clinics, the antenatal clinic, at investigation site, and to collect medicines.

One interesting findings of this study is that the highest score was found in communication domain which is an important

component of good medical practice as it not only helps to identify problems quickly and clearly but it also defines the expectations and helps to establish trust between the health care providers and the patient.

The present study also revealed that sociodemographic variables had no influential role in determining patient satisfaction.

The main limitation of this study is subjective variability in the determination of patient satisfaction. Patients come with different expectations and their perceptions also vary toward satisfaction. Hence, future research with qualitative study design as well as having a component of health workers' attitude can be done.

## Conclusion

Overall, the study showed a good level of satisfaction of patients with services obtained from this referral center. Among the different domains of measurements of patient satisfaction, only accessibility and convenience score was low. Being an only referral center of this island, this issue will remain till the services are being expanded to nearby islands. Waiting time and lack of facilities were the main reasons for dissatisfaction among a few patients. Therefore, there is a need to develop a strategy for addressing the issues of waiting time, utilization of waiting area site to deliver health-related preventive messages, better hospitality, and a fully functional grievance redressal system. The study findings would serve as a baseline data for improving the quality of services and making them more clients centered.

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## Conflicts of interest

There are no conflicts of interest.

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