

Factors Affecting patient Satisfaction level on Outpatient Department Laboratory Service At National Hospital Of Sri Lanka

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Abstract: Patient Satisfaction Is A Criterion For Determining Quality Of A Service. In This Study Outpatient Department (OPD) Laboratory Service In National Hospital Of Sri Lanka (NHSL) Was Considered. The Research Was Designed To Identify The Patient Satisfaction Level, Affecting Factors, Their Influence And Significance Of Demographic Factors On Patient Satisfaction At The OPD Laboratory Of NHSL.

The Study Was A Descriptive Cross-Sectional Study. Environmental Factors, Staff And Quality Of The Process Were Considered. Data Were Collected Through An Interviewer-Administered Questionnaire With Five-Point Likert Scale And Analyzed By Using SPSS Version 16.

Patient Satisfaction Was Affected Significantly By Income Level And Number Of Visits. Effect Of Education And Age Was Insignificant. Patients Who Have More Visits Were More Satisfied. Environmental Factors Were In Disagreeing Level With Inadequate Space, Sitting, Toilet, And Laboratory Environmental Facilities. Cleanliness Was In Moderate level. Providing Service Timely, Listening Skill Of Staff, Willingness To Help Was In Moderate Level Satisfaction. Listening, Helping Patients And Service Of Staff Has Shown More Satisfactory Levels Than The Availability Of Staff. Quality Of Report Was In Moderate Level Satisfaction. Access Was In Disagreed Level. Patients Were In Position To Recommend And Encourage Others Towards Obtaining OPD Laboratory Facilities. Staff And Quality Of The Process Were Moderate Level Satisfaction With Positive Correlation To The Patients' Satisfaction. Overall Satisfaction Was In Agreeing Level. All Three Factors Have Joint Effect On Patient Satisfaction. It Is Recommended To Consider Staff And Process More While Keeping Minimum Standards Of Environment In Order To Increase Patient Satisfaction. Extending The Research Correlation Of Patient Satisfaction With Income Should Be Further Studied.

Key Words: Quality, Satisfaction, Patient, Staff, Environment, Process, Laboratory

I. Introduction

1.1 Background

The National Hospital of Sri Lanka (NHSL) is the largest hospital and is considered as the national referral hospital to which the patients can be referred from any hospital within the island. In addition, any person living in Sri Lanka can receive their health care needs at NHSL without any referral. NHSL and other state sector hospitals of Sri Lanka provide free health services to the patients in clinical consultation, laboratory, radiological and other investigations, pharmacy facilities and surgical procedures etc. The services of NHSL comprised of inpatient care system and outpatient care system. OPD is the place where the maximum number of patients fulfill their health care needs per day (Medical Statistics Unit, 2014). In OPD set up patients come to the clinic and get the required health care services and some patients will be followed up at the OPD set up further.

1.2 Research Problem and Research Questions

Patient satisfaction is a criterion for determining quality of the service especially in patient centered health care concept. There is lack of studies in Sri Lanka on factors affecting the patients' satisfaction of the services of OPD laboratories of the state sector hospitals. An informal survey was done to identify the possibility of existing a gap between patients' expectations and existing services of the OPD laboratory at NHSL was taken as the research problem.

1.3 Objectives

Following objectives were identified.

1. To identify the patient satisfaction level on the services of the OPD laboratory staff, quality of the OPD laboratory process and available facilities
2. To identify the affecting factors and its influence in patient satisfaction with the services of the OPD laboratory staff, quality of the OPD laboratory process and available facilities
3. To identify whether there is significance difference in patient responses with regard to demographic factors

II. Literature Review

NHSL OPD laboratory provides all basic biochemical and hematological investigations and facilitate for reference laboratories to deliver a complete service on laboratory investigations. The OPD is the first point of contact of the hospital with patients. The care in the OPD is believed to be an indication of the quality of services of a hospital and which is reflected by patients' satisfaction with the services being provided. Overcrowding and the dependence on private sector for some investigations and drugs due to the limited supply or unavailability are two constraints encountered by patients at the OPD health care system in Sri Lanka (Ministry of Health, 2003).

Service quality can be defined in many ways. The extent, to which perceived service delivery meets, customer expectation measures the service quality. Service may fail meets or exceed the customer's expectations (Parasuraman, 1993). Sachdev and Verma (2004) indicate the service quality can be measured in terms of customer perception, customer expectation, customer satisfaction and customer attitude.

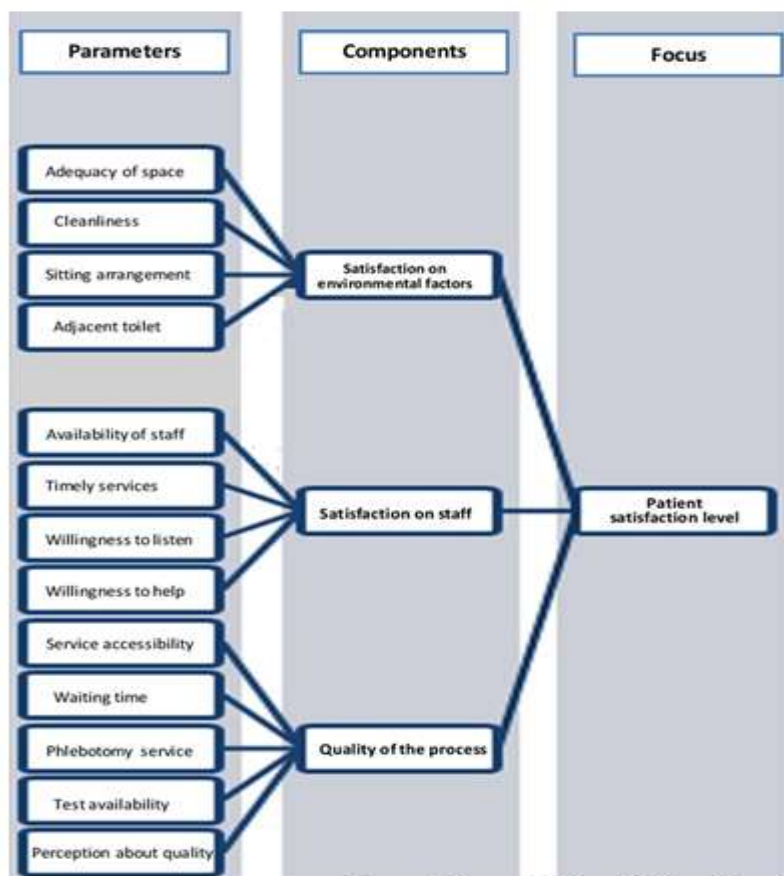
Patient satisfaction is a key factor of quality service. Patient satisfaction has defined as 'an individual's positive evaluations of distinct dimensions of health care (Linder-Pelz, 1982). Patient's satisfaction on laboratory service is an important and useful quality improvement tool for clinical laboratory and their accreditation (Minday and Taye, 2012). Many factors have been shown to influence client's satisfaction with health care services including client's social-demographic characters, physical health status, client's personal understanding and expectations from various health care services (Muula et al. 2007 & Tsasis et al. 2002). Although the patient satisfaction is an indicator of the overall quality of the OPD laboratory service and a tool for the assessment of competency of the laboratory, the patient satisfaction on laboratory services has not yet exhaustively studied in Sri Lanka. Therefore, the researchers have done this study on patient satisfaction level with OPD laboratory service at the National Hospital of Sri Lanka.

III. Methodology

The study was an institution based descriptive cross-sectional study and data collection was carried out for period of three months at the OPD laboratory of National Hospital of Sri Lanka.

3.1 Conceptual Framework

Conceptual framework of the methodology was designed by considering patient satisfaction components and its parameters. Environmental factors, staff and quality of the process were considered as the components in patient satisfaction and parameters of each component were identified according to the studies of Islam and Jabbar (2008) and Bogale (2015). Conceptual frame work developed for the study is shown in Figure 1.1



Source: Islam and Jabbar (2008) and Bogale (2015).

Figure 3.1: Conceptual Framework

Environmental factors were analyzed with respect to adequacy of space, cleanliness, sitting arrangement and adjacent toilet facilities. Staff related satisfaction was analyzed in respect of availability of staff, readiness to provide services timely, willingness to listen with compassion to patients' problems and willingness to help and reassure patients about their problem (Islam & Jabbar, 2008). Quality of the process was analyzed in service accessibility, turnaround time, phlebotomy service, test availability and perception about quality laboratory result (Bogale, 2015).

3.2 Study Population and Sampling

The study population was the patients attending outpatient department of NHSL the estimated sample size was 385 for the finite population.

3.3 Data Collection Instrument

A structured, pre-tested and interviewer-administered questionnaire was used as the data collection instrument. It was designed for testing patient satisfaction of environment (Statement No. 01 to 04), staff (Statement No. 06 to 09), and laboratory process (Statement No. 11 to 15). Further it consisted with statements to analyze overall satisfaction on each factor and overall satisfaction of the overall OPD Laboratory.

3.4 Analytical Technique

The data was analyzed using SPSS for window version 16. A five-point Likert scale rating was used (Tadelet al. 2014). Initially researcher uses Cronbach's alpha to test for internal consistencies to determine the direction of items. Secondly descriptive statistics was applied to identify the level of patients' satisfaction. Then, correlation and regression models were used to identify and understand the affecting factors. Finally, one-way analysis of variance was applied to observe the effect of demographic factors on patients' satisfaction.

IV. Results

4.1 Reliability Analysis

Internal consistency of items used in the questionnaire was tested before creating variables. Cronbach's alpha was applied to determine the directions of each question and the results are provided by the Table 4.1. All the Cronbach's alpha values are more than 0.8 showing a good internal consistency of items.

Table 4.1: Cronbach's Test for Dependent and Independent Variables

Variables	Cronbach's Alpha	No. of items
Environment	0.810	4
Staff	0.866	4
Process	0.802	5
Patients' Satisfaction	0.832	2

4.2 Level of Patients' Satisfaction

First objective of the study has been analyzed with respect to descriptive statistics to identify the level and nature of patients' satisfaction on environment, staff and quality of the process as well. Table 4.2 shows the results of environment.

Table 4.2: Level of satisfaction on Environment

	Space	Clean	Sitting	Toilet	Laboratory
Mean	2.27	2.66	2.16	2.20	2.52
Std. Deviation	.928	1.050	.998	1.018	1.072
Skewness	.284	.002	.562	.432	.061
Std. Error of Skewness	.159	.159	.161	.162	.160
Kurtosis	-.755	-1.015	-.590	-.912	-1.172
Std. Error of Kurtosis	.318	.317	.321	.322	.320

Table 4.3 shows the results obtained on satisfaction level regarding laboratory staff at OPD Laboratory.

Table 4.3: Level of Satisfaction on Staff

	Staff availability	Service	Listening	Help	Satisfactory
Mean	2.87	3.04	3.10	3.07	3.04
Std. Deviation	1.029	1.063	1.089	1.092	1.110
Skewness	-.078	-.400	-.311	-.334	-.410
Std. Error of Skewness	.163	.162	.160	.161	.163
Kurtosis	-.916	-.709	-.685	-.674	-.808
Std. Error of Kurtosis	.324	.322	.320	.320	.324

Table 4.4: Level of the Satisfaction on Quality of the Process

	Access	Turnaround time	Phlebotomy	Tests availability	Quality	Satisfy
Mean	2.49	2.83	3.20	3.45	3.73	3.28
Std. Deviation	1.048	1.158	1.174	1.115	.942	1.023
Skewness	.552	-.048	-.442	-.839	-1.175	-.338
Std. Error of Skewness	.160	.162	.160	.160	.160	.159
Kurtosis	-.442	-1.015	-.819	-.269	1.179	-.718
Std. Error of Kurtosis	.320	.322	.319	.320	.320	.318

Table 4.4 shows the results obtained on satisfaction level regarding laboratory staff at OPD Laboratory. Encouraging to receive OPD laboratory services and recommending OPD laboratory were analyzed. Table 4.5 has provided the results for level of overall patients' satisfaction.

Table 4.5: Level of Patients' Satisfaction

	Encouraged	Recommend
Mean	3.54	3.71
Std. Deviation	1.014	1.032
Skewness	-.860	-.883
Std. Error of Skewness	.160	.165
Kurtosis	.143	.428
Std. Error of Kurtosis	.318	.328

In general, their satisfaction level has been analyzed in Table 4.6.

Table 4.6: Patients' Satisfaction Level on Independent Factors and Overall Satisfaction

	Environment	Staff	Process	Patients satisfaction
Mean	2.3377	3.0377	3.1512	3.6348
Std. Deviation	.79781	.90014	.83624	.91999
Skewness	.310	-.386	-.377	-.916
Std. Error of Skewness	.160	.160	.160	.160
Kurtosis	-.373	-.365	.051	.570
Std. Error of Kurtosis	.320	.320	.320	.320

4.3 Affecting Factors on Patients' Satisfaction

Second objective has been addressed by applying correlation and multiple regression models. It was expected to determine the association by using Pearson's correlation analysis and significant affecting factors with respect to ordinary least square regression model. Bi-variate correlation results are given in Table 4.7.

Table 4.7: Association between the Explanatory Factors and Patients' Satisfaction

Factors		Patients satisfaction
Environment	Pearson Correlation	.112
	Sig. (2-tailed)	.089
Staff	Pearson Correlation	.395**
	Sig. (2-tailed)	.000
Process	Pearson Correlation	.452**
	Sig. (2-tailed)	.000

To identify affecting factors jointly on satisfaction, regression results have been applied and the model summary is provided by Table 4.8.

Table 4.8: Model Summaries

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.475 ^a	.225	.215	.81501	1.759

Multiple correlation (R) is 0.475 and used to identify the correlation of each factor. Table 4.9 shows the ANOVA results.

Table 4.9: Regressions ANOVA

Model		Sum of Squares	F	Sig.
1	Regression	43.704	21.932	.000 ^b
	Residual	150.118		
	Total	193.822		

Probability of the F test statistics was 0.000 and the result are highly significant. Table 4.10 provides the effect of these factors.

Table 4.10: Individual Beta Values

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.113	.227		9.292	.000		
	Environment	-.140	.076	-.121	-1.844	.066	.792	1.263
	Staff	.177	.088	.173	2.017	.045	.463	2.159
	Process	.416	.095	.378	4.392	.000	.463	2.160

a. Dependent Variable: Patients satisfaction

Probability of the staff is 0.045 and this is significant at 5%. Individual beta value is 0.177. Probability of the process is 0.00 and this is significant at 5%. Individual beta value is 0.416. Environmental factor is individually insignificant as the P value is 0.066.

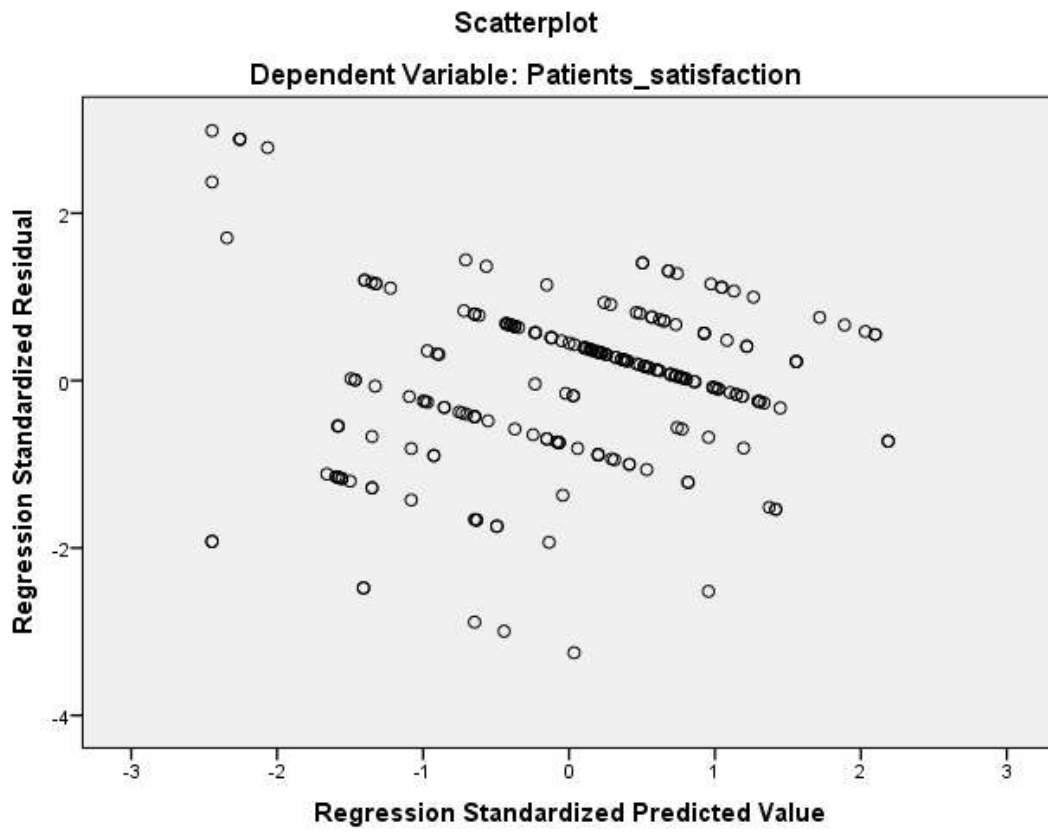


Figure 4.1: Behavior of Standardized Residuals

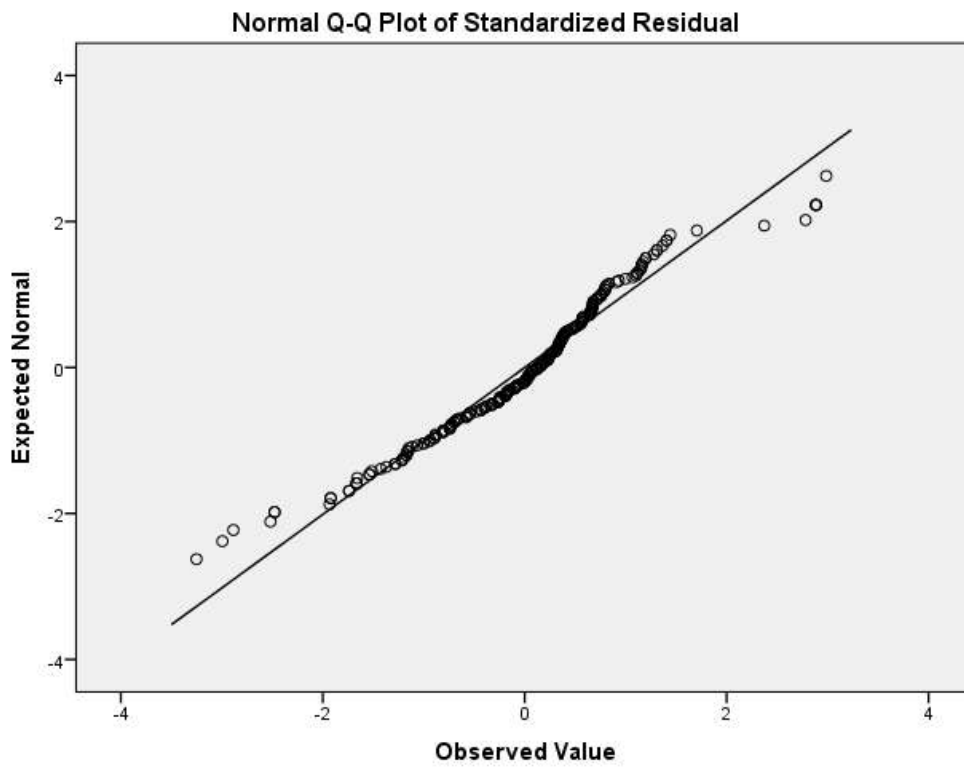


Figure 4.2: Normality of Standardized Residuals

4.4 Effect of Demographic Factors on Patients' Satisfaction

Final objective has been analyzed in relation to age, education, income and number of visit of patients. It was expected to determine whether there is a significant difference in patients' satisfaction regarding above demographic factors. One-way analysis of variance (ANOVA) was applied to analyze the objective.

Effect of Age on Patients' Satisfaction

Difference in patients' satisfaction with age was tested by using Tukey HSD test in the Table 4.11. As per the F test statistics probability of significance is 0.056 and there was no significant association of age and patient satisfaction at 95% confidence interval.

Table 4.11: Multiple Comparisons of Age Effect

(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-.35119	.32921	.823	-1.2566	.5542
	3	-.22024	.29778	.947	-1.0392	.5987
	4	-.15833	.28769	.982	-.9495	.6329
	5	-.54167	.27905	.299	-1.3091	.2258
2	1	.35119	.32921	.823	-.5542	1.2566
	3	.13095	.24314	.983	-.5377	.7996
	4	.19286	.23066	.919	-.4415	.8272
	5	-.19048	.21980	.909	-.7950	.4140
3	1	.22024	.29778	.947	-.5987	1.0392
	2	-.13095	.24314	.983	-.7996	.5377
	4	.06190	.18303	.997	-.4415	.5653
	5	-.32143	.16913	.320	-.7866	.1437

Effect of Education on Patients' Satisfaction

Probability of F test statistic is 0.042 and it was significant at 5%. Therefore, there may be a difference in the response of patients in relation to their education. Tukey HSD test is in the Table 4.12.

Table 4.12: Multiple Comparisons of Education Effect

(I) Education	(J) Education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	.47727	.33329	.481	-.3856	1.3401
	3	.75000	.33060	.109	-.1059	1.6059
	4	.69444	.38351	.271	-.2984	1.6873
2	1	-.47727	.33329	.481	-1.3401	.3856
	3	.27273	.12935	.154	-.0621	.6076
	4	.21717	.23348	.789	-.3873	.8216

Effect of Income on Patients' Satisfaction

Probability of F test statistic is 0.000 and it is highly significant at 1%. Accordingly, difference in patients' satisfaction with income was tested by using Tukey HSD test in the Table 4.13. Descriptive statistics have been calculated to identify the difference and results are given by Table 4.14.

Table 4.13: Multiple Comparisons of Income Effect

(I) Income	(J) Income	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	.18056	.16239	.800	-.2662	.6273
	3	.57367*	.16449	.005	.1212	1.0262
	4	.77124*	.18134	.000	.2724	1.2701
	5	-.20635	.21613	.875	-.8009	.3882
2	1	-.18056	.16239	.800	-.6273	.2662
	3	.39312	.17981	.189	-.1015	.8878
	4	.59069*	.19535	.023	.0533	1.1281
	5	-.38690	.22801	.438	-1.0141	.2403
3	1	-.57367*	.16449	.005	-1.0262	-.1212
	2	-.39312	.17981	.189	-.8878	.1015
	4	.19757	.19710	.854	-.3446	.7398
	5	-.78002*	.22951	.007	-1.4114	-.1486

4	1	-.77124*	.18134	.000	-1.2701	-.2724
	2	-.59069*	.19535	.023	-1.1281	-.0533
	3	-.19757	.19710	.854	-.7398	.3446
	5	-.97759*	.24187	.001	-1.6430	-.3122

*. The mean difference is significant at the 0.05 level.

Table 4.14: Descriptive Statistics of Income Effect

	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
				Lower Bound	Upper Bound		
1	3.8889	.68804	.08109	3.7272	4.0506	2.00	5.00
2	3.7083	.90409	.13049	3.4458	3.9709	1.00	5.00
3	3.3152	1.01849	.15017	3.0128	3.6177	1.00	4.50
4	3.1176	1.04489	.17920	2.7531	3.4822	1.00	5.00
5	4.0952	.68226	.14888	3.7847	4.4058	3.00	5.00
Total	3.6312	.92243	.06205	3.5089	3.7535	1.00	5.00

Effect of Number of Visits on Patients' Satisfaction

Probability of F test statistic is 0.048 and it is significant at 5%. Therefore, accordingly, researcher tested whether there is a difference in patients' satisfaction by using Tukey HSD test in the Table 4.15. Descriptive statistics have been calculated to identify the difference and results are given by Table 4.16.

Table 4.15: Multiple Comparisons of Number of Visits Effect

(I) Visit	(J) Visit	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	.05455	.15639	.935	-.3144	.4235
	3	-.27104	.15743	.199	-.6424	.1004
2	1	-.05455	.15639	.935	-.4235	.3144
	3	-.32558*	.13787	.050	-.6508	-.0003

*. The mean difference is significant at the 0.05 level.

Table 4.16: Descriptive Statistics of Number of Visits Effect

	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
				Lower Bound	Upper Bound		
1	3.5545	.87492	.11797	3.3180	3.7911	1.00	5.00
2	3.5000	1.07132	.11356	3.2743	3.7257	1.00	5.00
3	3.8256	.73871	.07966	3.6672	3.9840	2.00	5.00
Total	3.6348	.91999	.06066	3.5153	3.7543	1.00	5.00

V. Discussion

Chronbach alpha value for overall consistency and the Cronbach's alpha values of four variables reveals that there is good internal consistency among the items. These results show that there was high internal consistency among the items and appropriate to operationalize explanatory and explained variables. All the VIF values and tolerance has indicated that no Multi-co linearity problem in the regression model and results were highly valid.

This means 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. Analysis can conclude that quality of process has shown moderate level satisfaction except for the access to the OPD laboratory. Patients were more satisfied with the quality of the report and test availability than for phlebotomy process and waiting time. According to the results patients were in agree level for recommending and encouraging others for obtaining OPD Laboratory facilities. Environmental factors are disagreeing level. Staff and quality of the process were moderate level whilst overall satisfaction was in agreeing level.

Results were evident that staff and quality of process were positively correlated with patients' satisfaction. Higher the staff and quality of process, keeps higher the satisfaction. Environmental factors are insignificant.

Multiple correlation (R) has indicated that environmental factor, staff factor and quality of process jointly were correlated with patients' satisfaction in average. Durbin-Watson test statistic has indicated that residuals were independent and regression results were appropriate to determine the affecting factors.

According to F test statistics, the results were highly significant. Probability values and beta values have shown the staff and quality of the process are highly significant factors with positive effect on satisfaction. Further quality of the process influences the satisfaction more. Environmental factor is individually insignificant.

Regression results did not have heteroscedasticity problems and results were appropriate. Residuals were distributed close to the linear line of the Normal Q-Q plot indicating standardized residuals were normally distributed with zero mean and the results were highly valid.

P values were insignificant and the results say that no difference in the satisfaction of patients' age wise. Rather than education and age, patient income level and number of visits affect patient satisfaction more.

Results indicate that there was a difference in the satisfaction of patients in relation to their income. Those who are over LKR 40000 incomes were also satisfied with the income level less than LKR 10000. Patients in the income range between LKR 10000 and LKR 40000 were having less satisfaction in comparison to others. This variation should be further analyzed.

P value of number of visit is significant between 2-4 times and more than 4 times. Those who are coming more than 4 times were more satisfied. Patients who visit frequently have adapted to the OPD laboratory set up and they have fascinated with available condition.

In order to increase patient satisfaction, the management should concern about staff related factors and laborator process rather than the environment. As per the results obtained from the analysis the environment factors are in unsatisfied level and it should be improved up to the satisfied level in order to improve the quality of the service. With regard to environmental factors the management should actively engage utilizing space efficiently and keeping the environment clean and tidy.

Waiting time can be reduced by increasing the staff for phlebotomy, report delivery and giving appointments. The management can reduce patient anxiety and stress level with respect to waiting lines by providing them with magazines, news papers to read with, facilitating with internet, and they can even encourage laboratory staff to constantly check up on patients on the waiting queue. Further reports can be delivered to the clinic through laboratory information network system to the clinician's computer directly instead of delivering to the patient at OPD and patient can collect the report while visiting the clinician. Phlebotomy, available tests and the quality of results lie in moderate satisfactory level. These aspects can be improved by improving laboratory technology and staff training. Training should be arranged for improving skill, competency and attitudes.

With respect to the staff, management should encourage the staff to frequently interact with patients, offering them help and to listen them. This can be encouraged via a reward system, where the management can be rewarded the best staff personnel satisfying patients with a monthly reward and recognition.

Overall satisfaction is in agreed level and recommendation and encouragement were at agree level. It reveals there may be other significant factors which affects patient satisfaction. It is an area that should be further studied.

Management should maintain required minimum standards of environmental factors such as seating facilities, cleanliness and sanitary facilities etc while concerning more on improving staff and process towards the delight of the patient.

References

- [1]. A., Islam M. Z. and Jabbar M. (2008). Patients Satisfaction of Health Care Services Provided at Out Patient Department of Dhaka Medical College Hospita. *Ibrahim Medical College Journal*, 2(2), 55-57.
- [2]. Bogale, A. L., Kassa, H. B. and Ali J. H. ([Online]. Available at: <https://www>). Patients perception and satisfaction on quality of laboratory malaria diagnostic service in Amhara Regional State. *North West Ethiopia', Malaria Journal*, 14(241).
- [3]. Linder-Pelz, S. U. (1982). Toward a theory of patient satisfaction. *Social Science and Medicine*, 16(5), 572-588.
- [4]. Muula A. Chipeta J. Siziya S. Rudatsikira, E. Mataya, R. and Ataika E. (2007). Human resource requirements for highly active antiretroviral therapy scale-up in Malawi. *BMC Health Services Research*, 7(208), [Online]. Available at: www.ncbi.n.
- [5]. Minday and Taye. (2012). Patients satisfaction with laboratory services at antiviral therapy clinics in public hospitals. *BMC Research Notes*, 5(184) (Addis Ababa, Ethiopia), 1-7 [Online] Available at: <http://www.biomedcentral.com> (Accessed).
- [6]. Ministry of Health, N. a. (2003). *The Democratic Socialist Republic of Sri Lanka and Japan International Cooperation Agency Health Master Plan Sri Lanka*. Colombo: Pacific Consultants International.
- [7]. Sachdev S B and Verma H V. (2004). Relative importance of service quality. *Journal of Services Research*, 4(1), 93-116.
- [8]. Tadele G, Ejeta E., Desalegn, M., Abere, S. and Elias, K. (2014). Patients Satisfaction on Clinical Laboratory Services at Nekemte Referral Hospital. *Oromia, Ethiopia*.
- [9]. Tsasis, P. T. (2002). Evaluation of Patient Satisfaction in a Specialized HIV/AIDS Care Unit of a Major Hospital. *AIDS Patient Care and STDs*, 14(7), 347-349.