

## ASSESSMENT OF SATISFACTION AMONG SURGICAL CLIENTS OF TEACHING HOSPITALS: ANALYSIS OF TANGIBILITY\*

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**ABSTRACT:** The present study aimed to assess the degree of satisfaction of surgical clients of teaching hospitals in Uberaba/Minas Gerais, regarding the tangibility dimension. In the study, 228 clients were interviewed using a sociodemographic questionnaire and an instrument based on the multi-item scale SERVQUAL, whose items 1 to 4 concern the dimension tangibility. Data was collected between July 2013 and February 2014, and analyzed with the SPSS program. Analysis of expectation and perception regarding the tangibility domain showed that clients expect to be treated in a hospital equipped with a modern and adequate physical structure and whose workers maintain a professional well-groomed appearance and where easy-to-understand information is available. The mean values of the gap ranged between -0.31 ( $s = 1.07$ ) and -0.05 ( $s = 0.75$ ). The dimension tangibility revealed dissatisfaction, i.e. it did not meet the participants' expectations regarding tangible objects.

**DESCRIPTORS:** Patient satisfaction; Quality of health care; Quality indicators in health care.

### AVALIAÇÃO DA SATISFAÇÃO DE USUÁRIOS CIRÚRGICOS DE HOSPITAIS DE ENSINO: ANÁLISE DA TANGIBILIDADE

**RESUMO:** O objetivo do estudo foi avaliar a satisfação de clientes cirúrgicos de hospitais de ensino de Uberaba/ Minas Gerais, quanto à dimensão tangibilidade. Foram entrevistados 228 clientes, através de um questionário sociodemográfico e o instrumento baseado na escala SERVQUAL, cujos itens de 1 a 4 são relativos à dimensão tangibilidade. Os dados foram coletados entre julho de 2013 e fevereiro de 2014, e analisados através do programa estatístico *Statistical Package for Social Sciences*. A análise da expectativa e percepção em relação ao domínio tangibilidade evidenciou que os clientes esperam que o hospital apresente estrutura física conservada e moderna, que a equipe tenha uma aparência pessoal adequada ao ambiente e que haja informação disponível de fácil compreensão. Já as médias do gap variaram entre -0,31 ( $s = 1,07$ ) e -0,05 ( $s = 0,75$ ). A dimensão tangibilidade indicou insatisfação, ou seja, não atendeu as expectativas dos participantes em relação aos objetos tangíveis.

**DESCRIPTORIOS:** Satisfação do paciente; Qualidade da assistência à saúde; Indicadores de qualidade em assistência à saúde.

### EVALUACIÓN DE SATISFACCIÓN DE PACIENTES QUIRÚRGICOS DE HOSPITALES DE ENSEÑANZA: ANÁLISIS DE TANGIBILIDAD

**RESUMEN:** El objetivo del estudio fue evaluar la satisfacción de pacientes quirúrgicos de hospitales de enseñanza de Uberaba/Minas Gerais, respecto de la dimensión tangibilidad. Fueron entrevistados 228 pacientes, utilizando un cuestionario sociodemográfico y el instrumento basado en la escala SERVQUAL, cuyos ítems del 1 al 4 son relativos a la dimensión tangibilidad. Datos recolectados de julio 2013 a febrero 2014, analizados utilizando programa estadístico *Statistical Package for Social Sciences*. El análisis de la expectativa y percepción respecto del dominio tangibilidad evidenció que los pacientes esperan que el hospital presente estructura física conservada y moderna, que el equipo tenga la apariencia personal adecuada al ámbito y que exista información disponible de sencilla comprensión. Ya los promedios del gap variaron entre -0,31 ( $s = 1,07$ ) y -0,05 ( $s = 0,75$ ). La dimensión tangibilidad indicó insatisfacción, es decir, no satisfizo las expectativas de los participantes respecto de los objetos tangibles.

**DESCRIPTORIOS:** Satisfacción del Paciente; Calidad de la Atención de Salud; Indicadores de Calidad de la Atención de Salud.

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## ● INTRODUCTION

Assessment of health services by users is a widespread practice and an important tool for measuring the quality of health services<sup>(1)</sup>. The quality of a given service can be determined by the difference between user expectations of this service and perceptions of the service provided<sup>(2)</sup>. Therefore, this relationship will impact user's perception of the care received either in public or private health facilities<sup>(1)</sup>.

Users' expectations concern desires or needs of clients that use a given service. It is related to the perception of a service offered and can generate satisfaction or dissatisfaction, reflecting the user's assessment about the quality of the service. User satisfaction comprises an emotional and cognitive response and a consumer experience over a given period of time, based on accumulated experience<sup>(3-4)</sup>.

Customer assessment of the quality of services provides feedback information that improves health practices and meets the needs and rights of customers, contributing to the delivery of a more humanized service. Therefore, the SERVQUAL instrument was developed based on the expectations and perceptions of consumers about the quality of service<sup>(5)</sup>.

The instrument consists of five dimensions: tangibility, reliability, responsiveness, assurance and empathy. The dimension tangibility assesses the appearance of physical facilities, personnel, information technology equipment and communication materials<sup>(5)</sup>. Tangible is the quality of what is palpable, can be touched or felt, and tangibility is a quality or character of the dimension tangibility<sup>(6)</sup>.

According to the National Policy on Humanization of Health Care, the health environment should provide effective and humanized care, in accordance with the basic principles of the Unified Health System (SUS) of fairness, integrality and universality. To promote humanized care, the space of care should be clean and well-organized, with adequate furniture, safe food, sufficient air ventilation, easy access to water supply, clean clothes and adequate and clean toilet facilities. These issues concern the so-called "hard technologies", and they ensure high quality services when properly structured<sup>(7-9)</sup>.

Although user assessment of health services has been extensively debated, it is not a frequent practice. Indicators such as incidence or prevalence of hospital-acquired infection and average hospital stay have been prioritized, with little concern with customer satisfaction<sup>(10-11)</sup>.

Including the external client in the health process also means including it in the assessment of this process. In quality assessment, expectations and perceptions play a key role, reflecting in the assessment of the quality of the service. Customer satisfaction involves positive actions, such as adherence to treatment, maintenance of long-term treatment and attempt to prevent disorders<sup>(12)</sup>.

Assessment of the quality of health services contributes to the delivery of better services to customers, contributing to the strengthening of the SUS and the current public health policies, the elaboration of new proposals and the identification of unknown weaknesses in the system.

After these considerations, the problem that motivated this study was identified: Assessment of the quality of the services provided by hospital facilities under the SUS, regarding tangibility, as perceived by surgical clients.

Thus, the present study aimed to assess the degree of satisfaction of surgical clients of teaching hospitals in a city in the inland of Minas Gerais (MG), regarding the dimension tangibility.

## ● METHODOLOGY

Descriptive, observational, longitudinal and prospective study with a quantitative approach. This study is part of a larger project titled "elective surgery in public hospitals of a city in Minas Gerais: are the citizens satisfied?" which assessed client satisfaction with elective surgeries in teaching hospitals in the city of Uberaba, Minas Gerais, regarding the five dimensions of quality<sup>(13)</sup>. The present study aimed to promote a more in-depth analysis and explore the findings related to tangibility.

The study was carried out in two hospital institutions of a city in the inland of Minas Gerais: a public

hospital and a hospital maintained by a private institution, though providing health care within the SUS. Therefore, the survey involved only clients of public health services. For the purpose of the study, the hospitals were identified by letters: Hospital A and Hospital B.

Hospital A: large general federal teaching hospital, providing medium and high complexity medical care. Has currently 316 available beds.

Hospital B: general hospital, maintained by a private institution, classified as a charitable non-profit hospital, of medium size, providing medium and high complexity medical care. The hospital has currently 140 available beds.

Both hospitals provide regional care to the 27 cities that form the macro-region and meet the demand for professional training, offering teaching opportunities based on the teaching, research and extension triad.

The sample size was statistically calculated. Assuming a 20% refusal rate, the final number of attempted interviews was  $n=285$ . We obtained a sample size of 228 clients who were admitted for surgery at the specified hospitals from June 2013 to February 2014. The sample was randomly selected using the proportional systematic random sampling method. According to the inclusion criteria, clients over 18 years of age, legally responsible, who lived in the city where the study was conducted, able to answer the questionnaires and awaiting admission to the hospital at the waiting room or who have been hospitalized within the past 24 hours for undergoing any elective surgical procedure were eligible.

On the other hand, clients who underwent emergency surgical procedures, unable to answer the questionnaire due to clinical conditions, who died after the procedure, and who were not discharged within the data collection period were excluded from the study. Structured interviews were used in data collection.

At first, the researcher met with the technical-administrative officer of each institution, to present the project and explain its purposes. After proper authorization of the study by the institutions, the elective surgeries were daily monitored through the surgical map provided by these institutions. The clients on the elective surgery schedule were approached in the waiting room of the institution's reception desk before undergoing the procedure. Those who met the inclusion/exclusion criteria, were willing to participate in the study and signed the Informed Consent Term were interviewed.

The same approach was used with the clients on the elective surgery schedule who were hospitalized within the past 24 hours prior to the procedure, according to medical advice. The interviews were administered prior to the surgical procedure in the hospital and five to ten days after discharge in the clients' homes: during the first interview the clients were asked to inform their residential addresses and authorize the visit. The subjects were supposed to participate at these two stages of the study.

For the characterization of the sample, a sociodemographic questionnaire was administered to obtain an epidemiological profile of the sample, based on the literature review and considering the determinant factors of satisfaction. The variables related to the characterization of the respondents were: institution, age, gender, income, marital status, education and marital status. The variables related to the surgical procedure were: surgical specialty, size of surgery and length of hospital stay. Four surgery sizes were considered: small, medium-sized, large and larger+<sup>(14)</sup>.

Satisfaction was assessed by an instrument based on SERVQUAL, based on the model of successor failure of the product/service in the assessment of the quality of health services and validated in Brazil<sup>(15)</sup>. It is a multidimensional scale composed of two subscales: scale of expectations and scale of perception.

The instrument assesses five dimensions of quality: tangibility (Appearance of physical facilities, equipment, personnel, and communication materials), reliability (ability to perform the promised service dependably and accurately), responsiveness (willingness to help customers and provide prompt service) assurance (knowledge and courtesy of employees and their ability to convey trust and confidence), and empathy (caring, individualized attention the firm provides to its customers). One final question was added, according to the validated instrument, to assess the client's opinion regarding the quality of services. The instrument also included a questionnaire for respondents assigning scores

to these dimensions. The respondents allocated 100 points among the five dimensions, according to the relative importance they place on each of them. Items 1 to 4 of SERVQUAL concern the dimension tangibility<sup>(15)</sup>. Each scale consists of 22 items, totaling 44 items, and these items are assessed by Likert scale whose scores range from 1 (I agree) to 7 (I totally disagree)<sup>(2)</sup>.

Data were entered and stored in a Microsoft® Office Excel® spreadsheet and imported to the Statistical Package for Social Sciences (SPSS) version 16.0 for processing and analysis.

Data was analyzed with descriptive statistics, according to absolute and relative frequencies for qualitative variables, and descriptive measures of central tendency (mean, median and mode) and means of dispersion (standard deviation, minimum value and maximum value) were used for quantitative variables. For comparison between expectation and perception of the items of the dimension tangibility, paired t-test was used for qualitative variables and Pearson coefficient for quantitative variables.

The project was approved by the Research Ethics Committee for research with humans of Universidade Federal do Triangulo Mineiro, through protocol no. 2527, as well as the regulations of the hospitals included in the study, according to Resolution no. 466/12 on research involving human subjects<sup>(16)</sup>.

## ● RESULTS

Of the 228 clients who participated in the study, 163 (71.5%) were admitted to hospital A and 65 (28.5%) were admitted to Hospital B. Regarding the variable gender, 40.8% were male and 59.2% were female. The age range varied from 18 to 91 years (mean  $\pm$  standard deviation:  $48 \pm 16.99$ ) and median of 49.5 years. The average number of years of schooling was 7.27 years (mean  $\pm$  standard deviation:  $7.27 \pm 4$ ) and median of eight years. Regarding income, 74 (32.5%) earned one to two minimum wages, followed by 60 (26.3%) who earned three to four minimum wages. Regarding marital status, 99 (43.4%) of the clients were married and 61 (26.8%) were single.

Most clients (113 (49.6%)) underwent medium-sized surgical procedures; 84 (36.8%) clients underwent major surgeries; 29 (12.7%) who underwent small surgeries and two clients (0.6%) who underwent larger+ surgeries. Orthopedic surgeries were the most frequent procedures, with 18.9%. The average hospital stay was 3.11 days (mean  $\pm$  standard deviation:  $3.11 \pm 2.35$ ) and a median of three days, and the surgical procedures of 13 clients (5.7%) were cancelled.

According to analysis of expectation regarding the tangibility domain of the SERVQUAL instrument, the clients expect to be treated in a hospital equipped with a modern and well-preserved physical structure, and whose workers maintain a professional well-groomed appearance and where easy-to-understand information is available. Most responses to the items in this dimension were "strongly agree" and "agree" (Table 1). Regarding expectation, the means obtained for each response to the item expectation in the domain tangibility ranged between 6.43 ( $s = 0.64$ ) and 6.90 ( $s = 0.33$ ).

Table 1 - Frequency of participants' answers related to expectation for the Tangibility dimension. Uberaba, MG, Brazil, 2014

Tangibility	SD * n%	D N%	AD	Neutral	AA N%	A N%	FA N%
The hospital must equipped with a modern and adequate physical structure (99.8)	1 (0.4)	1 (0.4)	-	-	4 (1.8)	26 (11.4)	196 (86)
The physical facilities of the hospital should be aesthetically pleasing	2 (0.9)	1 (0.4)	2 (0.9)	14 (6.1)	11 (6.1)	42 (18.4)	156 (68.4)
The hospital staff should maintain a professional well-groomed appearance. (99.9)	1 (0.4)	-	-	3 (1.3)	1 (0.4)	22 (9.6)	201 (88.2)
Reports and other documents delivered to patients should be easy-to-understand and aesthetically pleasing (99.9)	-	-	-	1 (0.4)	-	19 (8.3)	208 (91.2)

\* SD- "strongly disagree"; D- "disagree"; AD- "almost disagree"; AA- "almost agree"; A- "agree"; FA- "I fully agree".

Regarding the general care provided in the hospital (item 23): “general quality of care during surgical procedures should be satisfactory”, users tend to have high expectations in this regard, emphasized by the absence of items with negative connotation, or else, six (2.6) users answered “agree” and 222 (97.4%) answered “fully agree”.

Regarding the assessment of client perception, most respondents expressed their satisfaction with physical structure, personal appearance and information available at the hospital. Most items were sorted with “fully agree” and “agree” (Table 2). The average score of each item regarding perception ranged from 6.37 (s = 0.89) and 6.78 (s = 0.46). In the assessment of perception of quality in general, item 23 “In the hospital, the general quality of the surgical service is satisfactory”, the clients showed good perception, attesting that the overall quality of the service is satisfactory, since there was no assessment of neutral or negative connotation: 11 (4.8) “almost agree”, 39 (17,1) “agree” and 178 (78,1) “fully agree”.

Table 2 - Frequency of responses related to perception for the Tangibility dimension. Uberaba, MG, Brazil, 2014

Tangibility	SD * n%	D N%	AD	Neutral	AA N%	A N%	FA N%
The hospital has modern and adequate equipment.	1 (0.4)	1 (0.4)	2 (0.9)	4 (1.8)	17 (7.5)	51 (22.4)	152 (66.7)
The physical facilities of the hospital are aesthetically pleasing(100,3)	1 (0.4)	-	3 (1.3)	3 (1.3)	27 (11.8)	64 (28.1)	130 (57)
The hospital staff should maintain a professional well-groomed appearance	-	-	-	1 (0,4)	2 (0.9)	43 (18.9)	182 (79.8)
Reports and other documents delivered to patients should be easy-to-understand and aesthetically pleasing (100.1)		3 (1,3)	2 (0,9)	11 (4,8)	32 (14)	180 (78,9)	

\* SD- “strongly disagree”; D- “disagree”; AD- “almost disagree”; AA- “almost agree”; A-“agree”; FA- “ fully agree”.

The gap is the difference between perception and expectation and indicates the presence or absence of satisfaction, where positive gap indicates satisfaction and negative gap indicates dissatisfaction. The gap means for tangibility items ranged between -0.31 (s = 1.07) and -0.05 (s = 0.75), indicating a slight dissatisfaction with tangible objects.

In quantitative analysis, the variables age, years of education (schooling) and length of hospital stay were compared with the gap and Spearman correlation was used. There was no statistically significant result for age and length of hospital stay,  $r = 0.112$  ( $p = 0.090$ ) and  $r = -0.069$  ( $p = 0.301$ ), respectively. The variable “years of schooling” showed a weak correlation,  $r = -0.127$  ( $p = 0.055$ ) (Table 3).

Table 3 - Association between the dimension tangibility of the SERVQUAL instrument and the variables age, years of schooling and hospital stay. Uberaba, MG, Brazil, 2014

Tangibility	Age		Years of schooling		Hospital stay	
	r*	p	r	p	r	p
	0.112	0.090	-0,127	0.055	-0.069	0.301

\*r - Pearson correlation coefficient; p - p value.

As for the qualitative variables institution, cancellation of surgery and gender, the use of paired t test showed no significant results (Table 4).

Table 4 - Association between the dimension tangibility of the SERVQUAL instrument and variables institution, cancellation of surgery and gender using paired t test. Uberaba, MG, Brazil, 2014

GAP Tangibility		n*	x	s	p
Institution	Hospital A	164	-0.1159	0,684	0.112
	Hospital B	64	-0.2695	0,637	
Cancellation	Yes	13	-0.0962	0,485	0.730
	No	215	-0.1628	0,683	
Gender	Female	135	-0.1426	0,677	0.659
	Male	93	-0.1828	0,670	

\*n - frequency; x- mean; s- standard deviation; p-p value.

## ● DISCUSSION

Regarding sociodemographic aspects, a higher percentage of women were identified in the study population. A study conducted in a regional hospital in Londrina aimed to characterize the profile of surgical patients found that 55% of them were female<sup>(17)</sup>. Another study conducted in a university hospital with 100 surgical patients also found a predominance of females (81%)<sup>(18)</sup>. Women use health care services more often than men. The differences between genders related to health perception are key factors that impact the behaviour of users of health care units<sup>(19)</sup>.

The predominant age was 48 years. Income and education characterized a low socioeconomic status, reflecting the social conditions of the community assisted by the institutions and corroborating a study that showed that most participants earned 1 to 3 minimum wages<sup>(7)</sup> and another study conducted in a hospital of Londrina where the mean age of clients was 35.3 years, i.e., an adult population.

Regarding the size of the surgical procedure undergone by the client, most patients underwent medium-sized procedures, which is explained by the characteristics of the health care facility, which is a high complexity hospital. Orthopedic surgeries were the most frequent surgical procedures. A study conducted in the regional hospital of Londrina with 110 surgical patients identified the following types of surgeries: 27 (25%) orthopedic, 26 (24%) general, 25 (23%) vascular, 20 (18%) otorhinolaryngology, eight (7%) child, and four (4%) were gynecological surgical procedures<sup>(17)</sup>.

The clients' perception of the quality of health services has played a very important role in the improvement of health services. The search for high quality care should be based on the delivery of humanized care by an interdisciplinary health team<sup>(12)</sup>.

To ensure the quality of care, the place where health care is provided should be properly clean,, with adequate furniture and equipment, and the health staff should have a professional well-groomed in order to provide a comfortable atmosphere for the client<sup>(7-9)</sup>.

The clients had high expectations regarding the hard technologies of the health service and hoped that these technologies could have a positive impact on the quality of the care provided. They were satisfied with the appearance of the equipment and the health team. Regarding the physical facilities, there were more neutral responses. It can be inferred that for these respondents the appearance of the physical facilities is less important than other factors.

Item four, "Reports and other documents delivered to the patient should be easy-to-understand and aesthetically pleasing", was the most important aspect, suggesting that the respondents expect that such documents have these characteristics. On the other hand, regarding the item "The hospital must equipped with a modern and adequate physical structure", there were some negative connotations. However, the assessment was generally favorable, as well as for items 1 and 3, "the hospital should count on modern and adequate equipment," and "the hospital staff should maintain a professional well-groomed appearance". Regarding the general quality of care, the clients showed high expectations, as seen in the absence of neutral and negative connotations. An Iranian study showed that the SERVQUAL

dimension that generated higher expectations of users was Tangibility<sup>(20)</sup>. This item was considered key to ensure a high quality service.

Assessment of perception showed that the hospital meets the needs related to this domain. The item presence of modern and adequate equipment obtained a positive result, with minimal negative connotation. The appearance of the health staff was satisfactory. The documents delivered to users in the hospital were considered easy to understand and well designed. The perception of general quality indicated satisfaction, without neutral or negative responses. Or else, the service was considered satisfactory. A study carried out in a private hospital in São Paulo showed that the characteristics that most interfered in the respondents' dissatisfaction were: quality (taste) of meal: 54 (76%); physical facilities of the room: 56 (78.9%) and length of time waiting time for admission: 59 (83.1%) of participants, which indicates that the appearance of the healthcare facilities has impact on the quality<sup>(21)</sup>.

Gap analysis showed that the clients were slightly dissatisfied with the service, i.e. their perception did not exceed their expectations. However, high mean scores were obtained for each item regarding expectation and perception were with the use of a seven-point scale and, when these items were compared to each other, the gap was negative, but the differences were not significant. However, health managers must always seek to achieve higher levels of customer satisfaction.

One study with patients in dialysis treatment showed similar results regarding the gap ( $-0.29 \pm 0.51$ ). However, the study showed that although the gap was negative, the difference was not so significant, and, thus, the quality of the service was acceptable, but efforts should be made to reach the ideal level<sup>(22)</sup>.

There was no significant correlation between gap and age, length of stay, institution, cancellation and gender. In another study, the dimensions of quality of service did not show significant association with gender, age, marital status and educational level, corroborating our data<sup>(19)</sup>. A study on tangibility in primary care (n = 319) obtained approval of 38 (92.70%) patients among the elderly population when the variable physical environment was associated with the age of the participants<sup>(7)</sup>.

In this study, the variable years of schooling showed a weak correlation. A study with chronic kidney patients found no association with this variable, but found a difference between the levels of education. The expectations of individuals tended to be more reasonable when they had higher levels of education, and their expectations for the treatment outcome tended to decrease with increased knowledge and awareness of the therapy processes<sup>(22)</sup>.

When quality is assessed based on tangible objects it can be more easily detected by the clients, and specific interventions can be made<sup>(21)</sup>. However, tangible objects are less important for the users.

Some limitations of this study included problems with surgery schedules and the identification of the clients because there were renovation works in the hospital and a new management team had just taken over. Moreover, many patients were excluded from the sample because they did not fit the inclusion/exclusion criteria, particularly regarding the origin and severity of the surgical cases. One strength of this study was the approach of the subject quality of service based on the dimension tangibility, a subject that has been little investigated in the literature.

## ● CONCLUSION

In the present study, the dimension tangibility indicated dissatisfaction, that is, it did not meet the participants' expectations regarding tangible objects. However, there were few negative assessments about expectation and perception, suggesting that tangible elements are necessary to confer quality to the service. In general, both the expectation and perception of overall quality in hospital services were satisfactory.

Given that quality assessment by users is a method used to promote changes in health care by managers and health professionals, it is expected that this study can encourage and contribute to the implementation of actions targeted to the improvement of the quality of the services delivered to patients.

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