Customer Related Factors Affecting Satisfaction of Laboratory Services in a Tertiary Hospital

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Abstract*:*

Introduction: The economic liberalization and privatization has made it possible to have the emergence of more and more private sector business organizations especially in medical sector leading to more competition in supply of health services. The customer satisfaction for the services rendered by the hospital is the yardstick to assess the quality of services which is the net effect of large number of factors related to the institution supplying the services and customer patients availing the services. The present paper focuses on customer patient related factors influencing their satisfaction level.

Objectives: The present study is aimed to assess the satisfaction level of patients availing laboratory services rendered by the central Biochemistry lab in a tertiary medical college hospital and to associate the same with the customer based socio-economic factors contributing to their satisfaction.

Methodology: The cross sectional survey method of research was used to collect the socio-demographic and customer satisfaction level of information visiting a tertiary hospital in southern Rajasthan. A five Likert scale was used to ascertain satisfaction level of patients at different points while availing the laboratory services. Mean scores, percentages, statistical test of significance and chi- square test were calculated using options available on Excel and on line options for different statistical tests

Results: The mean score values of the level of satisfaction are statistically significant between male and female patients, youngster and elder patients as well as for patients within and outside Rajasthan. The Chi-square test revealed that factors such as sex, age, place of stay, educational level and referred department are significantly associated with level of satisfaction of laboratory services by the patients. Remarkably, the location of stay (rural vs urban), occupation, stages of visit were found to have no significant association with level of satisfaction of patients.

Key words: *Customer satisfaction, laboratory services, factors*

INTRODUCTION:

Goods and services produced by the producers are made available to the customers in a business oriented system to satisfy their needs. Producers of goods and services play the supply side role

with the sole motto of earning profit for the investment made in the business whereas customers play the role of consumers by spending from their hard earned income to satisfy their needs from the demand side. The matching of demand with supply makes the equilibrium in the system. Modern business system treats consumers as the king of the production system as their level of satisfaction is of paramount importance for the sustainability of the business in the long run. Hence customer centric marketing strategies are overwhelming importance in almost all spheres of production. There is paradigm shift in the producer- consumer relationship in the new economic regime as private sector organizations play a crucial role in the production system of goods and services. It is more pertinent for health sector as private sector plays a crucial role in supplying health services to the people in developing countries like India. In private health sector all services are chargeable and hence the customer satisfaction is of very high relevance for long sustainability of the sector.

The health services in India have improved tremendously over the years as evident from a range of indicators in health sectors. The main focus in the healthcare industry is placed to improve the diagnostics services and treatment to promote good health conditions. India has witnessed tremendous progress in controlling incidence of malaria and is restructuring the "Malaria workforce" with the aim of strengthening the health infrastructure that will also help in reducing the incidence of TB. Along with this, childhood diarrhea was yet another major cause of illness, however, is largely preventable by simple public education. With improvements in living standards, building food security, and raising education levels with proper access to healthcare can help in reducing the prevalence of severe under nutrition in the younger children till the current year. From the recent years, patient satisfaction has been an important factor of consideration to identify gaps and developments in improving the healthcare system. Understanding that the patient's perception and level of satisfaction prompted to build quality improvement of care, moreover, the healthcare regulators have been shifted to a more market linked approach that will yield better patient's satisfaction and will motivate quality improvement tool to boost overall organizational performance. Diagnostics are essential in improving the patient care and help in reducing the healthcare expenses thus, solving the major economical issue in every hospital. In this context, Biochemistry laboratories holds a crucial edge in the healthcare organizational system as the series of test facilities available in Biochemistry labs helps the physicians and other specialists to diagnose and prescribe appropriate treatments based on the evidences from the laboratory tests.

Patient's satisfaction in health services is comprised of many factors expressed as attitudes and perceptions regarding the healthcare services. It depicts the extent to which individuals feel about the services rendered by the healthcare system. Moreover, the judgment of patient is the manifestation of the fulfillments of their expectations. The same depends on the expectations of the patients and their experience with the real services. Evaluation of the healthcare services is based on a realistic tool that provides an opportunity to improve and enhance strategic decisions along with reducing the costs and meeting their needs and requirements of the patients with the help of effective management and proper monitoring of the healthcare performance and plans, thus, providing a benchmark across various healthcare institutions. With the patient centred approach, healthcare institutions can increase the patient's satisfaction levels with better decision making and being focused in improving the quality of health. There are several factors which affect the customer expectations of the services such as efficiency, confidence, and personal interest reliability along with many such intrinsic factors. These aspects influence the response of the hospital staff to the patients and their respective families and are susceptible to training. The same can be improved by proper training that will lead to reach the set standards in the presence of various external factors such as media influence, experience of others, as well as contributes to the customer expectations. Patient's satisfaction is still under review in the clinical biochemistry

2625

Eur. Chem. Bull. 2023, 12 (S2), 2624 – 2630

laboratory and this study is focused to determine the perception of patients for laboratory services to improve the same.

OBJECTIVES:

The present study is aimed to assess the level of satisfaction on different components of services rendered by the central Biochemistry lab in a tertiary medical college and also the customer based socio-economic factors contributing to their level of satisfaction.

METHODOLOGY:

A cross sectional study was conducted on patients attending clinical biochemistry laboratory in a private medical college hospital. The study was conducted on 330 selected patients who visited the laboratory to avail the lab services. The type of sampling method was systematic random sampling from patients visiting the Biochemistry laboratory. About 9900 patients (N) were expected to visit biochemistry laboratory during two months (60 days) to have sample of size 330 (n). The K factor to select the random start (N/n=K) was worked out to be 30. A member 11 was randomly selected as the first sample or random start of the first day. The subsequent patients at 41th, 71th, 101th ….. were included in the study till 330 sample were covered within a period of two months.

The interview method by using a suitably structured questionnaire was used for collecting the level of satisfaction on different aspects of laboratory services rendered to the selected patients. The questionnaire was closed ended type prepared to measure satisfaction level of patients availing services of various Biochemistry laboratory tests for diagnoses and treatments by the concerned doctors of clinical departments. The first part contained the basic information like registration number, age, sex, marital status residence, education status, occupation, number of visits, place of stay, distance from hospital, department by which the patient was referred, etc. The patients who availed the lab services were then asked while handing over the test report to rate their opinion on a two point scale about the services availed by them either as satisfied or as dissatisfied.

The second part comprised of rating the satisfaction on Likert scale which covered aspects like cleanliness and hygiene at sample collection point, behavior of staff, time taken in getting the report, cost of the test, quality of services and required essential facilities at the sample collection point. Cleanliness and hygiene was rated for waiting area, toilets, sample and report collection point; behavior of the staff was rated for staff engaged at reception, technical, sample and report collection point; timeliness covered time taken at sample collection point to receipt of test reports; the cost covered was the payment made for the prescribed tests. Quality of services consisted of components like availability of prescribed test, outsourcing the test if not available in the laboratory and turnaround time, confidentiality of test results, quality of report with reference range, efficiency of laboratory and other staff, information and guidance given by staff etc. Lastly, the facilities in the laboratory included components like dustbins, drinking water, sitting arrangements, sign boards within the premises and toilets.

The numerical scores for different levels of satisfaction as per Likert scale ranged from 1 to 5 where 1 stands for completely dissatisfied situation and 5 for completely satisfied situations. Mean scores, percentages, statistical test of significance and chi- square test were calculated using options available on Excel and on line options for different statistical tests

RESULTS

Based on post stratification of the sample of 330 patient the factor like sex as male and female, Location of stay as rural and urban, age as youngsters (<40 years) and elders (> 40 years) and

place of stay as within Rajasthan and outside Rajasthan was considered as different population with respect to satisfaction score, the mean score were tested using z- statistics. The number of cases, mean score values and SD of respective group are given in Table 1.

Table 1: Mean , SD and Significance level of different characteristics.

Factors	Groups	Total No.	Mean	SD	p-value
Sex	Male	147	4.48	1.16	0.0001
	Female	183	3.92	1.37	
Age	Age <40	182	3.93	1.39	0.227
	Age >40	148	4.11	1.29	
Location	Urban	77	3.30	1.68	0.0043
	Rural	253	3.90	1.58	
Place	Within Rajasthan	174	4.59	0.93	0.0001
	Outside Rajasthan	156	3.69	1.67	

The results in the Table 1 revealed that the mean score values are statistically significant between male and females; youngsters and elders as well as for patients within and outside Rajasthan. However, the location of the stay did not reveal by significant difference in mean score for rural and urban patients.

FACTORS EFFECTING SATISFACTION
How far the personal factors associated with the patients influence the level of satisfaction as satisfied or dissatisfied while availing the lab services was ascertained using Chi square test for association of attributes. Here it was assumed that the socio-demographic factors has a role to determine the expectation level of patients availing the laboratory services which ultimately effect the level of satisfaction on various component of services provided by the hospital.

In order to satisfy factors influencing the level of satisfaction of consumers of the hospital laboratory services(patients) factors such as sex, age, location of stay (rural, urban), Place of stay (within or outside Rajasthan), educational level, occupation, stage of visit (first or repeated), referred Department(Medicine and others) were considered. The five levels of satisfaction in the original study was pooled into two classes (satisfied and dissatisfied). So as to have support member of frequencies in the classes to enable the chi-square test. The results of chi-square tests are given in Table 2.

Table 2: Assessment of Customer based factors effecting level of satisfaction.

Factor	Classes	Satisfied	Dissatisfied	Total	Calculated Chi- Square (χ^2)	p- Value
Sex	Male	128	19	147		
	Female	140	43	183	5.97	0.01
Age	<40	40	37	77		
	>40	186	67	253	12.72	0.0004
Location of stay	Urban	136	46	182		
	Rural	119	29	148	1.50	0.22

Place of stay/ Distance from home	Within Rajasthan	159	15	174	5.45	0.018
	Out of Rajasthan	135	21	156		
Educational status	Primary school	92	28	120	66.52	0.00001
	Secondary school	135	75	210		
Occupation	Earner	70	140	210	1.50	0.220
	Non-Earner	96	24	120		
Stage of visits	First visit	116	24	140	0.03	0.857
	Repeated visit	81	109	190		
Referred Department	Medicine	101	55	156	54.21	0.0001
	Other	111	63	174		

The Chi-square test revealed that factors such as sex, age, place of stay, educational level and referred department are significantly associated with level of satisfaction of laboratory services by the patients. Remarkably, the location of stay (rural vs urban), occupation, stage of visit had no significant association with level of satisfaction of patients.

Gender of patients has a crucial role in deciding level of satisfaction while availing the laboratory services as 87% male patients were satisfied with the services and only 76% female patients expressed their satisfaction. The female patients have more expectation of basic facilities like on the spot toilets, drinking water, waiting rooms, etc. Male patients can move around to avail such facilities and very often they are indifferent towards such facilities. Age is another customer based factor which influences the level of satisfaction of customers. Remarkably, 53% of youngsters and 74% of elders expressed the services as satisfied. It revealed that the expectations are more for young patients compared to elder patients. The location of stay of patients as urban or rural was found not to have any statistically significant effect on the level of satisfaction of laboratory services availed by the patients. As the hospital is situated about 20 km away from the city the patients visiting the hospital may be from semi urban areas as those from city areas have other hospitals more accessible to them. While 91% patients from Rajasthan were found satisfied with the laboratory services availed by them only 86% patients from outside Rajasthan expressed satisfaction in the laboratory services and the difference in level of satisfaction is statistically significant. The education level of patients showed statistically significant association with level of satisfaction as patients with higher education may have higher expectation level for facilities and services associated with lab testing. Remarkably, occupation and stags of visit as first or subsequent were found not to have statistically significant association with level of satisfaction of patients availing laboratory services. Remarkably, the patients visiting the hospital are either middle income classes our low income classes. The level of income of the earners is not very high for majority of the patients. The referred Department as medicine or others was found to have statistically significant association with level of satisfaction of patients. The patients referred by the medicine department are mostly suffering from one or the other communicable disease of moderate or mild type whereas patients referred by the other departments are mostly chronic patients of one or the other disease.

SUMMARY AND CONCLUSION
The mean score values of the level of satisfaction   are statistically significant between male and female patients, youngster and elder patients as well as for patients within and outside Rajasthan.

2628

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