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Assessing the educational services quality of health information technology students

Nahid Tavakoli, Ghasem Yadegarfar¹, Hossein Bagherian, Fatemeh Ghasri²

Abstract:

INTRODUCTION: Responsibility in the higher educational system requires the universities to be sensitive on students' needs and expectations. The purpose of the present study was to examine the educational service quality among health information technology (HIT) students in Isfahan University of Medical Science based on the SERVQUAL model.

METHODS: This was a descriptive cross-sectional study and carried out at the Management and Medical Information Sciences faculty of IUMS in 2018. Sixty-eight undergraduate and postgraduate students of HIT participated in this study. For collecting data, the standard SERVQUAL questionnaire was used. The collected data were analyzed using SPSS version 20 software in descriptive level.

RESULTS: Findings showed that there was a positive gap in overall dimensions of educational services quality (mean discrepancy of expectations and perceives). Most mean of service gap was contributed to responsiveness dimension 1.06 (0.98 standard deviation [SD]), following that empathy 1.04 (0.97 SD), assurance 1.00 (0.83 SD), reliability 0.83 (0.76 SD), and the least gap was seen intangibles 0.61 (1.02 SD).

CONCLUSION: According to the current gaps in all quality dimensions, as well as high amount of expectations in comparison with students' perception, it is required to evaluate higher education quality through implementing students' knowledge skill and creative abilities. Therefore, to improve the quality of educational services at the Faculty of Management and Medical Information, all dimensions, especially the responsiveness dimension, should be considered.

Keywords:

Assessment, educational services quality, health information technology, students

Health Information Technology Research Center, ¹Department of Epidemiology and Biostatistics, School of Public Health, ²MSc Student, Health Information Technology, Isfahan University of Medical Sciences, Isfahan, Iran

Address for correspondence:

Dr. Nahid Tavakoli, Health Information Technology Research Center, Isfahan University of Medical Sciences, Hezarjerib Street, Isfahan, Iran.
E-mail: tavakoli@mng.mui.ac.ir

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Introduction

Empirical studies have shown that the socioeconomic development of countries relies on the quality of higher education, and universities play an important role in this regard through the development of the production, preservation, and distribution of knowledge in the field of human capital investment, accounting for a significant portion of the budget of each country; therefore, it is necessary to pay more attention to the quality of educational services.^[1-4] By the quality of educational services, it

means to match the predefined standards with the obtained goals.^[5] Students, staff members, faculty members, and community and industries are the main customers of higher education. In this regard, students' views, as the main customers, are the key to assessing and monitoring the quality of the education system and can play a significant role in improving the quality of educational services. Through an investigation into the gap between the students' expectations and their perceptions of the educational services, ground can be provided for developing the appropriate programs to improve the quality of educational services.^[6-8] On the other hand, the growing development of educational

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centers in the knowledge-based communities reflects the need for the evaluation and analysis of the quality of performance of educational institutions.^[9] In this regard, it seems necessary to improve the quality of provided educational services to meet the students' satisfaction level.^[10] The level of student satisfaction of service is assessed through the comparison of student expectations of services with their received perceptions.^[11] Evaluation of the quality of educational services is considered as one of the most important measures to improve the quality of these services; improving the quality of educational services leads to more creative learners, and if the focus is on the qualitative dimension of educational services, it will lead to entrepreneurship and knowledge generation. Identification of the challenges and shortcomings of the education system will make the educational activities more effective in accordance with the standards and quality indicators in higher education.^[8,11-13] Based on new approaches, continuous quality improvement requires a continuous assessment of education, identification of the perceptions and expectations of students and universities, and receiving their feedback in this regard.^[6]

So far, some studies have been conducted in different countries to assess the quality of services in higher education institutions, and the most used model in this regard is the SERVQUAL model.^[1,2,5,7,14-25] This model measures the customer satisfaction of service quality in the five dimensions of empathy, reliability, responsiveness, assurance, and tangibles and identifies the gap between their expectations and perceptions of services. The advantages of this model include its subjectivity, multidimensionality, satisfaction-orientedness, customer-orientedness, and explicitness.^[7,19,20]

The results of previous studies in some universities in Iran showed a gap in the five dimensions of the quality of educational services, indicating the poor quality of these services. In the study conducted by Khadem Rezaiyan and Mousavi Bazaz, students of Mahshad University of Medical Sciences, the highest and the lowest mean of educational services gap were identified in the dimensions of responsiveness and tangibles, respectively, and their main concern was the uncertainty about being ready for the future job.^[17] Based on the study of Nakhaey *et al.*, the highest and the lowest mean of the educational gap, in the view of pharmacy students of Mashhad, were found to be in the tangibles and reliability dimensions, respectively.^[26] In their study of the quality of educational services in Isfahan School of Pharmacy, Esmaeili *et al.* concluded that the highest and lowest gaps are related to the empathy and reliability dimensions, respectively. The students' expectation level was higher than their perceptions of the current status of the faculty, and their expectations were not

met in any of the service dimensions.^[27] A review of the studies conducted in other countries also indicated the use of SERVQUAL model to assess the quality of educational services. Yousapronpaiboon investigated the quality of educational services from the view of graduates of private universities in Thailand using the SERVQUAL method; there was a difference between the expectations and perceptions of students in all five dimensions and the highest and lowest gaps were found to be in the dimensions of reliability and empathy, respectively.^[24] Furthermore, the results of the study conducted by Enayati and Mohamad Kareem indicated a gap in the dimensions of reliability, responsiveness, and assurance.^[25]

In recent years, with the development of information and communication systems and technologies in the field of medicine and the need to manage this information in the electronic environment, a new development has taken place in the educational system of medical sciences universities in Iran and hence that a new course, entitled Health Information Technology (HIT), has been created since 2009.^[28] HIT encompasses a wide range of technologies for collecting, storing, exchanging, and analyzing the health information, and its application can affect the quality of healthcare services, the performance of healthcare providers, and cost of medical care.^[29,30] Therefore, considering the vital role of the graduates of this profession in using the software and hardware and computer systems for the collection, storage, retrieval, and distribution of timely, accurate, and complete health information, it is necessary to assess the quality of the provided educational services. The results of this assessment can lead to the development of educational programs to improve the academic and technical skills of these students. Hence, the present study aimed to assess the quality of educational services in the field of HIT from students' point of view at Isfahan University of Medical Sciences.

Methods

This is a descriptive cross-sectional study conducted in 2018 in the faculty of medical management and information in Isfahan University of Medical Sciences. The statistical population of the study consisted of 68 undergraduate students major in HIT and all postgraduate students; the total population sampling was used due to the limited and accessible statistical population. The data were collected using the SERVQUAL questionnaire. The questionnaire consisted of the two parts of students' personal information and five dimensions of the quality of educational services (assurance, tangible, responsiveness, reliability, and empathy) extracted from the studies of Isfahan, Hamedan, and Mashhad University of Medical Sciences; validity of the questionnaire was confirmed

by the faculty members of the HIT and Health Services Management; the reliability was also calculated using the Cronbach's alpha coefficient as 0.94. Students evaluated the quality of educational services based on the Likert Scale from very high (5) to very low (1); they also expressed their opinions about the current status of educational services through choosing the options from very satisfactory (5) to undesirable (1). In order for the data collection, the researcher attended the students' classes after getting permission from the department of education and receiving their class timetables. The subject, goals, and necessity of doing the study were explained to the participants in each class and their satisfaction from the participation was obtained; then the questionnaire was distributed and collected in coordination with the representative of the class. The data were analyzed through the descriptive statistics (mean, standard deviation, and median) using the (IBM) SPSS Statistics.v20 software.

Results

The results of mean scores and standard deviation for the expectations and perceptions of HIT students and the quality gap in each of the five dimensions of the SERVQUAL model are presented in Table 1. The results show that the highest and lowest mean of the gap are in the responsiveness (1.07) and tangibles dimensions (0.63), respectively.

Table 2 shows that the highest and lowest mean gaps are in the responsiveness (1.24) and empathy (0.75) dimensions in men, and empathy (1.07) and tangibles (0.89) dimensions in women, respectively. In addition, the highest and the lowest mean gaps among the undergraduate students were in the responsiveness (1.12) and tangibles (0.70) dimensions and master's students, they were in the assurance (0.78) and tangibles (0.14) dimensions, respectively.

Discussion

The quality of educational services depends on the quality of learners' abilities and intrinsic capacities, the environmental, economic, and social conditions, the level of experience and education, teachers' responsibility and commitment, and educational facilities and equipment, including the textbooks, educational equipment, and infrastructure equipment.^[31] To provide more practical and applied educational services, it is necessary to make a list of all potential customers and determine their needs and expectations.^[32] Perceptions and expectations of students, as the main customers of higher education, provide valuable information for planning and improving the quality of educational services; lack of contact with students makes decision makers unable to have access to the real information and set the educational priorities; in this case, the educational services cannot meet students' expectations, leading to a quality gap.^[33]

Based on the results of this study, there is a gap in all dimensions of the quality of educational services. The highest mean of the quality gap was observed to be in the responsiveness dimension (1.07) and then in the empathy (1.04), assurance (1.00), reliability (0.81), and tangibles (0.63) dimensions, respectively.

The responsiveness dimension reflects the willingness of employees to help customers and provide immediate services. The highest quality gap in this dimension indicates that the relationship between students and faculty members is at a lower level in terms of the availability and responsiveness to curriculum issues. Furthermore, less feedback has been received from the students' comments and suggestions in the field of educational plannings, and this gap reflects the poor responsiveness of staff to the students' educational problems.

Table 1: Mean of expectations and perceptions of students and the quality gap

Dimensions		Frequency	Mean	Std. Deviation	Median	Minimum	Maximum
Expectations	assurance	68	3.86	0.61	3.82	1.64	5
	responsiveness	68	3.88	0.63	3.89	2.11	4.78
	empathy	68	3.91	0.74	3.88	1.88	5
	reliability	68	3.85	0.67	3.88	2	5
	Tangibles	68	3.87	0.77	4	2	5
Perceptions	assurance	68	2.86	0.60	2.82	1.09	4.27
	responsiveness	68	2.81	0.73	2.83	1.44	4.67
	empathy	68	2.87	0.77	2.88	1.25	4.50
	reliability	68	3.04	0.59	3	1.88	4.63
	tangibles	68	3.24	0.76	3.17	1.50	4.83
Gap between expectations perceptions	assurance	68	1.00	0.83	1.00	1.00	3.73
	responsiveness	68	1.07	0.98	0.94	1.22	3.33
	empathy	68	1.04	0.97	0.81	0.50	3.75
	reliability	68	0.81	0.76	0.75	0.50	2.88
	tangibles	68	0.63	1.02	0.33	1.17	3.50

Table 2: Mean of expectations and perceptions and the quality gap based on students' demographics information

Variables		Assurance		Responsiveness		Empathy		Reliability		Tangibles	
		Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
sex	Male	0.91	0.68	1.24	0.82	0.75	0.99	1.02	0.64	0.89	1.04
	Female	1.01	0.85	1.05	1	1.07	0.98	0.81	0.77	0.58	1.02
level	B.S	1.04	0.88	1.12	1.01	1.11	0.93	0.91	0.76	0.70	1.03
	MSc	0.78	0.54	0.68	0.67	0.75	1.16	0.43	0.66	0.14	0.85
Year of education	2 nd Year	1.21	0.65	1.37	0.97	1.21	1	1.22	0.71	0.83	1.05
	3 rd Year	1.21	1.13	1.25	1.15	1.17	0.92	0.80	0.63	0.77	0.93
	4 th Year	0.54	0.80	0.73	0.83	0.80	0.82	0.48	0.53	0.35	1.04
	MSc	0.78	0.54	0.68	0.67	0.75	1.16	0.43	0.66	0.14	0.85

The existence of a quality gap in the dimension of empathy reflects a mismatch between the assignments and the lessons and the inadequacy of interaction between the educational staff and students and the lack of respectful behavior between the professors and students. The quality gap in the dimension of assurance represents the lack of readiness of students for their future job, and the fact that professors do not spend enough time outside the class hours for students.

The existence of a quality gap in the reliability dimension indicates that the materials provided to students are not well understood by them and students are not aware of the results of the evaluation of the assignments and there is no timely notification in this regard.

The lowest mean of the quality gap was observed in the tangibles dimension, indicating that students are satisfied with the physical space, facilities, equipment, educational facilities, and their easy access to research resources.

The study conducted by Khadem Rezaiyan and Mousavi Bazaz^[17] in Mashhad University of Medical Sciences indicated that the highest and the lowest gaps are related to the responsiveness and tangibles dimensions, respectively, which is consistent with the findings of the present study. The study of Abbasian *et al.* in Shahroud University of Medical Sciences showed that there was a significant difference between the mean gap in the five dimensions of educational services between male and female students and among different disciplines; the mean gap for female students in all dimensions was higher than that of for male students.^[34] In the study done by Yousapronpaiboon, the difference between male and female students in the overall gap was significant in the dimensions of tangibles, responsiveness, and empathy, and the expectations of female students were higher than that of male students.^[24] However, in the present study, the expectation level of male students was higher than the female students in the responsiveness, tangibles, and reliability dimensions. The results of the study conducted by Enayati and Mohamad Kareem indicted

that there is no significant difference between gender and academic term.^[25]

Based on the results obtained from the study carried out by Bagherzadeh and Bagherzadeh in Tabriz Islamic Azad University, the highest and lowest gaps were found to be in the dimensions of empathy and assurance, respectively,^[35] which is not in line with the results of the present study. The results of the study by Ghavandi *et al.* indicated that there was a significant gap in all dimensions of educational services and students' expectations were beyond their perception of the current status, and their expectations have not been met in none of the dimensions of the quality of service.^[36]

In a study conducted in Beheshti University of Medical Sciences, Najafi *et al.* concluded that the greatest gap is in the responsiveness dimension,^[16] which is consistent with the results of this study. In another study conducted by Heidari and Mohammadi at the University of Science and Culture, the results showed that the highest mean gap is in the tangibles dimension; however, the total mean of student expectations in all aspects of the quality of educational services is equal to the mean in the study.^[3] In contrast to the Nakhaey *et al.* study in which the highest gap was found to be in the tangibles dimension,^[26] the lowest quality gap of educational services was associated with the tangibles dimension in the present study.

In a study at the University of Tehran, Shahamiri *et al.* concluded that there is a significant negative gap in all dimensions of the quality of educational services. Like the present study, the highest and lowest gaps were found to be in the responsiveness and tangibles dimensions, respectively. The results of both studies indicated that students do not have easy access to the management to convey their ideas and suggestions on the educational issues.^[37]

The results of the study conducted by Heidari Sureshjani *et al.* at Kermanshah University showed that the quality of postgraduate educational services is not at the favorable level and like in the present study, the responsiveness

dimension was ranked first in terms of the highest gap score; this reflects the students' dissatisfaction with the educational issues and lack of informing students by the professors.^[38]

Conclusion

Based on the present study, it can be concluded that due to the gap in all dimensions of the service quality, the level of student expectations is higher than their perceptions of the status quo and the quality of educational services is at a lower level than the students' expectations. Therefore, to improve the quality of educational services at the Faculty of Management and Medical Information, all dimensions, especially the responsiveness dimension, should be considered. In this regard, factors such as the level of accountability and the quality of performance of educational staff, the use of students' comments and suggestions, treatment of students without discrimination, teaching methods, a specialty of professors, and the content of the offered courses can play an important role in the student satisfaction.

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Conflicts of interest

There are no conflicts of interest.

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