

**ORIGINAL RESEARCH**

## Students' Perception on Quality Gap in Education Services in a Medical College in Kerala

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### ABSTRACT

**Introduction:** Considering views and expectations of students to improve the quality of medical educational services is important in educational institutions. **Objectives:** This study aims to identify the quality gap in medical education services as perceived by students in a selected medical college in Kerala, using a modified SERVQUAL model instrument. **Material and methods:** A cross-sectional study was conducted among undergraduate medical students in a selected medical college in Kerala. Through stratified random sampling, 300 undergraduate medical students were selected from different phases. A validated modified SERVQUAL instrument was used for data collection. The expectation and perception of students on 26 items under five dimensions of quality of educational services, namely, tangible, reliability, responsiveness, assurance and empathy, were measured in a five-point Likert scale. **Results:** The mean age of the participants was  $20.5 \pm 1.108$  years. The results indicated that there were the negative quality gaps in all dimensions of the service quality. The highest and lowest differences of mean scores between students' expectations and perceptions were in the responsiveness and reliability dimensions, respectively. Paired *t*-test showed the significant statistical differences between students' expectations and perceptions ( $p < 0.001$ ) in all five dimensions of the service quality. Improvements are required in all dimensions of educational services quality with priority to responsiveness dimension.

**Keywords:** Education, SERVQUAL, Students' perception, Students' expectations, Quality gap, Medical college, Kerala

### INTRODUCTION

The improved health of people is the main goal of medical education. Medical education quality is very important to ensure quality of healthcare to the community. As the medical education is more student-oriented now, the students' perceptions of educational services and facilities are becoming more and more important. Quality of educational services, emphasising student satisfaction, is a newly emerging field of educational research. The students' viewpoints about the quality of educational services can also be considered as a basis for planning quality promotion and improving organisational performance. There may be difference between the expectation of the optimal

conditions and perceived quality of medical education services by the medical students. Finding negative quality gaps in medical education services as perceived by students can be used for future improvement process. Many studies were conducted in different parts of the world to assess the quality of services in educational settings using SERVQUAL questionnaire<sup>[1-5]</sup>. However, there are only few studies conducted in the medical education sector in India, from the service quality components' point of view. Mukhopadhyay<sup>[6]</sup> conducted a study to determine the quality gap of educational services in a medical college in West Bengal, India. This study will analyse the students' perceptions and satisfaction regarding the

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service quality of education services in a selected medical college Kerala, India. If the gaps can be identified using this instrument, we can prioritise that require improvement.

## OBJECTIVES

1. To assess the expectation of medical students regarding the quality of medical education services in a medical college.
2. To assess the perception of medical students on the quality of medical education services available in a medical college.
3. To identify the quality gap in medical education services as perceived by students using modified SERVQUAL model instrument.

## MATERIAL AND METHODS

A cross-sectional study was conducted among 300 undergraduate medical students in a selected private medical college from Kerala from April 2016 to August 2016. Stratified random sampling method was used to select 100 students each randomly from phases 1, 2 & 3 of MBBS course.

A validated modified SERVQUAL instrument was used to measure the students' perceptions and expectations of the service quality of medical education along five dimensions. SERVQUAL instrument was originally designed and validated by Parasuraman *et al.*<sup>[7,8]</sup> to assess service quality, in the view that the customer's assessment of service quality is paramount. The original SERVQUAL instrument was specifically designed to assess organisations and businesses in the service sector. Service quality is the difference between customers' expectations and perceptions of the actual performance of a specific organisation based on the SERVQUAL. A modified SERVQUAL questionnaire prepared and validated by Mukhopadhyay<sup>[6]</sup> for measuring satisfaction with respect to different aspects of service quality in medical education. The validation of the modified SERVQUAL questionnaire

in medical education setting was done by Mukhopadhyay and established that it is valid and reliable. In the expectation scale, values of Cronbach's  $\alpha$  were 0.78, 0.76, 0.78, 0.82 and 0.86 for tangible, reliability, responsiveness, assurance and empathy, respectively. In the five dimensions of the perception questionnaire, Cronbach's  $\alpha$  were 0.75, 0.83, 0.85, 0.69 and 0.74 for tangible, reliability, responsiveness, assurance and empathy, respectively. Test-retest validity was also established with a weighted kappa value  $>0.8$  for each item.

Using the instrument, the students were asked to rate their perception about the quality of educational services in a five-point Likert scale (very good, good, moderate, poor and very poor). They were also asked to rate their level of expectation on each item in a five-point Likert scale (very important, important, moderate, less important and least important). Each item was scored from 1 to 5 with very poor/least important as 1 and very good/very important as 5 and others in between.

Five dimensions of quality of educational services are assessed by this modified SERVQUAL questionnaire. They are tangible (physical facilities, equipment and appearance of personnel), reliability (accuracy and consistency of a department in providing educational services), responsiveness (eagerness to help and commitment), assurance (ability of teaching departments to earn students' confidence) and empathy (ability to communicate care and understanding).

Positive scores of quality gap indicate that educational services are more than the expectations of the students, and a negative score of quality gap indicates that it does not meet expectations. Accordingly, the gap score of zero indicates that the current status of students met expectations of the services and there is no gap between them. Many studies were conducted to evaluate quality gap in service quality in medical institutions from different parts of the world [9-12].

### Method of Data Collection and Analysis

Anonymous self-administered questionnaires were distributed among students. The personal details like age, gender and phase of the students were collected in the initial part of questionnaire. A validated modified SERVQUAL questionnaire<sup>[1]</sup> was used to measure the quality gap in five dimensions of educational service. Perception of medical students about the current conditions on quality of medical educational services was measured in a five-point Likert scale (very good, good, moderate, poor and very poor) in the 26-item questionnaire. The students' expectation for optimal conditions was determined, using this questionnaire, in a five-point Likert scale (very important, important, moderate, less important & least important). The score of the gap in quality of educational services is calculated from difference between perception and expectation scores. Data collection started after obtaining approval from Institutional Ethics Committee. Data was analysed and mean score, standard deviation (SD) and standard error (SE) of expectation and perception scales in each dimension was calculated. In both the expectation and perception scales, dimension-wise mean score was calculated. In each dimension, the score of individual items was added up, and the sum was divided by the number of items in that dimension to get a mean score. The mean score of each dimension of the study population was calculated in both the perceived and expected services of medical education. The difference between the mean score

in the expectation and perception scales in each dimension was considered as 'quality gap' and *t*-test, paired *t*-test and ANOVA was applied to test whether the differences were significant or not in subgroups. Frequencies and proportions were calculated for categorical data. A *p* value <0.05 was considered as statistically significant.

### RESULTS

The mean age of the 300 participants was 20.5 ± 1.108 years. There were 98 (32.7%) males and 202 (67.3%) females in the study group. In this institution, female students outnumber their male peers.

#### Expectation of Students on Medical Education Services

All the five dimensions of quality of services as per SERVQUAL concept, were regarded as important (mean score ≥4) by the students. There was significant difference in expectation by gender in all five dimensions (Table 1). There was no significant difference in expectation according to phase (1, 2 & 3) in which they study, in any of the dimensions (*p* > 0.05).

#### Perception of Students on Medical Education Services

The perception of all dimensions was moderately good. No Significant difference by gender was found

**Table 1: Mean scores of expectation in five dimensions in both genders**

Dimension	Gender	N	Mean	Std. Deviation	Std. Error Mean	<i>p</i>
Tangible	Male	98	4.0740	0.67942	0.06863	0.001
	Female	202	4.3639	0.50621	0.03562	
Reliability	Male	98	3.8559	0.72518	0.07325	0.001
	Female	202	4.2494	0.58024	0.04083	
Assurance	Male	98	3.9184	0.92765	0.09371	0.004
	Female	202	4.2228	0.60100	0.04229	
Responsiveness	Male	98	3.8741	0.82315	0.08315	0.001
	Female	202	4.2855	0.53477	0.03763	
Empathy	Male	98	3.9311	1.01075	0.10210	0.001
	Female	202	4.2302	0.64229	0.04519	

in perception of services in any of the five dimensions ( $p > 0.05$ ). There was no significant difference in perception of tangible dimension by phase ( $p > 0.05$ ), but there was significant difference in perception by phase in all other dimensions ( $p < 0.05$ ). The perception of reliability dimension was significantly lower in phase 3 compared with phase 1 or 2. Perception on responsiveness dimension is significantly higher in phase 1 compared with phase 2 or 3. Perception regarding dimension of empathy was significantly high in phase 1 compared with phase 2 or 3. In 22 items out of total 26 items, the quality of existing services was perceived as moderate (mean score: 3–4) by the students, whereas in the remaining four items (items considering students’ view and suggestion in, provision of handouts after each class, provision of extra time for education, provision of anonymous suggestion to departments), the services were perceived as of poor (score between 2 and 3).

### Gap in Quality of Educational Services

If individual items are considered, the gap in quality

was found to be least in item no. 1 ‘Neat and professional appearance of faculty members’ and item no. 10 ‘Taking classes regularly as per schedule’. In all five dimensions, expectation of students exceeded their perceived quality of existing educational services, and there were negative quality gaps. There were significant differences between perceptions and expectations of students in all five SERVQUAL dimensions (Table 2). Also statistically, there was significant difference between negative quality gaps in five SERVQUAL dimensions ( $p < 0.001$ ).

There is significant difference in all dimensions by gender except tangible (Table 3). There is no significant difference in gap perceived by phase in tangible ( $p = 0.08$ ) and reliability ( $p = 0.2$ ) dimensions, but there is significant difference found in perception of gap in quality in responsiveness ( $p = 0.009$ ), assurance ( $p = 0.01$ ) and empathy (0.001) dimensions by phase. In empathy and responsiveness dimensions, the mean gap identified by phase 1 was lower compared with phase 2 and 3. In assurance dimension,

**Table 2: Mean scores of the students’ perceptions, expectations and quality gaps in five dimensions**

SERVQUAL Dimensions	Perception (Mean ± SD)	Expectation (Mean ± SD)	Service Quality Gap	Significance (p)
Tangible	3.4308 ± 0.65	4.26 ± 0.58	-0.838 ± 0.83	<0.001
Reliability	3.370 ± 0.60	4.12 ± 0.65	-0.75 ± 0.78	<0.001
Responsiveness	3.0611 ± 0.76	4.15 ± 0.67	-1.09 ± 0.89	<0.001
Assurance	3.17 ± 0.75	4.12 ± 0.75	-0.98 ± 0.94	<0.001

**Table 3: Mean scores in quality gap in five dimensions in both gender**

Dimensions	Gender	N	Mean	SD	SE of Mean	p
Gap in tangible	Male	98	-0.7092	0.79762	0.08057	0.062
	Female	202	-0.9010	0.84867	0.05971	
Gap in reliability	Male	98	-0.4796	0.74606	0.07536	0.001
	Female	202	-0.8812	0.76871	0.05409	
Gap in assurance	Male	96	-0.7786	0.94023	0.09596	0.01
	Female	202	-1.0767	0.93491	0.06578	
Gap in empathy	Male	96	-0.8073	1.04471	0.10663	0.01
	Female	202	-1.2178	1.02770	0.07231	
Gap in responsiveness	Male	98	-0.7296	0.81387	0.08221	0.001
	Female	202	-1.2649	0.87759	0.06175	

the mean gap identified by phase 3 was higher than phase 1 and 2.

## DISCUSSION

The aim of this study was to determine the quality gap of educational services using a modified SERVQUAL instrument among students. The expectation on all dimensions was significantly high among female students compared with male students. In a state with high-female literacy rate, the expectation of the female students may also be higher. The mean scores of expectation of students were highest in item no. 3, that is materials and educational equipment being up-to-date (4.44), followed by item no. 7, that is understandability of presented educational materials in the class (4.40). The mean scores of expectation of students were least for item no. 9 under reliability, 'Provision of handouts after class' (3.79), item no. 23 under empathy, 'giving anonymous suggestion to departments' (3.81), item no. 18 under responsiveness, 'out-of-class consultation' (3.84), respectively, and followed by 'Class attendance for a clear understanding of the subject', 'Neat and professional appearance of faculty members' and 'Facilitating discussion and interaction in class' which were also considered as of moderate importance by the students with score less than four. The remaining 20 items scored more than 4 indicated that they were considered as important by the students (Table 4).

The perception of service quality in all five dimensions had a mean score more than three. No dimensions were rated as poor or very poor. The perception regarding the services was similar in both genders, even though there is a higher expectation among female students.

The study showed that the students perceived negative quality gaps in all the five dimensions. Similar findings were noted by Aghamolaei *et al.*, Kebriaei *et al.* and Mohammad *et al.*<sup>[9-11]</sup> among medical students. Gholami *et al.*<sup>[12]</sup> has conducted a study to evaluate the quality gap in educational services among

paramedical and nursing students in Neyshabur Faculty of Medical Sciences in 2012, and he also observed that there is a negative quality gap in all of the five SERVQUAL dimensions.

Negative quality gaps in educational services mean students' expectation were higher than their perceptions. This indicates that there is a need for improvement in all dimensions of educational services quality to meet the expectation of students. Students' perceptions regarding gap in educational services may also be considered as an important basis for the quality improvement of their educational environment. Reliability was the domain where students perceived the least quality gap followed by tangible (physical facilities, equipment and appearance of the personnel). Identification of the negative quality gap in service dimensions can be used to plan for improvement in the quality of services. Even though the mean score of expectation of students was highest in tangible dimension, the gap perceived in this dimension was lesser. In addition, there was no significant difference in gap perceived by students belonging to different phase in tangible dimension.

The highest quality gap was perceived by students in responsiveness dimension in this study. In a studies conducted by Aghamolaei *et al.* and Kebriaei *et al.*<sup>[9,10]</sup>; also, the highest quality gap was perceived by students in responsiveness and lowest gap was in reliability. The highest quality gap was reported in the dimension of 'responsiveness' in a study conducted by Mohammadi *et al.*<sup>[11]</sup> in Iran. The responsiveness dimension indicates willingness to help the students and provide prompt services. The gap in this dimension means there is a perceived deficiency in eagerness to help and commitment which includes the items like 'easy accessibility of faculty members in need, easy accessibility of Head of Department (HOD)/Dean in need, introducing suitable reference to students for reading, considering students' view and suggestion in scheduling classes energy and eagerness of faculty in classes, provision of extra time for educational consultation with faculty'. More efforts are needed to meet the expectation of students in these aspects.

**Table 4: Scores of expectation of students in individual SERVQUAL items**

SERVQUAL Items	Maximum	Mean	Std. Error	Std. Deviation
Neat and professional appearance of faculty members	5	3.92	0.056	0.966
Comfortable physical facilities in class rooms	5	4.38	0.042	0.734
Materials and educational equipment being up to date	5	4.44	0.040	0.698
Attractive audio–visual teaching tools	5	4.26	0.047	0.820
Provision of correction of tasks by faculty	5	4.05	0.065	1.117
Conducting evaluation regularly and communicating results	5	4.08	0.063	1.090
Understandability of presented educational materials in the class	5	4.40	0.050	0.869
Class attendance for a clear understanding of the subject	5	3.91	0.064	1.108
Provision of handouts after each class	5	3.79	0.066	1.147
Taking classes regularly as per schedule	5	4.13	0.060	1.034
Easy accessibility of reference learning materials	5	4.36	0.052	0.902
Fulfilling the responsibilities of the faculty in promised time	5	4.26	0.056	0.978
Easy accessibility of faculty members in need	5	4.32	0.050	0.867
Easy accessibility of HOD/Dean in need	5	4.15	0.059	1.015
Introducing suitable reference to students for reading	5	4.16	0.059	1.025
Considering students' view and suggestion in scheduling classes	5	4.17	0.056	0.976
Energy and eagerness of faculty in classes	5	4.27	0.057	0.993
Provision of extra time for educational consultation with faculty	5	3.84	0.062	1.067
Facilitating discussion and interaction in class	5	3.93	0.061	1.050
Accessibility of teachers outside class	5	4.07	0.058	1.009
Faculty members' adequate preparedness for class	5	4.35	0.052	0.908
Students prepared adequately for the next level of education	5	4.14	0.057	0.985
Provision of anonymous suggestion to the departments	5	3.81	0.072	1.249
Dignified treatment of students by teachers	5	4.27	0.055	0.949
Dignified treatment of students by staff	5	4.21	0.056	0.963
Flexibility of teachers to fulfil the individual student's need	5	4.24	0.051	0.891

But in a study by Mukhopadhyay in West Bengal, it was in tangible dimension where the students perceived the highest quality gap<sup>[6]</sup>. The present study is conducted in a private medical college, and the situation may be different in government colleges. In another study conducted by Ruby, there was a positive quality gap in the tangible dimension; that meant, students' perceptions of the educational services quality were greater than their expectations in this dimension, but there were negative quality gaps in the reliability, assurance, responsiveness and empathy dimensions<sup>[13]</sup>.

In a study by Nabilou *et al.*<sup>[4]</sup> it was observed that the highest negative gap for faculty members was

about 'the teacher's accessibility when students need them' and 'to understand the educational needs of students'.

There is no significant difference between male and female students in perceived gap in tangible dimension ( $p = 0.06$ ). But there is significant difference between perceived gaps by female students compared with male students in other four dimensions, namely reliability ( $p < 0.001$ ), responsiveness ( $p = 0.001$ ), assurance ( $p = 0.01$ ) and empathy (0.001) dimensions by phase. The gaps perceived by female students were significantly higher.

The maximum gap was found in item 16 (considering

students' view and suggestion in scheduling classes). The students expect to consider their view and suggestions in scheduling classes. The inputs obtained from this study can be used for future planning and to prioritise the areas for improvement. More attention has to be given to the students' expectations to reduce the negative quality gap perceived by them, which may improve their aspiration in learning and the profession. The service quality dimensions that need priority for improvement of educational service quality are responsiveness, empathy and assurance domains.

The limitation of the study is that it was done in a single private institution and its focus on undergraduate medical students only. Further studies are required involving different medical colleges, involving undergraduate and postgraduate students. The knowledge regarding the perceived gaps in services quality may help the teachers, staff and the administrators of the institutions to improve the services.

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