

Perceived Quality of the Visual Health Service in Private Entities of Optometry*

Service quality factors in private visual health institutions*

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Received on: January 10th, 2018

Accepted on: March 3rd, 2018

Printed on: August 1st, 2018

DOI: <http://dx.doi.org/10.22335/rlct.v10i2.557>

* Article resulting from the research of the Project: "Quality Perceptions in the Framework of Services' Management and Marketing". The Project has been financed by Institution Universitaria Politécnico Grancolombiano.

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Abstract

Quality assessment of health services is a growing concern of the last decades, since consumer demands in the Colombian scope are not covered by the public sector. Similarly, according to literature review, there is no evidence of perceived quality factors assessment for the case of visual health services. Objective: To identify the perceived quality factors of the visual health service by users in private entities of optometry. Method: From a pragmatic approach, a non-experimental, cross-sectional study was performed with an exploratory sequential design. A scale designed for the purposes of this research was applied, since the

literature does not report an adequate prior instrument for this area. The definitive sample is of 382 users of the optometry service in Bogota. Results: 6 factors that compose the perceived quality of the visual health service: communication with professional, environment trust, accessibility, monitoring, punctuality, and, notion of time. Conclusion: the six factors explain 58.36% of the variance and the article presents managerial implications that can be applied by private health service providers in Colombia.

Keywords: Perceived Service Quality; Visual Health; Private Entities; Optometrics; Services Marketing

Introduction

Visual health and care are part of the development of people's daily lives, due to the fact that loss of vision is usually associated with higher risk of falls and with depression (Khan, Mustafa and Sanders, 2014). In that regard, it is relevant to clarify that visual health refers to an eye without alterations and with good vision, but that might have refractive errors, such as hypermetropia (far-sightedness) and myopia (near-sightedness), which, corrected with

glasses or contact lenses, lead to an optimum vision (Lopez, 2009).

In this context, the World Health Organization states that "uncorrected refractive errors are the leading cause of visual impairment, but cataracts are the main cause of blindness in mid and low-income countries" (WHO, 2014). In Colombia, Unisalud's Guide for Early Detection of Visual Alterations and Ocular Pathologies reports that there are almost 8,000 blind people per million habitants, mostly due to causes that are preventable or curable. Not surprisingly, there is growing concern among state entities, especially when the number of people with some degree of visual impairment in the country has reached 43.5% of the total disabled population, of which approximately 9% are under 11 years of age (Instituto Nacional Para Ciegos, 2012).

The Colombian health system does not have an information system that allows monitoring ocular health problems or provide information concerning the services; there is also lack of studies that allow identifying the impact of interventions or the needs of said sphere (Rincon, 2005). Likewise, the Colombian health system does not cover the entirety of the country's population, and in some regions, access is difficult (Ayala, 2014).

The aforementioned drives people with visual problems to seek care in private places such as optician's shops and optometry or ophthalmology private practices. In this context, it seems interesting to inquire into the quality of the visual health service, especially since each day the population with visual problems grows larger, demonstrated by the fact that 40% of the people that are unaffiliated to the health system have a prevalence of cataracts in one of their eyes versus 36% of people that are affiliated to the health system. In turn, Colombia's overall prevalence of visual problems in at least one eye is of 41%, testing the factor problems related with general health services (Cuellar, 2002). As in other countries, limitations for cataract surgery drive a large population with preventable visual problems (Chandrashekar, Bhat, Pai and Nair, 2016).

Delgado et al. (2010) affirm that "quality assessment of health services is a growing concern of the last decades" (p. 534). However, Rincon (2005) shows that "few studies aim at identifying the impact of interventions or the needs of said sphere" (p.3).

Currently, health care provisioning is in the middle of a transition period that is characterized firstly by continuous improvement and assessment of services rendered by health care provides to patients, and secondly by increased consumer demands of users who seek efficient and accessible health services, which in Colombia, are not covered by the public system (Wang et al., 2015).

Given the aforementioned, the need to have an empirical validation in order to review health services to their betterment, arose; it was evident that aspects such as service quality and user satisfaction are critical foundations to consolidate health organizations in the sector (Otalora and Orejuela, 2007). However, the sphere of quality assessment for visual health services is non-existent in the country because there is no evidence of previous studies.

Thus, taking into account different research on causes and percentages of visual problems in Colombia in public health (Ayala, 2014; Delgado et al., 2010; Cañon, 2011; Martinez and Villarraga, 2009; Rincon, 2005), and the overall world health service assessment (Cheah, 2014; Dickinson et al., 2011; Jung et al., 2015; Manterola, Pineda, Vial, 2007, Wong et al., 2015), these fail to address the visual health sphere. Likewise, previously presented numbers show the index of consultation is significant in the country, hence the need to research the quality of visual health service.

The aforementioned led to the following research question: Which quality factors of the visual health service are perceived by users of private entities of optometry in Bogota?

It is relevant that the geographical sphere of this research is Bogota, according to DANE (National Administrative Department of Statistics) the country's population is of 48,339,334 as of September 2105, of which 7,878,783 live in Bogota,

and the city ranks third in people with visual impairment (corresponding to 10.56% of the population), some were born with it, others acquired it and others are legally blind (Montoya, Herrera and Serrano, 2012). Likewise, the Ministry of Social Protection (2012), indicates that "by 2013, in Colombia 92% of the population is insured, of which 49% belong to the subsidized system" (p. 363), in turn, this has led to an increase in private service providers. According to Martínez and Villarraga (2009), only 1,002 optician's shops are registered in the Chamber of Commerce, out of those 687 are enabled for service; in Bogotá, there are 231 registered and enabled optician's shops, corresponding to 71%, and 96 optician's shops are registered but not enabled, corresponding to 29%. An average of 29,610 patients have access to each optician's shop, which is to say that there are 3.38 enabled optician's shops per 100,000 habitants" (p. 50).

Theoretical Framework

Marketing in the sphere of health must take into consideration not just profitability, it must also understand and provide for the needs of people creating new products (goods) and services (non-material), as health intends to offer solutions to the needs of human beings (Torres, 1996. p, 5).

Torres (1996) explains that people resort to private health services because the public sector fails to fulfill demands, and because some individuals with capacity to pay prefer it. There is also an abundance of health service practitioners in different areas and specializations, access to information allows the consumer to become familiar and have more alternatives at the moment of choosing (p. 4).

In that context, visual health refers to an eye without pathological or visual acuity alterations but considering common refractive errors may require correction to achieve the best possible visual acuity (which does not mean the presence of a disease) (Lopez, 2009); refractive problems are identifiable and can be corrected in a private consultation.

In fact, Leamon et al. (2014) concluded that visiting the optometrist is often driven only by symptoms such as loss of vision, since people think about the cost of the glasses and this affects the perception of the service in people. Likewise, people believe that the optometrist's only job is to prescribe glasses or contact lenses; this commercial element may also induce lead to mistrust in visual health care (p.671). There is also difficulty in access for the vulnerable population, which increases cost receiving care by health practitioners (Shickle et al., 2015).

A study conducted in the United States argues that optometrists are distributed equally at geographical level and are prone to providing service at the weekend and until late at night, increasing patients' access to ophthalmological care (Soroka, 1991, p.457); this can be tied to Colombia, since the number and the demand of optician's shops indicates that there is a large part of the population that uses this service.

Likewise, Dickinson et al. (2011) conducted a study in the United Kingdom about consultations of low vision, assessing two factors, as follows: 'only window', referring to the care and waiting time after the patient is serviced in the consultation about low vision; and 'integrated', referring to the time when the patient was serviced in a consultation for the same purpose; both assessed as per the clinic's regulations at the moment. The study found that none completely fulfilled the desired criteria for a comprehensive service. Access methods, waiting times, practitioners involved, service intensity and duration, as well as referrals to other agencies were documented, these are all important at the moment of assessing visual health.

In the sphere of health services it is also important to consider variables such as age, income, gender, ethnicity, education level, civil status, place of residence and work; as these variables influence the identification of the respondents of services related with health education (Cheah, 2014; Jung et al., 2015).

The service in itself is an event in which no tangibles are necessarily exchanged, however, the quality

concept for the doctor, patient and different practitioners varies. Nevertheless, the assessment of the concept for the users has become more relevant due to the reforms in the health sector (Delgado et al., 2010).

In a report by the Ministry of Health and Social Protection, Betancour, et al. (2005) indicate that the "quality of health care is understood as rendering accessible and equitable services, with an optimum professional level that considers the available resources and fulfills user adhesion and satisfaction" (2005, p. 7). Therefore, adequate quality of primary care promotes an improved state of the population's health, decreases health care costs and results in an equitable distribution of health among populations (Wang et al., 2015).

Service quality is defined as the fulfillment and capacity of a service provider to satisfy the needs and perspectives of the patient, which results in a positive perception by the client towards the capacities of the service provider (Zarei, Daneshkohan, Khabiri and Arab, 2014). With this in mind, the following are the service quality factors for the health context.

Service Quality Factors for the Health Context

In 2001, the Health Care Institute in the Netherlands defined six objectives (punctuality, accessibility, communication, staff availability, privacy, support following discharge) to improve health care quality (Soeteman, Peters and Busari, 2015).

Concurrently, Wong et al. (2015) and Jung et al. (2015) obtained joint results for the following quality factors: waiting time, environment, health staff, lack of information of procedures and medication, consultation time and access; it must be noted that this last study was applied online.

Almeida, Bourliataux-Lajoine and Martins (2015) applied a systematic review to the instruments to measure the satisfaction of health service users, they found that user satisfaction has decisive aspects such as: patient-practitioner interaction, physical setting, and processes and internal

management all of which drive user satisfaction. Therefore a study by Tabrizi, Askari, Fardiazar, Koshavar and Gholipour (2014) states:

...it is important to keep in mind that if private hospitals have the objective of improving patients' trust, quality improvement efforts must focus on service provision management aspects, such as timely and thorough programming of the services, strengthening interpersonal relationships and communication skills of nurses, doctors and other staff (p. 22).

Consequently, integrating the literature about service quality factors for the health sphere (Almeida et al., 2015; Jung, et al., 2015; Soeteman et al., 2015; Tabrizi et al., 2014; Wong et al., 2015) it was found that punctuality, accessibility, communication with the practitioner, availability, follow-up, environment, trust, waiting time and service time needed be jointly assessed. The following is a description of these concepts, also addressed by different authors (see Table 1).

Soeteman et al. (2015) refer to punctuality as a timely service to the patients, which reduces detrimental delays; this variable is essential and decisive for patient satisfaction in health care practice.

Accessibility has been defined as the suitable distance for all the population to access the service (offer) without it being difficult (Comes et al., 2007). Also, the literature indicates that health entities must be available for all, including the most vulnerable population (Jung et al. 2015; Wong et al., 2015); other referents add that the accessibility factor is perceived as the physical proximity to health establishments, and its presence is an indicator of health service satisfaction among patients (Dagnew et al., 2015).

Communication with the practitioner must be effective, understandable and should result in a diagnosis and a solution to the problem, rationally or psychologically, the practitioner's handling must improve patient satisfaction and must provide support to him/her (Moore, et al., 2010). Also, Zarei

et al., (2014) found in a study conducted in clinics in the United Kingdom, that the doctor-patient relationship and the interpersonal aspects of care have a deep effect on patient trust and the service provider's capacity and honesty, as well as a positive appreciation of care quality.

In terms of availability, Medicus Mundi refers to it as the amount of professional health entities and user care staff, as well as optimum sanitary conditions for performing health services. Soroka (1991) and Wong et al. (2015) found that availability of private health care establishments is related with closeness, location and business hours of the health providers, affecting or not the perceived quality at the moment of booking an appointment.

Follow-up is the continued service following a diagnosis, with therapeutic, invasive, preventive or remittal interventions, aimed at the patient's recovery and good health by assessing his/her progress, controlling complications and avoiding new events (Goroll, Berenson, Schoenbaum and Gardner, 2007) and (Tabrizi et al., 2014) found that continuity in care is an important aspect of quality from the patients' perspective for different diseases, suggesting an improvement in health care quality deriving from having a regular doctor, clients of the health system with a regular care provider are more likely to receive optimum care.

Table 1

Quality factors of private health services found in the literature:

Quality Factor	Authors
Accessibility	(Comes et al. 2007; Dagnev et al., 2015; Jung et al. 2015; Wong et al., 2015)
Punctuality	(Santos et al., 2015; Bello and Ubaque and Villalba and Riaño, 2014; Soeteman et al., 2015; Tabrizi et al., 2014)
Communication with the practitioner	(Santos et al., 2015; Jung et al., 2015; Moore et al., 2010; Soeteman et al., 2015; Tabrizi et al., 2014; Zarei et al., 2014)
Availability	(Jung et al., 2015; Soroka, 1991; Wong et al., 2015)

Follow-up	(Santos et al., 2015; Goroll, Berenson, Schoenbaum and Gardner, 2007; Tabrizi et al., 2014; Wong et al., 2015)
Environment	(Santos et al., 2015; Jung et al., 2015; Soeteman et al., 2015; Wong et al., 2015; Zarei et al., 2014)
Trust	(Jung et al., 2015; Ruiz-Moral, 2007; Soeteman et al., 2015; Tabrizi et al., 2014; Wong et al., 2015; Zarei et al., 2014)
Waiting time	(Santos et al., 2015; Soeteman et al., 2015; Soto, Benavente, 2008; Wong et al., 2015)
Service time	(Soeteman et al., 2015; Soto, sf; Wong et al., 2015)

Source: Authors

Environment is defined as the means in which an individual lives, which favors his/her functioning, development, wellbeing and/or survival. User perception of a place influences and drives emotional and consumption responses, whether positive or negative, and an intervention of the user's self-control. In their studies (Jung et al. 2015; Muñoz, 2015; Zarei et al., 2014) found that the perception of a clean and wide space, with elements of distraction may draw patient's trust, in fact, in hospitals these help perceive if it can satisfy patients' needs. The aforementioned traits cause distraction from the factor of time and help relax the patients' strains.

For Ruiz (2007), trust is "an essential part in the doctor-patient relationship, which is based on practitioner's following the ethical and legal regulations of confidentiality. The doctor owes all his/her loyalty and available scientific resources to his/her patients (p. 52)" Zarei et al. (2014) also found in a study that trust is understood as the patient's credence of a doctor or a hospital, based on the concept that the care provider has the best intention for the patient and will provide him/her with the adequate care and treatment. One of the most important points to determine patient trust is service quality.

Waiting time is the "average of minutes between the moment the user requests the service and its commencement by the doctor". (Soeteman et al., 2015) and (Soto, s.f) obtained a result in a study about how patients that had a longer waiting time presented a negative perception of the service received by the doctor, including several elements of service quality.

Service time is the "time taken in rendering the service. Both maximum and minimum times are quality and management parameters in sanitary care" (Soto, s.f., p.2). As found by Wong et al. (2015), there is a growing trend of higher satisfaction with an increase in the total time of the consultation from 15 to 20 minutes.

Assessment of Quality Factors

Firstly, the model of the American school of Parasuraman, V. Zeithaml and Berry (1988) has materialized the SERVQUAL Scale, Jung et al. (2015) indicate that the model contributes to obtaining valuations of clients in terms of service perception and expectations. In that context, Ayerbe (2015) specifies that SERVQUAL is the most commonly used scale for quality assessment of public services, it has also been used to assess different types of services (not just health) because it allows to look into users' expectations and perceptions in order to fulfill them. From another conceptual perspective, Croning and Taylor (1994) designed a more concise scale based on SERVQUAL, the SERVPERF scale, which focuses on user perception only, resulting in less questions (Ibarra, Espinoza and Casas, 2015). From those, Brady and Cronin (2001) proposed the Multi-dimensional Hierarchic Model based on the propositions of previous literature (Dabholkar, Thorpe and Rentz, 1996; Parasuraman et al., 1988; Rust, R, Oliver, 1994), show that "consumers form their perceptions of a service's quality based on an assessment of multi-level performance, and at the end, combine these assessments to reach a global perception of the service's quality" (p. 11). However, it is clear that this construct is complex, thus both perspectives may be used and may be considered

complementary to Brady and Cronin, (2001), as well as Colmenares and Saavedra. (2007).

Finally, Teas (1993) in its Model of Performance Evaluated, discussed the "expectations" with the authors of SERVQUAL and similar models, resulting in an indication that the difference between perceptions and expectations does not necessarily lie in perceived quality levels, as the initial model proposed.

Regarding the aforementioned, each country uses a different method, but the element in common is that the method must be endorsed by an acknowledged health university, school or entity, questionnaires such as the "Primary Care Quality among Different Health Care Structures in Tibet, China, are designed using the (PCAT-T) Assessment to Primary Care developed by Johns Hopkins University" (Wang et al., 2015), in "Satisfaction measurement instruments for healthcare service users: a systematic review based on (COSMIN) a standardized tool to assess methodological quality" (Dagnew et al., 2015). In Colombia several methodologies have also been used, most commonly SERVQUAL, which prevails in research of quality assessment in health institutions, such as "Service quality in health: a review of literature from a marketing perspective" (Otalora and Orejuela, 2007), also in "Quality of health care in users' perception" (Urriago and Viafara, 2010), "Perception of quality in health applied to the new healthcare provider Nueva Salud S.A.S., in San Jose Del Guaviare, and Proposal of action to improve" (Sabogal, 2015) and other studies, all of which are based on Likert-type measurement scale questionnaires.

Methodology

Given the nature of the research problem, the research was developed from the pragmatic paradigm and with a descriptive, non-experimental and cross-sectional approach. Likewise, research design was sequential exploratory (Cowman, 1993; Creswell, 2003; Muñoz Poblete, 2013; Soeteman et

al., 2015), qualitative and quantitative tools were applied.

Since a method or instrument to assess the common factors found in the literature for the scope of health (punctuality, accessibility, communication with the practitioner, availability, follow-up, environment, trust, waiting time and service time) does not exist, it was necessary to create an instrument to incorporate these characteristics in order to assess the service quality perception applied to the case of visual health.

First, a qualitative phase with in-depth interviews was conducted; in the health context, qualitative methodology has allowed practitioners of different health areas to generate significant contributions through their research (Salgado y Mart, 2007); second, as presented in the literature review, there is a lack of consensus regarding the adequate mechanism to assess quality; third, the in-depth interview serves as one of the mechanisms to realize cognitive validations prior to building closed instruments (Padilla, Garcia and Gomez, 2007). Five in-depth, semi-structured interviews were applied to five different profiles, the interviews had a corresponding guide which allowed inquiring about the different factors, the profiles were as follows:

1. **Young patient, user of glasses since childhood:** this profile provided information on the current and prior perception of the optometry service, and on changes perceived through time.
2. **Patient, user of contact lenses:** this profile provided information on the perception of an optometry service since a user of contact lenses requires different handling of the adaptation and care process.
3. **Elderly patient, user of glasses due to his/her age:** this profile provided information regarding the perception of the quality factors of an elder that uses glasses and accesses the service consequently.
4. **Elderly patient, user of glasses but not due to his/her age:** this profile provided information to countercheck the perception of the optometry service in the case of a person using glasses due to his/her visual defect.
5. **Patient, user of the optometry service but without visual troubles:** this profile provided

information about first-impression perception of the factors in the optometry service.

These participants were selected for the in-depth interview because their profiles represented different ages and perceptions of the private optometry service, they personify the factors evaluated from different perspectives, which led to congruency and understanding of the factors; the results were used in the quantitative phase. These individuals were not included in the quantitative phase, also, a verbal consent specified that the answers provided would be used for academic purposes.

The results of the qualitative phase were recorded and analyzed using Atlas.ti, one of the most commonly used worldwide for qualitative analyses, which allowed developing codes and maps applied in the hermeneutic analysis, assessing the research variables, discovering possible emerging dimensions in terms of the reviewed literature, and also drafting a cognitive pre-test on participants' understanding of the variables.

The quantitative phase was posterior to the results analysis, and it was conducted with a Likert-type questionnaire of closed questions, designed for this research, due to a lack of instrument in the literature for this scope. The questionnaire was in Tablet and printed form to avoid any kind of reluctance to respond. The instrument was applied to 382 users of the optometry service, a consent at the beginning of the survey provided acceptance regarding the academic use of their answers, with ages ranging between 18-60, in six randomly-selected optician's shops in Bogota (strategically located as per Table 2) in order to reach the largest population possible in different neighborhoods (prior to the survey, each optician shop was asked to supply the number of medical records, meaning the number of patients they had serviced since its foundation until October 2015, in order to fairly distribute the population; the information provided led to the conclusion that patient flow is not the same in each sector).

Table 2

Distribution of the sample

Location of the optician's shop	Number of medical records	of Sample
Rincon	4,735	70
San Cristobal Norte	214	58
Villas de Granada	71	55
Centro	9,901	70
Olaya	6,570	70
La Victoria	340	59
Total	21,831	382

Source: Authors

Initially, the surveys were going to be applied in six optician's shops, but since there was not enough evidence of considerable patient frequency, it was decided that the surveys were to be applied on-line to the sample of 382 participants, taking into account that the majority of the population had been at least to an optometry consultation; data collection lasted one month.

The results of the quantitative phase were recorded and analyzed in IBM SPSS Statistics 20, the reliability of the closed instrument was assessed with an

internal consistency of the 40 questions asked to the 382 respondents; the Cronbach's alpha index was conducted using the SPSS tool, which resulted in 0.917, indicating that the items have a high level of reliability.

Results

The following is a presentation of the results in the qualitative phase of the research. Afterwards, the factors of visual health service quality in private entities of optometry in Bogota will be exposed.

Since the prior literature addresses health care in general but is not specific to the optometry sphere, in-depth interviews took place to validate the cognition of the users regarding possible variables, therefore, the inquiry axis were: punctuality, accessibility, communication with the practitioner, availability, follow-up, environment, trust, waiting time and service time. Figure 1 illustrates a summary of the hermeneutic analysis.

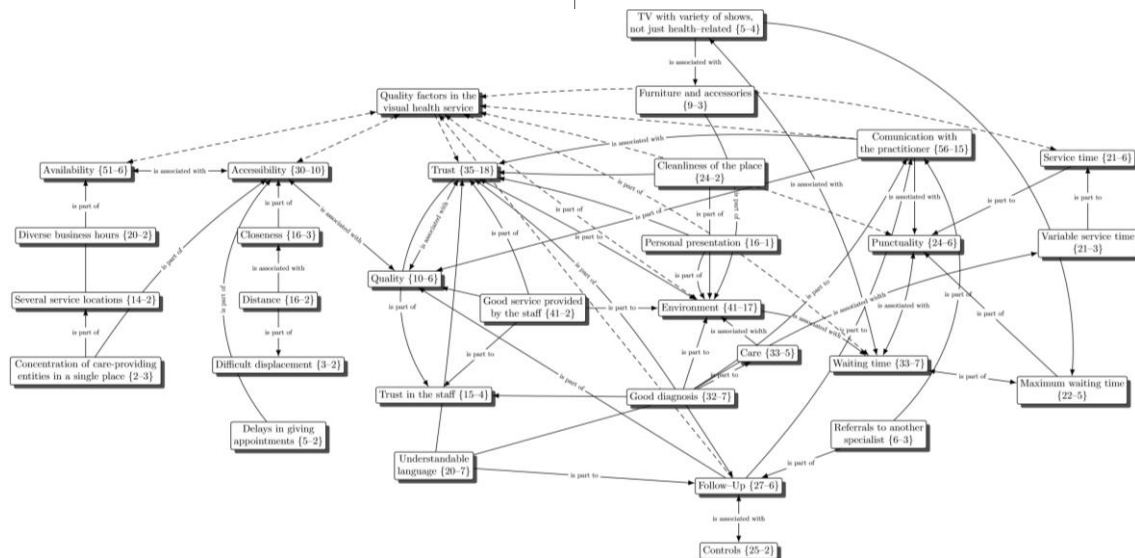


Figure 1. Users' perception of the quality factors. Source: Authors

It became evident that out of the nine factors initially found in the literature, some were perceived as very similar, i.e.: words such as accessibility [51-6] and availability [30-10], the literature reviewed states that accessibility is related to the fact that the population may have access and with the distance to which the entity is located, and availability is related to the suitable number of care-providing entities, business hours and availability of human resources and medical consumables; the respondents failed to clearly differentiate these words and merged the two definitions, they referred to the number of optician's shops, business hours and distance, but also considered if the practitioner was good or bad. It was found that both factors are connected, but respondents fail to grasp an individual definition, they associate the items, recognize the factors and relate them to the topic of assessment. The following are some of the text excerpts exemplifying availability and accessibility:

"... [For instance, sometimes I am in the south of the city and I get some dirt in my eye, I go looking for an optometrist and there isn't one, it is closed, I have to go very far, some optician's shops work on shifts and optometrists are not always on the premises]"... (Respondent 1, 2016).

"... [For example, in the city center and Chapinero there are more crowded optician's shops, the people who are located in other parts of the city have to go there to get service, they can really go to those places or what? And it also depends on the available hours, so I'm not sure to what extent do all these optician's shops cover the entire population, let's add that Bogota is permanently expanding, and that the visual problems are a daily thing, so it is necessary and indispensable]..." (Respondent 4, 2016).

One of the key factors found was the communication with the practitioner [56-15] given that many factors are linked with it, especially trust [35-18]; the literature refers to it as the doctor-patient relationship, but in respondents, it was

evident they perceived trust is also important in terms of the practitioner and the people that work in the optician's shop, and in the physical aspects, particularly in terms of hygiene and staff presentation. Likewise it is connected to the environment factor [41-17] which in literature is the physical aspect, but respondents perceived it as the service provided by the staff in the optician's shop (revealing that this aspect is more relevant for the users than the physical aspect), for example:

"... [At least that the person that will provide service is in a good mood, knows how to examine you and gives you the correct lens formula]..." (Respondent 3, 2016)

"...[Not all are large, some are small, but at least with an area for you to sit, an environment free from interruption or interference with the receptionist, if someone else arrives everyone is comfortable and no one interferes with the rest of the people there, some people only go to pick up glasses and don't have an appointment, so a waiting room. Not all the places are equally big but at least two or three chairs to sit and wait, maybe read a magazine without interfering. It is also important to receive respect and care by the staff, regardless]..." (Respondent 1, 2016).

Users also associate trust to a good diagnosis and consultation by the practitioner, his/her attention, and the continuity; therefore trust related to all factors, but especially with environment.

"... [Because that same person formulates my glasses correctly and I feel very comfortable, I can see very well]..." (Respondent 2, 2016)

".... [It must have all the apparatuses, that is good service, if they have the latest then you trust them more, imagine if they fail to formulate your glasses properly with the latest technology].... (Respondent 3, 2016).

Punctuality [24-5] in health entities is perceived in many ways because it influences patient's trust on the optician's shop and the practitioner. Respondents reported that in private visual entities, waiting time [33-7] is not very long, they believe it has something to do with the amount of optician's shops and because you are paying. They claimed that if they had to wait it was because they arrived at the same time as other patients, and that the time did not exceed 15 or 30 minutes.

"...[They take 15 minutes with each person, it is the standard. I think it is suitable, not too long nor to short]..." (Respondent 4, 2016).

"... [Technically it is immediate, I don't even need to book an appointment, I go there and they are available]..." (Respondent 5, 2016).

"... [I have waited 30 minutes maybe because of the amount of patients, or because the person was late, we are all human and have things to deal with]..." (Respondent 6, 2016).

But regarding service time [21-6] people are unclear as to how long it really takes, they remark a prudent service time must exist, since they believe if the consultation is really short it means it is incomplete or failed to be of quality, and if it is too long maybe the practitioner is not fit, thus arising doubts regarding the final diagnosis.

"... [That the practitioner does not service me in the best way and wants to check the patient as quick as possible]..." (Respondent 5, 2016)

"...[Clearly there were 15-minute appointments in which I believe not much can be done, it was actually clear in the formula and in what they might say to you]..." (Respondent 4, 2016)

This research evidenced different quality factors due to the users' perspective regarding their own experiences in private visual health entities and the concept they have of the definition of the factors, for this study, it was not exact (some were even different) to the nine factors evidenced in the literature. These findings led to the conclusion that some factors subsumed others, as follows: (accessibility and availability) was fused as accessibility because it was more familiar to the respondents; (punctuality, waiting time and service time) was called notion of time. But the final six factors contained questions for each, so nine factors were assessed in total, each with 12 questions from the interviews. Prior, an Excel form was drafted containing the definition of the aforementioned factors in the literature reviews. The names of the factors to be assessed, as well as 108 questions were sent to 12 expert judges to evaluate the instrument, they were given a week to reply and only five did, which eventually led to the final instrument for the quantitative phase. Consequently, the assumptions for normalcy, heteroscedasticity and multicollinearity were reviewed, results show absence of normalcy, no heteroscedasticity and a certain degree of multicollinearity. Afterwards, the KMO and Bartlett's Test was applied, as illustrated in Table 3. Additionally, individual adaptation was reviewed based on the anti-image correlation matrix. These allowed to verify the feasibility of executing an exploratory factor analysis.

Table 3

KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin measure of sampling adaptation		,896
Bartlett's test of sphericity	Approx. Chi-squared	8253,246
	Gf	780
	Sig.	,000

Source: Authors

Table 4

Factors obtained from the analysis in SPSS

Item	Factor						Mean	Standard deviation
	1	2	3	4	5	6		
The optometrist clearly explains the diagnosis to me	,735						1,98	0,751
The optometrist always uses understandable language when talking to me	,805						2,06	0,821
The optometrist always services me in the best way	,741						1,99	0,715
The optometrist explains my treatment in an understandable way	,777						2,05	0,823
If I don't understand a concept of my visual condition, the optometrist willingly explains it to me	,782						2,01	0,789
The optometrist always solves the reason for my consultation	,741						2,04	0,766
When there is a problem in the service, the optometrist provides a solution with professionalism	,694						2,05	0,795
When the optometrist gives me my diagnosis, I ask for an explanation because I like to fully understand it	,601						1,98	0,744
It is clear to me in which moment I must request a visual check -up	,406						2,11	0,882
Good communication with the optometrist generates trust		,510					1,88	0,683
To me, the optician's shop staff's presentation is important		,759					1,85	0,742
When I am going to buy something or going to a consultation to an optician's shop, I look to see if the place is clean		,802					1,79	0,684
When I go to a consultation with the optometrist I notice if there is enough equipment		,736					1,88	0,714
To me, the service provided by the staff is an important part of the optician's shop		,799					1,80	0,721
A complete consultation is part of the optician's shop		,746					1,88	0,737
If I see the staff's certifications, I trust the service I'm about to receive		,685					1,92	0,730
The trust I get from the optician's shop, from the moment I get there to the moment I leave, leaves me satisfied with the service		,701					1,85	0,682
In my perception, the distribution of the optician's shops is good in the places I normally visit			,650				2,10	0,892
From what I observe daily, I consider the available optician's shops are enough for the population of Bogota			,673				2,18	0,843

Item	Factor						Mean	Standard deviation
	1	2	3	4	5	6		
The business hours of optician's shop are accessible and adjust to my personal needs			,731				2,14	0,870
To me, it is important for optician's shops to open at the weekends			,577				1,90	0,755
When I book an appointment in an optician's shop, the times they offer are advantageous to my daily activities			,691				2,13	0,845
Ideally, I go to optician's shops near my home or workplace			,564				2,01	0,789
According to my experience, it is easy to have a consultation when I haven't booked an appointment			,632				2,12	0,904
Punctuality is fundamental in private services of optometry			,470				1,92	0,783
If I need an exam with a specialist I am referred by the optometrist				,405			2,11	0,779
I frequently go to my check-ups, as suggested				,602			2,25	0,947
I have had visual treatments other than glasses, such as: visual therapy, drops, among others				,807			2,59	1,274
I have had to consult with two or more visual specialists				,786			2,60	1,229
I have needed a special visual test for my evaluation, such as: eye topography, ophthalmoscopy, eye pressure, among others				,844			2,65	1,309
I follow my treatment as suggested by my visual specialist				,572			2,14	0,906
In private services of optometry, 10-20 minutes of waiting time are right for me					,594		2,51	1,119
I have received immediate service when I get to an optician's shop					,685		2,34	0,918
Most of the times, I am serviced on time in private services of optometry					,703		2,23	0,863
The business hours of my optician's shop are on time and enforced					,668		2,21	0,873
I would leave an optician's shop if I didn't get serviced on time						,620	2,08	0,886
If an optometry consultation is quick I perceive the service was not adequate						,669	2,25	1,023
If an optometry consultation is delayed, I distrust the service						,632	2,47	1,110
If adequate communication with the optometrist fails, I perceive the diagnosis is not right						,546	2,13	0,857

Source: compiled by the authors based on the results of the exploratory factor analysis in SPSS.

Given the previous considerations, it was found that six factors explain 58.36% of the variation, as follows: communication with the practitioner, trust

in the environment, accessibility, follow-up, punctuality and service time, as illustrated in Table 4. The first factor, communication with the

practitioner, refers to a comprehensive service by the optometrist in terms of a diagnosis and an understandable explanation that deals with the reason of the consultation and with clarity regarding the check-ups, also, if a problem arises, if it is ethically resolved; the mean is 2.03 and the standard deviation is 0.77.

The second factor, trust in the environment, considers staff and practitioner's presentation, optician's shop's presentation and service provided, as well as the proper equipment for a thorough consultation and certifications of the practitioner and the place; the mean is 1.84 and the standard deviation is 0.71.

The third factor, accessibility, refers to convenient distribution, availability and flexible business hours for all the population to use the service in a private entity of visual health without a previous appointment; the mean is 2.015 and the standard deviation is 0.8.

The fourth factor is follow-up, which includes check-ups, additional exams and pertinent referrals by the practitioner in order to monitor or prevent posterior alterations, without losing sight of the patient's commitment to follow the suggested treatment; the mean is 2.595 and the standard deviation is 1.2515.

The fifth factor, punctuality, means the attention is immediate at the time of arrival, business hours are flexible and enforced to service the population; the mean is 2.285 and the standard deviation is 0.8905.

The sixth factor, notion of time, includes punctual service, duration of the service and communication with the practitioner, in terms of length of the service, it generates distrust if it is either too short or too long; the mean is 2.36 and the standard deviation is 1.0665.

Discussion and Conclusions

The literature has assessed the overall quality of health care both in private and in public entities in other countries (Ayala Garcia, 2014; Cañon, 2011; Cheah, 2014; Delgado- et al., 2010; Dickinson et al., 2011; Manterola et al., 2007; Martinez Montes and

Villarraga Hernandez, 2009; Rincon, 2005; Wei et al., 2015), despite the fact that Almeida et al. (2015) found that some studies fail to clearly show if the entity is public or private, an element that was specified in this research; they also found that there are different ways of assessing quality in health care according to different authors (Dabholkar, Thorpe and Rentz, 1996; Ibarra, Espinoza and Casas, 2014; Jung et al. 2015; Parasuraman et al., 1988; Rust, R and Oliver, 1994) have applied different measurements in diverse countries, just as this research designed an exclusive instrument due to the lack of a standard and because the existing ones were not pertinent to this research. Likewise, it is clear that each researcher has assessed different factors depending on the place in which the service is rendered, however, this work adopted those assessed factors and finally found similarities with some of them (Soeteman et al., 2015; Zarei et al., 2014).

Despite the variety found in the literature, this research found six definitive factors for the private health service in Bogota, concurring with Soeteman et al. (2015), Wong et al. (2015) and others, the results found increased satisfaction when the consultation time went from 15 to 25 minutes without interfering in the waiting time, modifying other factors such as environment and daily scheduling flexibility, it was found that the average consultation influences the patient's perception of it.

Unlike Jung et al. (2015), factors such as punctuality, time of service, waiting time, availability, accessibility, environment and trust are assessed independently in other countries, in this research, the factors are subsumed and are similarly interpreted by the population.

Unlike Jung et al. (2015), who found that the environment is related to the place's physical aspect and its adaptation, this research found that people in Bogota perceive service as an important part of this factor, it may be cultural most likely because the concept of environment is connected to people being positive, but this would require in-depth research.

However, Zarei (2014) stated that trust is a factor that is closely related to service quality, understood as trust between a service provider and a patient and between the patient and the staff (Ruiz, 2007). It is similar to the results obtained by this research, which show that most of the factors had were trust-related; finally, trust was linked to the environment but taking into account the personal and professional relationship with the patient.

In contrast with Dagnew et al. (2015), who found that experiences of good communication and relationship with the practitioner and proper follow-up result in patients with better perception of service quality to whom the services generate trust.

Likewise, as found in the qualitative phase, the respondents' experience showed that their perception of visual health accessibility is unsatisfying in terms of distribution, despite having an optician's shop nearby, as illustrated by (Dagnew et al., 2015). Regarding business hours and access to consultations, optometrists are available for service at different times as well, as stated by Tabrizi et al. (2014).

However, this research faced some limitations. Firstly, not all the population in the sample completed the survey in the visual health entity, as the method had suggested; consequently, the entity in which the respondents experienced the visual health service is unclear. Secondly, the lack of literature in Colombia regarding quality in health entities, made it impossible to establish a comparison of the health factors applied to the Colombian population.

Given the considerations presented in the problem proposal from which this research derived, the integration of the literature review and the in-depth interviews enabled the creation of the instrument to assess the quality factors of visual health in Bogota.

Nevertheless, the composition of the factors allowed them to be subsumed, leading to the conclusion that six factors were needed to assess the quality factors of visual health in Bogota:

communication with the practitioner, trust in the environment, follow-up, accessibility, punctuality and notion of time.

The difference between the quality factors perceived by users in the visual service in private entities of optometry in Bogota and the literature reviewed is that the latter proposed nine factors, but the results showed that six factors apply to Bogota, some were subsumed because people's perceptions are similar and no significant differences were found.

It is evident that visual quality must focus on the trust between the patient and the staff, the practitioner and the entity, and on improvements to provide a better service.

It is clear that communication with the practitioner generates trust, and acts as an initial point for a positive perception of the patient following the service. The moments during and after the consultation, as well as the practitioner's follow-up are decisive for the patient to have a satisfactory service; clear understanding of the visual status is also decisive for the patients.

Future research should assess if this factors may be applied with focus groups, in order to compare if the factors found are the correct ones for all entities and if user perception of different entities matches or not. Literature is lacking for private and public entities as well, both of which could be subject to assessment to illustrate differences in the factors found and possible factors that may appear.

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