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Evaluation of Quality Gap of Educational Services from the Residency Students Viewpoint of Zanjan University of Medical Sciences in 2017-2018

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Abstract

Background & Objective: Evaluation of satisfaction of students with educational services of universities can show the gap between their expectations and the current state. Therefore, this study aimed to determine the quality gap of educational services from the viewpoint of residency students of Zanjan University of Medical Sciences in 2017-2018.

Materials and Methods: This analytical and cross-sectional study was performed on 188 residency students selected by census sampling. Data were collected using SERVQUAL, and data analysis was carried out by SPSS version 24 using descriptive statistics and paired t-test.

Results: In this study, 106 subjects (56%) were female and 82 participants (46%) were male. In terms of age, 122 individuals were below the age of 25 (65%), whereas 66 residency students were above 35 years (35%). According to paired t-test, there was a difference between expectations and perceptions of residency students from the quality of educational services and a negative service gap in five dimensions (P=0.001, t>1.97). In this regard, the highest and lowest gaps were related to the dimensions of reliable (-2.43) and physical dimension and tangible (-2.1), respectively.

Conclusion: From the perspective of residency students of Zanjan University of Medical Sciences, there was a negative gap between expectations of quality of educational services with the current state.

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Introduction

Educational activities can be regarded as generation investment for the next generation in any country. An education system encompasses interconnected components established to realize a specific goal. A fundamental issue in the higher education system is quality (1). Nowadays, universities that pay attention to the expectations of their students and constantly dedicate efforts to the growth and development of the abilities and talents of these individuals are more successful in reaching their goals. Meanwhile, student satisfaction with educational services provided by universities is an important indicator in this regard (2). Service quality gap is typically the result of the inability of decision-makers to prioritize and properly respond to the actual needs of learners. In order to compensate for this gap, the first step is recognizing the perception of service receivers about the current status and their expectation of the desirable situation. By doing so, we can determine the quality gap of services provided and make the necessary decisions to reduce the gap based on the opinions of service receivers and gain their satisfaction (3).

In the modern world, the subject of quality has created challenges for managers of organizations. In general, service quality is an important factor for growth, success, and survival of organizations and must put on the agenda of management as a strategic, effective and inclusive issue (4, 5). Currently, special attention has been paid to quality in higher education and universities, and several educational studies have

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been conducted on this subject (6, 7). In order to evaluate service quality, the expectations of customers (what they feel it should be) must be compared with their perceptions (what they receive). If expectations are more than perceptions, the quality of services is regarded as low, which will lead to dissatisfaction (8).

Studies in this field have shown that the model most applied for the measurement of service quality is the SERVQUAL model. This measurement tool was designed by Parasuraman, Zeithaml and Berry (9). While the mentioned model has been more applied in research on economics, its use in studies related to the assessment of service quality in educational centers has been on the rise owing to the attention to the customer-oriented strategy in education and treatment industry. Specifically, studies confirm the possibility of use of this model to evaluate the quality of educational services (10). In this context, Hiyogi quoted by Ghafouri used the mentioned tool to assess service quality in computer centers of universities. In addition, O'Neill applied the tool to evaluate the quality of services in universities upon admission of students, especially in the primary briefing courses, from the perspective of students (11).

Assessing the quality gap of the educational services of Zahedan University of Medical Sciences, Kebriaei marked the presence of a deep gap in the quality of some educational services of the aforementioned university (12). Moreover, results obtained from the internal evaluation of the department of community health nursing, Gonabad University of Medical Sciences, were indicative of a desirable mean score in this regard (13). In another study, Ali Mohammadi and Vakili demonstrated that the deepest quality gap was observed in the responsiveness dimension, which was related to the factors such as faculty members and staff, student access to faculty members, the proper time for counseling, and elimination of educational problems (14). Furthermore, studies conducted to assess the quality of services provided to residency students in Kerman University of Medical Sciences showed a gap in all education dimensions (15).

Meanwhile, given the role of residency students in the treatment process, assessing their viewpoints about the educational services is of paramount importance. Review of the literature revealed that no research has been conducted on the assistant students of Zanjan University of Medical Sciences. With this background in mind, this study aimed to determine the quality gap of educational services from the viewpoint of assistant students of Zanjan University of Medical Sciences in 2017-2018.

Materials and Methods

This cross-sectional research was conducted on all medical residency students (N=188) studying at Zanjan University of Medical Sciences. Given the low number of eligible students, the subjects were selected via census sampling. Data were collected in the form of two primary and secondary categories using library studies and questionnaires, respectively. The research collection tool was the standard questionnaire of SERVQUAL (Service Quality Model), which evaluates the gap between expectations and perceptions of customers. This model is applied to measure the quality level of services. Parasuraman et al. were the first who compared and classified different quality assessment methods. However, the SERVQUAL model was presented by the mentioned scholars in 1985, the goal of which was assessing the quality of services. In the mentioned model, the result is obtained by comparing the expectations and perceptions of customers (16). The questionnaire contains 26 items in five dimensions of physical and tangible (four items), reliable (six items), accountability (five items), sympathy (six items), and credit and guarantee (five items), all of which assess the quality of education are scored based on a five-point Likert scale. To confirm the reliability of the tool, questionnaires were distributed among subjects randomly, which led to a

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Cronbach's alpha of 0.85 indicating acceptable reliability.

In the implementation stage, the information required in five dimensions were divided into two sections of "current state" and "expected state" after completing and collecting the information. The quality gap was determined by subtracting the mean scores of expectations from the mean scores of assistant perception of the quality of education services. In this regard, positive mean meant that the education perceived had a desirable quality from the viewpoint of residency students. On the other hand, a negative mean was interpreted as unfavorable education quality and a gap between the quality of the current state and the favorable state. Nevertheless, a zero score demonstrated the lack of gap in this regard and meeting the expectations of students in terms of education qualities. The questionnaires were delivered to and collected from the residency students by themselves. It is notable that the authors of this study adhered to ethical considerations by explaining the research objectives and sensitivity of receiving accurate responses and receiving consent from the subjects prior to the study. In addition, the participants were ensured of the confidentiality terms regarding their personal information. Attempts were made not to bother the work of residency students; as a result, the questionnaires were distributed among residency students at specific times so that maximum responses could be obtained. It is noteworthy that the questionnaires were delivered to each assistant separately.

Data analysis was performed in SPSS version 24 using descriptive (frequency and percentage), statistical (mean, standard deviation, median, frequency and percentage of frequency), and inferential (Kolmogorov–Smirnov test and paired t-test) statistics. The two latter methods are used to evaluate the normal distribution of the data and significance of quality gap of education services, respectively.

Results

In this study, there were 106 female (56.38%) and 82 male (43.61%) subjects, 122 of whom were below the age of 35 years (64.89%) and 66 of them were above 35 years (35.10%). In terms of the semester, 108 subjects were in the first and second assistant years (57.44%), whereas 82 individuals were in the third and fourth assistant years (43.61%). Moreover, 36 subjects (19.14%) were native and 152 individuals (80.85%) were non-native. Table 1 shows the mean scores related to expectations, perception of the current state and quality gap of educational services based on five dimensions. According to the results, the lowest and highest scores of expectation dimensions were related to tangible (6.30) and sympathy dimensions, respectively. In the perception dimension, the lowest and highest means were reported for reliable (4.02) and sympathy (4.32) dimensions, respectively. In terms of quality gap, the lowest and highest scores were related to the dimensions of tangible (-2.10) and reliable (-2.43), respectively.

Table 2 shows the mean and standard deviation of scores related to expectations, perception of the current state and quality gap of educational services based on items. In this regard, the lowest expectation score was related to the item of "tools applied in education (books, handouts, and so forth) have physical appearance" (6.19), whereas the highest score was related to the item of "the staff respect the residency students" (6.65). In the dimension of perception of the current states, the lowest and highest scores were related to the items of "content of each session is presented in a regular and interrelated manner" (3.29) and "the professional appearance of professors affects the teaching of residency students" (5.13), respectively. In the area of quality gap, the lowest and highest scores were related to the items of "professional appearance of professors affects the teaching of residency students" (-1.34) and "content of each session is presented in a regular and interrelated manner" (-3.06), respectively.

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Table 3 shows the scores of the quality gap of educational services from the perspective of residency students based on the field of study. As observed, there was a negative gap in all dimensions, indicating a gap between expectations and perceptions of educational services. In Table 4, we presented the results of Independent Samples T-test in two internal and surgery groups, which demonstrated no significant difference between the groups in terms of the quality gap in the evaluated dimensions.

Table 1: Descriptive Indicators of Quality Dimensions of Educational Services to Assistants

Dimensions	Expectation	Perception	Quality gap	p-value
	Mean ± SD	Mean ± SD		
Essential factors and agents	0.67 ± 6.30	1.24 ± 4.20	-2.10	P<0.001
Reliability	0.59 ± 6.45	1.28 ± 4.02	-2.43	P<0.001
responsiveness	0.67 ± 6.34	1.40 ± 4.15	-2.19	P<0.001
Sympathy	0.59 ± 6.50	1.31 ± 4.32	-2.18	P<0.001
Assurance	0.63 ± 6.44	1.39 ± 4.16	-2.28	P<0.001
total	0.57 ± 6.41	1.16 ± 4.15	-2.26	P<0.001

Table 2: Quality gap for educational services to assistants

Dimensions	Questions	Expectation	Perception	Quality gap	p-value
		Mean ± SD	Mean ± SD		
Essential factors and agents	1. Facility and physical space (building, class, chair, etc.) are of an apparent appeal.	**6.21±0.81**	**3.87±1.57**	**2.34-**	**0.001<P**
	2. The educational materials and equipment (Internet, library, video projector, etc.) are efficient and advanced.	**6.31±0.74**	**3.92±1.59**	**2.39-**	**0.001<P**
	3. The decorated faces of professors are influential on the teaching of assistants.	**6.47±0.79**	**5.13±1.52**	**1.34-**	**0.001<P**
	4. The instruments used in teaching (books, pamphlets, transparent slips, etc.) are of apparent attraction.	**6.19±0.85**	**3.88±10.52**	**2.31-**	**0.001<P**
Reliability	5. Assistants have easy access to study resources.	**6.52±0.64**	**4.04±1.57**	**2.48-**	**0.001<P**
	6. The content of each class session is presented in a regular and interrelated manner.	**6.35±0.79**	**3.29±1.66**	**3.06-**	**0.001<P**
	7. Assistant professors will be informed of the outcome of the evaluation of the assignments or the practical activities undertaken.	**6.39±0.72**	**3.97±1.71**	**2.42-**	**0.001<P**
	8. Activities are performed by the professor at the time he promises.	**6.43±0.71**	**4.17±1.66**	**2.26-**	**0.001<P**
	9. The materials are presented to the assistant in a comprehensible manner (in accordance with the scientific level).	**6.42±0.73**	**4.07±1.60**	**2.35-**	**0.001<P**
	10. The assistant will gain a better score if he or she does more.	**6.62±0.64**	**4.55±1.72**	**2.07-**	**0.001<P**
responsiveness	11. The professor introduces appropriate study resources to the assistants for further study.	**6.45±0.72**	**4.36±1.62**	**2.09-**	**0.001<P**
	12. Assistant professors and consultants are available at an assistant's request.	**6.39±0.72**	**4.60±1.63**	**1.79-**	**0.001<P**
	13. Assistants have access to the authorities to convey their comments and suggestions on educational issues.	**6.35±0.72**	**4.16±1.75**	**2.19-**	**0.001<P**
	14. Comments and suggestions of assistants on educational issues apply to educational programs.	**6.28±0.82**	**3.69±1.76**	**2.59-**	**0.001<P**
	15. The hours that the assistant can refer to the professor for educational issues is announced.	**6.20±0.87**	**3.93±1.75**	**2.27-**	**0.001<P**

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Continue of Table 2: Quality gap for educational services to assistants

Sympathy	16. Assistant is suitable (not less or less) and related to the lessons.	**6.26±0.82**	**3.79±1.62**	**2.47-**	**0.001<P**
	17. Professors are flexible in confronting the specific circumstances that may arise for each assistant.	**6.44±0.69**	**4.17±1.74**	**2.27-**	**0.001<P**
	18. The time of the classes is appropriate.	**6.44±0.73**	**3.98±1.74**	**2.46-**	**0.001<P**
	19. The assistant has a quiet place to study in the hospital.	**6.54±0.68**	**3.93±1.88**	**2.61-**	**0.001<P**
	20. Staffing with the assistants is appropriate and respectful.	**6.65±0.63**	**4.60±1.67**	**2.05-**	**0.001<P**
	21. The behavior of professors with assistants in the hospital environment is respected with respect.	**6.64±0.64**	**4.90±1.70**	**1.74-**	**0.001<P**
	22. Better learning is done through professors through the exchange of lessons about the subject in the classroom.	**6.39±0.70**	**4.34±1.69**	**2.05-**	**0.001<P**
Assurance	23. Assistants are prepared for theoretical and practical training for future occupations.	**6.50±0.72**	**4.07±1.69**	**2.43-**	**0.001<P**
	24. The teacher devotes time to answer and explain the content for an assistant outside the classroom.	**6.32±0.84**	**3.89±1.79**	**2.43-**	**0.001<P**
	25. There are sufficient sources of study to increase the awareness of the assistants.	**6.46±0.75**	**4.05±1.67**	**2.41-**	**0.001<P**
	26. Professors have sufficient specialized knowledge.	**6.54±0.69**	**4.45±1.70**	**2.09-**	**0.001<P**

Table 3: Quality gap scores divided by the studied disciplines

Dimensions	Children	Anesthetics	General surgery	Internal	Radiology	Psychiatry	Gynecologist	Emergency Medicine	Infectious	Cardiovascular	Neurology
Essential factors and agents	-2.52	-2.00	-2.11	-2.13	-1.56	-1.99	-2.05	-2.02	-1.68	-2.23	-2.62
Reliability	-2.62	-2.27	-2.42	-2.38	-1.87	-2.33	-2.37	-2.25	-1.70	-3.25	-3.31
responsiveness	-2.47	-2.33	-2.20	-2.13	-1.56	-1.64	-2.08	-1.89	-1.72	-3.16	-3.03
Sympathy	-2.31	-1.52	-2.23	-2.31	-1.46	-2.22	-2.52	-1.90	-1.98	-2.83	-2.33
Assurance	-2.64	-2.50	-2.14	-2.28	-1.37	-2.21	-2.35	-1.64	-1.88	-2.89	-2.97
total	-2.53	-2.15	-2.25	-2.26	-1.62	-2.12	-2.30	-1.96	-1.82	-2.93	-2.90

Table 4: Independent T-test results for two subgroups of internal and surgical procedures

Dimensions	Subgroup internal			Surgery subgroup			p-value
	Expectation	Perception	Quality	Expectation	Perception	Quality	
	Mean ± SD	Mean ± SD	gap	Mean ± SD	Mean ± SD	gap	
Essential factors and agents	0.68 ± 6.29	1.23 ± 4.19	-2.10	0.64 ± 6.32	1.30 ± 4.25	-2.07	0.764
Reliability	0.59 ± 6.46	1.29 ± 4.02	-2.44	0.58 ± 6.40	1.26 ± 4.02	-2.38	0.917
responsiveness	0.69 ± 6.33	1.42 ± 4.13	-2.20	0.57 ± 6.35	1.33 ± 4.23	-2.12	0.952
Sympathy	0.62 ± 6.50	1.27 ± 4.38	-2.12	0.47 ± 6.49	1.42 ± 4.07	-2.42	0.183
Assurance	0.65 ± 6.46	1.40 ± 4.18	-2.28	0.56 ± 6.37	1.38 ± 4.09	-2.28	0.851
total	0.59 ± 6.42	1.15 ± 4.16	-2.26	0.52 ± 6.39	1.18 ± 4.11	-2.28	0.648

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Discussion

According to the results of the present study, there was a significant difference between the scores of expectations and perceptions of the current state in all items, where the highest gap was related to the scores of expectations and perceptions based on various dimensions of tangible, assurance, accountability, sympathy, and guarantee. In this regard, the gap between the expected and perceived states varied from -2.10 for the tangible dimension to -2.43 for the reliable dimension. In a research by Askari et al., the gap scores of the reliable and tangible dimensions were reported to be -0.51 and -1.50, respectively. On the other hand, the total gap score of the subjects in the present study was estimated at -2.26, whereas the same score was calculated at -0.94 in theresearch by Askari et al. (17).

Therefore, the results demonstrated that the gap between the exceptions and perceptions of the current state was significantly higher in the present study, compared to the research by Askari et al., and the difference in the results might be related to the implementation year of the studies. While Askari et al. conducted their study in 2014, we carried out our research in 2018 (four years later). Communication technologies and social networks provide an opportunity for residency students to share their educational experiences. As such, residency students can learn about the education states of other universities in the country and even other countries of the world, which affects their level of satisfaction. In fact, the expansion of communications at the university level increased the level of expectations of residency students to some extent. Another cause of difference between the results might be related to the population studied. It should be noted that residency students of various fields in Zanjan University of Medical Sciences are accepted only in the final semesters while several fields of the university are new. Meanwhile, the disciplines assessed in Kerman University of Medical Sciences have been taught for a longer time.

In a study conducted by Mohebi et al. on students of Qom University of Medical Sciences in various medical, dentistry, paramedical, health, nursing, and midwifery fields, the gap between the expected and perceived situations varied from -1.6 in the accountability dimension to -1.1 in the reliable dimension (15). While similar to our findings, a negative gap was reported in the mentioned research, a larger gap was observed in the current study. In general, it is expected if there is a higher difference between the expectations and perceptions of residency students because these students will be more accountable after graduation due to learning specialized skills during the course.

Furthermore, Yazdi Feyzabadi et al. reported a negative gap in all five dimensions, suggesting that attention be paid to the improvement of all five dimensions of educational services. Arbouni, Tofighi, Bahreini, Khandan, and Yarmohamadian also marked the importance of the gap between various expected and perceived educational services, recommending that the mentioned gap be lessened through promoting educational programs (18-23).

Given the limitations of the present study, the generalization of the results might be carried out with caution. Nevertheless, the current research was conducted on a target group, improvement of education of whom is of paramount importance. One of the major drawbacks of the present study was collecting information through self-report since this type of data collecting could be affected by social bias. Nevertheless, the questionnaires were filled anonymously to resolve this issue.

Conclusion

Compared to the results of other studies, it seems that there is a deep gap between the expectations and perceptions of residency students. Therefore, it is recommended that attention be paid to factors such as physical equipment, tools, appearance of employees in the workplace, ability to provide services on time, having the necessary knowledge and skills to present services, respecting students by educational staff, credibility of the educational staff, low probability of doubt for students to receive services, making efforts to recognize students with special needs, and properly interacting and informing students and providing quick services to decrease this gap.

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