ORIGINAL ARTICLE

Analyzing the Quality Gap of Clinical Educational Services in Hospitals Affiliated with Kerman University of Medical Sciences Using SERVQUAL Method

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Background: Students are the main customers of the universities. Thus, their perceptions and expectations of the educational quality is of great importance in planning for quality improvement. This study is aimed on evaluating the quality of clinical education in hospitals affiliated with Kerman University of Medical Sciences.

Methods: This is a descriptive-analytical study. 303 externship, internship and residency students were participated. After validity and reliability tests, the adapted SERVQUAL questionnaire was used for data gathering. SPSS 18, descriptive tests, Kruskal-Wallis test, and paired t-test were used for data analysis.

Results: A negative gap in service quality was observed in all five dimensions. Among externship students, minimum and maximum mean of the quality gap were in assurance (-1) and empathy (-1.28) dimensions, respectively. Among internship students, minimum quality gap was observed in reliability and tangibles dimensions together (-1.09) and maximum quality gap was in responsiveness dimension (-1.36). Among residency students, minimum and maximum quality gap was in tangibles (-1.48) and responsiveness (-2.04), respectively. No significant difference was observed regarding quality gap among different teaching hospitals (P>0.001). However, there was a significant difference among all students in all dimensions (P<0.001).

Conclusion: Considering the negative gap in all dimensions of educational services, it is recommended to hold courses educating employees on how to better provide education services and effectively communicate with students. Using new educational methods, counselling skills and communicating with students must be considered in workshops for faculty members.

Keywords: Program Assessment, Students, Clinical Competence, University Hospital

تحلیل الفراغ الموجود فی کیفیه التعلیم فی المستشفیات التعلیمیه فی جامعه کرمان للعلوم الطبیه عن طریق استعمال اسلوب سروکوال

التمهید و الهدف: إن الطلاب هم الزبائن الاساسیون للجامعات و لذا توقعاتهم من کیفیه الخدمات التعلیمیه تعطی انطباع لدی المبرمجین لاجل رفع مستوی الخدمات التعلیمیه. إن هذه الدراسه بهدف الی تقییم کیفیه الخدمات التعلیم السریری فی المستشفیات التعلیمیه فی جامعه کرمان للعلوم الطبیه.

الاسلوب: اشترک فی هذه الدراسه التوصفیه – التحلیلیه ۳۰۳ من طلاب ثلاثه مقاطع طبیه. و تم استخدام استماره سروکوال لتجمیع المعلومات و تم تحلیل المعلومات عبر برنامج spss.18 و اختبارات کروسکال و الیس و !!!

الاستنتاج: نظرا الی وجود الفراغ الکیفی فی الخدمات التعلیمیه نقترح ایجاد دورات تعلیمیه للموظفین فی مجال اسالیب اعطاء الخدمات التعلیمیه و ایجاد ارتباط مؤثر مع الطلاب خلال العام الدراسی. یجب أن یوضع برامج تعلیمیه لاعضاء الهیئه العلمیه تتضمن اسالیب حدیثه فی التعلیم و مهارات ایجاد الارتباط مع الطلاب.

النتائج: کان هناک فراغ سلبی فی الابعاد الخمسه الخدماتیه. فی مقطع الستاژ اقل و اکثر معدل فراغ کیفی کان علی الترتیب التالی: فی بعد التضمین (۱-) و اجتماع القلوب (۱.۲۸-)، و فی مقطع الانترن اقل معدل الفراغ الکیفی مشترکاً فی ابعاد الاطمئنان و الملموسات (۱.۰۹-) و اکثر معدل الفراغ الکیفی کان فی بعد الاجابه (۱.۳٦-). اما علی مستوی مقطع طلاب التخصص اقل و اکثر معدل الفراغ الکیفی کان علی الترتیب التالی: الملموسات (۱.۴۸-) و الاجابه (۲.۰۴-). إن مقارنه الفراغ الکیفی بین المستشفیات لم یعطی تفاوت احصائی واضح (p>0.001) و لکن کان هناک تفاوت واضح بین المقاطع الدراسیه المشترکه فی الدراسه (P<0.001).

الکلمات الرئیسیه: تقییم البرنامج، الطلاب، الکفائه السریریه، المستشفی الجامعی

تحلیل شکاف کیفیت خدمات آموزش بالینی در بیمارستان های آموزشی دانشگاه علوم پزشکی کرمان با استفاده از مدل سروکوال

زمینه و هدف: دانشجویان مشتریان اصلی دانشگاهها هستند. لذا ادراک و انتظار آنها از کیفیت خدمات آموزشی می تواند اطلاعات با ارزشی جهت ریزان برنامه در اختیار ریزان جهت ارتقای کیفیت خدمات آموزشی قرار دهد.این مطالعه با هدف ارزیابی کیفیت خدمات آموزش بالینی در بیمارستانهای آموزشی دانشگاه علوم پزشکی کرمان صورت گرفت.

روش: دراین مطالعه توصیفی– تحلیلی، تمامی دانشجویان سه رده تحصیلی کارآموز، کارورز و دستیار که۳۰۳ نفر بودند در مطالعه شرکت کردند. از پرسشنامه تعدیل شده سروکوال بعد از تأیید روایی و پایایی برای گردآوری داده ها استفاده شد. تجزیه و تحلیل داده ها با استفاده از نرم افزار SPSS.18 و به کمک آماره های توصیفی و آزمون های تحلیلی کروسکال والیس وTزوجی، صورت گرفت.

یافته‌ها: در هر پنج بعد خدمت، شکاف منفی کیفیت مشاهده شد.در رده کارآموزان، کمترین و بیشترین میانگین شکاف کیفیت به ترتیب در ابعاد تضمین (۱-) و همدلی (۱.۲۸-) ودر رده کارورزان کمترین میانگین شکاف کیفیت مشترکاً در ابعاد اطمینان و ملموسات (۱.۰۹-) و بیشترین میانگین شکاف کیفیت در بعد پاسخگویی(۱.۳٦-) مشاهده گردید. همچنین در رده دستیاران کمترین و بیشترین میانگین شکاف کیفیت به ترتیب مربوط به ابعاد ملموسات (۱.۴۸-) و پاسخگویی (۲.۰۴-) بود. مقایسه شکاف کیفیت بین بیمارستان های آموزشی تفاوت معنی داری را نشان نداد (۰.۰۰۱<P)، اما بین تمامی دانشجویان سه رده در تمام ابعاد تفاوت معنی داری وجود داشت (۰.۰۰۱ >P).

نتیجه‌گیری: بدلیل شکاف منفی کیفیت در همه ابعاد خدمات آموزشی، پیشنهاد میشود در طول سال برای کارکنان دوره هایی در زمینه شیوه های موثر ارایه خدمات آموزشی و برقراری ارتباط اثربخش با دانشجویان برگزار شود. استفاده از روش های آموزشی نوین، مهارتهای مشاوره و ارتباط با دانشجو باید در برنامه ریزی کارگاههای آموزشی برای اعضای هیأت علمی قرار گیرد.

واژه‌های کلیدی: ارزشیابی برنامه، دانشجویان، شایستگی بالینی، بیمارستان دانشگاهی

کرمان یونیورسٹی آف میڈیکل سائنس سے جڑے اسپتالوں میں معیاری کلینیکل ٹریننگ کا جائزہ۔ یہ جائزہ سروکوال طریقے سے انجام پایا ہے

بیک گراونڈ: طلباء دراصل یونیورسٹیوں کے گاہک ہوتے ہیں لہذا اگر انہیں تعلیمی معیارت کے مطابق ان کی توقعات کا علم ہوجائے تو اکیڈمک پروگرام بنانے والوں کو مفید معلومات حاصل ہوسکتی ہیں۔ یہ تحقیق کرمان سے جڑے اسپتالوں میں کلینیکل تعلیم کا معیار جاننے کے لئے انجام دی گئی ہے۔

روش: یہ ایک تحلیلی تحقیق ہے جس میں تین سو تین طلباء نے شرکت کی جن کا تعلق انٹرن شپ، اکسٹرن شپ اور ریڈیڈنسی سے تھا۔ان تحقیق کے لئے سروکوال سوالنامے سے استفادہ کیا گیا جس کی تائید اساتذہ نے کی تھی۔ڈیٹا کا تجزیہ ایس پی ایس ایس انھارہ اور کرسکال والیس ٹسٹ اور ٹی ٹسٹ کے ذریعے انجام دیا گیا۔

نتیجہ: اس تحقیق سے مندرجہ ذیل پانچ قسموں میں کوالٹی سروس کا فقدان دیکھا گیا۔ اکسٹرن شپ کے طلباء کو عدم اطمینان اور عدم احساس ہمدردی کا شکارتھے۔ انٹرن شپ کے طلباء کو سوالات کے جوابات سے کوئی خاص اطمینان حاصل نہیں ہوا تھا۔ ریذیڈنسی طلباء کو بھی اپنے سوالات کے جوابات سے اطمیان حاصل نہیں ہوا تھا۔ ان تینوں لیول کے طلباء میں تمام پہلووں سے خاصہ فرق دیکھا جاسکتا ہے۔

سفارشات: ان تین سطحوں پر معیاری ٹریننگ اور تعلیمی سروسز کا فقدان ہمیں یہ بتاتا ہے کہ اکیڈمک اسٹاف کے لئے پورے سال میں تعلیمی پروگرامز اور یہ کہ طلباء سے کس طرح پیش آیاجائے منعقد کئے جانے چاہیں تا کہ اساتذہ جدید ترین مہارتوں سے آراستہ ہوکر طلباء کو پڑھا سکیں جس سے تعلیمی معیار بہتر ہوجائے گا۔

کلیدی الفاظ: تعلیمی پروگرام، جائزہ، اسپتال۔

INTRODUCTION

The main aim of higher education is to train professionals to fulfil society's needs in their fields of expertise (1). Many factors are effective in the higher education process, each of them can play its own role on the learning process individually (2) leading to relatively permanent behavioral changes in students regarding knowledge, skills, and attitude (3). Such system can be effective only by providing good quality (4). Education quality is a dynamic process associated with services, people, processes, and environment to fulfil the customers' needs or even go beyond their needs, which requires constant improvement through regular assessment (5).

Schools of medicine are of the most important higher education centers in the world, training physicians who are not only experts, but also understand the society's needs and can handle people's personal and social problems (6). Schools of medicine have a vital role in training students, since they are responsible for the society's health (7). This requires constant review of medical education and solve its related issues to improve it (8).

Students are the main customers of the universities and their perceptions and expectations of the educational quality is of great importance in planning for quality improvement (9). One of the quality indexes in universities is fulfilling students' expectations. Thus, by researching the gap between students' expectations and perceptions, this quality can be evaluated. The main measures that should be taken to fill this gap are detecting strength and weak points and planning strategies to fulfil students' needs (9). This approach includes concepts such as perception, expectation, and quality gap. Perception and expectation explain the current and desired conditions of educational services' quality, respectively. The quality gap is resulted by the difference between perceptions and expectations (10). In other words, the quality gap is the difference between customers' expectations of the desired condition with its perception from the current condition (11).

Clinical education is considered to be the core of professional education, since more than 50 percent of students' time is spent in clinic. However, less attention has been paid to researching clinical and professional education (12). Evaluation can turn education from a static into a dynamic process (1). Different views regarding the educational quality has led to different methods of measuring quality in higher education (13).

One method leading to reasonable results is assessing the interest groups, who are students, interns, and assistants (14-17). The important aim of managers in assessing educational services is to avoid quality reduction and provide solutions (18).

The SERVQUAL model is suggested by Parasurman et al. to measure the quality of services. This tool evaluates perceptions and expectations of customers in five dimensions of tangibles, reliability, responsiveness, assurance, and empathy (19).

Tangibles is the appearance of physical facilities, equipment, personnel, and communication materials. Reliability is the ability to perform the promised service dependably and accurately (20). Responsiveness indicates the willingness to help customers and provide prompt service. Assurance is the Knowledge and courtesy of employees and their ability to convey trust and confidence. Empathy is the caring, individualized attention the university and hospital provides the students (21).

The SERVQUAL model is a standard method to measure customer's satisfaction in service-providing centers (22) and is a reliable tool to evaluate the quality of services and can be applied in educational fields, too (23).

Applying SERVQUAL has shown that this model is more capable than others. Some of the features of this model include: adapting SERVQUAL dimensions with different organizations, relative importance of its dimensions in the perception of service quality, the ability to analyze based on demographic features and other fields (24). Thus, the SERVQUAL model has been widely used recently in evaluating the quality of educational services. In a study conducted in Brazil, the quality of programs has been researched by the students' views, the researchers concluded that there is a gap between students' perceptions and expectations (25). In a study in two business schools in the United States, students were not satisfied with the quality of the provided services (26). Studies conducted regarding higher education in China and the business management school in Canada indicated that there is a negative quality gap in all dimensions (27). Two studies in Zanjan (28, 29), a study in Zahedan (9), Hormozgan (30), and Fasa (31) showed that the quality of services is not desirable regarding different dimensions.

Considering the importance of reaching the answers of the questions "where are we now?" (perceptions) and "where should we be?" (expectations) in students' views, this study is aimed on researching the quality of educational services among internship, externship and residency students in hospitals affiliated with Kerman University of Medical Sciences. As far as the researchers know, this is the first study conducted using the mentioned model among clinical students and residents in hospital.

METHODS

This is a descriptive-analytical study. Population includes students in their internship, externship, and residency of three teaching hospitals in Kerman. 303 clinical students were selected by census method in 2011-2012 academic year. This study has been approve by the ethics committee of Kerman University of Medical Sciences (code: /90/62)

For data gathering, a questionnaire was designed based on the SERVQUAL model (15). This questionnaire includes 26 paired questions regarding perceptions and expectations with 7-point Likert scale (totally disagree to totally agree) in 5 dimensions of tangibles (4 questions), reliability (6 questions), responsiveness (5 questions), assurance (5 questions), and empathy (6 questions).

Validity of the questionnaire has been approved in different studies (9, 30) and the reliability has been confirmed by Cronbach's alpha coefficient of 0.96.

To determine the quality gap, students' views regarding current condition of educational quality (perceptions) and

Table 1. Mean scores of perception, expectation, and quality gap in dimensions of educational services' quality

Dimensions	Perception	Expectation	Quality gap	P-value
Assurance	4.59	5.77	-1.18	< 0.001
Responsiveness	4.26	5.82	-1.56	< 0.001
Empathy	4.54	5.94	-1.4	< 0.001
Reliability	4.66	5.93	-1.27	< 0.001
Tangibles	4.55	5.76	-1.21	< 0.001

their views regarding the desired condition (expectations) were assessed. Questionnaires were provided to students in different occasions including morning reports and journal clubs. After explaining the aims of the research and assuring students of unnamed results, subjects were asked to fill the questionnaires. The data were analyzed by SPSS 18.0, the difference of the scores of expectations and perceptions was calculated, and the quality gap was determined. Paired t-test was used to compare the perception and expectation of students is each dimension of educational services. Variance analysis test (ANOVA) and Kruskal-Wallis test were used to compare mean of scores of quality gap between different hospitals and different stages.

RESULTS

Of 303 questionnaires, 259 participants (85.5 percent) answered the questions. Of 259 participants, 27.8 percent were male and 70.3 percent were female and the rest (1.9 percent) left unanswered. Mean age of the participants was 25, with minimum of 20 and maximum of 39. 45.9 percent were in internship students, 24.1 externship students, and 30% were residents.

Table 1 indicates that there is a negative gap in all five dimensions. Comparing perceptions and expectations (analyzing the quality gap) in five service dimensions, shows a significant difference (P<0.001). Students' expectations are far from the current conditions of the services provided to them.

According to the results of Kruskal-Wallis test, there is a significant difference between perceptions and expectations of students (the gap between current and desirable conditions) in different stages. The results showed that between views of internship and externship students there was no significant difference except in the tangibles dimension. Between satisfaction of interns and residents in four dimensions of reliability, assurance, empathy, and responsiveness, a significant difference was observed. Between residents and externship students, significant difference was observed only regarding the assurance dimension. In general, the satisfaction of residents was lower comparing to internship and externship students (the maximum gap was observed).

DISCUSSION

This study is aimed on analyzing the gap in educational services' quality according to the views of students of medicine in three stages of internship, externship, and residency in three teaching hospitals of Kerman University of Medical Sciences.

Table 2. Mean scores of perception, expectation, and quality gap based on educational stages

Service dimension	Educational stages	Quality gap
Assurance	Internship	-1
	Externship	-1.18
	Residency	-1.78
Responsiveness	Internship	-1.27
	Externship	-1.36
	Residency	-2.04
Empathy	Internship	-1.28
	Externship	-1.33
	Residency	-1.78
Reliability	Internship	-1.19
	Externship	-1.09
	Residency	-1.6
Tangibles	Internship	-1.18
	Externship	-1.09
	Residency	-1.48

Negative quality gap was observed in all dimensions of educational services' quality. The negative gap indicates that students' expectations are far from their perceptions of the current condition. These gaps make planning for better service providing in order to fulfil students' expectations possible. Results of the studies conducted using SERVQUAL model in universities of medical sciences in Tehran (32), Hormozgan (30), Zahedan (9), Hamadan (33), Mazandaran (34), and studies in the universities of Singapore (35) and China (27) indicate a negative gap regarding dimensions of educational services' quality which confirm the results of the current study.

According to the results of current study, the maximum mean of quality gap was observed in responsiveness in the three stages, which means that the educational system at hospitals are far from the expected condition regarding responsiveness and prompt services to students. This gap was more among residents, which can be due to their previous experience of clinical environments and higher expectations. Therefore, using their comments about problems and challenges is of great importance. Since the emphasis of the responsiveness dimension is to provide

prompt services and to respond to needs, questions and complaints of the customer (36), this gap indicated that the members of faculty are less available upon students' educational needs, and the management and educational departments of the hospitals are not efficiently available to students for their comments. This leads to less participation of the learners' comments and finally reduced quality of education. In a study in Isfahan (37) the minimum satisfaction of internship and externship students was with the performance of teachers in hospitalization. A study researching the morning reports in teaching hospitals of Kerman University of Medical Sciences (38), indicated that internship and externship students do not play an important role in the morning reports, which confirms the results of the current research regarding the less attention paid to comments of students.

In the current study, in interns' point of view, besides responsiveness, the maximum gap was observed in empathy which confirms the results of a study in Tehran (37). Empathy means Caring, individualized attention the firm provides its customers. In this regard, hospitals and faculty members did not have the appropriate interaction and communication with students. After passing their basic sciences period, students enter the hospital, which is a rather unknown and complicated organization, and they need to get familiar with the environment and their duties, this explains the negative gap of the educational services for internship and externship students. Therefore, employees, faculty members, and students should interact better with each other by holding friendly sessions outside the formal learning sessions, giving advice to students which creates a safe and convenient environment for students to learn better. This leads to a positive empathy and increase in satisfaction. The minimum quality gap was observed in the assurance dimension which confirms the results of Ruby's study (1998) (40).

The minimum gap among externship students was observed in tangibles and reliability dimensions. Reliability emphasizes the ability of employees and members of faculty to attract students' trust (34), this result has been confirmed by studies in universities of Tehran (32), Zahedan (9), Hormozgan (30), Zanjan (28), and kashan (41).

Although the minimum gap among residency and externship students was observed in tangibles dimension, it was far from fulfilling their expectations. This dimension emphasizes on the appearance of physical facilities, equipment, personnel, and teachers (36). In a study conducted in Isfahan (42), the students were not satisfied with the physical conditions in teaching hospitals of the Isfahan University of Medical Sciences. Considering the importance of physical conditions in achieving clinical education goals, managers should pay more attention to this dimension and take proper measures to improve such conditions and provide better educational resources to the students.

Since the questions were sensitive regarding evaluation of educational system of the hospitals, it was possible that the principle of integrity would be ignored in answering the questionnaire.

Since providing clinical educational services is one of the great missions of teaching hospitals, fulfilling the expectations of the students is inevitable. Results of this study indicated that hospitals are far from fulfilling the expectations of internship, externship, and residency students regarding clinical service providing. Considering the gaps in tangibles dimension among externship students and in responsiveness dimension among internship and residency students, it is recommended to pay more attention to these dimensions and modify the educational programs more seriously.

Conflict of interest: The authors declared no conflict of interest.

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