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### The Quality Assessment of Educational Services Based on Perceptions and Expectations of Students in Tabriz University of Medical Sciences

**Background:** Service quality (SERVQUAL) is a model that measures the quality through comparing the expectations and perceptions of recipients to identify gaps. Identifying the gap may provide valuable insights for improving services. The students are the main recipients of services in educational organizations. So, this study was conducted to assess the educational services from the perspective of students of Health Services management at Tabriz University of Medical Sciences by the SERVQUAL model.

**Methods:** This descriptive-analytical study was conducted in 2018. The participants were 85 students of various levels of Health Services management. The SERVQUAL questionnaire including dimensions of empathy, tangibles, reliability, responsiveness and assurance was used for data collection. Descriptive analysis, T-test, ANOVA, and correlation (Pearson and Spearman) tests were used for data analysis.

**Results:** The overall mean perceptions and expectations were  $3.02 \pm 0.58$  and  $3.78 \pm 0.73$  respectively. There was a negative gap in all dimensions of educational services (mean = -0.76). The greatest negative gap was in the dimension of assurance (-1.05). The other variables were ranked as the following order: Responsiveness, Empathy, Reliability, and Tangibles. A statistically significant correlation was observed between the students' expectations and their educational level ( $P < 0.05$ ).

**Conclusion:** Students' expectations were higher than their perceptions based on the results; however, according to SERVQUAL model the quality of education was inappropriate. It is necessary to plan effectively, so that the quality of education in all dimensions, particularly in assurance domain, can be improved.

**Keywords:** Quality of services, Quality of education, SERVQUAL Model, Service Gap, Education, Health Services Management student

### ارزیابی کیفیت خدمات آموزشی مبتنی بر ادراکات و انتظارات دانشجویان دانشگاه علوم پزشکی تبریز

**زمینه و هدف:** مدل سروکوال یک مدل برای ارزیابی کیفیت و مقایسه بین ادراکات و انتظارات گیرندگان خدمت و شناسایی شکاف ایجاد شده است. شناسایی شکاف ممکن است بینش ارزشمندی برای بهبود خدمات ایجاد کند. دانشجویان گیرندگان اصلی خدمت در سازمانهای آموزشی هستند. بنابراین این مطالعه با هدف ارزیابی خدمات آموزشی از دیدگاه دانشجویان مدیریت خدمات بهداشتی و درمانی دانشگاه علوم پزشکی تبریز با استفاده از مدل سروکوال انجام شده است.

**روش:** این مطالعه یک مطالعه توصیفی-تحلیلی است که در سال ۱۳۹۷ انجام شده است. شرکت کنندگان در مطالعه ۸۵ دانشجوی مقاطع مختلف رشته مدیریت خدمات بهداشتی و درمانی بودند. از پرسشنامه سروکوال شامل ابعاد همدلی، ملموسات، قابلیت اطمینان، پاسخگویی و تضمین برای جمع آوری داده استفاده شد. برای تجزیه و تحلیل داده ها از آمار توصیفی و آزمون های تی تست، آنوا و همبستگی پیرسون و اسپیرمن استفاده شد.

**یافته ها:** میانگین ادراکات و انتظارات کلی به ترتیب  $3.02 \pm 0.58$  و  $3.78 \pm 0.73$  بود. در کلیه ابعاد خدمات آموزشی شکاف منفی وجود داشت ( $76 / - =$  میانگین). بیشترین شکاف منفی در بعد اطمینان ( $105 / - =$  میانگین) وجود داشت و ابعاد پاسخگویی، همدلی، قابلیت اطمینان و ملموسات در رده های بعدی قرار داشتند. بین انتظارات دانشجویان و سطح تحصیلات همبستگی معنی داری مشاهده شد ( $05 / < p$ ).

**نتیجه گیری:** بر اساس نتایج مطالعه، انتظارات دانشجویان براساس نتایج بالاتر از ادراک آنها و بنابراین کیفیت خدمت بر اساس مدل سروکوال نامناسب بود. در نتیجه ضروریست برای بهبود کیفیت در تمامی ابعاد به ویژه بعد تضمین برنامه ریزی شود.

**واژه های کلیدی:** کیفیت خدمت، کیفیت آموزش، مدل سروکوال، شکاف خدمت، آموزش، دانشجوی مدیریت خدمات سلامت

### تقدیم جودة الخدمات التعليمية على أساس تصور و توقعات الطلاب في جامعة تبريز للعلوم الطبية

**الخلفية:** جودة الخدمة (SERVQUAL) هي نموذج يقيس الجودة من خلال مقارنة معايير أساسية فيها مع توقعات و تصورات متلقي الخدمات لتحديد الثغرات. الطلاب هم المتلقون الرئيسيون للخدمات في المؤسسات التعليمية. لذلك أجريت هذه الدراسة لتقييم الخدمات التعليمية من وجهة نظر طلاب جامعه تبريز للعلوم الطبية في مجال دراسي "إدارة الخدمات الصحية" من خلال نموذج جودة الخدمة.

**الأساليب:** أجريت هذه الدراسة الوصفية التحليلية في عام ١٣٩٧ هجرياً شمسياً و كان المشاركون ٨٥ طالباً من مختلف مستويات إدارة الخدمات الصحية. تم استخدام استبيان جودة الخدمة لجميع البيانات مشتقاً على أبعاد: التعاطف، الأشياء الملموسة، الموثوقية، الاستجابة و الضمان. تم استخدام التحليل الوصفي و اختبار T-test و ANOVA و الارتباط (Pearson and Spearman) لتحليل البيانات.

**النتائج:** كان المتوسط العام للتصورات و التوقعات  $3.02 \pm 0.58$  و  $3.78 \pm 0.73$  على التوالي. وجود فجوة سالبة في جميع أبعاد الخدمات التربوية (المتوسط = -0.76). أكبر فجوة سالبة كانت في بعد الموثوقية (-1.05). تم ترتيب المتغيرات الأخرى بهذا الترتيب، الاستجابة و التعاطف و الموثوقية و الملموسات. لوحظ وجود علاقة ارتباطية ذات دلالة إحصائية بين توقعات الطلاب والمستوى التعليمي ( $P < 0.05$ ).

**الخلاصة:** كانت توقعات الطلاب أعلى من تصوراتهم بناءً على النتائج وكانت جودة التعليم على أساس نموذج جودة الخدمة غير مناسبة. من الضروري التخطيط لتحسين جودة التعليم في جميع الأبعاد وخاصة في مجال الضمان.

**الكلمات المفتاحية:** جودة الخدمات، جودة التعليم، نموذج جودة الخدمة، فجوة الخدمة، التعليم، طالب إدارة الخدمات الصحية

### تبریز یونیورسیتی آف میڈیکل سائنسز میں تعلیمی خدمات کیا طلبا کی سمجھ بوجھ اور توقعات کے مطابق ہیں؟

**بیک گراؤنڈ:** SERVQUAL ایسا ماڈل ہے جس کے ذریعے خدمات کی کوالٹی کا جائزہ لیا جاتا ہے، اس روش سے جن لوگوں کو خدمات پیش کی جاتی ہیں ان کے نقطہ نگاہ اور توقعات کے مطابق خدمات کی کوالٹی کو جانچا جاتا ہے۔ سب جانتے ہیں کہ یونیورسٹیوں اور دیگر تعلیمی اداروں میں طلبا کو ہی خدمات فراہم کی جاتی ہیں۔ اس تحقیق سروکوال ماڈل کے ذریعے طلبا کی توقعات اور نقطہ نظر سے حفظان صحت اور معالجاتی خدمات کا جائزہ لیا گیا ہے۔

**روش:** یہ تحقیق دوپہار اٹھارہ، انیس میں انجام پاتی تھی، اس تحقیق میں طبی اور حفظان صحت کی خدمات فراہم کرنے والے کورس کے مختلف لیول کے پچاسی طلبا نے شرکت کی۔ ان لوگوں کو سروکوال کا سوالنامہ دیا گیا جس میں ہمدلی، قابل احساس امور، ایسے امور جن سے اطمینان حاصل کیا جا سکتا ہے، ذمہ داری کا احساس یعنی جواب گو ہونا نیز ایک دوسرے کو اطمینان دلانا جیسے مسائل کو شامل کیا گیا تھا۔ ڈیٹا کا تجزیہ ڈسکرپٹو اعداد و شمار، ٹی ٹسٹ، اینوا، اور پیرسن اور اسپیرمن کوریلیشن سے کیا گیا تھا۔

**نتیجے:** کلی طور پر اوسط طلبا کا نقطہ نگاہ اور توقعات  $3.02 \pm 0.58$  و  $3.78 \pm 0.73$  کے مطابق تھیں۔ تمام پہلووں سے تعلیمی خدمات پر سوالیہ نشان لگے تھے  $76 / - =$  اوسط، تھا سب سے زیادہ منفی صورتحال ایک دوسرے کے درمیان اطمینان کی برقراری کے موضوع کو ملے تھے۔ اس کے بعد ہمدلی اور محسوسات کا نمبر آتا ہے۔ اس تحقیق سے یہ بھی معلوم ہوتا ہے کہ طلباء تعلیم میں بہتری کے خواہاں ہیں۔

**سفرارش:** اس تحقیق سے پتہ چلتا ہے کہ سروکوال ماڈل کے مطابق طلباء کی توقعات اعلیٰ تھیں لہذا انہیں جو خدمات پیش کی جاتی تھیں وہ معیاری نہیں تھیں۔ اس امر کے پیش نظر ضروری لگتا ہے کہ تمام پہلووں سے تعلیمی خدمات کو بہتر بنایا جائے۔

**کلیدی الفاظ:** کوالٹی، تعلیمی معیار، سروکوال ماڈل

## INTRODUCTION

Obtaining and holding customers have always been considered as two key approaches in service organizations. The quality of services has been studied within the discipline of business management for years; because the market has transferred its focus from internal performance to external interests like customers perceptions to compete and sell more products (1). Today, generally the students' views (as a customer) about different dimensions of trainings are evaluated in educational institutions as a main factor for monitoring the quality in the universities (2,3). The simplest definition of quality is as follows: "it is a kind of judgment, which the customers make based on their perception after a process of receiving service; through this judgment, they compare their expectations of services with their perceptions" (4).

The subject of measuring service quality has been studied widely in the past few decades. Some of quality researchers believed that service quality can only be measured by the functioning of the services and it is not necessary to evaluate clients' expectations. They believed that the concept of service quality can only be measured by perception without any regards for expectations (5). There is one model that is commonly used to measure customer satisfaction. To evaluate the quality, service quality (SERVQUAL) is an approach that takes into consideration the gap between customers' perceptions and expectations. This model has been invented by Parasuraman et al. and includes 5 scales (6):

*Tangibles*: The existence of physical facilities, equipment, personnel, and communication materials

*Reliability*: The organizational obligations to satisfy customer needs and achieve the objectives of organization

*Assurance*: Employees' abilities to convey trust and confidence regarding the organization and its services

*Responsiveness*: Desire to collaborate and contribute with customers and being sensitive towards their requests, questions, and complaints

*Empathy*: Personal attention, devoting the proper time for all employees, understanding customers, and dealing with them in accordance with their mentality.

Students' perspectives have been investigated by using SERVQUAL model in various studies with regard to the importance of monitoring the quality of educational services. The results of the study of Akhlaghi et al. in the technical and professional center of girls represented a negative gap in the five dimensions of SERVQUAL model (1). Based on the study about the quality of educational services for Chinese graduate students, a negative gap of quality was evident in all dimensions (7). The results of a study done by Ross & Tyrant based on this model, showed that the students had high expectations regarding the quality of educational services. The responsiveness dimension was the weakest dimension of quality of services (8). The results of the study by Hayduk & Ham showed that scores of students' expectations about physical dimensions, responsiveness, assurance, and empathy were higher than average perceived by the students (9). These studies show the utility of the instrument in identifying areas needing improvement in educational programs.

The quality of services in the field of education has been taken into consideration many years ago in Iran. However, the focus on the method of teaching is used often in assessing the quality of services, while the students' perception and expectation are not taken into consideration as main point in assessment. Also, in many cases, the quality gap (difference of perception and expectation) is not assessed and analyzed. The present study was designed and implemented to assess the quality of educational services of the students' perspectives in Tabriz University of Medical Sciences using the SERVQUAL model.

## METHODS

This descriptive-analytical study was conducted in Tabriz University of Medical Sciences in 2018. Students including BSc (61), MSc (21), and PhD (14) students of Health Services Management comprised the population under study. The total census method without determining the sample size was used due to the nature of the study and the limitation of the population under study.

The SERVQUAL questionnaire was used to collect data. The questionnaire was the Persian translation of Yarmohamadian et al (4) that confirmed its validity and reliability. The first part of the questionnaire included demographic information (age, gender, educational level, and academic year) and 25 questions were related to the measurement of five dimensions of educational services; assurance (questions 1 to 5), responsiveness (questions 6 to 10), empathy (questions 11 to 16), reliability (questions 17 to 21) and tangibles (questions 22 to 25). Scoring the questions was based on Likert scale ranging from 1 "I disagree completely" to 5 "I agree completely".

After explaining the research objectives, ensuring confidentiality, and obtaining students' informed consent the questionnaires were distributed. Students provided ratings for each question regarding expectations (the "ideal" situation) and perceptions (the existing status). To determine the quality gap, students' perception scores were deducted from their expectation scores. A negative score meant that there is a gap between the quality of the existing status (perception) and the desired situation (expectation) which indicates low quality of services. A positive score meant the opposite: the existing status (perception) is greater than the "ideal" situation which indicates high quality services. A score of zero indicated a match between perception and expectation (4).

The mean and standard deviation were calculated for each of the items and dimensions of service quality. Normality of the score distributions were determined using the Shapiro-Wilk test ( $p > 0.05$ ). To study the relationship between the dimensions of the quality of services and the bivariate nominal factor (sex), the t-tests were used and the ANOVA test was used for multivariate nominal factors (age, educational level, and academic semester). Also, correlation tests (Pearson and Spearman) were used to show the relationships. The significant level of tests was considered 0.05, and the software (SPSS 23) was used for data analysis.

The main protocol of this study was reviewed and approved by the Ethics Committee of Tabriz University of Medical Sciences. Its approval code was IR.TBZMED.REC.1396.421.

Questionnaires were distributed after explaining the research objectives, ensuring confidentiality and obtaining students' informed consent.

**RESULTS**

Of the 96 distributed questionnaires, 85 were returned and analyzed. There was a response rate of 88.5%. The mean age of the participants was  $23.87 \pm 4.75$ . Most of the respondents were female ( $n=56$ ; 65.9%). Most of the students participating in the study were BSc students ( $n=54$ ; 63.5%); however, the PhD students ( $n=13$ ; 15.3%) were the minimum number of participants in the study. The frequency of participants has been provided based on educational level, academic semester, and age group in Table 1 respectively.

Variable	Frequency	Percentage	
Degree	B.Sc.	54	63.5
	M.Sc.	18	21.2
	PhD	13	15.3
Academic semester	1	7	8.2
	3	35	41.2
	5	18	21.2
	7	23	27.1
	9	2	2.4
Age groups	19-25	63	75.1
	26-30	14	16.7
	31-35	5	6
	Up 35	2	2.2

Generally speaking, the mean perceptions of students also were obtained ( $3.02 \pm 0.58$ ). The highest perception was in the dimension of tangible with mean ( $3.35 \pm 0.70$ ), and the lowest perception related to the area of responsiveness with mean ( $2.67 \pm 0.71$ ). Men's perception of the existing status was more than women's ( $3.81 \pm 0.64$ ). Students' perceptions were highest in the age group over 30 years ( $4.050 \pm 0.88$ ), and the lowest were in the age group under 20 years old ( $3.54 \pm 0.72$ ). The students' perception in PhD level was more than other levels ( $4.24 \pm 0.54$ ). The overall mean of students' expectations was ( $3.78 \pm 0.73$ ). The highest expectation pertained to the dimension of assurance with the mean ( $3.94 \pm 0.68$ ), and the lowest expectation was related to responsiveness with the mean ( $3.58 \pm 0.88$ ). Women's expectations rating ( $3.02 \pm 0.58$ ) were higher than men's ( $3.01 \pm 0.60$ ). The expectation for the age group (25 to 29 years) was ( $3.18 \pm 0.53$ ), it was more than other groups, while the expectation of greater than 30 years was as the lowest ( $2.70 \pm 0.52$ ). PhD Students' expectation was more than the rest ( $4.32 \pm 0.45$ ) in all dimensions. Scores of students' perceptions and expectations of the quality of educational services in terms of gender, age, degree relevant to all dimensions have been given in Table 2.

Dimensions	Sex		Age				Degree			Overall Score	
	Male	Female	≤20	21-24	25-29	≥30	BSc	MSc	PhD	Mean (SD)	
Assurance	Expectation	3.91±0.83	3.76±0.92	3.88±0.84	4.18±0.61	4.27±0.95	3.81±0.87	3.94±0.94	4.49±0.37	3.94±0.86	
	Perception	2.88±0.73	2.89±0.60	2.92±0.82	2.92±0.57	3.04±0.60	2.6±0.73	3.03±0.61	2.49±0.60	2.89±0.65	
Responsiveness	Expectation	3.60±0.77	3.57±0.93	3.28±0.85	3.54±0.86	3.07±0.73	3.96±0.89	3.47±0.91	4.16±0.53	3.58±0.88	
	Perception	2.33±0.80	2.67±0.68	2.78±0.84	2.73±0.67	2.73±0.72	2.33±0.61	2.72±0.70	2.24±0.53	2.67±0.71	
Empathy	Expectation	3.75±0.69	3.81±0.79	3.63±0.75	3.82±0.75	3.66±0.63	4.07±0.86	3.77±0.77	4.23±0.59	3.79±0.75	
	Perception	3.10±0.71	3.10±0.73	3.03±0.92	3.14±0.69	3.43±0.57	2.70±0.58	3.10±0.77	2.88±0.53	3.10±0.72	
Reliability	Expectation	4±0.71	3.79±0.87	3.51±0.77	3.95±0.79	3.84±0.62	4.04±1.03	3.84±0.83	4.21±0.51	3.86±0.86	
	Perception	3.15±0.76	3.12±0.74	2.94±0.93	3.37±0.61	3.18±0.72	2.84±0.91	3.19±0.72	2.78±0.65	3.14±0.74	
Tangible	Expectation	3.79±0.86	3.71±0.88	3.48±0.97	3.79±0.84	3.8±0.66	3.86±1.01	3.70±0.89	4.09±0.59	3.73±0.87	
	Perception	3.29±0.67	3.38±0.71	3.12±0.70	3.45±0.70	3.51±0.47	3.11±0.83	3.38±0.72	3.21±0.66	3.35±0.70	
Total	Expectation	3.01±0.60	3.02±0.58	2.96±0.73	3.09±0.54	3.18±0.53	2.70±0.52	3.06±0.60	4.23±0.45	3.78±0.73	
	Perception	3.81±0.64	3.77±0.78	3.54±0.72	3.80±0.71	3.84±0.51	4.05±0.88	3.72±0.75	4.24±0.45	3.02±0.78	

The overall gap score was -0.76. The greatest negative score was in assurance dimension (-1.05), and the lowest was in the tangibles dimension (-0.38). Gap score of other dimensions including Responsiveness, Empathy, and Reliability was -0.91, -0.69, and -0.72 respectively. Scores of students' perceptions, expectations, and gap scores based on questions of every dimension have been presented in Table 3.

In total, the negative gap of quality was more in men (-0.08). Negative quality gap in age group (greater than 30 years) by -1.35 was more than the rest. In all dimensions the gap between the PhD students with score -1.53 was more than the other groups. The gap of the quality of educational services based on gender, age, and student's educational level has been given in Table 4.

Table 3. Scores of students' perceptions and expectations based on question presented in dimensions				
Dimension	Items	Perception score	Expectation score	Gap score
Assurance	Facilitating discussion on the subject of the lesson by professors in class	3.14±0.86	3.14±0.86	-0.84
	Preparing students for future jobs by providing theoretical and practical trainings in the field	2.42±0.93	2.42±0.93	-1.72
	Allocating time by the professor to answer and explain the content for the student outside the classroom	2.64±0.91	2.64±0.91	-0.89
	Existing resources of study to increase student awareness	3.11±0.91	3.11±0.91	-0.63
	Having specialized knowledge among professors	3.15±1	3.15±1	-1.18
	<b>Total score of items</b>	<b>3.02±0.58</b>	<b>3.94±0.86</b>	<b>-1.05</b>
Responsiveness	Announcing the hours that students can refer to the professor for educational issues	2.74±0.97	3.48±1.18	-0.74
	Easy access to manager for expressing ideas and suggestions	2.59±0.97	3.47±1.17	-0.88
	The availability of supervisors and advisors when students need them	2.67±1.00	3.81±0.99	-1.14
	Applying students' comments and suggestions on educational issues in educational programs	2.35±1.09	3.56±1.16	-1.21
	Providing students the appropriate study resources for further study	3.01±1.05	3.64±0.96	-0.63
	<b>Total score of items</b>	<b>2.67±0.71</b>	<b>3.58±0.88</b>	<b>-0.91</b>
Empathy	Suitable homework (not less or more) which are related to lessons	2.59±0.95	3.6±1.002	-1.01
	Flexibility of professors in certain conditions that may occur for each student	2.67±1.07	3.61±1.07	-0.94
	Suitable time for holding classes	2.82±1.11	3.87±1.02	-1.05
	Existing a quiet place to study inside the faculty	3.56±1.10	3.78±1.004	-0.22
	The suitability of staff's behaviours with students	3.52±1.13	3.89±0.98	-0.37
	Respectful behaviour of teachers with students	3.47±1.06	4.02±1.03	-0.55
<b>Total score of items</b>	<b>3.10±0.72</b>	<b>3.70±0.75</b>	<b>-0.69</b>	
Reliability	Presenting lessons in a regular and interrelated manner	3.08±1.03	3.96±1.005	-0.88
	Informing the students about the evaluation of their homework assignments	2.98±0.92	3.78±0.98	-0.80
	Providing educational materials in a way that is understandable to the students	2.98±0.97	4.07±0.99	-1.09
	Dedicating a better score for more endeavours	3.16±1.04	3.81±1.13	-0.65
	Registering and maintaining a student's record without mistakes and completeness	3.47±1.13	3.69±1.04	-0.22
	<b>Total score of items</b>	<b>3.13±1.01</b>	<b>3.86±1.03</b>	<b>-0.73</b>
Tangible	Easy access to existing study resources at the University	3.65±0.89	3.84±1.03	-0.19
	Performing activities by professors at the appointed time	3.06±0.93	3.73±1.06	-0.67
	The proper appearance and the words of the professors	3.34±1.05	3.78±1.01	-0.44
	Appearance of physical facilities (such as a building, a class, a chair, a place of rest faculty)	3.36±1.12	3.61±1.15	-0.25
	<b>Total score of items</b>	<b>3.35±0.70</b>	<b>3.76±0.87</b>	<b>-0.38</b>
<b>Total score of 5 dimension</b>	<b>3.02±0.58</b>	<b>3.78±0.73</b>	<b>-0.76</b>	

**Table 4. Gap scores by gender, age, and degree**

Dimensions	Sex		Age				Degree		
	Male	Female	20≤	21-24	25-29	30≥	BSc	MSc	PhD
Assurance	1.03-	1.06-	0.75-	0.96-	1.14-	1.67-	0.87-	0.91-	2-
Responsiveness	0.93-	0.9-	0.6-	0.81-	0.99-	1.63-	0.72-	0.79-	1.92-
Empathy	0.65-	-0.71	0.6-	-0.68	0.33-	1.37-	0.67-	0.29-	1.28-
Reliability	0.85-	0.67-	0.57-	-0.68	0.66-	1.2-	0.65-	0.44-	1.43-
Tangibles	0.5-	0.33-	0.36-	-0.34	-0.29	0.75-	-0.32	0.2-	0.88-
<b>Total</b>	<b>-0.8</b>	<b>0.75-</b>	<b>0.58-</b>	<b>0.71-</b>	<b>0.66-</b>	<b>1.35-</b>	<b>0.66-</b>	<b>0.53-</b>	<b>1.53-</b>

The results of Pearson correlation test showed that the correlation between students' perceptions and expectations was 0.159 (although this correlation was weak) which showed positive and direct correlation. However, considering the amount of P-value (0.145), it was not significant.

There was no statistically significant correlation between gender, age, academic semester, and expectations and perceptions (Table 5). According to the results of the ANOVA test, there was a correlation between educational level and students' expectations of quality of educational services (p-value=0.045, r= 0.173); however, there was no correlation between educational level and students' perceptions (p-value=0.110, r=-0.163).

**DISCUSSION**

The main objective of this research was a description of quality of the educational services based on SERVQUAL model. This study was managed to create evidence on the perceptions and expectations of students affected by educational environment. This seems to be very important for decision makers effectively meet their needs. The results of the study showed that students' expectations were higher than their perceptions, which showed a gap in the quality of services received.

In this study, the highest perceptions have been related to the tangible dimension and lowest ones were related to the responsiveness dimension. Regarding the expectations, the most of them was related to the dimension of assurance and the lowest was related to the dimension of responsiveness. Based on the study of Bahadori et al, like the present study, the highest expectations were related to assurance and the lowest ones were related to tangible and responsiveness dimensions. However, regarding the perception, the highest

and the lowest scores were related to the reliability and empathy respectively (10). The results of the study of Ham & Hayduk in higher education in the Netherlands and in the field of quality of educational services showed that the expectations of students in the dimensions of assurance, responsiveness, empathy, and tangibles were more than the perceptions of the respondents in the present study. In addition, the lowest score in the study has been related to the perception of responsiveness (9). In this study, due to the sufficient and appropriate facilities of the Faculty of Management, the tangible dimension obtained a high score in terms of perception. The high scores of expectations in assurance dimension were also related to the students' lack of confidence in the adequacy of educational services.

According to the results, there was a correlation between educational level and students' expectations of quality of educational services. No significant statistical relationship was found between perceptions and expectations and other demographic variables. Also, Nelwan research found no significant difference on students' perceptions when comparing gender, study program, and length of study (11). Further, in line with the present study, in Soltani et al.'s study on the rate of satisfaction of dental students about educational services, the results indicated that there was a significant difference in satisfaction rate of fourth year students in comparison with others (12).

Another important finding of this study was the negative gap of services quality in all aspects. The greatest negative score was in assurance, and the lowest was in the tangible dimension. Similar results have been reported in various studies. The results of mahboobi et al. showed that there was a negative gap among all five dimensions of SERVQUAL questionnaire, with the highest gap in assurance dimension and the lowest gap in responsiveness (13). The results of the

**Table 5. Relationship between perception, expectation, and demographic variables**

Variable	Expectation		Perception	
	P-value	Correlation coefficient	P-value	Correlation coefficient
Sex	0.336	0.017	0.536	-0.004
Age	0.313	0.191	0.663	-0.119
Academic semester	0.138	0.165	0.983	0.052



study of Sarsale et al. showed that quality of students' services commonly fell short of students' expectations through all indicators, servicing units, and dimensions of which responsiveness showed the highest negative gap while tangible got the lowest negative gap among all dimensions (14). Chua's Study on the quality of educational services in the Faculty of Business Management indicated a negative gap in quality in all dimensions of the SERVQUAL model. The greatest gap was reported in the dimension of assurance, while the lowest one was in reliability dimension (15). In a study done by Rasli et al. the greatest gap has been related to empathy and the lowest one was related to tangible dimension (16). Also in the study of Emanuel & Adams in the United States, it was identified that there is a negative gap in dimensions of assurance and responsiveness (17).

The students are the thinking and creative layer of society. Their expectations of the educational system can be based on the comparison of the aforementioned services in different universities inside and outside the country; students' access to communication modes including the internet which has made for them an easy communication with students in other universities through conferences and congresses. In this way they will have awareness of how to update the services in other universities and their possible casual comparisons. Therefore, the question caused the students to request the similar or even further services (4, 18, 19)

Awareness of the areas that have the maximum gap causes the efforts to be concentrated in these areas and reduce the quality gap of services to minimum. Galloway's study suggested that the aspects of responsiveness, the apparent and personal effects of a service affect the perception of its quality and creation of satisfaction more than other dimensions of model (20). The results of Marmion et al. showed that accomplishment of expectations has a high expounding power and this antecedent of satisfaction is well described by the dimensions of perceived quality, supporting its mediation role between quality and satisfaction (21). The results of the study done by Samidi and Murugan revealed that the most important factors affecting the service quality dimension are tangible and empathy, so these are the most important factors of SERVQUAL model influences on service quality (22).

In this study, preparing students for future jobs got the highest negative score in dimension of assurance. It means that the necessary trainings and commensurate with future jobs of students of health service management are not offered; this can be caused by not properly running an internship or an inappropriate relationship of hospital system with students. Comparative study approaches to higher education in different countries by Ardakani et al. showed the important policies in the graduate section in Malaysia containing activities research by consciousness of market demands and industry needs, establishing suitability

between programs and academic disciplines in graduate section, and appealing the best brains (23). Other questions with the highest negative score included considering students' comments and suggestions, determining suitable time for classes and activates, and providing educational materials. Therefore, it seems that a dynamic system of information exchange is established between students and the organization authorities to reduce the quality gap. Improving work processes and empowering professors can promote the quality of educational services. In Soltani et al. maximum cooperation of the professors and accurate execution of the educational curriculum was introduced as element of increasing the students' satisfaction (12).

This study was conducted only at Tabriz University of medical sciences and among health service management students. So, authors are not sure to extend the results of this study to all medical universities in Iran. Another limitation is related to the cross-sectional nature of the study which was not allowed for the study of causality.

The level of service quality in educational organization can be measured using five dimensions of SERVQUAL model. Negative gap regarding all dimensions of quality of services means that the efforts to improve different dimensions of the quality of services are necessary in this study. Since in all previous studies the service quality gap was negative, it seems this is a common issue among all universities and institutions of higher education. Students' dissatisfaction of the quality of educational services can affect negatively their academic performance. Now, the universities should constantly improve processes and their outputs to achieving students' satisfaction as the customers. It seems that a dynamic system of information exchange is established among students and the organization authorities; however, the professors can reduce the quality gap.

#### **Ethical considerations**

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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