

Determinants and level of patient satisfaction on clinical laboratory services

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ABSTRACT:

A component of effective health care services is the measurement of patient satisfaction. It aids in the evaluation of health care services from the patient point of view and facilitates the identification of problem areas and generates ideas for resolving these problems. Monitoring patient satisfaction is an important and useful quality improvement tool for clinical laboratories in particular and healthcare organizations in general. There is an increasing interest to improve the quality of laboratory services world-wide including in many resource poor countries. The purpose of this study was to assess the determinants and level of satisfaction on laboratory services in a selected hospital in Trivandrum. An institution based cross sectional survey design was used to conduct the present study. The study population included all adult patients above the age of 20 years who avail the laboratory services for more than two times from medicine, surgery and gynecology/obstetric departments. Data were collected using a pre-tested and structured questionnaire which was administered by the researcher. The questionnaire included satisfaction indicators which were related to sociopersonal characteristics of the study participants and different dimensions of laboratory services. Average age of the study population was 44.7 ± 12.5 years and age ranges from 20-69 years. 29.3% of the subjects were in the age group of 40-49 years. The overall satisfaction of patients with laboratory service was 81.4% where 48.1% had an average level of satisfaction. Only 9.3% were very much satisfied with services received from the laboratory. 40% of the patients have good satisfaction with the registration services at the laboratory. Nearly half of the study participants had an average level of satisfaction with regard to time spent on registration (50.7%), facilities in the waiting area (53.3%), cleanliness of the laboratory (40%), waiting time for taking sample (49.3%) and atmosphere of the laboratory. Nearly half of the study participants had poor satisfaction with regard to the toilet facility available at the laboratory which was the highest dissatisfaction observed in the study. A significant association was found between sociopersonal variables like age and duration of visit to avail laboratory services with level of satisfaction on laboratory services ($p < 0.01$). Patient satisfaction is a paramount indicator of the quality of service delivered by the health care service especially the diagnostic services. Further study with more influencing factors and broad environmental variables are recommended.

Key words: Patient, level of satisfaction. Clinical laboratory services

INTRODUCTION:

Quality medical laboratory service provision is important in order to enhance diagnostic value and save lives. This is because recognition of disease is the foundation of disease control and prevention. Healthcare service quality and patient satisfaction are very fundamental concepts that require attention in

healthcare services operations. Service quality is taken into account as very beneficial because it results in higher patient satisfaction, profitability, cost reduction, patient loyalty and retention. Patient satisfaction magnifies the hospital image, which successively renders into increased service use and market share. Measuring the degree of patient satisfaction can help to

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accelerate hospital service provision and management, also to strengthen and maintain the standard of the service provision. Patient satisfaction is an essential part of the quality of results of medical treatment in hospital. The concept of service quality patient satisfaction studies of quality improvement has become more important year by year in the health care industry. Because in the processes of monitoring and improving the quality of health care services patients' views can serve as an essential tool¹. The World Health Organization (WHO) has established that the patient satisfaction assessment may address the various aspects of services provided, such as reliability and consistency of the laboratory services, service responsiveness, and the providers' willingness to meet the patient's expectation regarding services. Accurate and reliable clinical laboratory services are considered as the pillars of healthcare services. It is an essential component of curative and preventive healthcare activities world². Comprehensive quality laboratory services are challenging processes that need multiple sources of support from patients, clinical service providers, managers, laboratory professionals, and other stakeholders. Especially, the needs and preference of clients in the clinical laboratory must be addressed in the design and implementation of laboratory quality system. Laboratory customers are the best source of information on both the quality and quantity of health care services provided and their views are determining factors in planning and evaluating satisfaction of services rendered to them³. Globally, international differences exist in the guidelines on good quality laboratory services. The quality of service provided and the challenges laboratory practitioners face are different in developed versus developing countries. In the developed world, the challenge is the selection of appropriate testing techniques provided to consumers. Quality assurance schemes in the developed countries are incorporated in the laboratory operations policies, there are established standards and enforced regulations for quality services. In developing countries, the challenge is the lack of diagnostic tests. Developing countries are resource poor so the challenges are resource based, like human resource and financial resources. Resultantly, there are considerable differences between countries in the implementation of quality laboratory services, in particular between highly developed countries and less developed countries. In developing countries all over the world, poverty and poor infrastructure are major contributing factors leading to inefficient provision of health services which affect the stakeholders. Health was one of the ambitious development goal for India in the post independent era. Since then, the India Government spent an immense amount of money on medical programs. India has not yet fully realized its health objectives, even though the government is committed to achieving better health for all people and

recognizes delivery of quality laboratory services as an integral part of this goal in the national health strategy. Against this background the National Public Health Laboratory Service (NPHLS) had drawn the attention to the necessity for improving the laboratory working environment and laboratory standards and bringing them up to WHO standards of quality⁴.

The quality of the laboratory service is important in achieving the national goal of any country to provide improved healthcare. Service quality is influenced by the competence of the laboratory service providers who are the practitioners in their field. The quality of service remains a growing concern even as medical diagnostic laboratories are undergoing the process of accreditation for quality services in line with WHO. The study provides a good basis to identify the practitioner characteristics of competence, and management function, and investigate the compliance pertaining to practice structure in terms of space and basic amenities. The findings provide a comprehensive understanding regarding the patient's needs in order for them to deem the service to be of quality standards⁵.

The increase in number of service quality patient satisfaction studies over the past few years in developing countries indicates that the concept of quality improvement has become more important year by year in the service industry and stresses the importance of patient's views as an essential tool in the processes of monitoring and improving quality of healthcare services. Quality is increasingly perceived to be judged not only by the producer but by the receiver. Based on those researchers, a true estimation of acceptable quality is customer satisfaction, which takes into account both the objective and subjective interpretations of the needs and expectations of the consumer and the stakeholders⁶.

It is identified that patient satisfaction towards clinical laboratory service is influenced by the quality of service and professionalism of the laboratory staff, provision of adequate information while specimen collection and when and how to receive laboratory results, waiting time to collect the results, availability of requested laboratory tests, cleanliness and location of laboratory room, availability and accessibility of toilets⁷.

Given the lack of adequate study on the matter in India, especially in Kerala, more studies need to be conducted periodically on the general laboratory services. Hence, the present study attempts to assess the patient satisfaction of laboratory services received during their visit. Quality and improvement in healthcare without considering the medical laboratory service is incomplete for any quality assurance programs. The quality improvement in healthcare is mainly proven by the high quality of medical laboratory results for their patients. It also aids in providing better service, remain in competition with other health care institutions, participating confidently

for recognition and accreditation programs. Even though poor infrastructure, shortage of supplies, lack of trained technical staff, ineffective equipment maintenance and material-man power mismanagement are some of the problems faced by the laboratories in rural locality, satisfied services needs team work among all healthcare workers.

Patient satisfaction assists in the evaluation of healthcare services from the beneficiary’s point of view. As the importance of monitoring the satisfaction status is becoming necessary and not much data regarding the same is available in Kerala, hence, present study was designed to estimate the patients satisfaction status with the services provided⁸.

METHODOLOGY:

An institution based cross sectional survey design was used to conduct the present study at Taluk headquarters hospital, which is a 300 bedded multi-specialty hospital with all departments and provide twenty-four hours causality service. The average number of patients who treated at the hospital is around 9600. The study population included all adult patients above the age of 20 years who avail the laboratory services for more than two times from medicine, surgery and gynecology/obstetric departments. All adult patients who were requested for clinical chemistry, hematology, parasitological and urine analysis tests were included in the study. However, patients who had mental illness and hearing impairments were excluded from the study.

The sample size was calculated based on a previous study conducted in Ethiopia using the same variables

and was identified as 75. A systematic random sampling technique was used to select the study participants. proportional allocation to population size was employed for the three departments. The dependent variable of the study was patient satisfaction. Patient satisfaction on clinical laboratory services is defined as the patient’s opinion of the care received from the laboratory while availing their services and is acknowledged as an outcome indicator of the quality of services received. Data were collected using a pre-tested and structured questionnaire which was administered by the researcher. The questionnaire was prepared in English and translated to Malayalam, then back to English to check for its consistency.

The questionnaire included satisfaction indicators which were related to sociopersonal characteristics of the study participants and different dimensions of laboratory services. Informed consent was taken from patients and confidentiality of their response was assured. A brief introduction about the researcher and study was explained to the patients and data was collected. The subjects were asked to rate each aspect of the laboratory service on a five-point Likert scale (Very poor, poor, acceptable, good and very good). The questionnaire was given and filled by the participants after giving the sample for investigation or at the time of report collection. SPSS 20 was used to create and analyze the data. Descriptive statistics such as number and percentage were used to present the data. Association of the variables with the satisfaction status was checked with Chi-square test. The p-value <0.05 was considered to be statistically significant.

RESULTS:

Table 1 Sociopersonal characteristics of study participants

(n=75)

Sno	variables	frequency	percentage
1	Age in years	8	10.7
	<30 years	19	25.3
	30-49 years	22	29.3
	50-59 years	15	20.0
	>60 years	11	14.7
2	Gender		
	Male	25	33.3
	Female	50	66.7
3	Duration of visit		
	>1 year	21	28.0
	<1 year	54	72.0

Average age of the study population was 44.7 ±12.5 years and age ranges from 20-69 years. 10.7% of the subjects were in the age group of <30 years and 29.3% of the subjects were in the age group of 40-49 years. 33.3% of the study population were males and 66.7% were females. 72.0% of the patients were visiting the laboratory for their services for more than a year.

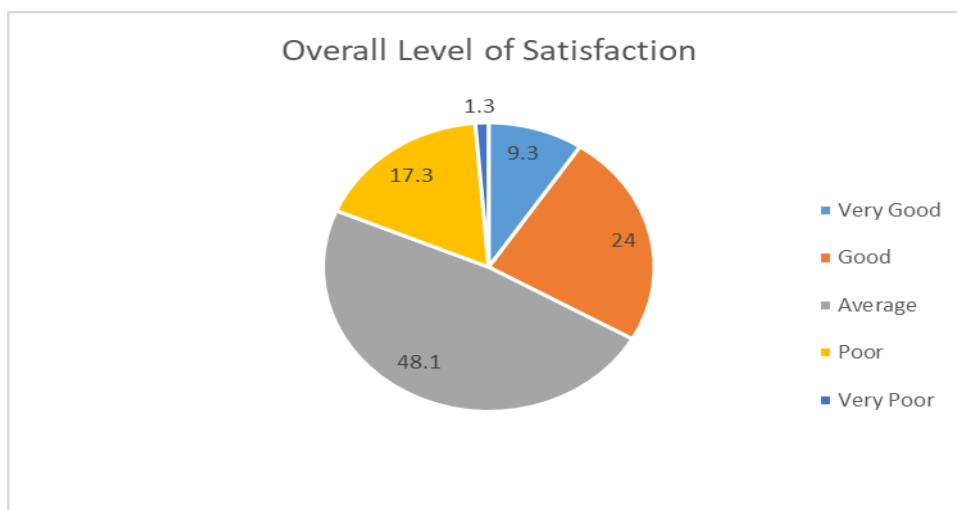


Figure 1: Overall satisfaction of patients on laboratory services

The above figure depicts that the overall satisfaction of patients with laboratory service was 81.4% where 48.1% had an average level of satisfaction. Only 9.3% were very much satisfied with services received from the laboratory.

Table 2: Determinants of patient satisfaction on clinical laboratory services

Sno	Questions	Level of satisfaction									
		Very good		Good		Average		Poor		Very Poor	
		n	%	n	%	n	%	n	%	n	%
1	Registration Services	13	17.3	30	40.0	25	33.3	4	5.3	3	4.0
2	Time spent for registration	9	12.0	9	12.0	38	50.7	18	24.0	1	1.3
3	Adequacy of sitting arrangement	11	14.7	29	38.7	27	36.0	8	10.7	0	0.0
4	Facilities in the waiting area	8	10.7	13	17.3	40	53.3	12	16.0	2	2.7
5	Cleanliness of the laboratory	9	12.0	16	21.3	30	40.0	18	24.0	2	2.7
6	Toilet facility	3	4.0	3	4.0	22	29.3	27	36.0	20	26.7
7	Waiting time for sample taking	14	18.7	20	26.7	37	49.3	4	5.3	0	0.0
8	The atmosphere of laboratory	9	12.0	23	30.7	33	44.0	10	13.3	0	0.0
9	Facilities of laboratory	17	22.7	31	41.3	23	30.7	3	4.0	1	1.3
10	Availability of staff	32	42.7	32	42.7	6	8.0	5	6.7	0	0.0
11	Approachability of laboratory staff	20	26.7	23	30.7	28	37.3	3	4.0	1	1.3
12	Behavior of laboratory staff	13	17.3	19	25.3	32	42.7	10	13.3	1	1.3
13	Attitude of Laboratory staff	9	12.0	27	36.0	29	38.7	8	10.7	2	2.7
14	sincerity of laboratory staff	13	17.3	21	28.0	26	34.7	14	18.7	1	1.3
15	Expertise of laboratory staff	19	25.3	17	22.7	24	32.0	12	16.0	3	4.0
16	Availability of requested lab services	15	20.0	22	29.3	28	37.3	10	13.3	0	0.0
17	Cost of laboratory tests	8	10.7	17	22.7	36	48.0	12	16.0	2	2.7
18	Provision of	21	28.0	41	54.7	11	14.7	2	2.7	0	0.0

	information regarding govt.schemes										
19	Waiting time for test results	23	30.7	27	36.0	20	26.7	5	6.7	0	0.0

40% of the patients have good satisfaction with the registration services at the laboratory. Nearly half of the study participants had an average level of satisfaction with regard to time spent on registration (50.7%), facilities in the waiting area (53.3%), cleanliness of the laboratory(40%), waiting time for taking sample(49.3%) and atmosphere of the laboratory.

36% of the patients had good level of satisfaction with the sitting arrangement at the laboratory while waiting for sample collection. 41.3% had good satisfaction with facilities available at the laboratory and 42.7% were very much satisfied with the availability of laboratory staffs for prompt services.

Nearly half of the study participants had poor satisfaction with regard to the toilet facility available at

the laboratory which was the highest dissatisfaction observed in the study.

With regard to the communication and interaction among the patients and laboratory staff, nearly half of the study participants had an average level of satisfaction.ie, approachability of staff (37.3%), behaviour of staff (42.7%), attitude(38.7%), sincerity(34.7%).

Also, the participants had an average level of satisfaction with expertise of the laboratory staff in sample collection(42%), availability of requested services(37.3%) and cost of laboratory services(48.2%).

54.7% of the patients have good satisfaction with the information provided by the laboratory staff regarding government schemes and 36% were the satisfied with the waiting time to receive the test results.

Table 3: Association of level of satisfaction with selected sociopersonal variables

Sno	Variables	Satisfaction						χ^2	df	p
		Good		Average		Poor				
		N	%	N	%	N	%			
1	Age in years									
	<30	1	12.5	2	25.0	5	62.5	56.160	df=8	0.001**
	30-39	0	0.0	11	57.9	8	42.1			
	40-49	2	9.1	20	90.9	0	0.0			
	50-59	9	60.0	6	40.0	0	0.0			
	>60	8	72.7	3	27.3	0	0.0			
	Total	20	26.7	42	56.0	13	17.3			
2	Gender									
	Male	5	20.0	16	64.0	4	16.0	1.092	2	0.579
	Female	15	30.0	26	52.0	9	18.0			
	Total	20	26.7	42	56.0	13	17.3			
3	Duration of visit									
	<1 year	1	4.8	10	47.6	10	47.6	21.048	2	0.001**
	>1 year	19	35.2	32	59.3	3	5.6			
	Total	20	26.7	42	56.0	13	17.3			

A significant association was found between sociopersonal variables like age and duration of visit to avail laboratory services with level of satisfaction on laboratory services ($p < 0.01$).

DISCUSSION:

The present study was designed with the aim to assess the level of satisfaction of patients with clinical laboratory services. Average age of the study population was 44.7 ± 12.5 years and age ranges from 20-69 years. 10.7% of the subjects were in the age group of <30 years and 29.3% of the subjects were in the age group of 40-49 years. 33.3% of the study population were males and 66.7% were females.

72.0% of the patients were visiting the laboratory for their services for more than a year. The findings are in accordance with the study conducted by Bi A Khadeja et al. on patients and clinicians satisfaction with clinical laboratory services where the participants were mostly young, married and female predominance. Similar study done by Aleign A and Belay YA et al also reported similar findings. Another study by

Teklemariam Z et al., concluded that half of the population were females.

The study findings revealed that the overall level of satisfaction with laboratory service was 81.4 which is similar to the findings of the study conducted by Hailu et al in Ethiopia where the overall patients' satisfaction level with medical laboratory services was 78.6%. The researchers attributed the high satisfaction level to the introduction of social desirability bias by patients. They felt that patients might not be ready to tell their dissatisfaction status freely as the interviews were carried out within the hospital premises. The present findings are higher than the findings of Choudhary S et al (59.2% mean satisfaction level), Kavitha Aggarwal et al (61.2%), Tadele G et al (60.4%) and Alelign and Belay et al (48.2%).

The present study identified many factors influencing the rate of satisfaction of patients. 40% of the patients have good satisfaction with the registration services at the laboratory. Nearly half of the study participants had an average level of satisfaction with regard to time spent on registration (50.7%), facilities in the waiting area (53.3%), cleanliness of the laboratory (40%), waiting time for taking sample (49.3%) and atmosphere of the laboratory. 36% of the patients had good level of satisfaction with the sitting arrangement at the laboratory while waiting for sample collection. 41.3% had good satisfaction with facilities available at the laboratory and 42.7% were very much satisfied with the availability of laboratory staffs for prompt services. The above findings are in concordance with findings of Tadele G et al, Kavitha Aggarwal et al. and Bi A Khadeja et al., whose research studies revealed that the majority of the patients were satisfied with the waiting time at reception and blood collection, cleanliness and atmosphere of the laboratory. These findings are contradictory to the findings from the study conducted by Pushpamaliekp et al in Sri Lanka. This study reported that space of the laboratory premises is inadequate, no adequate sitting facilities, toilet facilities, and laboratory environmental facilities are not sufficient. Cleaning and tidy could be seen in moderate level. Availability of staff members, providing service timely, staff members willing to listen with compassion to patients' problems, willing to help and as a whole satisfactory service of the staff are in moderate level. Listening, helping patients and service of staff has shown more satisfactory levels than the availability of staff. Patients were more satisfied with the quality of the report and test availability than for phlebotomy process and waiting time. Environmental factors are disagreeing level. Staff and quality of the process were moderate level whilst overall satisfaction was in agreeing level

Nearly half of the study participants had poor satisfaction with regard to the toilet facility available at the laboratory which was the highest dissatisfaction observed in the study. Khatri A and Sharma S, reported

a high score for dissatisfaction (35.8%) for toilet cleanliness and comfort. Contrary to the present study, Kavitha Aggarwal et al reported that majority of the participants 123 (48.42%) were neutral regarding the cleanliness of sample collection and toilet.

CONCLUSION:

In conclusion, the overall patients' satisfaction towards clinical laboratory services was high. The age of the study participants and duration of laboratory visit had a statistically significant association with the overall satisfaction of patients towards clinical laboratory services. Patient satisfaction is a paramount indicator of the quality of service delivered by the health care service especially the diagnostic services. The overall satisfaction level with the laboratory service was 81.4%, showing a majority of the participants were satisfied with the overall services of the laboratory. Cleanliness and availability of toilet, expertise of the staff and sincerity of the staffs scored low on satisfaction scale. Accessibility of different facilities like the reception, sitting arrangement in sample collection room, availability of toilet and communication can influence patient satisfaction regarding the laboratory services. Further study with more influencing factors and broad environmental variables is recommended.

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