Rev Esp Med Nucl Imagen Mol. 2014;**33(2)**:65–71

Original Article

Personalizing the reference level: Gold standard to evaluate the quality of service perceived☆

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ARTICLE INFO

Article history:
Received 14 January 2013
Accepted 3 March 2013

Keywords:
Service quality
Gold standard
Threshold
Survey

ABSTRACT

Objective: To know the cutoff point at which in-house Nuclear Medicine Department (MND) customers consider that the quality of service is good (personalized cutoff).
Material and method: We conducted a survey of the professionals who had requested at least 5 tests to the Nuclear Medicine Department. A total of 71 doctors responded (response rate: 30%). A question was added to the questionnaire for the user to establish a cutoff point for which they would consider the quality of service as good. The quality non-conformities, areas of improvement and strong points of the six questions measuring the quality of service (Likert scale 0 to 10) were compared with two different thresholds: personalized cutoff and one proposed by the service itself a priori. Test statistics: binomial and Student's *t* test for paired data.
Results: A cutoff value of 7 was proposed by the service as a reference while 68.1% of respondents suggested a cutoff above 7 points (mean 7.9 points). The 6 elements of perceived quality were considered strong points with the cutoff proposed by the MND, while there were 3 detected with the personalized threshold. Thirteen percent of the answers were nonconformities with the service cutoff versus 19.2% with the personalized one, the differences being statistically significant (difference 95% CI 6.44%: 0.83–12.06).
Conclusions: The final image of the perceived quality of an in-house customer is different when using the cutoff established by the Department versus the personalized cutoff given by the respondent.

Personalización del nivel de referencia: patrón oro para evaluar la calidad de servicio percibida

Palabras clave:
Calidad percibida
Patrón oro
Punto de corte
Encuestas

RESUMEN

Objetivo: Conocer el punto de corte a partir del cual los clientes internos del servicio de medicina nuclear (MN) consideran que la calidad de servicio es buena (punto de corte personalizado).
Material y método: Se realizó una encuesta a los profesionales que hubieran solicitado al menos 5 pruebas al servicio de medicina nuclear. Contestaron 71 médicos (tasa de respuesta del 30%). Se añadió al cuestionario una pregunta para que el usuario estableciera el punto de corte a partir del cual el encuestado considera que la calidad de servicio es buena. Se compararon las no conformidades, las áreas de mejora y los puntos fuertes de las 6 preguntas que medían la calidad de servicio (escala Likert de 0 al 10) con 2 dinteles de referencia: el punto de corte personalizado y el que propuso a priori el propio servicio. Test estadísticos: binomial y t de Student para datos pareados.
Resultados: El servicio propuso el valor de 7 como punto de corte, mientras que el 68,1% de los encuestados propuso un valor superior a 7 puntos (media 7,9 puntos). Los 6 elementos de calidad percibida fueron considerados puntos fuertes con el punto de corte propuesto por el servicio de MN, mientras que fueron 3 los detectados con el punto de corte personalizado. El 13% de las valoraciones fueron no conformes con el punto de corte del servicio frente al 19,2% con el punto de corte personalizado, siendo las diferencias estadísticamente significativas (diferencia 6,44%; IC 95%: 0,83-12,06).
Conclusiones: La imagen final de la calidad percibida por los clientes internos de un servicio es diferente si se utiliza el punto de corte que establece el servicio frente al que indica el propio individuo que responde al cuestionario.

☆ Please cite this article as: Rodrigo-Rincón I, Reyes-Pérez M, Martínez-Lozano ME. Personalización del nivel de referencia: patrón oro para evaluar la calidad de servicio percibida. Rev Esp Med Nucl Imagen Mol. 2014;33:65–71.
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2253-8089/$ – see front matter

Introduction

One of the most relevant elements for improvement in the quality of organizations is knowing the satisfaction and the quality of the services perceived by the consumers.[1–3]

Although the concepts of satisfaction and service quality service are apparently simple, there is no consensus with regard to their meaning or how to conceptualize the relationship between satisfaction and the quality of the service provided or the most correct method for their measurement.[3] Nonetheless, most institutions use some type of tool for their measurement.[4]

The method most frequently used to measure both satisfaction as the service quality is with questionnaires.[5,6] Most questionnaires use scales following a structure of Likert-type response with a series of categories of response along the continuum "favorable/unfavorable". On numerous occasions, the question only indicates the meaning of the initial and final points with intermediate values remaining unspecified. One example of this is question number 3 of the healthcare barometer which asks: "Are you satisfied or dissatisfied with the way in which the public healthcare system works in Spain?" To answer, the individual is shown a card with numbers from 1 to 10, with 1 corresponding to very dissatisfied and 10 to satisfied,[7] without specifying the intermediate values.

Analysis of the results of questions with this type of scale is not simple. How can the cutoff or reference value to be considered as a good result be determined? Above what score should the institution consider an aspect as a strong point or at what value is there an area of improvement?

To answer this question different approaches have been used such as the determination of an objective value from a benchmark[8] or a desired value. That is, users are asked about their perception of an aspect with the aim of involving the users in the evaluation of a department, but the interpretation of the results is performed with a subjective aim established by the service provider.

To measure the service quality other authors[9,10] have used the model of discrepancies or "gaps" model comparing the perceptions of the user with respect to their expectations.

In the present study we considered an alternative to the setting of a subjective cutoff point by the Department of Nuclear Medicine (DNM). The proposal consisted in having the internal customers requiring tests from the DNM themselves establish the cutoff at which the quality perceived is deemed good.

We compared the strong points, the areas of improvement detected and those discrepant with 2 reference levels, that proposed by the DNM and the internal consumers.

The objective was to determine the cutoff at which the internal consumers of the DNM consider the service quality as good.

Material and methods

The framework of the sample was made up of professionals from the clinical departments of a tertiary level hospital requesting tests or consultations from the DNM. The subjects constituting the sample were physicians from other departments who had requested at least 5 tests from the DNM in 2010.

On identifying these professionals they were sent a questionnaire designed to evaluate the quality of service provided by the DNM (Annex 1). Two modalities of questionnaire completion were provided. The questionnaire in paper form was sent to each professional by internal mail of the hospital together with an envelope for returning the questionnaire. In addition, the professionals were sent an email with a link in order to answer the questionnaire anonymously. They were told that the two modalities were incompatible. Two reminders were sent. The collection period of the questionnaires was from June to September, 2011. Of a total of 237 professionals, 71 answered (30% response rate).

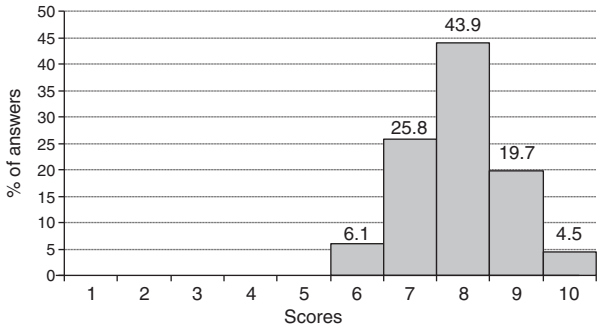

Fig. 1. Distribution of the frequencies of the score given to the question "*Above what score do you consider that the service quality is good?*".

The questionnaire consisted of 14 items, 6 of which involved items related to the quality of the services. The scale used for the questions ranged from 0 (worst possible score) to 10 (best possible score).

The reliability of the questionnaire measured with the Cronbach alpha coefficient was of 0.643, with the general alpha value with typified items being 0.790.

At the end of the questionnaire there was an item asking the professional to state at what numerical score they would consider the service quality as good, considering this score as a personalized cutoff. Prior to the incorporation of the item to the questionnaire, 5 interviews of professionals were undertaken to perform cognitive validation of the question and thereby confirm that the statement was correct and comprehensible.

Prior to the analysis of the results the DNM was requested to set a cutoff at which they considered that the service quality provided was good. By consensus the department determined the cutoff of 7 and this value was denominated the "department cutoff".

An element evaluated was considered as a strong point of the department if its lowest value of the confidence interval of 95% was greater than the reference level, and an area of improvement was considered if the highest value of the confidence interval of 95% was lower than the value of this level.

Using the personalized cutoff the number of discrepancies was calculated by the difference between the score given to each question and the value at which the subject considered that the service quality was good. For example, if an individual gave an item referring to the service quality the reports 8 points and considered that 9 was the score that should be obtained to provide good quality service, we have a value of −1 point (8 minus 9). All the negative values such as the example indicated were considered to be discrepant. Likewise, the number of discrepancies was calculated applying the value of 7 as the threshold of reference. This value was what had been established by the DNM.

The statistical tests used included the binomial method for dependent samples and Student's *t* test for paired data.

Results

Table 1 shows the results of the analysis of the items measuring the service quality.

With regard to the question "*Above what score do you consider that the service quality is good?*" 68.1% of the subjects gave a value greater than 7. That is, the level of reference established *a priori* by the service was below the reference level given by many of the professionals (Fig. 1).