

# Exploring the Level of Patient Expectations vis-à-vis Perception of Service Quality : An Empirical Study of Charitable Eye Hospitals of Haryana

\*Dr N K Gupta & \*\* Dr Sanket Vij

The quality of services in eye care sector is an important factor of successful healthcare business. In view of intense competition in the eye care sector with rapid corporatization of eye care services & emergence of medical tourism, perceived quality eye care service has been considered as essential requirement for survival, because it is the perceived quality on the basis of which consumers take purchase and re-purchase decisions.

The study has been undertaken to demonstrate the use of SERVQUAL for measuring patient's perceptions vis-à-vis expectations of eye care services quality at charitable eye hospitals in the state of Haryana (India). The purpose of this empirical study is to provide review of the SERVQUAL research in measurement of eye care service quality, to obtain information about quality parameters of services provided by the charitable hospitals, to find out as to how much these parameters rate are as per the expectations of the patients.

## Introduction

As a result of globalization and international competition, a number of important developments have had a profound impact on the delivery of healthcare at various hospitals in India. Perhaps the most important of these to clinicians, administrators and patients, has been the change in society's attitude towards the quality of care that a patient expects a hospital to deliver. Growing proliferation of the Internet, increased purchasing power of patients, the availability of specialists and media vehicles are leading to awareness about health among people which is fuelling their desire to remain healthy. (Yadav, 1993)

Patients are demanding better quality of eye care delivery both for the in-patient services, outpatient services or even preventive care. This also puts additional pressure on organizations and practising physicians to evaluate the quality of care provided. (Parkash, 1984) Quality eye care is not a catchy phrase or cliché. Quality in eye care is essential for survival. Quality service is not only a patient weapon in a hospital's competitive arsenal, it is the driving force behind profitability. Quality is emerging as the single most critical factor for eye care business to survive in the ever expanding and competitive global market place. Corporates are

being required to conform to international standards such as ISO 9000 and have to focus their resources to achieve high quality standards in their eye care products and services.

The Indian eye care sector especially the charitable eye hospitals are still more of a seller's market. The demand far outstrips the supply. As in case with any other product or industry in a seller's market, the marketing aspect in Indian eye care sector is given a low level of importance. Some of the charitable eye hospitals which have started giving a thought to marketing are also more limited to 'sales' aspect or 'image building' exercise and not to total marketing approach. Especially, the private medical practitioners/hospitals/clinics are trying to tap the market using this approach with quality as the platform. Growing competition from patients is placing pressure on charitable eye hospitals to increase their marketing and promotional efforts to persuade clients to utilize their facilities and services.

Quality is an abstract characteristic that encompasses a variety of more or less physical attributes. Philip Crosby (1979) Quality in healthcare cannot be measured directly but must be judgmentally assessed by considering entity attributes that are more directly perceptible. Unlike a manufactured

---

\*Professor, Indian Institute of Management, Lucknow, Noida Campus

\*\*Dean & Chairperson, School of Management Studies, BPS Mahila Vishwavidyalay, Khanpur, Sonapat

product, where quality can readily be assessed, service quality is an elusive and abstract concept that is difficult to define and measure. Services in healthcare are intangible because it is not possible to count, measure, inventory, test or verify them in advance of sale.

Quality assessments of a service are not unidimensional. Patients are known to use various aspects of medical care to evaluate the quality of services received. The nature of service performance diverges from one transaction to another. This "heterogeneity" can occur because the service is delivered by different physicians, nurses and others to a variety of patients with varying needs. Caretakers provide services differently because of variations in factors, such as their specialty training, experience and individual abilities and personalities. In eye care, production and consumption are inseparable. The services are consumed when they are produced, which makes quality control difficult. This necessitates that marketing and operations functions occur simultaneously. In short, the management of eye care quality cannot be separated from the management of its provision. The customers usually serve as participants in the service act. The ultimate goal of service quality measurement is to assist administrator in ensuring service quality and customer satisfaction (Webster, 1988). If service quality is to become the cornerstone of marketing strategy, the marketer must have the means to measure it. Measurement is a necessary step towards devising any action plan.

### Objectives

The present study by providing the Perception vis-à-vis Expectation Gap Score will help charitable eye hospitals of Haryana, in identifying the deficiencies and excesses in quality as regards to various dimensions of quality. The broad objectives of the present study were as under:

- To obtain information about quality parameters of services provided by the various charitable eye hospitals of state of Haryana (India).
- To find out as to how much these parameters rates are as per the expectations of the patients.

### Assumption

- Patients' needs can be documented and captured and they remain stable during the whole process.

### Research Methodology

The present study was carried out between May, 2008 and December, 2008. Primary data was collected from patients of 10 charitable eye hospitals, as named below, of Haryana.

1. Krishan Lal Jalan Charitable Eye Hospital, Bhiwani.
2. Atlas Charitable Eye Hospital, Sonapat.
3. Saligram Charitable Eye Hospital, Jind.
4. Shri Baba MastNath Charitable Eye Hospital, Asthal Bohar, Rohtak.
5. Atsmshudhi Charitable Eye Hospital, Bhadurgarh.
6. Arunodya Charitable Eye Hospital, Gurgaon.
7. Krishna Dham Charitable Eye Hospital, Kurkshetra.
8. Jindal Charitable Eye Hospital, Hisar.
9. Mission Charitable Eye Hospital, Ambala.
10. Baba Behari Charitable Eye Hospital, Sirsa.

These charitable eye hospitals are located in a densely populated area of various district of Haryana state and provides both routine and emergency services to a wide section of people. These hospitals have good amount of patient turnover and only indoor patients admitted to hospital were taken up for study. Both primary and secondary data is used in this study.

The selection of the units was made on the basis of non-probability sampling technique, viz, 'QUOTA' sampling. In the present study the researcher approached only those prospective respondents (patients) who have no previous experience related to eye care services offered by selected charitable eye hospitals of Haryana. Respondents were selected at the time of admission and then discharged from the hospital after spending some time in the system for availing treatments. A total of 300 patients were surveyed out of which 190 were found usable for the present study.

Survey Response Rate Table 1

	Total Sample Size	Response Received	Usable Response Received	Response Rate (%)
Charitable Eye Hospitals Survey	300	217	190	72.33

**Instrument Used :** The present study used the SERVQUAL scale questionnaire designed by Parasuraman et al. (1985; 1986; 1988; 1990; 1991a; 1991b; 1993; 1994; Zeithaml et al., 1990; 1991; 1992; 1993) to measure the expected and perceived

quality of eyecare services provided by the various charitable eye hospitals of state of Haryana (India) to patients. Seven-point Likert scale ranged from "1" for strongly disagree" to "7" for "strongly agree" was used.

## Analysis and Discussion

Frequency Table

Table 2

Gender			Education Qualification		
	Frequency	Percent		Frequency	Percent
Male	110	57.9	Under Graduate	30	15.8
Female	80	42.1	Graduate	48	25.3
Total	190	100.0	Post Graduate	112	58.9
			Total	190	100.0
Profession			Household Income		
	Frequency	Percent		Frequency	Percent
Service	114	60.0	Below 10000	18	9.5
Self Employed	46	24.2	10001-30000	134	70.5
Unemployed	30	15.8	30001-50000	30	15.8
Total	190	100.0	Above 50001	8	4.2
			Total	190	100.0
Marital Status			Age Group		
	Frequency	Percent		Frequency	Percent
Single	22	11.6	Below 20	6	3.2
Married	168	88.4	20-40	122	64.2
Total	190	100.0	40-60	50	26.3
			Above 60	12	6.3
			Total	190	100.0

Out of 217 responses received, 190 (87.55%) were usable responses and of which 110 (57.9%) were males and 80 (42.1%) were females; 114 (60%) of the surveyed patients belong to service class, 46 (24.2%) were self employed and 30 (15.8%) were

unemployed; 122 (64.2%) surveyed patients belong to 20-40yrs, 50 (26.3%) belong to 40-60yrs, 12 (6.3%) belong to >=60yrs and 6 (3.2%) belong to <20yrs age group; 168 (88.4%) of the surveyed patients were married, and 22 (11.6%) were unmarried; 112

(58.9%) surveyed patients were post graduate, 48 (25.3%) were graduate, and 30 (15.8%) were under graduate; 134 (70.5%) surveyed patients belong to 10000 - 30000 household income, 30 (15.8%) belong to 30001 - 50000 household income, 18 (9.5%) belong to <10000 household income, and 8 (4.2%) belong to >50001 household income group.

### Overall Servqual Score Of All Charitable Eye Hospitals Of Haryana

SERVQUAL Scores both Unweighted and Weighted have been tabulated in Table-3.0 All values are explained by mean, median and standard deviation.

**Table-3**

Servqual Score in the study group (n=190)			
	Mean	Median	Deviation
Unweighte Servqual Score	0.86	1.26	1.16
Weighted Servqual Score	16.54	22.74	23.02

Average Unweighted SERVQUAL Score for the total of 190 respondents was 0.86. It is in positive zone meaning thereby that the respondents' perceptions were more than their expectations. They perceived the services provided to them as of good quality.

When importance weights were also taken into consideration the resultant Weighted SERVQUAL Score (16.54) is also positive. In USA-General sample in 1990, East Midlands UK outpatients in 1995 & Vassa Finland outpatients in 1996, Average Weighted SERVQUAL Score was negative, while it was zero in Scottish-Public Library services in 1995 and was positive in Scottish-Home Help service in 1995 (Dalrymple, 1995). This reaffirmed that

dimensions. The results are presented in table 5.0.

charitable eye hospitals of the state of Haryana (India) are providing the quality eye care treatment to patients.

### Importance Weights For Dimensions :

Average Importance Weights were compiled and are tabulated in Table-4.0.

**Table-4**

### Dimension wise Importance Weights in Total

	Study Group (n=190)				
	Tangi bility	Relia- bility	Responsi- veness	Assu rance	Empa -thy
Mean	20.40	27.73	18.53	19.18	13.91
Median	20.00	25.00	20.00	18.00	10.00
Std. Devi- ation	10.03	13.19	6.37	12.09	7.01

Reliability (27.73) was allocated maximum weight. Respondents therefore accorded more importance to reliability of eye care services. Tangibility (20.40) ranked second closely followed by assurance (19.18), responsiveness (18.53) and empathy (13.91) was ranked lower in quality dimensions, meaning thereby that the study group was ready to compromise on appearance of physical facilities, equipments, courtesy of hospital employees, hospital willingness to help and caring individual attention. The inherent intangibility of eye care services led the respondents to look for surrogate parameters of quality in reliability which they rightly ranked higher than other quality dimensions..

Multiple correlations have been done between the dimensions and it was observed that there is significant correlations exist between most of the

**Table - 5**

Multiple Correlations Amongst Dimensions						
		Tangibility	Reliability	Responsi- veness	Assurance	Empathy
Tangibility	Pearson Correlation	1.	-.503**	.143	-.345**	-.051
	Sig. (2-tailed)		.000	.166	.001	.627
Reliability	Pearson Correlation	-.503**	1	.013	-.442**	-.382**
	Sig. (2-tailed)	.000	.	.900	.000	.000
Responsiveness	Pearson Correlation	.143	.013	1	-.464**	-.303**
	Sig. (2-tailed)	.166	.900	.	.000	.003

Assurance	Pearson Correlation	-.345**	-.442**	-.464**	1	.039
	Sig. (2-tailed)	.001	.000	.000	.	.709
Empathy	Pearson Correlation	-.051	-.382**	-.303**	.039	1
	Sig. (2-tailed)	.627	.000	.003	.709	.

Correlations\*\* Correlation is significant at the 0.01 level (2-tailed). N=190

### Comparison With The Results Of Other Studies :

**Table 6**  
**Dimension-wise Importance Weight Comparison**

	Tangibility	Reliability	Responsiveness	Assurance	Empathy
Present Study (n=190)	20.40	27.73	18.53	19.18	13.91
USA-General sample*	11	32	22	19	16
Scottish-Public Lib. Se*	18	23	22	21	17
Scottish-Home Help*	17	20	21	21	21
UK Outpatients*	13	26	21	20	20
Finland Outpatients*	18	21	20	22	19

(\*Source: Dalrymple, Donnelly, Wisniewski and Curry, 1995)

The present study findings when compared with the findings of other studies in different countries revealed some interesting facts See Table 6. Reliability was consistently rated as the top dimension of service quality by almost all. While tangibility was ranked as second most important dimension in the present study, most of the other

studies ranked it as average important dimension.

### Dimension Wise Gap Score :

One can have a better impression of the importance weights of different dimensions and dimension wise average gap score comparison by different studies from table 7.

**Table 7**  
**Dimension-wise Gap Score in all Patients (n=190)**

Unweighted Gap Score		Tangibility	Reliability	Responsiveness	Assurance	Empathy
	MEAN	0.62	0.78	0.93	0.94	1.05
	MEDIAN	0.75	1.00	1.25	1.50	1.40
	STD. DEVIATION	0.64	0.89	0.93	0.59	0.79
Weighted Gap Score		Tangibility	Reliability	Responsiveness	Assurance	Empathy
	MEAN	8.30	22.33	17.19	19.86	15.01
	MEDIAN	10.00	20.00	20.00	17.50	16.00
	STD. DEVIATION	9.65	28.447	23.94	13.2	12.41

As an extension of analysis each service quality dimension was separately compiled and analyzed to find the Average Gap Score accorded to them by the study group. Table 7 compiles the result

of this analysis. However, one must understand that for all dimensions whether their scores are in positive or negative zones, the perceived value of service quality had not always exceeded the initial

expectations for all variables under all dimensions. One can observe that respondents were consistently more satisfied with empathy dimension (Average Unweighted Gap Score of 1.05) in dimensions wise Unweighted gap score and were consistently more satisfied with reliability dimension (Average

weighted Gap Score of 22.33) in dimensions-wise weighted gap score which is ranked higher than all other quality dimensions. It was interesting to note that the services being provided were perceived to be better than expectations for all the dimensions.

**Table 8**  
**Dimension-wise Average Gap Score Comparison**

	Tangibility	Reliability	Respon- siveness	Assurance	Empathy
Present Study (n=190)	0.62	0.78	0.93	0.94	1.05
USA General sample*	0.38	-1.28	-1.16	-1.00	-1.12
Scottish Public Lib Se*	-0.25	-0.20	0.11	0.29	0.01
Scottish Home Help*	0.56	0.44	0.59	0.47	0.44
UK Outpatients*	-0.03	-0.79	-0.29	-0.41	-0.50
Finland Outpatients*	-0.38	-0.54	-0.39	-0.40	-0.35

(\*Source: Dalrymple, Donnelly, Wisniewski and Curry, 1995)

Comparison of dimension-wise Gap Score was done with other studies and the results have been presented

in table 8 above. One can see that in present study of charitable eye hospitals of Haryana, all respondents were most satisfied over all dimensions of quality and, therefore, there was positive Gap score for all dimensions. The finds are similar to Scottish Home Help study. In contrast, UK-Outpatients & Finland-Outpatients accorded negative Gap score for all dimensions of quality. Except for tangibility dimension USA-General sample accorded negative Gap score for all quality dimensions.

Review of other studies revealed that our findings were quite different when compared with them for Gap Scores of the five dimensions of quality under consideration.

- Nihada Mujic & Jelena Legcevic (2005), in their survey to measure service quality of primary care doctors in Osijek, Croatia, where this internationally recognized SERVQUAL instrument was used, found that the Gap Scores recorded were negative for all dimensions. Patients in Osijek were not generally satisfied with the quality of services received from their primary care doctors.
- In another study conducted in Turkey by Uzun Ozge (2001) to determine the level of satisfaction with nursing care at university

primary care doctor, negative Gap score for each of the five dimensions was obtained, indicating a need for overall improvement in service quality.

- Beverly Black (2001), in a study used SERVQUAL scale to measure the service quality delivered by the district nursing services in Dundee, found the Gap score to be positive for three dimensions of tangibility, reliability and responsiveness, while there was slight negative score for the dimensions of assurance & empathy.
- Heng-Ching Lin et al. (2004), using SEVQUAL in a cross-sectional survey of clinic outpatients, concluded that patients perceived better service quality at group practice compared with solo practice on all dimensions.
- Wisniewski (2005) applied the SERVQUAL in a Scottish Colposcopy clinic and found that patient satisfaction with the overall service provided was generally high. The largest positive Gap score was for reliability and then for tangibility.

#### **Inter Comparison Of Charitable Eye Hospitals Of Haryana :**

The study group was further broken into hospital wise respondents. There were 20 respondents (10.53%) each from all the hospitals except Baba Behari Charitable Eye Hospital, Sirsa. There were only 10 respondents (5.26%) from Baba Behari Charitable Eye Hospital, Sirsa. The results have been presented in table 9. All values are explained by mean, median and standard deviation.

Respondents rated the quality of Mission Charitable Eye Hospital, Ambala (Unweighted SERVQUAL Score 1.61 & Weighted SERVQUAL Score 32.70) positive and better than the other hospitals studied.

**Table - 9**  
**Inter Comparison of SERVQUAL Scores of**

**Charitable Eye Hospitals**

Name and Address of Charitable		Unweighted	Weighted
Eye Hospitals		SERVQUAL Score	SERVQUAL Score
Krishan Lal Jalan Charitable	Mean	-0.14	-2.31
Eye Hospital, Bhiwani (n=20)	Median	-0.03	3.1
	Std. Deviation	0.90	17.73
Atlas Charitable Eye Hospital, Sonapat (n=20)	Mean	0.89	17.6
	Median	0.98	20.35
Saligram Charitable Eye Hospital, Jind (n=20)	Std. Deviation	0.62	13.65
	Mean	0.10	0.46
Shri Baba MastNath Charitable Eye Hospital, Asthal Bohar, Rohtak (n= 20)	Median	0.22	4.37
	Std. Deviation	1.77	35.84
Atsmshudhi Charitable Eye Hospital, Bhadurgarh. (n= 20)	Mean	1	16.58
	Median	1.22	21.69
Arunodya Charitable Eye Hospital, Gurgaon. (n=20)	Std. Deviation	0.64	15.49
	Mean	1.29	25.20
Krishna Dham Charitable Eye Hospital, Kurkshetra (n=20)	Median	1.55	29.87
	Std. Deviation	1.14	19.45
Jindal Charitable Eye Hospital, Hisar (n= 20)	Mean	1.17	24.22
	Median	1.50	29.85
Mission Charitable Eye Hospital, Ambala (n=20)	Std. Deviation	1.37	27.10
	Mean	0.15	1.77
Baba Behari Charitable Eye Hospital, Sirsa (n=10)	Median	0.14	1.35
	Std. Deviation	1.25	23.68
All of these hospitals were accorded positive SERVQUAL SCORE (Unweighted and Weighted) that means the patients using the services of these charitable hospitals perceived better than their expectations	Mean	0.63	9.86
	Median	1.12	17.8
	Std. Deviation	1.04	19.02
	Mean	1.61	32.70
	Median	1.78	36.02
	Std. Deviation	0.53	1049
	Mean	1.53	30.59
	Median	1.54	33.35
	Std. Deviation	0.08	3.99

except Krishan Lal Jalan Charitable Eye Hospital, Bhiwani (Unweighted servqual score -0.14 and Weighted servqual score -2.31). Average importance weight were compiled and tabulated in appendix 1.0. Reliability dimension was accorded the best perceived dimensions out of all the dimensions, amongst all the hospitals except Saligram Charitable Eye Hospital, Jind (Tangibility 31.5) and Atsmshudhi Charitable Eye Hospital, Bhadurgarh (Tangibility 27.8). Empathy was accorded the worst perceived dimensions amongst all hospitals except Krishan Lal Jalan Charitable Eye Hospital, Bhiwani (Assurance 15.5), Atlas Charitable Eye Hospital, Sonapat (Assurance 12.5), and Atsmshudhi Charitable Eye Hospital, Bhadurgarh (Responsiveness 16.1).

Mission Charitable Eye Hospital, Ambala was accorded the best Unweighted and Weighted gap score in the three dimensions (Reliability 1.7 & 47.9, Assurance 1.67 & 38.87, Tangibility 1.55 & 25.75) followed by Atsmshudhi Charitable Eye Hospital, Bhadurgarh accorded the best Unweighted and Weighted gap score in the remaining two dimensions (Empathy 2.06 & 33.52, Responsiveness 1.72 & 32.25). Krishan Lal Jalan Charitable Eye Hospital, Bhiwani was accorded the worst Unweighted score amongst all dimensions (Reliability -0.2, Responsiveness -0.2, Assurance -0.17, Empathy -0.16 and Tangibility 0.12) and also accorded the worst weighted score amongst all dimensions (Reliability -5.08, Assurance -4.58, and Tangibility -1.77) except Responsiveness and Empathy dimensions. These findings can be appreciated from appendix 2.0.

## Conclusion

The findings of this study have important practical implications to management of quality of eyecare services. This study demonstrates the usefulness of the SERVQUAL approach as a measure of service quality. SERVQUAL can highlight areas for specific action and address perceived service shortcomings. Consequently, systematic patient feedback for quality assurance, can shape future service delivery and intervene before possible complaints. The results of the study indicate that the SERVQUAL scale could make a valuable contribution by enhancing the understanding of the perceived quality of eyecare services. The measurement scale also serves to identify symptoms and the underlying problems that inhibit the effective provision of quality eyecare

services.

Once the attributes of eyecare services from the patient's perspective are more clearly known and understood, its service providers will be in a better position to anticipate patient's requirements rather than to react to patient's dissatisfaction. The attributes of reliability and tangibility have been identified by respondents to be the most important dimensions of service quality. All of these dimensions were found to have positive gap, implying that patient's expectation regarding the eyecare services are met by Charitable Eye hospitals of Haryana state except Krishan Lal Jalan Charitable Eye Hospital, Bhiwani. Although these findings cannot be generalized to the overall patient profile, governing bodies of these charitable hospitals should use it as an impetus to assess their services, particularly to study ways of improving on their responsiveness and tangibility dimensions.

Although almost all Charitable Eye hospitals of Haryana are providing eye care services at or above par than expected by their patients, still quality improvement is a never ending process. Governing bodies of these charitable hospitals could start by improving on staff training, especially to train their staff to be more professional and courteous when dealing with patients to improve overall patients' experiences and satisfaction. The best way is for the management to look at improving on aspects such as improving physical facilities, training of staff and communicating precise information on all activities.

## References

1. Berry L (1980), "Services marketing is different." *Business Week*, May-June, pp 24-29
2. Beverly Black (2001), "The Application of SERVQUAL in a District Nursing Service", *JCN Online*, May 2001
3. Bopp KD (1990), "How patients evaluate the quality of ambulatory medical encounters: a marketing perspective.", *J. Health Care*, 10 March, pp 6-15
4. Brown J 1990, "Creating a service culture.", *Canadian Banker*, 97(5), pp 40-42
5. Brown Stephen W and Teresa A Swartz (1989), "A Dynamic Evaluation of the Professional Services Encounter", *Journal of Marketing*, Vol-53, April, pp 92-98
6. Brown T J, Churchill G A and Peter J P (1993), "Research note: Improving the measurement of Service Quality." *Journal of Retailing*, 69 (1), pp 126-139
7. Dalrymple J F Donnelly, M Wisniewski M and Curry A C



- (1995), *Measuring service quality in local government*, In: Total Quality Management, Eds G K Kanji, Chapman and Hall, London
8. Donabedian A (1980), "Explorations in Quality Assessment and Monitoring. The Definition of Quality and Approaches to its Assessment." *Ann Arbor, MI: Health Administration Press, Vol 1*
  9. Donabedian A (1982), "Explorations in Quality Assessment and Monitoring. The Criteria and Standards of Quality.", *Ann Arbor, MI: Health Administration Press, Vol. 2.*
  10. Grönroos C (1984), "A service quality model and its marketing implications", *European Journal of Marketing*, 18: pp 36-44
  11. Heng-Ching Lin, Sudha Xirasagar and James N. Laditka. (2004), "Patient perceptions of service quality in group versus solo practice clinics", *International Journal for Quality in Health Care*, 16 (6): pp 437-445
  12. John J Miller AR (1988), "Health care service quality: the importance of consumer perceptions." In: *Developments in Marketing Science*. Eds. Bahn KD, Blacksburg, VA: Academy of Marketing Science, 11: pp. 373-377.
  13. Nihada, Mujic. Jelena, Legcevic. (2005), "Evaluation and management of Service Quality as steps to Marketing Excess", *Economic Annals*. No.167, October-December, pp 199-209
  14. Parasuraman, A. Berry, L L Zeithaml, V A (1990), "An Empirical Examination of Relationships in an Extended Service Quality Model", *Marketing Science Institute, Cambridge, MA*
  15. Parasuraman, A Zeithaml, V A. and Berry, L L (1985), "A Conceptual Model of Service Quality and its Implications for Future Research", *Journal of Marketing*, 49 (Fall): pp 41-50
  16. Parasuraman, A Zeithaml, V Berry, L L (1986), "SERVQUAL: a multiple-item scale for measuring customer perceptions of service quality", *Report No. 86-108*, Marketing Science Institute, Cambridge
  17. Parasuraman, A, Zeithaml, V A and Berry, L L (1988), "SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality", *Journal of Retailing*, 64 (1), Spring, pp 12-40
  18. Parasuraman, A Zeithaml, V A Berry, L L (1991a), "Perceived service quality as a customer-based performance measure: an empirical examination of organizational barriers using an extended service quality model", *Human Resource Management*, 30 (3): pp 335-64
  19. Parasuraman, A Zeithaml, V A and Berry, L L (1991b), "Refinement and Reassessment of the SERVQUAL Scale", *Journal of Retailing*, 67 (4), Winter: pp 420-449
  20. Parasuraman, A Zeithaml, V Berry, L L (1993), "Research Note: More on Improving Service Quality Measurement", *Journal of Retailing*, 69 (1), Spring: pp 140-147
  21. Parasuraman, A Zeithaml, V Berry, L L (1994), "Reassessment of expectations as a comparison standard in measuring service quality: implications for future research", *Journal of Marketing*, 58: pp 111-24
  22. Prakash, Ved (1984), "Validity and Reliability of the Confirmation of Expectations Paradigm as a Determinant of Consumer Satisfaction", *Journal of the Academy of Marketing Science*, 12 (Fall): pp 63-76
  23. Uzun, O (2001), "Patients satisfaction with nursing care at a university hospital in Turkey", *Journal of Nursing care Quality*, 16 (1): pp 24-33
  24. Webster, C (1989), "Can Consumers Be Segmented on the Basis of Their Service Quality Expectations?" *Journal of Services Marketing*, 3 (2), Spring: pp 35-53
  25. Wisniewski, M and Wisniewski, H (2005), "Measuring service quality in a hospital colposcopy clinic." *Research Paper No. 2005/3: Management Science*, University of Strathclyde, Glasgow, Scotland
  26. Zeithaml, V A (1988), "Consumer perceptions of price, quality and value: a means-end model and synthesis of evidence", *Journal of Marketing*, 52: pp 2-22
  27. Zeithaml, V A Berry, L L Parasuraman, A (1991), "The nature and determinants of customer expectations of service", *Marketing Science Institute, Cambridge, MA*, working paper; pp 91-113
  28. Zeithaml, V A Berry, L L and Parasuraman, A (1993), "The Nature and Determinants of Customer Expectations of Service", *Journal of the Academy of Marketing Science*, 21 (1), Winter: pp 1-12
  29. Zeithaml, V A Parasuraman, A Berry, L L (1990), *Delivering Quality Service: Balancing Customer Perceptions and Expectations*, Free Press, New York, NY.
  30. Zeithaml, V A Parasuraman, A Berry, L L (1992), *Strategic positioning on the dimensions of service quality*, In: *Advances in Services Marketing and Management*, Eds. Swartz, T A, Bowen, D E, Brown, S W, Vol 2

**Appendix 1.0**  
**Importance Weight Comparison**

Name and Address of Charitable Eye Hospitals	Tangibility	Reliability	Responsiveness	Assurance	Empathy
Overall (n=190)	20.40	27.73	18.53	19.18	13.91
Krishan Lal Jalan Charitable Eye Hospital, Bhiwani (n=20)	23.5	24.5	18.0	15.5	18.5
Atlas Charitable Eye Hospital, Sonapat (n=20)	23	29.5	18.5	12.5	16.5
Saligram Charitable Eye Hospital, Jind (n=20)	31.5	14	24.5	14	14
Shri Baba MastNath Charitable Eye Hospital, Asthal Bohar, Rohtak (n= 20)	21	30.1	19.9	16.6	12.4
Atsmshudhi Charitable Eye Hospital, Bhadurgarh. (n= 20)	27.8	20.3	16.1	16.6	19.2
Arunodya Charitable Eye Hospital, Gurgaon. (n=20 )	12.5	38.5	17	18	14
Krishna Dham Charitable Eye Hospital, Kurkshetra (n=20 )	16.5	31.5	15.5	24	12.5
Jindal Charitable Eye Hospital, Hisar (n= 20 )	13.5	42.5	19.5	13.5	11
Mission Charitable Eye Hospital, Ambala (n=20 )	17	29	20	23.5	10.5
Baba Behari Charitable Eye Hospital, Sirsa (n=10 )	17	31	21	22	8

**Appendix 2.0**  
**Comparison of Un-weighted and Weighted Gap Scores of Charitable Eye Hospitals**

Name and Address of Charitable Eye Hospitals		Tangibility	Reliability	Responsiveness	Assurance	Empathy
Krishan Lal Jalan Charitable Eye Hospital, Bhiwani (n=20)	Dimension wise Unweighted Gap Score	-0.12	-0.2	-0.02	-0.17	-0.16
	Dimension wise weighted Gap Score	-1.77	-5.08	1.14	-4.58	0.67
Atlas Charitable Eye Hospital, Sonapat (n=20)	Dimension wise Unweighted Gap Score	0.87	0.94	0.8	0.95	0.88
	Dimension wise weighted Gap Score	18.87	27	16.12	11	15
Saligram Charitable Eye Hospital,	Dimension wise Unweighted	-0.3	0.42	0.27	0.1	0.02

Jind (n=20)	Gap Score					
	Dimension wise weighted Gap Score	-19.5	9.2	1.62	6	5
Shri Baba MastNath Charitable Eye Hospital, Asthal Bohar, Rohtak (n= 20)	Dimension wise Unweighted Gap Score	0.15	0.68	1.3	1.15	1.72
	Dimension wise weighted Gap Score	-1.625	19.44	22.97	20.65	21.48
Atsmshudhi Charitable Eye Hospital, Bhadurgarh. (n= 20)	Dimension wise Unweighted Gap Score	0.4	0.84	1.72	1.45	2.06
	Dimension wise weighted Gap Score	15.95	20.24	32.25	24.05	33.52
Arunodya Charitable Eye Hospital, Gurgaon. (n=20)	Dimension wise Unweighted Gap Score	1.1	1.14	1.02	1.25	1.36
	Dimension wise weighted Gap Score	13.5	43.2	15.25	26.87	22.3
Krishna Dham Charitable Eye Hospital, Kurkshetra (n=20)	Dimension wise Unweighted Gap Score	0.37	-0.24	-0.05	0.3	0.38
	Dimension wise weighted Gap Score	1.62	-4.5	1.87	7.75	2.1
Jindal Charitable Eye Hospital, Hisar (n= 20)	Dimension wise Unweighted Gap Score	0.45	0.22	0.82	0.87	0.78
	Dimension wise weighted Gap Score	3.12	15.5	17.87	6	6.8
Mission Charitable Eye Hospital, Ambala (n=20)	Dimension wise Unweighted Gap Score	1.55	1.7	1.37	1.67	.78
	Dimension wise weighted Gap Score	25.75	47.9	29.5	38.87	21.5
Baba Behari Charitable Eye Hospital, Sirsa (n=10)	Dimension wise Unweighted Gap Score	1.55	1.56	1.70	1.60	1.24
	Dimension wise weighted Gap Score	25.75	47.20	35.00	35.00	10.00