

The use of the quality model of Parasuraman, Zeithaml and Berry in health services

O EMPREGO DO MODELO DE QUALIDADE DE PARASURAMAN, ZEITHAML E BERRY EM SERVIÇOS DE SAÚDE

EL EMPLEO DEL MODELO DE CALIDAD DE PARASURAMAN, ZEITHAML Y BERRY EN LOS SERVICIOS DE SALUD

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ABSTRACT

This is an article about the theoretical model for assessing quality in health services proposed by Parasuraman, Zeithaml and Berry, in order to measure the degree of satisfaction of users. This model is based on the analysis of expectations and perceptions of users of health services, by means of five dimensions: tangibility, reliability, responsiveness, assurance and empathy. From the difference between what is expected by the user and the service offered, gaps or shortcomings are derived that may be the main obstacle for users to perceive the provision of such services with quality. It was observed that the use of the psychometric scale called Service Quality (SERVQUAL) in some studies about satisfaction, obtained very favorable results in the institutions in which it was employed. The analysis revealed the need to improve the existing models of evaluation, as well as the importance of measuring user satisfaction in health institutions.

DESCRIPTORS

Quality of health care
Health Services Evaluation
Patient satisfaction
Consumer satisfaction

RESUMO

Trata-se de um artigo teórico acerca do modelo de avaliação de qualidade em serviços de saúde proposto por Parasuraman, Zeithaml e Berry, a fim de mensurar o grau de satisfação de usuários. Tal modelo baseia-se na análise de expectativas e percepções de usuários de serviços de saúde, por meio de cinco dimensões: tangibilidade, confiabilidade, responsividade, garantia e empatia. Da diferença entre o que é esperado pelo usuário e o serviço oferecido derivam os *gaps*, ou lacunas, que podem ser o principal obstáculo para que os usuários percebam a prestação desses serviços com qualidade. Observou-se que a utilização da escala psicométrica denominada *Service Quality (SERVQUAL)*, em alguns estudos sobre satisfação, obteve resultados bastante favoráveis nas instituições em que foi empregado. Evidenciou-se a necessidade de aprimorar os modelos de avaliação existentes, bem como a importância de medir a satisfação dos usuários nas instituições de saúde.

DESCRIPTORIOS

Qualidade da assistência à saúde
Avaliação de Serviços de Saúde
Satisfação do paciente
Satisfação dos consumidores

RESUMEN

Artículo teórico sobre el modelo de evaluación de la calidad en los servicios de salud, propuesto por Parasuraman, Berry y Zeithaml con el fin de medir el grado de satisfacción de los usuarios. Tal modelo está basado en el análisis de las expectativas y percepciones de los usuarios de los servicios de salud, y mide cinco dimensiones: la confiabilidad, la sensibilidad, la intangibilidad, la garantía y la empatía. De la diferencia entre lo que el usuario espera y el servicio ofrece, derivan las *lagunas*, o vacíos, que pueden ser el principal obstáculo para que los usuarios perciban la prestación de esos servicios con calidad. Se observó que la utilización de la escala psicométrica, llamada *Service Quality (SERVQUAL)*, utilizada en algunos estudios de satisfacción, obtuvo resultados bastante favorables en las instituciones en que fue utilizado. Se evidenció la necesidad de mejorar los modelos de evaluación existentes, así como la importancia de medir la satisfacción de los usuarios en las instituciones de salud.

DESCRIPTORIOS

Calidad de la atención de salud
Evaluación de Servicios de Salud
Satisfacción del paciente
Satisfacción de los consumidores

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INTRODUCTION

Quality models emerged in the late 1970s, as a result of numerous studies proposing concepts, operationalizations and systematization for quality services. Already the subjectivity present in the perception of quality is being incorporated through different approaches and their consequences.

The first essays on the topic of quality in service suggested starting from comparisons between what users considered that they should be offered by the provider and what he actually offered⁽¹⁾. In this direction, quality service can be considered the ratio of the level of service effectiveness and expectations of the user. Thus, to promote quality service means to meet the needs and expectations of a user in an effective manner⁽¹⁾.

To evaluate a service is more complex than to evaluate a product, because the product is tangible and its defects can be detected, its functioning assessed and its durability compared. Conversely, service is first purchased and then it is produced and consumed simultaneously, and then the possible nonconformities are produced and experienced, characterizing their inseparability⁽²⁾.

Services are intangible and heterogeneous, at the same time being judged by the performance and the experience of those who use them, with the possibility of interpretation and different judgments, according to the provider and the user in question. Besides the intangibility, services present three other characteristics that affect program development: inseparability, variability and perishability⁽³⁾.

The intangibility is characterized by the activities which cannot be seen, felt, heard or proven before they are acquired. The inseparability translates to the simultaneity in which services are produced and consumed. The professionals responsible for providing the service are part of it and interaction with users is a special characteristic of services. The variability concerns to whom, where and when services are provided. The perishability reinforces that services cannot be stored in advance, so it is necessary that strategies are established for the balance between existing demand and provision of services⁽³⁾.

The objective of this study was to reflect on the assessment model of service quality of Parasuraman, Zeithaml and Berry, and to demonstrate its applicability in the evaluation of health services, in order to measure the degree of user satisfaction.

The evaluation of the model of service quality of Parasuraman, Zeithaml and Berry

In order to understand how users perceived and assessed the quality of services, a study was developed

in 1985 involving twelve focus groups, three in each of the four different services investigated - retail banking, credit cards, securities brokerage, and repairs and maintenance. Based on common perceptions among the groups, the authors formally defined service quality as the degree and type of discrepancy between the perceptions and expectations of users, suggesting that they all, in general, employed similar aspects of service by which quality could be assessed⁽⁴⁾.

The results obtained from these focus groups confirmed that users were influenced by the dimensions of the process and not only by the results of the evaluation of service quality. In this study, the pattern of responses revealed ten evaluative criteria by which the user can evaluate, regardless of the service investigated, namely: *tangibility*: the physical appearance of the facilities, equipment, framework for employees and normative materials; *reliability*: ability to perform the promised service dependably and accurately; *responsiveness*: the ability to help users promptly; *competence*: appropriation of the abilities and knowledge required to perform services; *cordiality*: politeness, respect, consideration and friendliness of the employees; *credibility*: trust, truth and honesty; *safety*: absence of danger, risk or doubt; *accessibility*: proximity and empathic contact; *communication*: keeping users informed in appropriate language; and, *comprehension*: endeavoring to understand the user and his needs.

By submitting the results to statistical analysis to determine the interrelationships between these dimensions, three of them remained intact: tangibility, reliability and responsiveness. The seven remaining dimensions were included in two others: assurance and empathy⁽⁴⁾. The analysis of these five dimensions demonstrated that users were using them as criteria for judging the quality of service. The dimensions are not mutually exclusive, yet provide an important framework for understanding the expectations of users, and issues that delineate the service from the point of view of those who will judge it⁽¹⁾.

After this refinement, the following definitions were used:

- *Tangibility*: concerns the physical facilities, equipment, *personnel* and materials that can be perceived by the five human senses;
- *Reliability*: translated into the ability of the supplier to execute the service in a safe and efficient manner. It depicts the consistent performance, free of non-compliance, in which the user can trust. The supplier must comply with what was promised, without the need for rework.
- *Responsiveness*: refers to the availability of the provider to attend voluntarily to users, providing a

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service in an attentive manner, with precision and speed of response. It concerns the availability of employees of the institution to assist users and provide the service promptly;

- *Assurance*: it is identified as the courtesy, knowledge of employees and their ability to convey trust;

- *Empathy*: related to whether the organization cares for the user and assists him in an individualized manner, referring to the ability to demonstrate interest and personal attention. Empathy includes accessibility, sensitivity and effort in understanding the needs of users.

Chart 1 presents a comparison between the original model and the restructured model of the quality dimensions.

Chart 1 – Original model compared to the restructured model of the five dimensions of Parasuraman, Zeithaml & Berry

Original model	Restructured model	Description
Tangibility	Tangibility	Physical aspects of what is provided to users.
Reliability	Reliability	Ability to fulfill what was promised accurately.
Responsiveness	Responsiveness	Ability to attend to the users and provide the service promptly, capturing the notion of flexibility and ability to adapt to the needs of the service user.
Competency Courtesy Credibility Safety	Assurance	Competency and courtesy extended to the users and the security provided by the operations.
Access Communication Comprehension of the user	Empathy	Individualized attention to the users.

Source: Marshall G, Murdoch I⁽⁶⁾

Investigations have confirmed that reliability is the most important dimension, and tangibility is less relevant to the quality of service from the perception of the user⁽⁴⁾. In view of this, some dimensions may be more accentuated than others, depending on the type of service provided.

The result of the analysis as a whole verified that there is a set of key discrepancies or gaps, consisting of the differences between users' expectations and what is actually offered. These gaps can be the main obstacle for users to perceive the provision of such services as high-quality⁽⁵⁾.

When perceptions are higher than expectations, the gaps are narrow and there are high levels of satisfaction, considering the excellent service and quality. Five corporate gaps are emphasized that are usually encountered between the expectations and perceptions of users⁽⁵⁻⁶⁾. These are:

- *Gap 1*: refers to consumer expectations and the perception of management towards them. The service providers do not always understand what requirements connote excellence of quality for consumers;

- *Gap 2*: is the specification of the quality of the services defined by the translation of perceptions that management has of the expectations of users. This discrepancy is due to the lack of specification of the offer, adjusted to the wishes of the consumers;

- *Gap 3*: relates to the actual performance of service in the face of previously established specifications;

- *Gap 4*: relates to the service actually provided and external communications (service specifications announced in the media or other communication channels);

- *Gap 5*: This was established as a function of the four previous shortcomings, namely

$$\text{Gap 5} = f [\text{gap 1, gap 2, gap 3, gap 4}].$$

In summary, one can consider the following definitions for the *gaps*:

Gap 1- Not knowing what users want to receive;

Gap 2- Not selecting the right design of the service and established standards;

Gap 3- Not delivering the standard service;

Gap 4- Not marrying performance with promises;

Gap 5- Established according to the four previous gaps;

$$\text{Gap 5} = f [\text{gap 1, gap 2, gap 3, gap 4}].$$

Figure 1 illustrates the shortcomings or gaps in service quality.

To perform the measurement of user satisfaction it is necessary to focus on the expectations and perceptions that the user has about the offered services⁽⁵⁾. The concept of perceived quality, used both for services as well as for products, has been understood as superiority or excellence, while the concept of service quality is more abstract and intangible. In the absence of objective measures, it may be considered appropriate that the evaluation is performed by measuring the perception of the service by the user⁽⁷⁾.

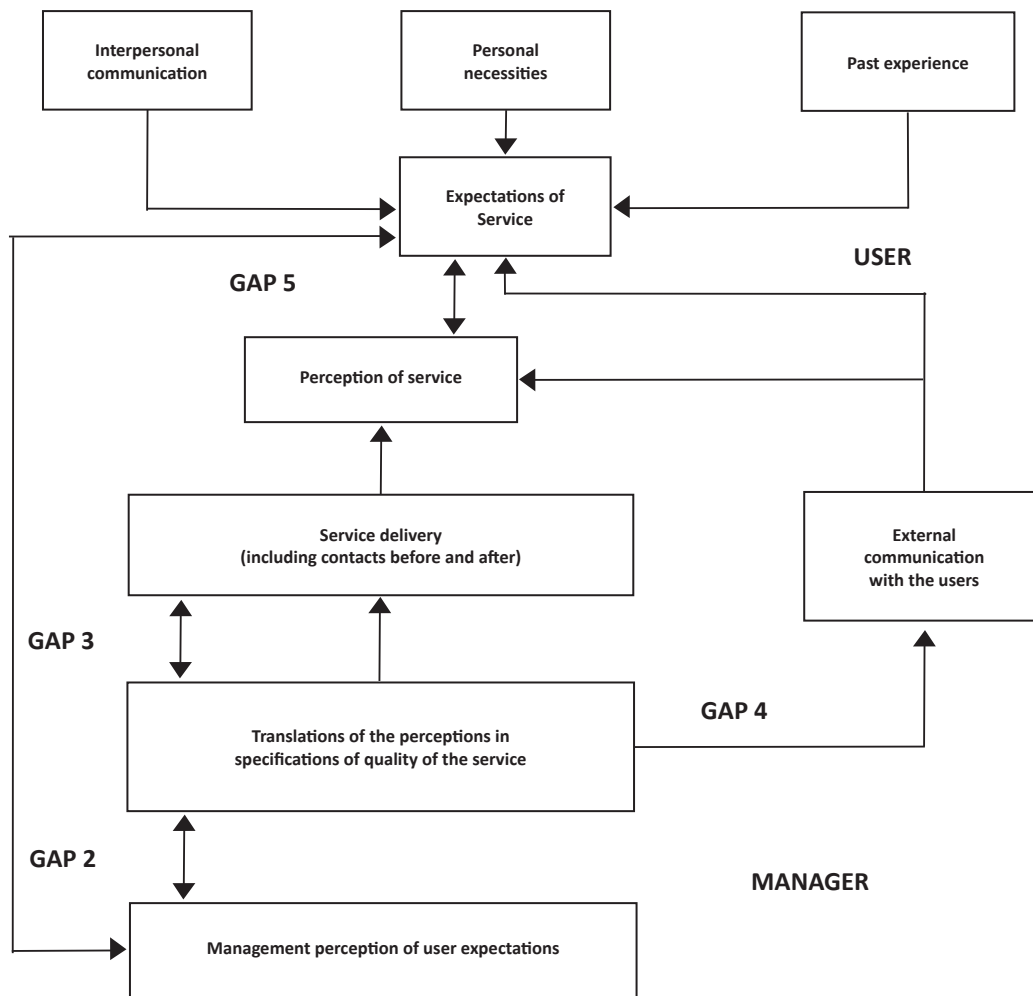


Figure 1 – GAP Model of Service Quality

Service quality: a psychometric scale of the dimension of quality and its use in health services

A psychometric scale of the dimensions of quality called Service Quality (SERVQUAL) was the first attempt to operationalize the construct of user satisfaction. The scale was developed with the assistance of the Marketing Science Institute (MSI), whose purpose was to provide a tool to derive functional quality, applied to numerous service providers⁽⁸⁾.

The SERVQUAL instrument is composed of 44 questions, divided into two sections, the first containing 22 affirmations about user expectations regarding the service, and the second with 22 affirmations related to user perceptions within the specific categories of service⁽⁶⁾.

The users must supply two scores for each attribute, one reflecting their expectations of the level of service that was to be delivered by the institutions and the other showing their perceptions of the service delivered by a specific unit within that institution. The scores range from totally disagree to totally agree⁽¹⁻⁷⁾. The differences

obtained between expectation and perception scores can be used to improve the quality of services.

Developed in 1988, after two decades of use, the SERVQUAL scale has been found to be efficient for measuring perceptions and expectations of the users about service quality⁽⁶⁾, including in health services.

In the health area, several authors have employed the aforementioned scale, consolidating it as an important tool to get to know the expectations and needs of users as well as to support decision making in the institutions. In Brazil, several studies have proposed it for gauging satisfaction levels of users and managers of health services^(2, 9-13).

The SERVQUAL scale was validated in Brazil, involving both demographic data such as users' perception about the care received, and building on the five dimensions, with all variables grouped into 35 attributes of care⁽⁹⁾. This framework, as previously mentioned, has been employed in health evaluation research, and was cited in the following studies.

When researching user satisfaction at the University Hospital of USP related to the attributes of care, and comparing it to the perception that the management team had of satisfaction, there was a big difference between what the user identified as quality and what the manager considered to be quality, demonstrating divergences between the two perceptions. The rate of satisfaction manifested by users was higher than that perceived by the managers and they, in turn, had a higher expectation than the actual performance of the operational area. As to the attributes of the care, it became clear that the user considered the initial care and treatment outcome as the important attributes for his satisfaction, portrayed predominantly in the dimensions of empathy and reliability. The study also identified that the quality of services of the nursing team was a positive difference in the institution⁽⁹⁾.

The quality of an ambulatory ophthalmological service provided to users of the National Health System in the city of Belo Horizonte (MG) was evaluated using two structured questionnaires, adapted from the modified SERVQUAL scale. A slight general dissatisfaction was detected regarding the quality of care, and safety and reliability were the attributes of greatest importance; the authors concluded there was a need for planning and implementation of actions to improve this service⁽¹⁰⁾.

The quality of health services in the public and private networks in Ribeirão Preto-SP was analyzed focusing on analysis of the time for the medical consultation. The study identified fragility in the system of scheduling appointments, especially in public institutions, and delays in waiting for medical care. Institutions that presented shorter times of medical consultation also received a lower score on the quality assessment in relation to others⁽¹¹⁾.

The expectations and perceptions of chronic renal patients, in relation to the dialysis treatment programs, were measured using the SERVQUAL scale, in the city of Taichung, in Taiwan, and demonstrated that elderly users had a level of perception of the service that was lower than younger people. With regard to education, users with higher levels of education demonstrated lower expectations and perceptions in relationship to the programs. A positive correlation was present between expectations and perceptions, loyalty and perceptions of the service; however there was no positive correlation between expectation and loyalty⁽¹²⁾.

Levels of satisfaction in a private hospital the city of São Paulo were analyzed and the attributes that reached the highest levels of satisfaction corresponded to education and commitment of medical and nursing staff, the explanations and guidance about the health problem of the user, respect for privacy and guidance for continuing care after hospital discharge. Assurance and reliability were the dimensions that most influenced satisfaction, followed by responsiveness and empathy. There was also the need to adopt strategies in the nutrition service and in the initial care of the users⁽²⁾.

Another study employing the SERVQUAL was conducted at a university hospital in the interior of the state of São Paulo, with the objectives of verifying the levels of user satisfaction and knowing the factors involved in their satisfaction. Findings indicated that the dimensions of reliability and assurance represented the attributes with the highest degree of satisfaction and that the dimensions of responsiveness and empathy were the attributes with lower levels of satisfaction⁽¹³⁾.

In the cited studies, an elevated level of user satisfaction was observed in relationship to the respective health services. The authors mentioned above iterated the importance of health services counting on assessment tools that enabled managers to plan improvements, and indicated the need for enhancement of such instruments.

Despite the recognition that every theoretical model is always partial and approximate, it is necessary to recognize the relevance of the criticism that indicates important theoretical and conceptual inconsistencies within the area of user satisfaction studies. Finally, the establishment of a consensus of experts should be encouraged, to seek a validation for the concept of user satisfaction and operationalization for its measurement⁽¹⁴⁾.

Consequently, on the option of a particular model of evaluation, it is necessary to remember that, depending on the type of assessment to be developed, one can choose or adapt one or more approaches in the design process. However, the success of the evaluation process is conditional on effective planning that meets the specifics of each organization and the context in which it operates.

FINAL CONSIDERATIONS

The absence of objective measures to assess the quality of services increases the degree of complexity in relation to its assessment. There are several models proposed in the literature to evaluate such an attribute, during and after the experience of acquisition, ranging in numerical representation, principle characteristics and conclusions about their applicability.

In this article, the employment of an evaluation model developed in the context of marketing and applied to the area of health demonstrates the growing concern of health institutions and professionals themselves regarding user satisfaction. Furthermore, it reinforces the possibility of using existing models, adapting them to the the health segment, in order to obtain a model that most closely approximates the reality of these services.

The monitoring of the quality of services, according to the various existing models, not only permits the planning of assertive, highly effective strategies of intervention, but also the monitoring of the responses to these actions, contributing to scientific and technological advances.

REFERENCES

1. Zeithaml V, Parasuraman A. Service quality. Cambridge: Marketing Science Institute; 1990.
2. Cruz WBS, Melleiro MM. Assessment levels of the user's satisfaction in a private hospital. Rev Esc Enferm USP [Internet]. 2010 [cited 2012 Sept 17];44(1):147-53. Available from: http://www.scielo.br/pdf/reeusp/v44n1/en_a21v44n1.pdf
3. Kloter P, Keller KL. Administração de marketing. São Paulo: Pearson Prentice Hall; 2006.
4. Parasuraman A, Zeithaml VA, Berry LL. *SERVQUAL*: a conceptual model of service quality and its implications for future research. J Mark. 1985;49(1):41-50.
5. Parasuraman A, Berry LL, Zeithaml VA. Refinement and reassessment of the *SERVQUAL* dimensions. J Retailing. 1991;67(4):420-50.
6. Marshall G, Murdoch I. Service quality in consulting marketing engineers. Int J Constr Mark. 2001;3(1):41-9.
7. Zeithaml V, Parasuraman A, Berry LL. Delivering service quality: balancing customers perceptions and expectations: New York: The Free Press; 1990.
8. Parasuraman A, Zeithaml VA, Berry LL. *SERVQUAL*: a multiple-item scale for measuring consumer perceptions of service quality. J Retailing. 1998;64(1):12-40.
9. Castellanos PL. Comparação entre a satisfação do usuário com os serviços oferecidos num hospital geral e a percepção gerencial dessa satisfação [dissertação]. São Paulo: Escola de Administração de Empresas de São Paulo, Fundação Getúlio Vargas; 2002.
10. Hercos BVS, Berezovsky A. Qualidade do serviço oftalmológico prestado aos pacientes ambulatoriais do Sistema Único de Saúde – SUS. Arq Bras Oftamol. 2006; 69(2):213-9.
11. Arroyo CS. Qualidade de serviços de assistência à saúde: o tempo de atendimento da consulta médica [tese doutorado]. São Paulo: Faculdade de Economia, Administração e Contabilidade, Universidade de São Paulo; 2007.
12. Lin DJ, Li YH, Pai JY, Sheu IC, Glen R, Chou MJ, et al. Chronic kidney-disease screening service quality: questionnaire survey research evidence from Taichung City. BMC Health Serv Res. 2009;9:239.
13. Pena MM, Melleiro MM. Degree of satisfaction of users of a private hospital. Acta Paul Enferm [Internet]. 2012 [cited 2012 Sept 19];25(2):197-203. Available from: http://www.scielo.br/pdf/ape/v25n2/en_a07v25n2.pdf
14. Esperidião AM, Trad LAB. Avaliação de satisfação dos usuários: considerações teórico-conceituais. Cad Saúde Pública. 2006;22(6):1267-76.