






THE DIMENSIONS OF THE QUALITY PERCEIVED BY USERS IN A CLINICAL ANALYSIS LABORATORY OF A UNIVERSITY HOSPITAL

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ABSTRACT

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The perception of the user has been regarded as a sensitive indicator of the quality of health service. In addition, incorporating the vision of the user in the planning of the service is acting within the guidelines of humanization and popular participation recommended by the Single System of Health - SUS. These considerations motivated to carry out an investigation of the perception of quality of Service of Laboratory Medicine of Clinical Hospital of the Federal University of Minas Gerais - HC-UFGM - by its users. It was sought to identify the dimensions of quality associated with the Laboratory, from the perspective of the SUS's user. 22 in-depth interviews were performed with users and two with managers. The data obtained were subjected to content analysis five dimensions of quality in the lab were found: the humanized care, efficiency in care, confidence in the quality of the laboratory, the comfort of the collection place and the cost. There was a consistency in the testimonies which allows considering that the service of Laboratory Medicine of HC-UFGM is well evaluated regarding size acceptance and trust, but it does not do a very good job when taken into account the efficiency of care - considered time consuming - and the comfort of the collection place. Also, as a result of the research, there are the subsidies for the development of a data collection instrument for assessing the quality perceived by the users of the Clinical Analysis Laboratories.

Contribution/Originality: This study contributes to the existing literature addressing the attributes considered by patients from clinical laboratories in their process of evaluating the quality of services provided. Thus, from the results obtained, it is possible to create an instrument to measure the quality of services offered, especially for clinical analysis laboratories.

1. INTRODUCTION

The aspects related to health issues are the second biggest problem for the Brazilian population, falling behind only corruption (Datafolha, 2016). In 2011, the Institute for Applied Economic Research (IPEA) published the results of the design of the system of indicators of Social Perception (SIPS) and, for 28.9% of the respondents, the

health services provided by the Unified Health System - SUS - are good or very good, but a similar proportion of persons (28.5%) believed that are bad or very bad, and for 42.6% of the sample interviewed, still, these services are regular (Schiavinatto, 2011).

In specific research on health services in Brazil, commissioned by the Federal Council of Medicine (CFM) to Datafolha in 2015, 93% of Brazilians classify as poor, bad or regular. Among those who claim to be SUS's users, this percentage is 87%. About two in every ten Brazilians assign grade zero for both Health in Brazil in general as to SUS. The Brazilians who have contact with SUS add up 86% of respondents, whether by direct use or by indirect information from friends and family. The main complaints refer to limited access and the fact that the degree of resolution falls, as the level of complexity of the procedures requested increases (Datafolha, 2015). Thus, despite government efforts, public health services remain a problem in assessing the population (Campos, Negromonte Filho, & Castro, 2017).

In relation to the services themselves, the perceptions which are more negative are related to the care of emergencies in emergency rooms (69%) and health centers (67%) and the elective medical consultations (66%). Laboratory tests come in a dishonorable fourth place among the services with the lowest ratings (62% of negative reviews) (Datafolha, 2015).

Therefore, SUS is perceived as having services offered in insufficient volume to meet the population, and the quality of these services is considered bad. As in other developing countries, public health services are under pressure concerning their financial resources, and the assessment of the quality of the services offered is an essential procedure for the provision of these services (Campos et al., 2017).

It is in this context that the present research is inserted. A micro scenery within SUS: the service of Laboratory Medicine Clinical Hospital of the Federal University of Minas Gerais - HC-UFMG -given the importance that laboratory tests have in medicine. When investigating what the SUS 's users consider as being quality in the context of laboratory medicine, the popular participation for the reality of the service is brought to the surface.

The production of Laboratory Medicine Service in the HC-UFMG in the year of 2015 had a monthly average of 140,000 tests (one hundred and forty thousand tests). The number of total of exams was approximately 1,700,000 (One million and seven hundred thousand) examinations performed in the year 2015. The number of patients treated on an outpatient basis in 2015 was more than 11,000 patients per month. These services affect a significant contingent of people.

In addition, the overall objective of this study is to identify the attributes of the quality perceived by the users of the service of Laboratory Medicine Clinical Hospital of the University of Minas Gerais and to gather these attributes identified in dimensions, with the aim of identifying possible constructs formers of perceived quality in Clinical Analysis Laboratories. The evaluation of the quality of care in clinical analysis laboratories, with a focus on customer perception, is a relevant topic since the technical and functional qualities correlate positively and contribute to the success of the public health actions (Luxford, 2012).

There are authors who advocate the application of Marketing and its concepts in public services in general and in health services in particular, as a way of setting priorities, apply the scarce resources and obtain the maximum possible satisfaction of citizens (Kotler, Kartajaya, & Setiawan, 2012; Lega, 2006). However, the marketing research in public health services in Brazil are sparse, being an area of great potential, but still little explored. The searchers among the key-words "Marketing", "SUS", "Qualidade percebida", "saúde" in the data base from *Scientific Electronic Library Online* (SciELO), *Public Medline* (Pubmed) and Google Scholar tool bring few national papers if compared to international production. The dissertations bank from *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - CAPES* - returns a few studies on the subject. These are sparse, located initiatives, whose central focus is the satisfaction, or the implementation of international instruments in healthcare services in Brazil. There are studies more focused on the satisfaction rather than quality, but the services approached – *Programa de Saúde da Família* [Program of Family Health] (Gaioso & Mishima, 2007; Santos, Oliveira, & Oliveira, 2010; Savassi, 2010)

Odontology Service (Andrade, 2006; Cruz, Salvador, & Drumond, 2005) in some hospitals (Ribeiro, 2010) and in physiotherapy services (Vieira, Souki, Reis Neto, & Gonçalves Filho, 2011) – do not stand out the laboratory. No paper published in journals evaluating the clinical analysis laboratories was found, from the point of view of SUS's user. So, academically, this work has characteristic of originality in terms of Brazil.

It is this knowledge gap that this project aims to help remedy, addressing a key participant of health assistance, the Laboratory Medicine, better known as Clinical Analysis Laboratory, responsible for about 15% of investments in health in SUS, under outpatient context (non-hospital care), which, in the state of Minas Gerais, in 2011, reached 1 billion reais (Vidigal et al., 2014).

In terms of management, patient satisfaction in the area of quality of health care services has become increasingly important, as it can increase patients' confidence in treatment results, in addition to facilitating decision making by managers, becoming a valuable tool to improve the quality of procedures performed in the health area (Anabila, Kumi, & Anome, 2019). Monitoring the evaluation of patients is fundamental to the process of improving the services offered (Rocha, Pinto, Batista, de Paula, & Ambrosano, 2017).

Based on the identification of the attributes of the quality perceived by the users of the service of Laboratory Medicine Clinical Hospital of the University of Minas Gerais and its categorization in factors or dimensions, it will be possible to draw up an instrument for measuring the satisfaction and the quality perceived by the users of the clinical laboratories. The development of a standardized instrument for measuring the quality perceived/adapted to the user experience in Clinical Analysis Laboratories, in particular for the SUS's user, will allow the manager and his or her team to know in fact his or her user, see their points of vulnerability, take the user to the role of the constructor of the health system, to humanize the care and, if applied sequentially, assess the impact of any changes in their services.

2. THEORETICAL FRAMEWORK

2.1. Marketing in Health

According to Lega (2006) the initial repulsion to partnership between marketing and public health services can be understood by the popular notion that marketing means to induce demand and market manipulation. The idea of increasing the demand for public services is not well seen by managers in the public sphere. In addition, at SUS, as well as in other public health systems in developing countries, there is still little incentive to consider patients as customers (Rao, Peters, & Bandeen-Roche, 2006). There is also a little consideration with the patient's opinion about the quality of service received. Even the patient satisfaction is one disparaged indicator, seen with indifference or even distrust (Kloetzel, Bertoni, Irazoqui, Campos, & Santos, 1998).

This stance is consistent with the model of health attention centered on doctor - still predominant in Brazil - in which this professional is considered the cornerstone of the entire structure and process of care. If the doctor knows more, he is the one who decides what is better and more suitable for the patient. Furthermore, the model centered on the doctor puts the technology at first place (Irwin & Richardson, 2006).

The hospital quality is affected by both the technical quality of care received and the quality of interpersonal relationships between patient and healthcare team. The environment in which this care is provided has also been implicated as a factor of influence, i.e., the evidence shows that a good experience as a patient is associated with clinical quality. The evaluation of the quality should be based both on objective criteria, in particular the results of the treatments (outcomes), as on subjective criteria, relating to the patient's perception, especially the perceived quality and satisfaction (Anabila et al., 2019; Luxford, 2012).

Listening to the patient is consistent with the model of health care centered on the patient. There is no consensus with regard to the concept of this model. However, Kitson, Marshall, Bassett, and Zeitz (2013) in a systematic review of the literature on the subject, found 3 recurring themes: (I) the participation and involvement of the patient; (ii) the relationship between the patient and the healthcare professionals, especially in a situation of

partnership, which requires communication and (iii) the context in which the care is performed. Another factor considered important by patients is the result of treatment (Anabila et al., 2019).

The model of health care centered on the patient lies at the heart of the policy of humanization of SUS. According to Rao et al. (2006) in developing countries, in the eagerness to obtain universal coverage of their public health services, they end up ignoring the needs of those who are served by such services. Listening to the patients in relation to the quality of health services is to provide an opportunity for these organizations to be more responsive to the needs of its users.

Lega (2006) proposed a model of alternative functions of marketing from the two roles in the health system: the provider and the manager/regulator. For each one of them there are three levels of approaches proposed: the operational, the strategic and institutional. The model is summarized in Table 1 below.

Table-1. Alternative functions of marketing proposals for public health services.

Function in the health public system	Marketing approach		
	Operational	Strategic	Institutional
Provider	Correspond to the patients' needs and their expectations with the service	Planning the portfolio of services, strategic positioning, services hierarchization	Construction of networks of relationships of institutional service providers to meet the health needs of society
	Mix of services and aspects of internal marketing	Contracting of services with managers Repositioning of the service through network of inter-organizational relationships	Public relations and marketing with private donors Construction of image along with the users (honesty, trust, transparency)
Manager		Create inter-organizational networks of relationships to ensure continuity of care in health safely and rationally (relationship marketing)	Set priorities in the area of health and adapt the supply chain to demand
	Increase the adequacy of the use of services, quality of services and their cost-effectiveness by contracting with the providers and through the users' education.	Set contracts and regulate the health system in order to improve their proper use and get a response cost-effective for the needs of the population in general and of the target populations. Instruments for analysis of the behavior of the health system users; instruments for education and communication with users in order to support the technical measures adopted and increase the clinical governance	Epidemiological and behavioral analysis of the population; communication tools to involve citizens in achieving the objectives of the system, in particular in the reduction of its abusive or incorrect use (-marketing) Construction of image along with the users (honesty, trust, transparency)

Table 1 shows the range and variety of approaches of marketing on both levels of the public health system: the healthcare provider and manager/regulator of health.

From the point of view of the healthcare provider, the marketing provides tools to select the niche market in which the organization will act, what represents a strategic approach. It is possible to have services geared toward the basic health, specialized care clinics or even tertiary level of care with hospital care - to name the most common - as to the extent that the complexity level of care is increased. Still within the strategic approach, marketing can help in the negotiation of financial transfers with the managers of health, especially in situations in which the provider intends to expand the services, or migrate to more advanced levels of complexity (Lega, 2006).

In an operational approach, marketing helps to adjust the mix of services appropriate to the needs of the population group as desired and the complexity of health care. It is sought to meet the expectations, needs and wants of its users and build an offer consistent with respect to the characteristics of the specific service. It is used the knowledge and techniques of marketing to identify the process of care: action in logistics, in the times of waiting, humanizing the information processes, physician-patient relationship, in the geographical distribution of services, in the peripheral services such as scheduling, time of requests, hospitality of the hospital (admission), time for discussion with the doctors, information and explanations of procedures in an appropriate language for users. The institutional approach of marketing includes the construction of the image of the provider and of the relations of the organization with suppliers, other partner companies and with users (Lega, 2006).

From the point of view of the manager, marketing strategies are decisive in the consolidation of consensus and behaviors that make health care more efficiently and with greater cost-effectiveness. The behaviors may be of users - accept the vaccination, reducing salt intake, quit smoking, do not self-medicate - or from the health team: adopt the evidence-based medicine, build care protocols or guidelines, complete worksheets disease notification penalty payments, among others. Regulations without consensus has a great tendency to fail in their deployment. Education, information and communication are marketing objectives to induce the desired behaviors. Setting priorities is a task of the government and the marketing can be helpful in achieving the understanding of society on the adequacy of the measures adopted for the system, with the exception that the use of marketing must not be unethical or manipulative (Lega, 2006). It is also noteworthy that knowledge about the aspects that patients value most is important for the management of health services (Anabila et al., 2019).

2.2. Satisfaction In Health Services

The evaluation of user's satisfaction has been considered an important indicator of the quality of health service and its appropriateness to the expectation of the same user (Donabedian, 1994; Trad, Bastos, Santana, & Nunes, 2002).

There is evidence from studies on the evaluation of the satisfaction in all regions like Europe, Asia, North America and South America, Australia and Africa. However, only thirty-seven studies showed the scientific rigor necessary to be included in the meta-analysis. The majority of studies were conducted in university hospitals or general hospitals, and some in specialized clinics. The construct satisfaction is treated as multidimensional by almost all of these studies. The common dimensions among them are users' socio-demographic characteristics, the interaction between the patient and the healthcare professionals, the physical environment and the managerial internal process, and the results derived from the services, in particular the resolution of health problems (Almeida, Bourliataux-Lajoinie, & Martins, 2015).

No studies were found addressing a diagnostic support, as it is the case with the clinical analysis laboratory, the object of study in this research.

One of the possible ways to evaluate the users' satisfaction of health services is to divide it into 8 dimensions: interpersonal behavior (how the providers interact with the patients); technical quality of care (competence and adherence to high criteria for diagnosis and treatment); accessibility (waiting time, ease of access), financial aspects, effectiveness and outcome of care (improvement and maintenance of health), continuity of care, physical environment (well-signed environments, equipment, pleasant atmosphere), availability (presence of medical resources: sufficient quantity of providers and inputs (Ware, Snyder, Wright, & Davies, 1983). In the case of dental services, a large part of patient satisfaction depends on the relationship between dentist and patient, on available infrastructure, the time of treatment, and waiting, in addition to the information received by the patient during the consultation (Rocha et al., 2017).

For services with specific characteristics (home-care, psychiatric clinic and pediatric), the authors recommend using specific dimensions (Almeida et al., 2015).

Since that SUS has no need to capture clients and their users do not have many alternatives - to the extent that they cannot enter the private market for health due to their economic standard - the power of these same users is very low. The ratings of the user's perception may represent an important means to circumvent this issue, giving voice to patients, allowing them to participate in the processes of planning and carrying out the social control of SUS organization (Esperidião & Trad, 2006). The bodies of research can still make users sensitive, making them adopt a more critical stance regarding the quality of services received, contributing to the creation of a culture of evaluation of services (Andrade., Vaitsman, & Farias, 2010).

2.3. Quality Perceived in Health

In the area of health, the concept "quality" has a construction rooted in common sense and is associated with a high standard of assistance. The topic of quality receives a lot of interest by researchers from several different fields of knowledge (Bittar, 2017) and it can be defined as the ability of a service or a product to meet the needs, desires, and expectations of customers (Hammoud & Bittar, 2016). More specifically, the quality of services depends on the comparison between expectations and the perceived performance of the provision of services through different dimensions (promptness, security, service, among others) (Anabila et al., 2019; Jiang & Liang, 2019).

The care in health can be divided into structure - which includes the physical structure where health care takes place, the culture of service and management - process and outcome (Donabedian, 1994) in addition to the seven pillars of quality for the area of Health, described in Table 2 (Donabedian, 1990):

Table-2. The seven pillars of health care quality.

Pillar (Dimension)	Brief Description
Efficacy	It is the ability of the care to contribute to the improvement of health conditions. It means the best that can be done in the most favorable conditions, given the patient's state.
Effectiveness	Possible improvements in health conditions that can be obtained in the normal conditions of daily practice of medicine and other specialties in the area of health.
Efficiency	It is a measure of the cost with which a given improvement in health is achieved. If two strategies of care are equally efficient and effective, the most efficient is the lowest cost.
Optimization	It becomes relevant as the effects of health care are not evaluated as absolute, but compared to the cost of care. In an ideal curve, the process of adding benefits can be so uneven to the costs that such useful "additions" lose their reason of being.
Acceptability	Appropriateness of care to the wishes, expectations and values of patients and their families.
Legitimacy	Acceptability of care in the way in which is seen by the community or society in general. It is the compliance with social preferences.
Equity	Principle by which it is determined what is fair or reasonable in the distribution of care and its benefits among members of the population

In addition, Kloetzel et al. (1998) identified the following dimensions when evaluating the perceived quality in Hospitals: (I) the availability of medical services; (ii) health information: accessibility of the patient to information relevant to their health condition, treatment options, prognosis; (iii) the behavior of the health team: how professionals interact with patients; (iv) the behavior of the doctor: how medical professionals interact with patients; (v) infrastructure of the hospital.

In another study, Narang (2010) found four dimensions with statistical significance in the perception of the quality of the services in India: (I) health team and health practices, (ii)the way care is delivered; (iii) access to services and (iv) the appropriateness of physicians for women. The order demonstrates the strength of association found.

The opinion of users of public health services that are offered can serve as the basis for the definition of indicators and the development of procedures and projects. It is important to define qualitative parameters, as well

as practices and actions. Therefore, the participation of service users, even if it is through surveys of opinion, is relevant for managers to define standards, norms and priorities, as well as enhance and improve the systems of care and services (Moimaz et al., 2010).

The variety of dimensions found reinforces the need for qualitative exploratory studies for the construction of instruments for measuring the perceived quality for the service of Laboratory Medicine.

3. METHODOLOGY

To achieve the objectives of this research project, interviews were conducted with users of services of the Department of Laboratory Medicine at the Hospital das Clínicas of Belo Horizonte and also with the managers of the organization. Scripts of semi-structured interviews were used, that combine open and closed questions. For the formulation of the questions other recent studies on quality attributes and attributes in the service sector were considered (Azevedo, Moura, & Souki, 2015; Lima, Moura, & Souki, 2015). It was asked what was important, which made the user more satisfied and also more dissatisfied, what the organization ought to do, what was really important in providing services, delivery times, infrastructure and related services. The script consisted of 33 questions and an open question, to allow free comments by the interviewee. Some questions were variations of the same subject, in order to try to stimulate the responses and the expression of the users. The interviews lasted an average of 10 minutes, were recorded and later transcribed to then be analyzed.

In this research, the study population was composed by adult users of Outpatient Collection in the Department of Laboratory Medicine of the HC-UFGM. The number of interviews was determined by the saturation of responses (when the data or information collected are similar in terms of content).

Therefore, 22 interviews with adult patients were performed, 14 women and 8 men, aged between 29 and 76 years, who were accustomed to attend the Laboratory Medicine Service of the HC-UFGM, hereinafter simply the laboratory.

The interviewees were selected by convenience, among those who were waiting in line for the register of exams, for blood collection and for the withdrawal of the reports. It was searched, however, diversity of sex, age and place of origin, in order to achieve representativeness of the public served by the laboratory.

The proportion of women is higher for two reasons: there is a greater presence of women among users of laboratory and many men refused to respond to interviews, alleging lack of interest or lack of time. It is worth noting that all interviewees gave their consent to the interview to be carried out and allowed, including, its recording.

It was adopted the analysis of content to review systematically all interviews. According to Bardin (2011) the analysis of content consists of systematic procedures and objectives of description of the content of messages, allowing their thematic categorization, allowing the organization of the attributes most often mentioned by the participants interviewed. Its objective is to sort the statements on issues to assist in the understanding of what is behind them.

4. DATA ANALYSIS

4.1. Interpretation of the Reports of Respondents

The initial questions of the interview were about the quality in terms of what was important for the user and also what the laboratory could not fail to make or perform. Almost all respondents equate service, in its entirety, to care, especially until the collection of material, but some also mention the delivery of results. It is worth noting that no interviewee made reference, in these moments, to the technical quality of the laboratory. In addition, one of the respondents makes clear the references with which compares the quality of service in the lab to say that "In view of certain places there, here is much better."

In relation to satisfaction, the main reason for it to be achieved is the cordiality in attendance. The dissatisfaction is expressed by the delay in service and in the absence of comfort. When addressing the binomial satisfaction/dissatisfaction, the delay in service, coupled with the lack of comfort for the waiting time is present in almost 100% of the interviews. It is often the complaint on lack of chairs outside the health center. The queue for the register of examinations and the withdrawal of the records happens outside the building of the collection. There are only a small number of seats in place and a narrow cover installed and most of the people are totally exposed to rain, wind, sun. Inside the collection place, there is greater protection, but the space is improvised and insufficient for the demand of patients that appear in the morning. The place provides services in spontaneous demand, without scheduling. There are around 500 samples on average, with fluctuations throughout the week. Generally, there is a peak on Monday and lower demand on Thursday and Friday.

Often the interviewees mention the elderly and the disabled to illustrate the lack of comfort and the delay as inhumane. They also mention the user demand that comes from the countryside of the state and that, therefore, has a waiting time worsened by the journey. The complaint of delay and lack of comfort are inter-associated. The long time that people wait makes the lack of comfort evident. It is noticed that the fast service would result in a decrease in complaints of lack of comfort. In addition, for them the staff is insufficient to meet demand and the increase in the number of attendants could solve the problem.

In relation to the hours of operation of the laboratory, in a general way, users believe that it is a suitable time. Only two interviewees suggested that the collection should open earlier. None of them found it useful that the collection place worked until later.

About the availability of different exams, respondents consider that the laboratory meets their needs.

One of the problems that occur is the temporary suspension of laboratory tests, which creates tension between users and staff and that was commented upon by respondents. The suspension occurs due to difficulties with the suppliers, whether for payment or in changing supplier, because they can only be contracted through bidding, which is a time-consuming process. However, this is a complaint that does not reach everyone, because the problems are isolated occurrences and refer to more rare tests and/or more complex.

In relation to the location of the collection place, the vast majority of respondents considered that the location, centrally located in Belo Horizonte, is good. The fact of being distant from where the respondents live is compensated by being close to the buildings of offices and the complex of the Hospital das Clínicas, facilitating the care services

Whereas the structure available in the health center is subject to various criticisms, especially while waiting for the register, which is the most frequent complaint. There is a queue that is formed since the dawn, at the outside of the place and that keeps the patients exposed to rain, sunshine or wind. As there are few chairs outside and only a narrow awning, most patients are standing or sitting on the ground, barely staying to wait for the screening. As there is no schedule, people are seen in order of arrival and the most serious cases, the priorities are identified in the queue and passed in front of the other users.

The internal structure of the place also receives criticism. The lighting is considered reasonable, but the ventilation is poor. There is only one large door for entrance and exit, which makes the air circulation difficult and creates a warm and stuffy environment in most months of the year. In addition, the quantity of drinking fountains and toilets was considered insufficient.

Even the new chairs, just placed inside the collection place, are said to be uncomfortable. The model of chair is hard plastic, aiming the durability and hygiene. Upholstered models have short shelf life and each chair with exposed foam is a risk of contamination and must be collected.

The cabins of collection were well evaluated, because they are spacious and allow the patient to remain seated during blood collection. The pediatric collection room is well fitted and was well evaluated.

Cleaning is considered reasonable by the majority. However, the cleanliness of the toilets was poorly evaluated by most respondents considered dirty and even disgusting. The toilets are a difficulty for the cleaning team, since they are constantly occupied by the users, due to their insufficient to meet demand. The professionals have difficulty finding an opportunity to perform the cleaning, since there is only one female bathroom and one male on site. When the cleaning is taking place, access to the bathroom is blocked.

However, the interviews leave little doubt that the sore and sensitive point in relation to the perception of quality by users is the delay or waiting in attendance, because all the times of care are targets of complaints, is the time until the registration, the time of the register until the collection of biological material (blood, urine and others) and the time until the delivery of the result. For them, waiting until the registration is the most sacrificing, constantly being referred to as "the queue".

From the complaints related to the waiting time, opinions are divided over the interviewees' reports. For example, some attribute the delay in service to the deficiencies of the Federal Government - in a broader sense, thus exempting the Board of Hospital das Clínicas. Only one interviewee rated the service time as normal. Others believe that the wait is the "price to pay" for the service to be free and others consider the registration time as a contempt for the user.

The time for the delivery of the result divides opinions. There are those who believe that the term fully meets their needs, while others believe that they could be reduced, but they are satisfied because the agreed deadlines are met. But there are those who complain. Usually they are the same people who suffered with the suspension of exams. For those exams that were affected by the lack of reagents or problems with equipment, the delivery period ends up being, necessarily, dilated.

It was also approached the team qualification, separating employees who work in the registration from those who work in the collection of biological material itself. It was asked still about the friendliness and willingness to help. In general, the teams are considered competent and friendly. The humanized - gentle service providing- is often mentioned as one of the qualities of the lab, being that the complaints were considered exceptions among the users.

The collection materials used were well evaluated, being classified as "good", "appropriate", "within the pattern", "compatible". Users perceive that the materials used for the collection have quality, assure a collection with minimal pain and maximum safety for them and for employees who are performing the procedure.

Some situations identified were also surveyed by the Laboratory of the Hospital das Clínicas identified as source of dissatisfaction of patient one of those situations is the crash of the Laboratory Computerized System, which in most cases occurs in function of the fragility of the network of computers. Each interruption generates a negative impact on the registration of exams and, consequently, in their process of collecting, causing delays and occasionally suspensions. For users, there should be expanding of the team to sign up or even outsourcing, including improvements in the computerized system.

Another situation that creates discontent among patients is when they are summoned to a recollection of biological samples (blood or urine). The recollection usually occurs for three reasons: inadequate sample, confirmation of the result and loss. The first two reasons were mentioned as a reason for possible increase of confidence in the laboratory, despite the discomfort that accompanies this situation. The loss is seen as neglect of the Lab team and the user in this case should receive priority service so they do not have to face the queue again, but they have to go through the entire procedure again, facing the queue.

Another topic discussed was the trust, which, unlike the expected by technical staff, does not come from the advanced equipment that are part of the lab. It seems to derive from the trust that exists in the medical assistants of the laboratory. Of the twenty-two respondents, only one has put in doubt the accuracy of the results, demonstrating a certain mistrust of the laboratory.

In spite of the free service being an important point for the vast majority of users and influencing their tolerance with the deficiencies of the service, contributing to the general satisfaction that the user feels, it is not the only determinant of satisfaction. Quality seems to be the factor with the greatest impact to the satisfaction of the lab users.

Preference was the last topic addressed. Users listed several reasons for the preference, since pragmatic reasons such as the lack of financial condition to pay a private laboratory, until the quality of the result, the quality service and reliability. For some people, the preference is not by the laboratory, it is the health care at the Hospital das Clínicas, for often the preference is not the user's, but it is his or her doctor's.

When analyzing the users' responses, it was realized that those who value the quality of the result would abandon the lab if it worsened and if the errors became constant. Those who use the services of the laboratory because of the gratuity, if he or she had money, would select another service provider. There are those who developed an affectionate relationship, generally associated to a good service, and, among these users, there are some who declare that there would abandon the Laboratory of the Hospital das Clínicas. They want to continue using the services of the lab while there is a need or last the treatment.

4.2. *Elaboration of the Intermediary and Final Categories from the Reports Analysis of the Respondents*

From the analysis of the interviewees' reports, it was tried to create intermediate categories capable of grouping, in terms of meaning, the various initial categories or opinions of respondents. Subsequently, the intermediary categories were grouped into final categories, which effectively represent the dimensions of the quality of the services of a laboratory for their users.

The first category to be formed was the humanized care – see Table 3 -, which relates to the kindness and warmth in reception of the users, which transpires in the screening or prioritization of critically ill patients, removed from the queue and placed in the priority queue. The interpersonal skills of the team of front line are also required in the communication of technical information about exams, in preparation for its implementation, in the solution of customer questions and mainly in the explanation of possible interruptions in service, communication of results are critical and in invocations to recollections.

This category was maintained until the final categories. Once the kindness in care is one of the strong points of the Service of Laboratory Medicine, highlighted by managers and by virtually all patients.

Table-3. Category “Humanized care” associated with the perception of quality in the Laboratory of the Hospital das Clínicas of Federal University of Minas Gerais (UFMG).

Categories		
Initial	Intermediary	Final
1 - Kindness in care services	A - Humanized care	I - Humanized care
2 - Information on procedures and the preparation		
3 - Transparency about the problems		
4 - Prioritization of care		
5- Employee “May I help you?”		

Table 4 presents the following intermediary category involves the waiting times for care, in several steps, including the time for the register of examinations, the time until the collection of material and time to obtain the reports with the results of laboratory tests.

The patients perceive the waiting as waste of time, as disrespect, especially in association with the precarious conditions of service.

Table-4. Intermediate category "Waiting Time" associated with the perception of quality in the Laboratory of the Hospital das Clínicas of UFMG.

Categories	
Initial	Intermediary
6 - waiting time for registration	B-Waiting time
7-Waiting time for collection	
8-Waiting time for results	

Associated with the waiting time is the next category, which is related to the performance of the team care, both the registration team as the team of collection. The schedule of care for the collection of exams was presented as a solution to reducing the queue and waiting time. All of these aspects can be condensed as customer service responsiveness – see [Table 5](#).

Table-5. Intermediate category "Customer Service Responsiveness" associated with the perception of quality in the Laboratory of the Hospital das Clínicas of UFMG.

Categories	
Initial	Intermediary
9 - Schedule for the collection of exams.	C - customer responsiveness
10-Deadline for examinations delivery	
11 - Highly-qualified collection team (good hand)	
12 - Fast registration team	

The two intermediate categories are associated and can be understood as a single aspect of care, i.e., the efficiency. The [Table 6](#) comprises these categories.

Table-6. Final category "Customer Service Responsiveness" associated with the perception of quality in the Laboratory of the Hospital das Clínicas of UFMG.

Categories	
Intermediary	Final
B-Waiting time	II - Efficiency in customer service
C - customer responsiveness	

The fourth intermediate category was created by grouping several aspects related to the technical quality. It is worth noting that many of these aspects were mentioned only by users who were or have been related in any way with the technical part of a lab, or related to the management. [Table 7](#) presents these categories.

Table-7. Intermediary category "Technical quality" associated with the perception of quality in the Laboratory of the Hospital das Clínicas of UFMG.

Categories	
Initial	Intermediary
13 - Adequate Collection Material	D- Technical quality
14-Quality internal control	
15-Quality external control	
16 - Laboratory Accreditation	
17 - Computerized laboratory System	
18-Scientific Consulting	
19-Competent technical team	
20-Analytical equipment	

Another intermediary category that emerged from the analysis of content was the confidence in the result of the examinations to perceive that the expectation of the correct result is equivalent to trusting in the results delivered by the laboratory – see [Table 8](#).

Table-8. Intermediary category "Confidence in the Result" associated with the perception of quality in the Laboratory of the Hospital das Clínicas of UFMG.

Categories	
Initials	Intermediaries
21- Correct and accurate result	E- Confidence in the result
22- Confidence in the result	

The provision of laboratory exams, in variety that meets the users' needs, is another intermediary category formed from the content analysis. Doctors must have access not only to basic exams, but also to in-depth ones, since the patients who are referred to the hospital complex of Hospital das Clínicas in UFMG are those of difficult diagnosis, high risk, whose treatment and follow-up require greater workup. Thus, the provision of specialized tests, either by the own laboratory or even by outsourcing to support laboratories, expands the range offered and can be considered as an aspect that improves perceived quality. These categories are present in [Table 9](#).

Table-9. Intermediary category "Tests Menu" associated with the perception of quality in the Laboratory of the Hospital das Clínicas of UFMG.

Categories	
Initials	Intermediary
23-Variety of the exams offered	F- Tests menu
24- Specialized exams	
25- Outsource of exams	

The following category regards the delivery of results – see [Table 10](#). The deadlines must be as short as possible. The comfort of the availability of the results on the internet must be increasingly valued by users and by doctors.

Table-10. Intermediary category "Results delivery" associated with the perception of quality in the Laboratory of the Hospital das Clínicas of UFMG.

Categories	
Initials	Intermediary
26-Fullfilment of the deadlines for the results delivery	G-Results delivery
27-Results through the internet	

Finally, the problems in the process laboratory, either the interruption of service by crashing of the computerized system or temporary suspension of examination, are negative experiences that mark the users' perception in relation to the laboratory and the quality of its services and, thus, contribute to the users' dissatisfaction. Even when the interruption is partial, it can generate delays in the process of analysis and the release of the result. The Recollection of biological material are other complications with negative impact, although the reasons for the need of new collection may influence the user's opinion. Confirmation Recollection confirmation of the results of the examination - are more well accepted because they are perceived as an extra precaution, by the laboratory. Recollections due to loss of material are perceived as negligence, such as errors and are less tolerated. The [Table 11](#) comprises these categories.

Table-11. Intermediary category "Laboratory Mistakes" associated with the perception of quality in the Laboratory of the Hospital das Clínicas of UFMG.

Categories	
Initials	Intermediary
28 - number of crashes computerized system laboratory	H-laboratory mistakes
29-Recollections	
30-Laboratory mistakes	
31- Loss of samples	
32- Temporary suspension of exams	
33- Delays in the delivery of exams	

The categories from D to H could be grouped into a single category: "The confidence in the quality of the laboratory". This final category emerged by the fact that users, even the doctors, perceive only fragments of the whole analytical process that occurs inside the lab – see Table 12. They end up having contact with these aspects especially if something goes wrong, but in general, as emphasized the interviewed doctor manager, confidence emerges emanates from the brand “Hospital das Clínicas of UFMG”.

Table-12. Final category "Confidence in the Laboratory Quality" associated with the perception of quality in the Laboratory of the Hospital das Clínicas of UFMG.

Categories	
Intermediaries	Final
D- Technical quality	III-Confidence in the Laboratory Confidence
E- Confidence in the result	
F- Tests Menu	
G- Results Delivery	
H-laboratory mistakes	

An intermediary category that practically remained intact was “Comfort in the Collection Place”. It includes all aspects associated with the place that may be perceived as comfort items to lessen the waiting time and, thus, in service quality and respect for the customer. It is a dimension also associated to humanization, but such specific aspects, related to infrastructure, some of which are difficult to change because they involve remodeling, which deserves to be kept separate, as a dimension of its own. The Table 13 comprises these categories.

Table-13. Final category "Comfort in the collection place" associated with the perception of quality in the Laboratory of the Hospital das Clínicas of UFMG.

Categories		
Initials	Intermediaries	Final
34- Location of the collection place	I-Comfort and facilities in the Collection Place	IV-Comfort in the Collection Place
35-Accessibility of the collection place		
36-Chairs in the collection place		
37-Bathrooms in the collection place		
38-Cleaning of the collection place		
39-Drinking fountains in the collection place		
40-Pannel for passwords in the collection place		
41- Televisions in the collection place		
42- Ventilation in the collection place		
43- Illumination in the collection place		
44-Snack after collection		

Finally, there is the Dimension associated with the price of exams or, as it is a public service, other aspects associated to the cost and the sacrifice of patients, such as the moving to reach the collection place and travel, the requirement of fasting, time spent on the journey and on hold and alike – see Table 14.

Table-14. Final Category "Cost associated with the perception of quality in the Laboratory of the Hospital das Clínicas of UFMG.

Categories		
Initials	Intermediary	Final
45-Price or cost	J-Cost	V-Cost
46- Free Service		
47-Moving		
48-Fasting requirement		

There are few studies on perceived quality in health services in Brazil, so the comparisons among results obtained previously and those found in the present study were affected.

In a study on the satisfaction of users of an inter-municipal consortium of health, it was identified that the delay in scheduling appointments was the main complaint of respondents, which generates the dissatisfaction with the services provided (Silva, Rogério, & Ferraci, 2014). The access is a dimension which has a great impact on the satisfaction of SUS's users, because these users due to their socioeconomic situation, remain dependent on public service. The access even overcomes other dimensions, such as the physical structure of the service and even the quality of care received (Esperidião & Trad, 2006).

In two studies on the quality of services of university hospitals, it was concluded that, in view of the user, empathy, i.e., the humanitarian aspects of the doctor-patient relationship are the domain of greatest importance to the user, followed by the scale reliability. In addition, the facilities were the focal point of dissatisfaction, but not to the point of reducing the perception of users regarding the ability of solving the health problems or prevent the recommendation of the institution to third parties (Ribeiro, 2010; Silva et al., 2014).

The results of both surveys are consistent with those that were found in the present study, in which the categories that make up the dimension Humane Care were mentioned more appreciatively in the interviews, spontaneously, which shows, in an indirect way, its importance. Confidence in the quality of the laboratory was also cited in a positive way.

In addition, when analyzing the theoretical background in Narang (2010); Kloetzel et al. (1998); Lega (2006) and Donabedian (1990) it is verified that many aspects considered important by users of health services and which are related to the quality of service are present in the results obtained in this study, such as the relationship between health professionals and the public, courtesy, knowledge, security, quickness, infrastructure, among others.

5. FINAL CONSIDERATIONS

In principle, the results showed that the laboratory can be seen as similar to other companies, in the sense that the perceived quality depends heavily on the contact with the staff at the front line.

In the case of a clinical analysis laboratory, this experience of consumption is equivalent to the sign-up process (user and tests) and collection of biological material. Therefore, for a satisfactory experience to rapid service is fundamental, the care and the technical quality of the collection. Another moment of interaction between laboratory and user usually takes place at the reports withdrawal. Also at this time agility is needed, which translates into meeting deadlines promised and delivering correct and reliable results.

These are essential points to a public laboratory, whose financial resources are limited, which seem to be understood by the users, who classified as secondary the other aspects of comfort. If the permanence time in the collection place is short, it matters little whether there is great comfort there. The most important is to obtain the results necessary for the health treatment.

One aspect that emerged with the interviews was the confidence in the laboratory, more specifically on the results of examinations that it produces. It was noticed that the user's confidence in laboratory results derive primarily from the confidence of the medical assistant in the laboratory. It is the doctor who selects the necessary exams, requests them and interprets the results obtained. Thus, if the doctor relies on the laboratory and the patient trusts his or her doctor, the confidence in the laboratory is transferred to the user. There are, therefore, two clients

with distinct profiles, but that are inter-related: the internal customer - who is the doctor - and the external customer, who is the patient.

Despite of not having been the subject of this research, one may speculate that the internal customer has more knowledge on the technical quality of the laboratory, the limitations of the methodologies, the advances in technology and is still able to identify possible errors in the lab to correlate clinical data and the results of laboratory tests. There is an internal customer for various external customers, because a single doctor is responsible for several appointments. This diversity of services makes the internal customer require greater variety of tests.

This study contributes to the academy, bearing in mind that it explored a type of undertaking - the clinical analysis laboratories - neglected by the literature. Further, it focused on a public laboratory and studies aimed at the perception of quality and satisfaction of SUS users are still rare in Brazil. The model of perceived quality for laboratory Medicine Service shall be adapted in a questionnaire so that it can be applied on a larger scale. This data collection instrument aimed at the perception of quality in the lab is an academic contribution, because its use will allow the performance of various laboratories to be compared and that the range of information on the subject expand.

In terms of managerial implications, this study contributes to the research institution, since the results may assist in prioritizing the development of policies and practices that are in fact aimed at the users' expectations and aspirations. From the results of the interviews, it can be argued that managers should prioritize measures to ensure greater customer responsiveness at the collection place through the restoration of a technical team, direction for the collection, the deployment of the schedule, the computerization of the request for exams. All these initiatives that contribute to a faster service. In having the patient as a focus, such measures should be placed at the front of the expansion of the range of laboratory tests, the supply of snacks, remodeling and physical adaptations and even obtaining the accreditation. It should be noted that, if possible, all measures could be conducted in parallel.

In terms of the limitations of work, despite the qualitative methods allow users to expose their perceptions about the health service from a wider range of positions, these methods are questioned as their representativeness that the individual speech would have, on the possibility of generalization of the contents of this testimony.

Furthermore, the present study was restrict to a single laboratory, with specific characteristics - as part of a Public and University Hospital - that distinguishes it from the others. Moreover, as mentioned previously, the research did not comprise the doctors, who in the specialized literature in the area of laboratory medicine are considered internal users of the lab. Another limitation derived from the design of the study is the use of a non-probabilistic sampling. Such fact itself, means that the generalization of the results is not allowed.

In terms of future research, [Esperidião and Trad \(2006\)](#) describe that a combination of qualitative and quantitative techniques would be a timely combination to avoid reductionism and achieve representativeness. Thus, the preparation of a questionnaire for completion of a survey among the users of other laboratories is a natural consequence of this research. From the data obtained, it was possible to prepare the data collection instrument, as well as to be aware of the dimensions to be obtained through factor exploratory analyzes, and also by means of checking the reliability of scales for each of the final dimensions of the quality perceived by the user and other psychometric characteristics of the scale, by means of checking the convergent validity and discriminant validity.

In addition, it is also suggested to check if there are other factors that are considered by users of private clinical laboratories and, if so, adjust the scale to better be able to evaluate them. Finally, another study that can be done is the comparison between public and private laboratories, in order to verify the level of requirement and the perception of the quality of their users.

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