


Assessing the Quality of Educational Services of Iranian Universities of Medical Sciences Based on the SERVQUAL Evaluation Model: A Systematic Review and Meta-Analysis

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What's Known

- One of the important criteria for assessing the quality of educational services in any university is the students' opinions. A look at the results of research carried out inside and outside Iran reveals a quality gap in all or some of the 5 dimensions of services: responsiveness, assurance, tangibility, empathy, and reliability (based on the SERVQUAL).

What's New

- There was a negative gap in all 5 dimensions, and the expectations of the students were beyond their perception of the status quo.
- The average gap in all the dimensions was -1.335 out of the maximum 5 (responsiveness = -1.463, assurance = -1.367, tangibility = -1.364, empathy = -1.297, and reliability = -1.091).

Abstract

Background: Determining the gap in the quality of educational services, followed by the adoption of appropriate strategies for eliminating or reducing the existing obstacles, is considered the first basic step in developing quality improvement programs for universities. Therefore, this study was conducted to evaluate the quality of educational services of Iranian medical universities.

Methods: This study was a systematic review and a meta-analysis based on the SERVQUAL evaluation pattern, and data collection was done through accessing published articles in reputable academic websites inside and outside Iran including and searching 4 keywords “the quality of educational services, SERVQUAL Evaluation Model, educational service gap, and Iran” without time and language restrictions. The CMA software, version 2.2.064, was used for data analysis.

Results: There was a negative gap in all 5 dimensions. The average gap in all the dimensions was -1.335 out of the maximum 5 (responsiveness=-1.463, assurance=-1.367, tangibility=-1.364, empathy=-1.297, and reliability=-1.091).

Conclusion: Based on the results of this study, it can be claimed that students are not satisfied with the current state of the quality of the educational services provided, and we are far away from achieving the ideal state and winning their full satisfaction. The differences observed among the 5 dimensions of the quality of educational services can be used as a guide for planning and allocating resources. Iranian medical science universities should try to pay their most attention to the dimensions that have the widest gaps and place them at the top of their priorities.

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Keywords • Universities • Quality Improvement • Students • Iran

Introduction

One of the manifestations of the ancient civilization of Iran is the attitude toward medical science as reflected by the establishment and development of the University of Gondishapur in the region of the current Khuzestan Province of Iran about 1745 years ago.^{1, 2} The sustainable development of a higher education system, which is a dynamic system, requires balanced and

proportional growth of both quantitative and qualitative dimensions.³ Higher education plays an important role in the economic, social, and cultural development of societies. Therefore, the quality of services offered in higher education has attracted increasing scholarly attention over the last 2 decades.⁴ Higher education in Iran is growing rapidly along with globalization processes. The quality of educational services with an emphasis on students' satisfaction has recently been accorded greater significance.⁵ Medical science universities of Iran are pivotal in educating efficient, expert, and committed manpower to meet the health and medical needs of the public.⁶ In this regard, a student seeking to acquire knowledge has a prominent role in promoting the university's higher goals, which means maintaining and increasing human health. Assessing students' viewpoints is one of the essential elements in evaluating the quality of educational services provided by the university, and the results obtained from such surveys are an important factor in upgrading the future performance of these institutions.⁷ One model that describes the current situation and the expected status of the quality of educational services is the SERVQUAL evaluation model. It determines the existing gaps in the educational services in terms of students' viewpoint based on 5 dimensions, namely reliability, assurance, tangibles, empathy, and responsiveness.⁸ This model has been used to assess the quality of educational services in some Iranian medical universities (Kebriaei et al.,⁹ Arbouni et al.,¹⁰ Aghamolaei et al.,¹¹ Aghamolaei et al.,¹² Mohammadi et al.,¹³ Tofighi et al.,¹⁴ Abbasian et al.,¹⁵ Bahadori et al.,¹⁶ Khademloo et al.,¹⁷ Goharinezhad et al.,¹⁸ Enayati et al.,¹⁹ Rasoolabadi et al.,²⁰ Haresabadi et al.,²¹ Kavosi et al.,²² Shams et al.,²³ Rahim Khanli et al.,²⁴ Mohebbifar et al.,²⁵ Khandan et al.,²⁶ Seyedaskari et al.,²⁷ Yarmohammadian et al.,²⁸ Jafarinejad et al.,²⁹ Gholami et al.,³⁰ Nabilou et al.,³¹ Nabilou et al.,³² Yasbolagi et al.,³³ Asefi et al.,³⁴ Ghavimi et al.,³⁵ Nekoei-Moghadam et al.,³ and Jafari Asl et al.³⁶). In order to make constructive changes in any educational system, there is a need for descriptive information about the status quo and knowledge of the students' attitude toward the quality of the provided services. By using this information, we can increase the satisfaction of the students while reinforcing positive factors and correcting negative factors.³ Determining the gaps in the quality of educational services, followed by the adoption of appropriate strategies for eliminating or reducing them, is deemed the first basic step in developing quality improvement programs for universities.²⁹ The

quality assessment of educational services is one of the most important measures to improve the quality of these services. If we do not take into account the quality of educational services, we will see a marked decline in education quality and a reduction in the learners' creativity. Hence, one of the essential steps in augmenting the quality of educational programs is to evaluate the quality of services from the perspective of the users.³⁶ Quality in any academic system can be regarded from various dimensions. One of the factors determining the quality of the services provided by a university is the satisfaction of students' expectations of the educational services.³⁷ Students are regarded as any educational system's clients and play a major role in evaluating its performance and educational activities, and because of their specific mental and social conditions, students tend to look at educational issues with a different perspective, which may be strange and unfamiliar to university officials and their colleagues. Therefore, in order to investigate the problems and barriers in the provision of educational services, we should be informed about students' opinions and coordinate the existing physical and intellectual forces to remove obstacles and bring about students' satisfaction. Given that medicine, dentistry, and pharmacy and other similar fields are among the popular fields of study in universities and higher education institutions of Iran,³⁸⁻⁴⁰ in the present study we aimed to examine the quality of the educational services of Iranian medical science universities based on the SERVQUAL assessment model (a systematic review and meta-analysis).

Materials and Methods

This study was carried out as a systematic review and meta-analysis in order to evaluate the quality of the educational services of Iranian medical science universities based on the SERVQUAL evaluation model in the time period between 2005 and 2017. In the SERVQUAL evaluation model, the quality of educational services is determined by examining the gap between students' expectations (desirable situation) and the educational services provided (current status). The Egger test was applied to evaluate the possibility of publication bias.

Data Collection

Data collection was done through accessing published articles in reputable academic websites inside and outside Iran including *SID*, *MAGIRAN*, *IranMedex*, *Google Scholar*, *Embase*, *PubMed*, *Scopus*, and *Web of Science*

and searching 4 keywords “the quality of educational services”, “SERVQUAL evaluation model”, “educational service gap”, and “Iran” without time and language restrictions. Initially, 285 related studies were found, of which, 26 papers (20 Farsi papers and 6 English papers) which were completely related to the scope of our study were used. The articles encompassed descriptive and cross-sectional articles performed in educational settings in Iran and published in English or Farsi and they reported the mean score of students’ perception and expectation of the quality of educational services (figure 1). Studies irrelevant to the scope of our study were excluded by 2 expert reviewers in the field. Afterward, the abstracts and full-text articles that met the inclusion criteria of our study were finally chosen. A third reviewer was invited in order to alleviate the inter-reviewer disagreements. Proceedings papers, case reports, and interventional studies were excluded from our study.

In order to organize and assess the titles and abstracts, and to identify duplicate studies, we employed Endnote X5. In addition to the articles accessed by the method mentioned above, review articles dealing with the quality of educational services and the reference lists of articles that were relevant to the scope of our study were also manually searched to obtain more articles.

Assessment of Study Quality

The study quality was assessed by 2 reviewers using ‘Strengthening the Reporting of Observational Studies in Epidemiology’ (STROBE) checklist.^{41, 42}

Data Extraction

The data were extracted by 2 reviewers using a standard data collection form including the following items: author’s name, date of implementation, setting, sample and sample size, mean score of the dimensions of educational services quality, and significant factors (table 1)

Statistical Methods and Data Analysis

Comprehensive Meta-Analysis (CMA) software, version 2.2.064, was used to analyze the data. In order to obtain the average gap in the extracted educational services (for each dimension separately and overall) from the studies and a total average at a 95% confidence interval (for each dimension separately and in general), we utilized the random effects model. This model simultaneously takes into account the inter and intra changes of the studies. Q Cochrane statistics were used to evaluate the heterogeneity of the results of various studies, and the degree of heterogeneity between the studies was evaluated using the I^2 index. A P value less than 0.05 or values of I^2 greater than 50% suggested high heterogeneity.

Results

Currently, there are 65 universities or independent medical faculties under the supervision of the Ministry of Health and Medical Education in Iran. Additionally, according to statistics released in 2017 by the Ministry of Health and Medical Education of Iran, a total of 189 967 students are enrolled in independent medical science faculties of the Ministry of Health and Medical

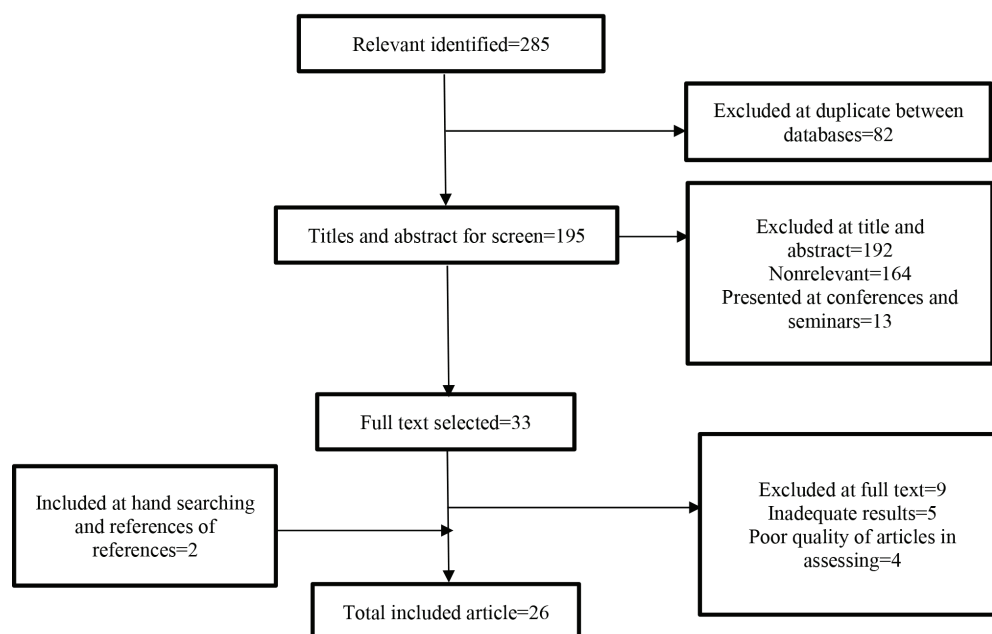


Figure 1: Flowchart of study selection according to the MOOSE guideline.

Table 1: Main characteristics of the included studies

Sample Size	Gap	Total	Response	Empathy	Response	Assurance	Response	Responsiveness	Response	Reliability	Tangible	Authors	Year of Implementation	Line
386	1.07	-1.49	1.06	-1.55	1.02	-1.54	1.04	-1.73	0.99	-1.10	1.15	Kebriyalie et al.	2004	1
362	0.08	-1.56	0.14	-1.67	0.04	-1.54	0.14	-1.62	0.22	-1.46	0.14	Arbooni et al.	2005	2
300	0.15	-0.89	0.25	-0.95	0.22	-0.89	1.03	-1.14	0.17	-0.71	0.49	Aghamola et al.	2007	3
320	1.10	-1.45	1.03	-1.34	1.06	-1.51	1.10	-1.69	0.89	-1.18	0.97	Mohamadi et al.	2010	4
170	0.10	-1.45	0.11	-1.57	0.23	-1.40	0.17	-1.42	0.15	-1.31	0.28	Tofighi et al.	2010	5
274	0.13	-1.26	0.32	-1.22	0.18	-1.14	0.37	-1.45	0.20	-1.15	0.50	Abasiyan et al.	2010	6
383	0.81	-1.58	0.92	-1.54	1.01	-1.75	1.02	-1.76	0.85	-1.33	1.13	Bahadori et al.	2010	7
140	0.07	-1.26	0.24	-1.26	0.16	-1.26	0.23	-1.33	0.28	-1.15	0.25	Khademlo et al.	2011	8
97	0.19	-1.39	0.77	-1.23	0.89	-1.56	0.84	-1.66	0.74	-1.26	0.82	Goharinezhad et al.	2011	9
341	0.73	-1.17	0.86	-1.15	1.05	-1.29	0.90	-1.19	0.33	-0.01	0.79	Enayati et al.	2011	10
198	0.68	-1.64	0.49	-1.33	0.32	-1.89	0.28	-2.02	0.25	-0.32	0.48	Rasoul Abadi et al.	2012	11
175	1.4	-1.9	1.2	-1.8	1.4	-2.2	1.3	-1.8	1	-1.6	1.4	Haresaba et al.	2013	12
220	0.83	-1.64	1.11	-1.51	0.91	-1.72	1.02	-1.72	0.99	-1.62	0.88	Kavosi et al.	2013	13
198	0.20	-1.39	0.31	-1.23	0.50	-1.52	0.37	-1.64	0.24	-1.14	0.93	Shams et al.	2013	14
140	0.04	-0.84	0.31	-0.85	0.28	-0.85	0.16	-0.88	0.15	-0.77	0.28	Rahimkha et al.	2013	15
256	0.1	-1.56	0.22	-1.47	0.34	-1.24	0.70	-1.96	0.17	-1.41	0.24	Mohebfar et al.	2013	16
150	0.05	-1.26	0.26	-1.2	0.22	-1.2	0.30	-1.3	0.29	-1.3	0.34	Khandan et al.	2014	17
204	0.40	-0.94	0.63	-0.6	0.41	-1.05	0.64	-1.07	0.31	-0.51	0.38	Seyedasg et al.	2014	18
78	0.05	-1.03	0.23	-1.08	0.24	-0.93	0.13	-1.06	0.21	-1.04	0.28	Yarmohamadian	2014	19
86	0.29	-1.74	0.40	-1.64	0.77	-2.14	0.26	-1.99	0.27	-1.38	1.15	Jafarnejad et al.	2014	20
198	0.56	-1.31	0.66	-1.33	0.65	-1.26	0.82	-1.30	0.72	-1.02	1.002	Gholami et al.	2014	21
173	0.97	-0.97	1.51	-1.11	1.1	-0.96	1.28	-1.09	1	-0.83	1	Nabilo1 et al.	2014	22
173	0.891	-1.45	1.16	-1.47	1	-1.58	1.2	-1.48	1.1	-1.5	0.96	Nabilo2 et al.	2014	23
453	0.04	-1.283	0.04	-1.291	0.04	-1.338	0.04	-1.344	0.04	-1.113	0.06	Yasbolagh et al.	2015	24
313	0.77	-0.77	0.88	-0.81	0.84	-0.65	0.94	-0.74	0.8	-0.69	1.09	Asefi et al.	2016	25
402	0.06	-1.57	0.86	-1.57	0.98	-1.5	0.96	-1.68	0.87	-1.53	0.97	Ghavimi et al.	2016	26

Education of Iran studying for different degrees including associate, bachelor's, postgraduate, PhD, and fellowships. In addition, a total of 16 863 faculty members (educational and research) are employed at this ministry.⁴³ It should be noted that in Iran, medical courses are not exclusively offered by institutions under the supervision of the Ministry of Health, and there are also 5 other universities, namely Army Medical University, Baqiyatallah University of Medical Sciences, Islamic Azad University of Medical Sciences, Shahed University, and Tarbiat Modarres University, which are active in this area and are licensed by the Ministry of Health and Medical Education of Iran.

Tangibles

The average gap between perception (status) and expectation (desirable condition) in the area of physical and tangible factors of the quality of educational services based on the SERVQUAL evaluation model apropos of students' attitude in the medical science universities of Iran was -1.364 (95% CI: -1.434 to -1.293).

The smallest gap in this area was -0.84 (Aghamolaei et al.¹² in Bushehr University of Medical Sciences) and the highest gap in this area was -1.74 (Mohebbifar et al.²⁵ in Qazvin University of Medical Sciences). Figure 2 illustrates the mean gap in the tangible dimension of the SERVQUAL questionnaire based on the random effects model. The middle point of each line shows the estimated mean, and the length of the lines shows the 95% confidence interval in each study. The diamond sign shows the mean

gap in the tangibles dimension for all the studies.

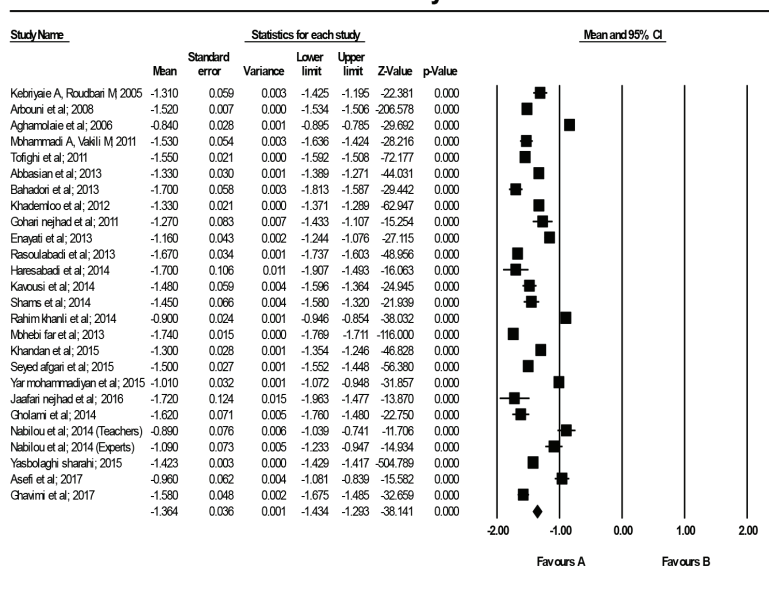
Reliability

The average gap between perception (status) and expectation (desirable condition) in the area of reliability of the quality of educational services based on the SERVQUAL evaluation model in respect of students' attitude toward the educational services provided in the medical science universities of Iran was -1.091 (95% CI: -1.208 to -0.973). The smallest gap in this area was -0.01 (Enayati et al.¹⁹ in Sari University of Medical Sciences), and the highest gap was -1.62 (Kavosi et al.²² in Shiraz University of Medical Sciences). Figure 3 demonstrates the mean gap in the dimension of the reliability of the SERVQUAL questionnaire based on the random effects model. The middle point of each line shows the estimated mean, and the length of the lines shows the 95% confidence interval in each study. The diamond sign shows the mean gap in a reliability area for all the studies.

Responsiveness

The average gap between perception (status) and expectation (desirable condition) in the area of responsiveness of the quality of educational services based on the SERVQUAL evaluation model with respect to students' attitude toward the educational services provided in the medical science universities of Iran was -1.463 (95% CI: -1.558 to -1.368). The smallest gap in this area was -0.74 (Asefi et al.³⁴ Shahrekord University of Medical Sciences) and the highest gap in this area was -2.02 (Rasoolabadi et al.²⁰ in Kurdistan

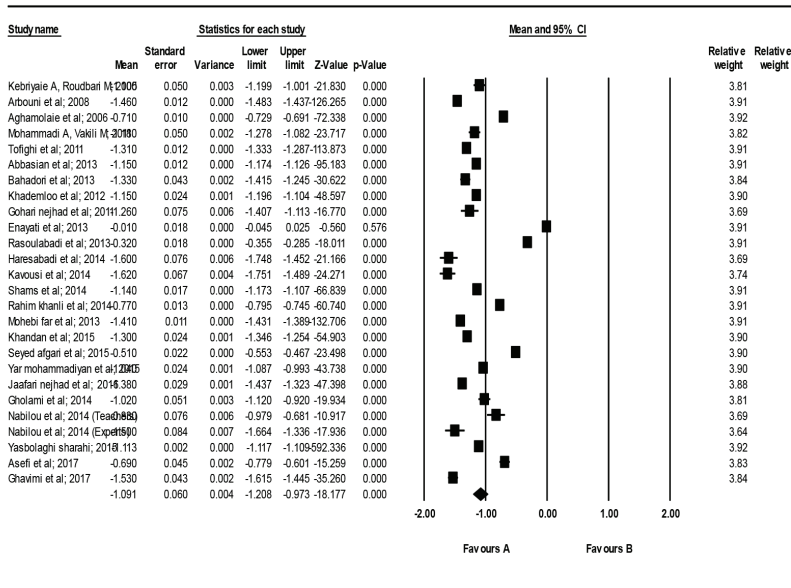
Meta Analysis



Meta Analysis

Figure 2: Mean gap in the tangible dimension.

Meta Analysis



Meta Analysis

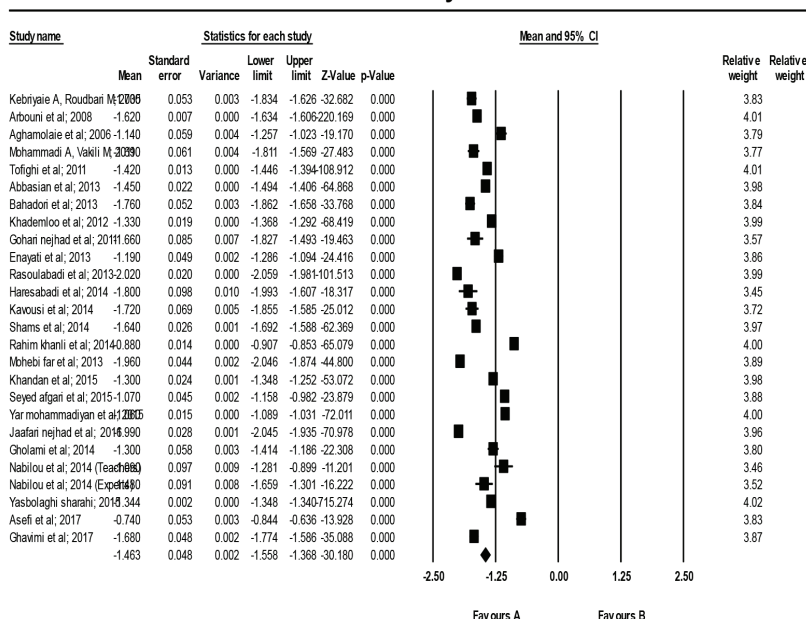
Figure 3: Mean gap in the dimension of reliability.

University of Medical Sciences). Figure 4 demonstrates the mean gap in the dimension of the responsiveness of the SERVQUAL questionnaire based on the random effects model. The middle point of each line shows the estimated mean, and the length of the lines shows the 95% confidence interval in each study. The diamond sign shows the mean gap in the responsiveness area for all the studies.

Assurance

The average gap between perception (status) and expectation (desirable condition) in the area of assurance of educational services based on the SERVQUAL evaluation model vis-à-vis students' attitude toward the educational services provided in the medical science universities of Iran was -1.364 (95% CI: -1.438 to -1.295). The smallest gap in this area was -0.65

Meta Analysis



Meta Analysis

Figure 4: Mean gap in the dimension of responsiveness.

(Asefi et al.³⁴ in Shahrekord University of Medical Sciences), and the highest gap in this area was -2.2 (Haresabadi et al.²¹ in Northern Khorasan University of Medical Sciences). Figure 5 illustrates the mean gap in the dimension of the assurance of the SERVQUAL questionnaire based on the random effects model. The middle point of each line shows the estimated mean, and the length of the lines shows the 95% confidence interval in each study. The diamond sign shows the mean gap in the assurance area for all the studies.

Empathy

The average gap between perception (status) and expectation (desirable condition) in the area of empathy of educational services based on the SERVQUAL evaluation model apropos students' attitude toward the educational services provided in the medical science universities of Iran was -1.297 (95% CI: -1.383 to -1.211). The smallest gap in this area was -0.60 (Seyedaskari et al.²⁷ in Kerman University of Medical Sciences), and the highest gap in this area was -1.67 (Arbouni et al.¹⁰ in Zanjan University of Medical Sciences). Figure 6 depicts the mean gap in the dimension of empathy of the SERVQUAL questionnaire based on the random effects model. The middle point of each line shows the estimated mean, and the length of the lines shows the 95% confidence interval in each study. The diamond sign shows the mean gap in the empathy area for all the studies.

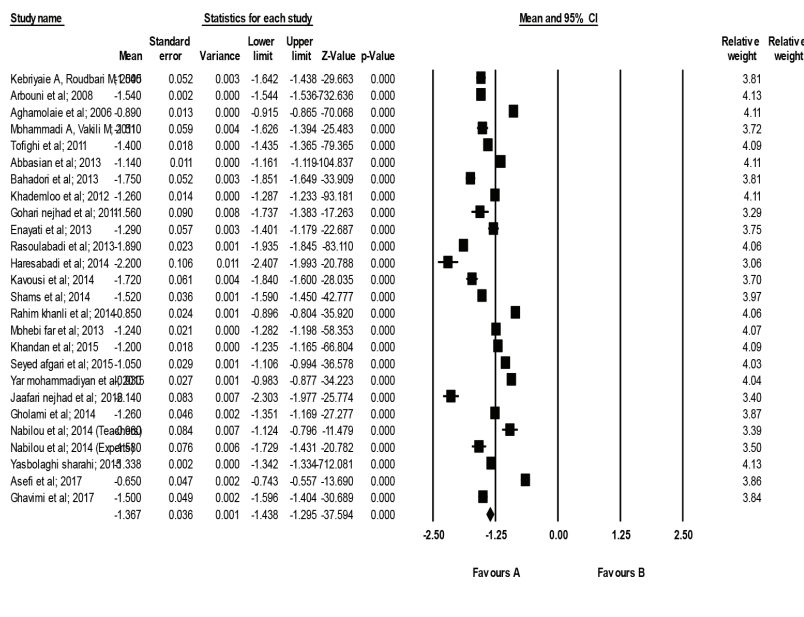
Total Score of the SERVQUAL Questionnaire

The average gap between perception (status) and expectation (desirable condition) of the quality of educational services based on the SERVQUAL evaluation model with regard to students' attitude toward the educational services provided in the medical science universities of Iran was -1.335 (95% CI: -1.433 to -1.237). The smallest gap was -0.77 (Asefi et al.³⁴ in Shahrekord University of Medical Sciences), and the highest gap was -1.90 (Haresabadi et al.²¹ in North Khorasan University of Medical Sciences) (out of the maximum 5). Figure 7 demonstrates the mean gap in the SERVQUAL questionnaire based on the random effects model. The middle point of each line shows the estimated mean, and the length of the lines demonstrates the 95% confidence interval in each study. The diarrhea sign shows the mean of the total gap for the all studies. To evaluate the publication bias, we applied the Egger test. The results of this test showed no publication bias among the studies.

Discussion

According to the results of the present systematic review and meta-analysis, the level of the expectations of Iranian students of medical sciences was higher than the quality of educational services provided, and there was a negative gap in all of the 5 dimensions

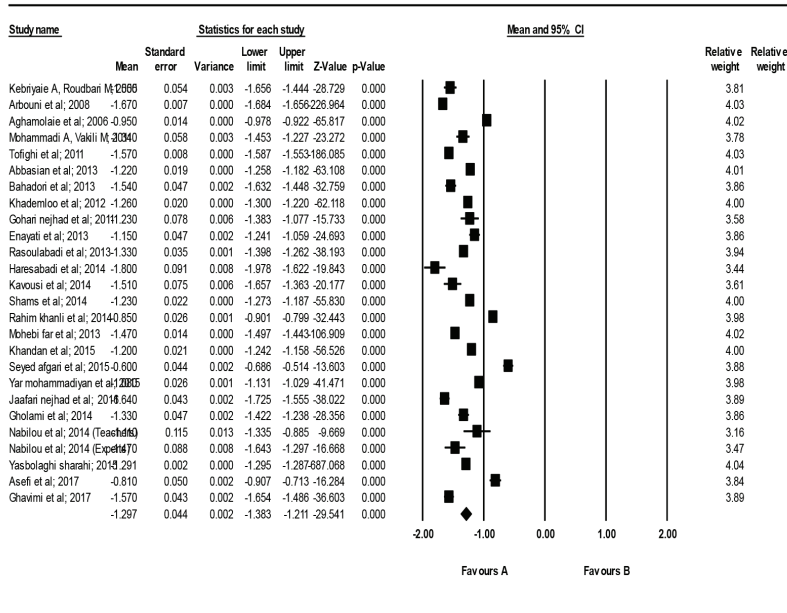
Meta Analysis



Meta Analysis

Figure 5: Mean gap in the dimension of assurance.

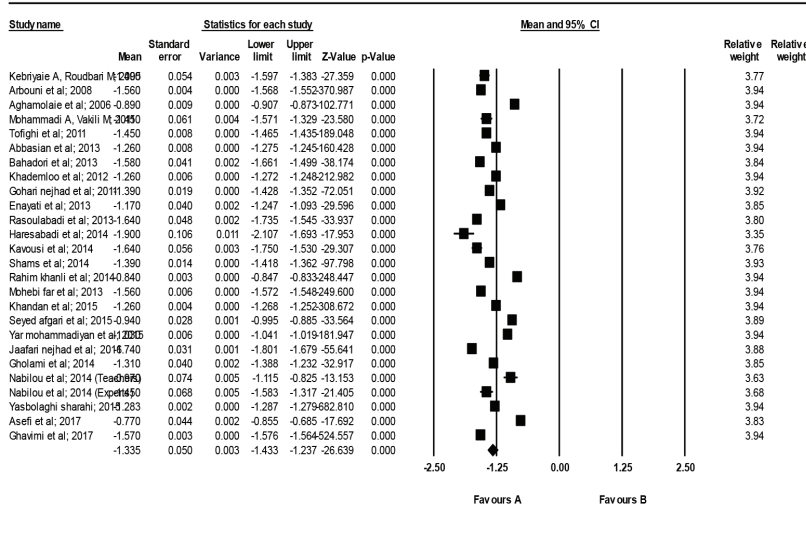
Meta Analysis



Meta Analysis

Figure 6: Mean gap in the dimension of empathy.

Meta Analysis



Meta Analysis

Figure 7: Mean gap in the SERVQUAL questionnaire based on the random effects model.

(Kebriyae et al.,⁹ Arbouni et al.,¹⁰ Aghamolaei et al.,¹¹ Aghamolaei et al.,¹² Mohammadi et al.,¹³ Tofighi et al.,¹⁴ Abbasian et al.,¹⁵ Bahadori et al.,¹⁶ Khademloo et al.,¹⁷ Goharinezhad et al.,¹⁸ Enayati,¹⁹ Rasoolabadi et al.,²⁰ Haresabadi et al.,²¹ Kavousi et al.,²² Shams et al.,²³ Rahim Khanli et al.,²⁴ Mohebbifar et al.,²⁵ Khandan et al.,²⁶ Seyedaskari et al.,²⁷ Yarmohammadian et al.,²⁸ Jafarnejad et al.,²⁹ Gholami et al.,³⁰ Nabilou et al.,³¹ Nabilou et al.,³² Yasbolagi et al.,³³ Asefi et al.,³⁴ Ghavimi et al.,³⁵ Nekoei-Moghadam et al.,³

and Jafari Asl et al.³⁶). The average gap in all the dimensions was -1.335, out of the maximum 5. There was a statistically significant difference between the university students' expectations and the current quality. This requires universities to put more efforts in order to improve the quality of their educational services in all aspects. In this research, the dimension of responsiveness with a gap of -1.463, dimension of assurance with a gap of -1.367, dimension of tangibles with a gap of -1.364, dimension of empathy with a gap of

-1.297, and dimension of reliability with a gap of -1.091 were respectively located in the lowest levels of the quality of the educational services of Iran's medical science universities. The lowest gap with a value of -0.77 was observed in Shahrekord University of Medical Sciences³⁴ and the highest gap with a value of -1.90 was observed in Northern Khorasan University of Medical Sciences.²¹

In similar studies conducted on the universities of India, Thailand and China, there was also a gap in all 5 dimensions of the SERVQUAL, which is in line with our research.^{5, 44, 45} In a study conducted on universities in Malaysia, there was a gap in 2 dimensions of empathy and assurance.⁴⁶ In another study conducted in the United States, there was a gap in 2 dimensions of assurance and responsiveness.⁴⁷ The results of a study on the quality of educational services from the perspective of 2 groups of college dropouts and students studying at the VSC college (at Sunshine Coast University) and the College of Higher Education in Australia showed that the educational service gap was higher for the studying students than for the college dropouts.⁴⁸

In the area of assurance, it is necessary for the universities of medical sciences to provide educational, research, and therapeutic services in a genuine and reliable manner in accordance with the changing and growing needs of students and the community.^{19, 22, 27} A constructive and suitable interaction should be provided in the dimension of empathy between students and professors and the staff working in the university. Furthermore, student guilds and cultural councils should be established, and active participation of students and student associations in various cultural, political, guild, welfare, and other fields should be encouraged.^{11, 12, 16} As far as the dimension of tangibles is concerned, it is necessary to pay more attention to the ergonomics and physical appearance of educational places, appearance of professors and employees, and educational equipment. Studies have shown that there is a direct relationship between the academic progress of students and the educational institution's environmental elements such as color, light, sound, seating, and open space.⁴⁹⁻⁵⁴ As regard the dimension of assurance, with the constant modification and revision of the educational programs, based on the feedback received from the students and the proper interaction of students with professors, as well as the promotion of knowledge and competence of the staff and faculty members of the universities, instilling a sense of trust and confidence in the students should be ensured.^{3, 32, 34, 36} When it

comes to the dimension of responsiveness, legal and legitimate demands of students should be noted, and it is necessary to be aware of the real needs of students through holding periodic question/answer meetings between officials and students and taking appropriate actions to remove the existing problems and barriers.^{22, 27, 34, 36}

Based on the results of the current study, it can be claimed that students are not satisfied with the current state of the quality of the educational services provided, and we are far away from achieving the ideal state and winning their full satisfaction. The differences observed among the 5 dimensions of the quality of educational services can be used as a guide for planning and allocating resources. In this regard, as was shown by the significance of the difference, the 5 dimensions can be divided into 3 priority groups for universities to allocate resources and seek to solve problems and raise the quality of education. Thus, reliability is placed in the highest degree of priority, empathy and tangible dimensions in the next, and the dimensions of assurance and responsiveness are at the lowest priority level. If such a prioritization is made, it is logical to address the dimensions that have the lowest quality first. Along with raising the quality in this dimension, other dimensions will also improve from the perspective of students. This is because the existence of a defect (as opposed to quality) in 1 dimension has an exacerbating effect and reduces quality in the other dimensions. Recognizing the demands of clients and understanding service quality is an important step in reducing the current gap and the difference between expectations and perceptions of service recipients.

Since all these institutions were not studied simultaneously, it cannot be claimed that the present study has accurately examined the gap in the educational services in Iran's medical science universities. Instead, it can only be claimed that this research gives us an overview of the quality of the services provided in these universities. It should also be noted that the consent or dissatisfaction of individuals in any field may depend on a variety of variables such as ethnicity, culture, personal experiences, level of education, age, expectations, and achieving the desired goals.

Conclusion

The results of the current study showed that there was a gap in all the dimensions of the SERVQUAL evaluation model, and the expectations of the students were beyond their perception of the status quo. In other words,

the students' expectations were met in none of the 5 dimensions of the quality of educational services. Medical education systems in different countries have undergone various transformations that have affected not only their operational processes but also their goals. These transformations are in consequence of global developments, development of information technologies, and spread of new diseases over the past few decades. It follows that Iran's medical universities can focus on upstream documents and eliminate the existing gaps by relying on their strengths and opportunities, reducing the weaknesses, avoiding threats and turning them into opportunities. Moreover, they should try to pay sufficient heed to the dimensions with widest gaps and place them at the top of their priorities.

Conflict of Interest: None declared.

References

- Gilavand A. Study of the Growth and Flourish of Ahvaz Jundishapur University of Medical Sciences; A Cultural History. *Int J Med Res Health Sci*. 2016;5:83-6.
- Gilavand A. Ahvaz Jundishapur University of Medical Sciences over Years; the History of AJUMS. *Jentashapir J Health Res*. 2016;7:e42677. doi: 10.17795/jjhr-42677.
- Nekoei-Moghadam M, Amiresmaili M. Hospital services quality assessment: hospitals of Kerman University of Medical Sciences, as a tangible example of a developing country. *Int J Health Care Qual Assur*. 2011;24:57-66. doi: 10.1108/09526861111098247. PubMed PMID: 21456498.
- Gilavand A. Examining the Knowledge Management Status in Iranian Universities: A Review, *Indo Am. JP Sci*. 2017;4:4219-25.
- Mukhopadhyay DK. Students' perception of quality of medical education in a medical college in west Bengal, India. *Indian J Public Health*. 2016;60:4-9. doi: 10.4103/0019-557X.177256. PubMed PMID: 26911211.
- Gilavand A. Quality Assessment of Staff in-service training from View Points of Employees Ahvaz Jundishapur University of Medical Sciences. *Future of Medical Education Journal*. 2016;6:42-6.
- Narang R. Measuring perceived quality of measuring quality health care services in India. *Int J Health Care Qual Assur*. 2010;23:171-86. doi: 10.1108/09526861011017094. PubMed PMID: 21388099.
- Gilavand A, Fatahiasi J, Majd RM. Evaluating the Quality of Educational Services from the Viewpoints of Radiology Students of Ahvaz Jundishapur University of Medical Sciences, in Southwest of Iran. *Middle East Journal of Family Medicine*. 2017;7:187-92. doi: 10.5742/mewfm.2017.93123.
- Kebriaei A, Akbari F. Quality gap of primary health care services at Kashan District Health Centers, Iran. *J Med Sci*. 2006;6:393-9. doi: 10.3923/jms.2006.393.399.
- Arbouni F, Shoghli A, Badriposhteh S, Mohajery M. The gap between students' expectations and educational services provided for them, Zanjan University of Medical Sciences, 2007. *Strides in Development of Medical Education*. 2008;5:17-25. Persian.
- Aghamolaei T, Fazel I. Medical students' perceptions of the educational environment at an Iranian Medical Sciences University. *BMC Med Educ*. 2010;10:87. doi: 10.1186/1472-6920-10-87. PubMed PMID: 21114818; PubMed Central PMCID: PMCPMC3001739.
- Aghamolaei T, Zare S. Quality gap of educational services in viewpoints of students in Hormozgan University of medical sciences. *BMC Med Educ*. 2008;8:34. doi: 10.1186/1472-6920-8-34. PubMed PMID: 18564413; PubMed Central PMCID: PMCPMC2442591.
- Mohammadi A, Shoghli A. Survey on quality of primary health cares in Zanjan District Health Centers. *ZUMS Journal*. 2009;16:89-100. Persian.
- Tofighi S, Sadeghifar J, Hamouzadeh P, Afshari S, Foruzanfar F, SM TS. Quality of educational services from the viewpoints of students SERVQUAL model. *Education Strategies in Medical Sciences*. 2011;4:21-6. Persian.
- Abbasian M, Chaman R, Mousavi S, Amiri M, Taromsar MG, Maleki F, et al. Gap analysis between students' perceptions and expectations of quality of educational services using Servqual Model. *Qom University of Medical Sciences journal*. 2013;7:2-9. Persian.
- Bahadori M, Mousavi SM, Sadeghifar J, Haggi M. Reliability and performance of SEVQUAL survey in evaluating quality of medical education services. *International Journal of Hospital Research*. 2013;2:39-44.
- Khademloo M, Zare A, Fakhari M. Survey of service quality gap from the viewpoint of paramedicine students in Mazandaran University of Medical Sciences, 2010. *J Educ Ethics Nurs*. 2013;2:48-55. Persian.
- Goharinezhad S, Maleki M, Khajehkazemi R. The measurement of education quality from the viewpoints of master students in Tehran University of Medical Sciences. *Journal of Medical Education Development*.

- 2011;4:55-62. Persian.
- 19 Enayati T, Zamani F, Nasirpoor Deravi N. Assessing the quality of educational service in Mazandaran University of Medical Sciences using Servqual Model. *Journal of health promotion Management*. 2013;2:32-9. Persian.
 - 20 Rasolabadi M, Shafieian M, Gharibi F. Assessment of the quality of educational services by the SERVQUAL Model: viewpoints of the students at Kurdistan University of Medical Sciences. *Scientific Journal of Kurdistan University of Medical Sciences*. 2013;18:104-12. Persian.
 - 21 Haresabadi M, Bibak B, Abbasi Z. Quality Gap in Educational Services at North Khorasan University of Medical Sciences (2011): Students Viewpoints about Current and Optimal Condition. *J North Khorasan Univ Med Sci*. 2013;5:715-21. Persian.
 - 22 Kavosi Z, Rahimi H, Qanbari P, Haidari L, Bahmaei J. Investigation of quality gap of educational services from the viewpoints of students of Shiraz University of Medical Sciences, 2012-2013. *2014;2:161-72*. Persian.
 - 23 Shams L, Mahmoudi S, Maleki MR, Ameli E, Mousavi SM. Educational service quality of Tehran University of Medical Sciences: the students' perspective. *Razi Journal of Medical Sciences*. 2014;21:37-46.
 - 24 Khanli MR, Daneshmandi H, Choobineh A. The students' viewpoint on the quality gap in educational services. *J Adv Med Educ Prof*. 2014;2:114. Persian.
 - 25 Mohebbifar R, Atighechian G, Gholamalipoor S. Analysis of educational services quality from viewpoints' of Health & Paramedical students in Qazvin university of Medical Sciences, using SERVQUAL model in 2011. *Jentashapir Journal of Health Research*. 2013;4:255-62. Persian.
 - 26 Khandan M, Nouhi E, Sabzevari S. Quality Assessment of Educational Services in Nursing and Midwifery School of Kerman Based on SERVQUAL Model. *Iranian Journal of Medical Education*. 2015;15:251-62. Persian.
 - 27 Seyedaskari SM, Shafa MA, Iranmanesh F, Beigzadeh A, Mohammad Pour Ravari M. Quality Assessment of Educational Services for Residents in Teaching Hospitals of Kerman University of Medical Sciences, Iran, based on the SERVQUAL Model. *Strides in Development of Medical Education*. 2015;12:159-67. Persian.
 - 28 Yarmohammadian MH, Nazari M, Moradi R, Mirzaei H, Navvabi E. Evaluation of educational services quality for healthcare services management students of Isfahan University of Medical Sciences based on SERVQUAL model. *Iranian Journal of Medical Education*. 2015;15:319-29. Persian.
 - 29 Jafarinejad M, Ebrahimipour H, Laelmonfared E, Jamali F, Amini A. Quality of educational services from viewpoints of students at School of Public Health at Mashhad University of Medical Sciences. *Journal of Medical Education and Development*. 2017;11:247-59. Persian.
 - 30 Gholami A, Gazerani A, Behfar K, Asghari A, Mohammadzadeh H, Samadi A, et al. Quality evaluation of educational services gap in Neyshabur Faculty of Medical Sciences based on service quality scale. *Shiraz E Med J*. 2014;15:e21869. doi: 10.17795/semj21869.
 - 31 Nabilou B, Khorasani-Zavareh D. The bridge between real and ideal: students perception on quality gap in reality and their educational expectations. *Iran Red Crescent Med J*. 2014;16:e14254. doi: 10.5812/ircmj.14254. PubMed PMID: 25593712; PubMed Central PMCID: PMC4270665.
 - 32 Nabilou B, Khani M. Quality of Dormitory Services in Urmia University of Medical Science: Female Student's Perceptions. *J Educ Manage Stud*. 2015;5:233-9.
 - 33 Yasbolagi SB, Havas BF, Moosavipour S. A Survey of the Quality of Educational Services Provided to Arak University Students Using the SERVQUAL Model. *Journal of Instruction and Evaluation*. 2015;8:29-44. Persian.
 - 34 Asefi F, Delaram M, Deris F. Gap between the Expectations and Perceptions of Students regarding the Educational Services Offered in a School of Nursing and Midwifery. *J Clin Diagn Res*. 2017;11:JC01-JC4. doi: 10.7860/JCDR/2017/21483.9640. PubMed PMID: 28571167; PubMed Central PMCID: PMC49813.
 - 35 Ghavimi MA, Rahbar M, Kalvanag AF, Ghoreishizadeh A, Ghanizadeh M. Evaluation of the quality of educational services of Tabriz University of Medical Sciences based on SERVQUAL model. *WJD*. 2017;8:114-8.
 - 36 Jafari Asl M, Chehrzed M, Ghanbari A. Quality of educational services from viewpoint's of nursing and midwifery students of Guilan University based on Servqual model. *Research in Medical Education*. 2014;6:50-8. Persian.
 - 37 Norouzinia R, Mohammadi R, Sharifi A. Gap Analysis of Educational Services Quality based on SERVQUAL Model from Iranian Medical Students' Viewpoint (2014). *Educational Research in Medical Sciences Journal*. 2016;5:87-96.

- 38 Gilavand A. The Comparison of Iranian and Foreign Students' Motivations to Choose Dentistry Field of Study. *Int J Pediatr*. 2016;4:1993-2010.
- 39 Gilavand A. A Study of Ahvaz Jundishapur University of Medical Sciences Dental Students' Interest to Pursuing a Specialty According to Their Demographic Information. *IAJPS*. 2017;4:1593-8.
- 40 Gilavand A. The comparison of the tuition-paid and free tuition dental students' incentives in choosing their field of study at Ahvaz Jundishapur University of Medical Sciences, Southwest of Iran. *Ann Trop Med Public Health*. 2017;10:1254-9. doi: 10.4103/ATMPH.ATMPH_316_16.
- 41 von Elm E, Altman DG, Egger M, Pocock SJ, Gotsche PC, Vandenbroucke JP, et al. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *Bull World Health Organ*. 2007;85:867-72. PubMed PMID: 18038077; PubMed Central PMCID: PMCPMC2636253.
- 42 Mohseni M, Alikhani M, Tourani S, Azami-Aghdash S, Royani S, Moradi-Joo M. Rate and Causes of Discharge against Medical Advice in Iranian Hospitals: A Systematic Review and Meta-Analysis. *Iran J Public Health*. 2015;44:902-12. PubMed PMID: 26576368; PubMed Central PMCID: PMCPMC4645761.
- 43 Gilavand A. Evaluating the Process of Recruiting Faculty Members in Universities and Higher Education and Research Institutes Affiliated to Ministry of Health and Medical Education in Iran. *World Family Medicine*. 2017;15:155-9. doi: 10.5742/MEWFM.2017.93070.
- 44 Yousapronpaiboon K. SERVQUAL: Measuring higher education service quality in Thailand. *Procedia Soc Behav Sci*. 2014;116:1088-95. doi: 10.1016/j.sbspro.2014.01.350.
- 45 Barnes BR. Analysing service quality: the case of post-graduate Chinese students. *Total Quality Management & Business Excellence*. 2007;18:313-31.
- 46 Chui TB, bin Ahmad MS. Evaluation of service quality of private higher education using service improvement matrix. *Procedia-Social and Behavioral Sciences*. 2016;224:132-40. doi: 10.1016/j.sbspro.2016.05.417.
- 47 Richard E, Adams J. Assessing college student perceptions of instructor customer service to student's questionnaire: Assessment in higher education. *J Assess Evalu High Educ*. 2006;31:535-49.
- 48 Slade P, Harker M, Harker D. Why do they leave, why do they stay? Perceptions of service quality at a new university. *ANZMAC2000, Proceedings of Australia New Zealand Marketing Academy*. 2000;28:1197-200.
- 49 Gilavand A, Hosseinpour M. Investigating the Impact of educational spaces painted on learning and educational achievement of elementary students in Ahvaz, southwest of Iran. *Int J Pediatr*. 2016;4:1387-96.
- 50 Gilavand A, Jamshidnezhad A. The Effect of noise in educational institutions on learning and academic achievement of elementary students in Ahvaz, South-West of Iran. *Int J Pediatr*. 2016;4:1453-63.
- 51 Gilavand A, Espidkar F, Gilavand M. Investigating the Impact of Schools' Open Space on Learning and Educational Achievement of Elementary Students. *Int J Pediatr*. 2016;4:1663-70.
- 52 Gilavand A, Gilavand M, Gilavand S. Investigating the impact of lighting educational spaces on learning and academic achievement of elementary students. *International Journal of Pediatrics*. 2016;4:1819-28.
- 53 Gilavand A. The impact of educational furniture of schools on learning and academic achievement of students at elementary level. *Int J Med Res Health Sci*. 2016;5:343-8.
- 54 Gilavand A. Investigating the Impact of Environmental Factors on Learning and Academic Achievement of Elementary Students. *Health Sciences*. 2016;5:360-9.