



The Quality of Educational Services for Internship and Apprenticeship Courses at the Community Medicine Department of Kerman University of Medical Sciences, from the Trainees' View Point

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Received 2017 July 04; Revised 2018 January 13; Accepted 2018 January 14.

Abstract

Background: Community medicine departments play a major role in the education of medical students in order to provide primary health care services. The appropriate quality of education in such departments plays an important role in providing effective services for health promotion of communities.

Objectives: The current study was aimed to evaluate the quality of educational services at the Community Medicine Department of Kerman University of Medical Sciences from the viewpoint of interns and apprentices.

Methods: The current cross sectional, descriptive-analytical study was conducted on all medical students that completed their internship or apprenticeship course at the Community Medicine Department of Kerman University of Medical Sciences in 2016 as the study population. Data were collected by the service quality measurement questionnaire (SERVQUAL), and analyzed by Independent *t* test, paired *t* test, and one sample *t* test, as well as Pearson correlation coefficient.

Results: Of 244 participants in the study, 58.2% (n = 142) were female and 41.8% (n = 102) male, 57% (n = 139) were in the internship and 43% (105) in the apprenticeship courses. From the students' point of view, the mean score of perception in all five dimensions of educational quality was significantly lower than the expectations score, which indicated a negative gap in the quality of educational services in all dimensions (P < 0.001). The greatest quality gap was observed in the responsiveness dimension (-0.86) and the lowest in the assurance dimension (-0.59). The utility level of the quality of educational services in the Department of Community Medicine was 84% from the viewpoint of the students. The highest level of utility in the quality of medical services was respectively observed in the dimensions of assurance (86.4%) and empathy (86.1%) and the lowest in responsiveness dimension (79.6%) (P < 0.001). The lowest and highest correlations were respectively observed between tangibles and assurance (r = 0.486) and between empathy and assurance (r = 0.708) dimensions.

Conclusions: In all five dimensions of the quality of educational services, there were negative gap that required planning for quality improvement. Issues such as modifying educational contents and tailoring training to future jobs, modifying educational methods, increasing the contribution of students to educational planning, and updating educational facilities should be considered more urgently in the education quality promotion programs.

Keywords: Quality, Quality of Educational Services, Quality Measurement, Community Medicine, Medical Students

1. Background

The main goals of the healthcare system in all countries are to improve the community health and respond to their changing health care requirements. Human resources of the health system, including physicians, should be trained in such a way to achieve these goals effectively (1). In this regard, as well as traditional training in hospitals, community-based education should be thought to medical students in order to empower them to provide integrated health care services, especially primary health

care, health management, planning, implementation, and evaluation of health programs. The best approach to achieve these abilities is community-based education (2, 3).

Community medicine departments, using the community-based education approach, play an important role in the establishment and development of health-oriented knowledge, attitudes, and skills in medical students and prepare them for the provision and management of health services at the first level of the health provider system (4). Since the first level of health services is the most important part of the health system

in the country, it can significantly reduce the health problems of the community if it provides appropriate services. The purpose of the community-based medical education program in community medicine departments is to establish the direct contribution of medical students to the primary health care system of the country in order to teach them various skills such as how to communicate with the community, health needs assessment of individuals and community, health problems management, basic health services provision, and health teams management (3, 5).

Medical students play a main role in health promotion and health services management for the community in future. Therefore, the status of providing such services in the health system is directly related to the quality of education (5). On the other hand, the quality of provided services is an important factor in the promotion and success of any organization, i.e., the health system, and should be considered as a strategic and effective issue. Therefore, monitoring the quality of provided services in each sector, including the education sector, is one of the essential components in its effective management (6, 7).

In traditional approaches, quality of services was defined by the characteristics and features of the services or goods; but in modern attitudes toward quality, quality is defined as the customer's satisfaction, and customers or clients of services can assess the quality of services by comparing their expectations and perceptions with the received services (8). Therefore, the quality of service is the gap between customer's perceptions and expectations of the provided service. Evaluation of services by customers is one of the most important steps in improving the quality of services (8, 9). Similar to other organizations, higher education systems must have a realistic understanding of the needs and expectations of their clients, most notably the students, in order to respond effectively to these needs and expectations (10). Based on the approaches that measure the gap between expectations and perceptions of customers about provided services, if the level of expectations of provided services is less than the perception, it indicates the poor quality of the service. In other words, the negative gap shows the level of customer dissatisfaction with the service (11). If the perceptions of customers about the provided services is more than their expectations, customer expectations are well-fulfilled and service quality is appropriate (8).

In Iran, there are various studies on the quality of theoretical and clinical educations. Although most of such studies reported a gap in the quality of educational services, the degree of gap varies in different aspects of the quality of service. On the other hand, there are few studies on the quality of medical education the community medicine departments (3, 5, 7, 12). Due to the importance of

community-based education that provides students with the knowledge and skills required to meet the health needs of individuals and communities.

2. Objectives

The current study aimed to evaluate the quality of educational services in the Department of Community Medicine from the viewpoint of students in internship and apprenticeship courses in order to use the results in programs designed to promote the quality of educational services.

3. Methods

The current descriptive-analytical study was conducted on 255 medical students attending internship or apprenticeship courses at the Department of Community Medicine, Kerman University of Medical Sciences from April to March 2016 by the census method. Guest and transition students were excluded from the study according to the exclusion criteria. Data of the quality of educational services were collected using the service quality measurement questionnaire (SERVQUAL). Demographic variables including age, gender, marital status, and type of educational course (internship or apprenticeship) were also recorded. The self-report questionnaire was completed by the subjects every month after the completion of the internship or apprenticeship courses and after explaining the study objectives to them. In terms of ethical considerations, the questionnaires were anonymous with no studentship number; the students were free to withdraw from the study at any stage. The study was approved by the Ethics Committee of Kerman University of Medical Sciences (code No. IR.KMU.AH.REC.1396.1590).

The SERVQUAL questionnaire includes five dimensions: Tangibles (conditions and physical atmosphere of services providing environment such as facilities, equipment, staff, and communication channels), reliability (performing services in a reliable manner to ensure customer's expectations), responsiveness (willingness to collaborate and support customer), assurance (competence and ability of personnel to build trust and confidence toward the organization in customers) and empathy (feeling of commitment and belonging in personnel toward customers to such an extent that customers are convinced that the organization understands them and they are important to the organization) (8, 12, 13). Validity and reliability of the instrument to assess the quality of educational services in higher education in Iran were confirmed (7, 11). The 24-item SERVQUAL questionnaire is completed by students to measure expectations and perceptions about the status of

services based on a five-option Likert scale (from very low to very high expectations, and from very bad to very good perceptions). Answers ranged from very low to very high, and very bad to very good were scored from 1 to 5. Then, the mean scores of perception and expectation items in each dimension were considered as the scores of perception and expectations of that dimension. By subtracting the perception score from the expectation score, the score of the gap of educational services quality was calculated in each dimension. The positive score of the service quality gap indicated that the status perceived from the quality of educational services was higher than expectations, and the negative score indicated that the quality of the provided educational services was lower than expected. Also, in each dimension, the utility level of educational services quality was calculated by dividing the expectation score to the perception score and multiplying the result by 100.

To presentation of the results descriptively, percentages, tables, and charts were used. Comparison of the mean scores of different dimensions in terms of sex, marital status, and educational course was performed using independent *t* test; comparison of expectations and perceptions in each dimension was performed using paired *t* test, and comparison of expectations and perceptions with a specific value was performed using one sample *t* test. Also, comparison of the mean scores of different dimensions was performed using ANOVA and to determine the relationship between different dimensions Pearson correlation coefficient was used. Data were analyzed by SPSS version 22 (IBM Corporation, Armonk, NY). $P < 0.05$ was considered as the significant level.

4. Results

Of the 255 medical students that completed their internship and apprenticeship courses at the Community Medicine Department of Kerman University of Medical Sciences from April to March 2016, eleven subjects were excluded from the study due to unwillingness to participate in the study or incomplete filling of the questionnaire (the response rate was 95.7%). Of the 244 participants, 58.2% ($n = 142$) were female and 41.8% ($n = 102$) male, 57% ($n = 139$) were attending the internship and 43% ($n = 105$) the apprenticeship courses, 77.5% ($n = 189$) were single and the rest were married. The mean age of the participants was 24.3 ± 1.8 years.

According to the current study findings, the assurance and tangibles dimensions had the highest and lowest mean scores of expectations of the educational services quality (mean score 4.3 vs. 4.02), respectively. The mean scores of expectations in all dimensions except for the tangibles dimension ($P = 0.66$), were greater than 4 (the value four indicates high importance); there was a significant

difference among the four dimensions ($P < 0.001$). There were no significant differences between the mean scores of expectations of the quality of education in all five dimensions in terms of gender and course type (internship or apprenticeship) ($P > 0.05$).

The assurance dimension (mean = 3.74) had the greatest mean scores and the tangibles (mean = 3.36) and responsiveness (mean = 3.36) dimensions had the lowest mean scores of the perception of educational services quality respectively. There was a significant difference in the mean score of perception of educational services quality in all five dimensions with score 3 (the value three indicating the medium educational services quality) ($P < 0.001$).

The mean score of perception in reliability dimension in the students of internship course (mean = 3.70) was significantly higher than that of the apprenticeship (mean = 3.31) course ($P = 0.020$), but in the other four dimensions, the differences were insignificant in this regard. There were no significant difference of perception mean scores in all dimensions in terms of gender ($P > 0.05$).

From the students' point of view, the mean score of perception in all five dimensions of educational quality was significantly lower than expectation score, which indicated a negative gap in the quality of educational services in all dimensions. The greatest and lowest quality gaps were observed in the responsiveness (-0.86) and assurance (-0.59) dimensions. Also, the total score of the perception of the quality of educational services in the Department of Community Medicine was significantly lower than that of expectations (Table 1).

The mean scores of educational services quality gap based on sex and educational course did not show significant difference in any dimensions ($P > 0.05$). The utility of quality of educational services in the Community Medicine Department was 84.0% from the viewpoint of students. The highest level of utility of the educational services quality was observed in the assurance (86.4%) and empathy (86.1%) dimensions, and the lowest belonged to the responsiveness dimension (79.6%) (Figure 1). There was a positive and significant correlation between the scores of perception educational services quality at different dimensions. The lowest and highest correlations were observed between tangibles and assurance dimensions (correlation coefficient 0.486) and between empathy and assurance dimensions (correlation coefficient 0.708) (Table 2).

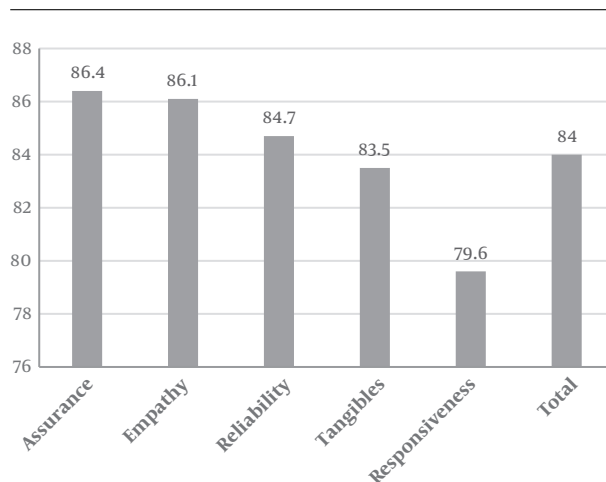
The mean scores of perception of all items (components) of assurance, responsiveness, empathy, and reliability were significantly lower than those of expectation mean scores. So, there were negative gaps in the educational services quality for the items. In the tangibles dimension, there was no significant difference between the mean scores of expectations and the perceptions in the item "well-dressed appearance of professors and staff", but

Table 1. Mean Scores of Perceptions and Expectations of the Educational Services Quality in the Department of Community Medicine from Students' Viewpoints

Dimension	Perceptions (Mean ± SD)	Expectations (Mean ± SD)	Gap	P-Value
Tangibles	3.36 ± 0.63	4.02 ± 0.65	-0.66	< 0.001
Reliability	3.62 ± 0.65	4.27 ± 0.58	-0.65	< 0.001
Responsiveness	3.36 ± 0.76	4.22 ± 0.63	-0.86	< 0.001
Empathy	3.71 ± 0.62	4.31 ± 0.61	-0.60	< 0.001
Assurance	3.74 ± 0.64	4.33 ± 0.62	-0.59	< 0.001
Total	3.57 ± 0.55	4.25 ± 0.54	-0.68	< 0.001

Table 2. Correlation Coefficient Between Different Dimensions of the Quality of Educational Services in the Department of Community Medicine^a

Dimension	Reliability	Responsiveness	Empathy	Assurance
Tangibles	0.527 ^a	0.495 ^a	0.493 ^a	0.486 ^a
Reliability	1	0.692 ^a	0.674 ^a	0.620 ^a
Responsiveness		1	0.561 ^a	0.640 ^a
Empathy			1	0.708

^aP < 0.001.**Figure 1.** Utility rate of the quality of educational services in the Department of Community Medicine from the viewpoint of students

in other items of this dimension there were significant differences and negative gap in the quality of services (Table 3).

From the viewpoint of students, in the tangibles dimension, the “Professors and staff are well-dressed and have elegant appearance” (102.2%), had the highest level of utility and “Educational equipment are effective and modern” (72.2%) had the lowest level of utility.

In the reliability dimension, the item “Contents are presented to the students in an understandable manner” (88.0%) and “The educational content of each session is presented regularly and relevantly” (80.0%), had the highest

and lowest levels of utility of educational services, respectively.

The items “professors introduce proper references to students for further studies” (91.8%) and “students have access to the advisors to share their comments and suggestions on educational issues” (76.9%) had the highest and lowest levels of utility of educational services, respectively, in the dimension of responsiveness.

In the dimension of empathy, the items “respectful treatment of the professor by the student” (95.7%) and “faculty members are flexible toward different conditions that may occur to the students” (74.1%) had the highest and lowest levels of utility, respectively.

In the dimension of the assurance, the item “sufficient specialized knowledge of professors” (95.1%) had the highest level of utility, and “preparing students for the future job by providing the necessary theoretical and practical educations” (76.7%) had the lowest level of utility (Table 3).

5. Discussion

The results of the current study indicated that the assurance and tangibles dimensions had the highest and lowest mean scores for expectations of the quality of educational services, respectively. In the studies performed at medical universities, the assurance dimension had the highest expectations score from the viewpoint of students. Therefore, assurance was the most important dimension in the quality of educational services from the students' viewpoint (6, 7, 10, 11, 14). This dimension reflects the competence and ability of staff in an organization to build a

Table 3. The Mean Scores of Expectations and Perceptions, the Levels of Utility, and Quality of Educational Services in the Department of Community Medicine at Kerman University of Medical Sciences

Dimension	Expectations (Mean \pm SD)	Perceptions (Mean \pm SD)	Service Gap	P-Value	Utility Level
Tangibles					
Facilities and physical space are apparently attractive	3.83 \pm 0.87	3.33 \pm 0.86	-5.0	< 0.001	86.9
Educational equipment are effective and modern	4.14 \pm 0.79	2.99 \pm 0.98	-1.15	< 0.001	72.2
Professors and staff are well-dressed and have Elegant appearance	3.99 \pm 0.91	4.08 \pm 0.79	0.09	0.110	102.2
Educational equipment are apparently attractive	4.14 \pm 0.82	3.05 \pm 0.96	-1.09	< 0.001	73.6
Reliability					
Students have easy access to study references	4.31 \pm 0.81	3.71 \pm 0.92	-0.60	< 0.001	86.0
The educational content of each session is presented regularly and relevantly	4.31 \pm 0.84	3.45 \pm 1.06	-0.86	< 0.001	80.0
Professors inform students of assessment results	4.01 \pm 0.76	3.40 \pm 0.88	-0.61	< 0.001	84.7
Activities are performed by the professor at the promised time	4.18 \pm 0.067	3.53 \pm 0.99	-0.65	< 0.001	84.4
Contents are presented to the students in an understandable manner	4.43 \pm 0.74	3.90 \pm 0.82	-0.53	< 0.001	88.0
Students get higher scores if they make efforts on their studies	4.28 \pm 0.74	3.67 \pm 0.99	-0.61	< 0.001	85.7
Responsiveness					
Professors introduce proper references to students for further studies	4.03 \pm 0.93	3.70 \pm 0.88	-0.33	< 0.001	91.8
Supervisor and consultants are accessible by request	4.26 \pm 0.73	3.41 \pm 0.99	-0.85	< 0.001	80.0
Students have access to the advisors to share their comments and suggestions on educational issues	4.26 \pm 0.75	3.28 \pm 1.00	-0.98	< 0.001	76.9
Student comments and suggestions on educational issues are considered to curriculums	4.34 \pm 0.80	3.09 \pm 1.05	-1.25	< 0.001	89.8
Empathy					
Students are given the tasks based on educational contents	3.95 \pm 0.87	3.50 \pm 0.85	-0.45	< 0.001	88.6
Faculty members are flexible toward different conditions that may occur to the students	4.41 \pm 0.71	3.27 \pm 1.09	-1.14	< 0.001	74.1
The timing of the classes is appropriate	4.21 \pm 0.85	3.56 \pm 1.02	-0.65	< 0.001	84.5
In the educational environments, professors treat their students respectfully	4.45 \pm 0.71	3.98 \pm 0.97	-0.47	< 0.001	95.7
Department staff respect for their students	4.48 \pm 0.72	4.29 \pm 0.76	-0.19	< 0.001	89.4
Assurance					
Professors have sufficient specialized knowledge	4.54 \pm 0.70	4.32 \pm 0.81	-0.22	< 0.001	95.1
Better learning occurs through sharing ideas about the topics of the lessons in the classrooms by the professors	4.34 \pm 0.77	3.85 \pm 0.91	-0.49	< 0.001	88.7
Students are prepared for future jobs based on the theoretical and practical trainings	4.43 \pm 0.74	3.40 \pm 1.00	-1.03	< 0.001	76.7
Professors dedicate time to respond and explain the contents to students outside the classroom	4.16 \pm 0.87	3.58 \pm 0.91	-0.58	< 0.001	86.0
There are sufficient references to increase students' specialized knowledge	4.22 \pm 0.81	3.54 \pm 0.90	-0.58	< 0.001	83.8

sense of trust and confidence in students toward that organization (8). Considering the items of this dimension, benefiting from professors with adequate specialized knowledge, the possibility of discussion inside and outside the class, providing practical and theoretical training tailored to the future career of the students, and introducing sufficient references to increase the specialized knowledge were of the most important aspects of the quality of education (12, 13). The lower mean score of expectations in the tangibles dimension indicates that from the viewpoint of students, educational contents, methods, and atmosphere of educational processes are more important than facilities, educational equipment, and physical space. In various studies in Iran, inappropriate educational methods, inadequate time dedicated by the professors for teaching, and the inapplicability of the provided trainings were considered as the most important aspects of educational problems, which indicate their importance from the point of view of students (3, 4, 15).

Based on the results of the current study, the mean score of perception was lower than that of expectations in all five dimensions of educational services quality. The results of the studies in Hormozgan (14) and Guilan provinces (15) as well as Shiraz (16), Qom (17), Tabriz (11) and Urumia (10) also showed a negative gap in the quality of educational services in all five dimensions, which was consistent with the results of the current study. Studies in Thailand (18), Greece (19), and Bosnia and Herzegovina (20) also reported similar results. In new attitudes toward quality, meeting the demands and expectations of customers is one of the main aspects of the quality of the provided services (9, 14). Students are considered as the main customers of the higher education system in medical sciences universities, and assessing the quality of education from their viewpoint can identify educational expectations that are not adequately met, and contribute to effective planning to promote the quality (8, 9). However, the negative gap between the expectations and perceptions of the quality of educational services may be due to high and unrealistic expectations of students, but failure to meet students' actual expectations may reduce their academic motivation and satisfaction (8, 11).

In the current study, the highest negative quality gap was observed in the responsiveness dimension. The studies in Guilan (15), Kurdistan (21), Kermanshah (6), and Hormozgan (14) provinces also showed the same results. Students' access to professors for educational purposes, the possibility of transferring students' suggestions and opinions to managers, and considering student suggestions in making educational decisions were the main problems of this dimension in various studies (14, 17, 21). Making appropriate channels of communication with customers in order to get their opinions on the services and considering

their viewpoints on the planning of educational services were of the important issues in the promotion of quality of services and customer satisfaction. Therefore, specific attention should be paid to customer- and student-centered educational services in medical sciences universities (9). The reason for the considerable gap in the responsiveness dimension reported in different studies on the quality of education in Iran can be due to the centrality of planning and policy-making in the Iranian higher education system; since usually customer-orientation and considering customers' expectations, communicating with them, and their contribution in planning are not seriously considered.

The results of the current study showed that the lowest negative gap in the quality of educational services belonged to two dimensions of assurance and empathy, respectively. The high mean score of perceptions and the low negative gap in the assurance dimension indicate the ability and competence of the professors to build a sense of trust and confidence in the students toward the provided trainings (12, 18). The assurance dimension indicates the professors' knowledge and their ability to build a sense of trust and intimacy in their students. Therefore, the high level of utility of educational services in this dimension indicates that there is a good atmosphere to transfer knowledge (8). Empathy dimension indicates paying special attention to the client and being sensitive to his needs (9). The low negative gap between expectations and perceptions of the quality of educational services and high level of utility of quality of this dimension indicate that professors and employees have a respectful attitude towards students and are interested in hearing their opinions and suggestions (8).

According to the results of the current study, the items "providing theoretical and practical training to prepare students for future careers", "using comments and suggestions of students in educational programs", "using advanced and up-to-date teaching equipment", "and flexibility of professors toward student's various conditions" had the highest negative gaps in the quality of educational services, respectively. In many similar studies, these items had a high negative gap (6, 10, 11, 15, 21). In a qualitative study in Iran, inapplicability of educations, inappropriate educational methods, improper use of teaching equipment, and lack of active contribution of students in the training process were of the educational problems reported by students (22). Other studies also reported the application of active teaching methods, appropriate educational facilities, the creation of appropriate learning opportunities, updating the educational contents, paying attention to the criticisms and suggestions of students, making proper relationship between theoretical and practical education, and the effective involvement of professors in practical

training as the most important items in the promotion of educational services quality and satisfaction of students (23-26). Therefore, reviewing educational contents, modifying educational methods, and enhancing the role and contribution of students in education are of the essential elements that should be considered in order to improve the quality of education.

The results of the current study showed that the utility level of the quality of educational services in the Department of Community Medicine was totally 84% and varied from 79.6% to 86.1% between responsiveness and assurance dimensions. Contrary to the educational services quality gap, which is the difference between perceptions and expectations and indicates the level of unmet expectations, the utility rate of services quality represents the met expectations. There are a number of problems in the educational departments of medical universities such as the high number of students, lack of faculty members, lack of students' sufficient motivation to learn, various duties of professors, the inadequacy of educational spaces, and the high number of patients (2, 27). It is essential to analyze the quality of educational services considering these problems and constraints. The utility level of the quality of services positively reflects the achievement of expected quality. Therefore, in service quality analysis, along with an analysis of the gap of services quality, there is an appropriate benchmark to assess the quality of educational services and an indicator to assess the achievement of goals in interventional programs to improve the quality of services.

5.1. Conclusion

According to the results of the current study, there were negative gaps in all dimensions of the quality of educational services in the Department of Community Medicine, which should be planned for quality improvement. In terms of items such as modifying educational content and tailoring trainings to future careers and the job market, reforming educational methods and more involvement of students in curriculums designing and updating educational facilities in quality promotion programs are of great concerns. Based on the analysis of the gap, responsiveness, tangibles, and reliability dimensions have higher priority for quality improvement, respectively. Given the positive correlation between different dimensions of quality and performing an intervention focusing on higher priority dimensions may improve the overall quality of educational services and result in the optimal use of resources. The results of the current study showed that the utility level of service quality can be considered complementary to the quality gap analysis to assess the quality of educational services and the evaluation of interventional programs.

Supplementary Material

Supplementary material(s) is available [here](#) [To read supplementary materials, please refer to the journal website and open PDF/HTML].

Acknowledgments

The authors wish to thank Mrs. Zahra Alirashidi for her collaboration in data collection.

Footnotes

Authors' Contribution: Ali Khalooei, contributed to the design and implementation of the research, to the analysis of the results and to the writing of the manuscript. Akram Karbakhsh, contributed to the design and implementation of the research.

Conflict of interests: The authors declared have no conflict of interests.

Funding/Support: This research was supported by Kerman University of Medical Sciences.

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