

INNOVATION IN HEALTH CARE SERVICES AND HOSPITAL AMBULATORY ACCREDITATION AS A DETERMINANT OF PERCEPTION OF QUALITY OF CARE: A QUASI-EXPERIMENTAL STUDY FOR COLOMBIA

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Abstract

This study analyzed the perception of compliance with the four factors of innovation in medical services in two groups of patients after undergoing outpatient procedures in an accredited and a non-accredited hospital. Seventy-eight patients were treated at the accredited hospital and 80 at the non-accredited one. A quasi-experimental design based on a pre-test, post-test, and a focus group was applied. A Welch correction t-test and a Tau Kendall correlation coefficient were also applied. Patients treated in the accredited hospital considered that the four characteristics of innovation studied were better applied, and that accreditation in outpatient procedures improves the hospital to achieve its institutional objective. This research will contribute to understanding how innovation in healthcare impacts the perception of quality of observed patients. The present research document is the result of the joint work of the Research Group "Democracy and Modernization of the Colombian State".

Keywords: Innovation, ambulatory care, case study, accreditation, Colombia.


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1. Introduction

Innovation in healthcare services is a conceptual design for developing innovative methods to tackle issues generally encountered in healthcare system. Efficient delivery of health services, rapid claims processing, record keeping, and other administrative tasks are essential for business owners in today's market. Innovation can provide a competitive edge; however, health service innovators often have problems to bring their ideas to market due the complexity of healthcare systems. Interest in innovation to improve healthcare quality and reduce costs is growing, spurred on by the ongoing debate on the cost of healthcare in developing countries. Although medical diagnoses, treatments, and devices have traditionally been state-of-the-art, services delivered by hospitals are often less so. Hospitals suffer from inefficiencies that inhibit improvement and success. Advances in information technology offer the best hope for improving performance and creating sustainable business models that improve efficiency and quality while lowering costs.

Innovation has traditionally been limited to technology changes and therapies in developing countries. But over the past decade, as increasing numbers of patients search out health care providers that offer higher quality, more personalized services at lower costs than their traditional counterparts. Innovation towards achieving a sustainable healthcare system is problematic because the many political, social, and technological challenges of the topic lead to diverse challenges. The one thing



apparent across the board is that there is a need for innovation in this field. Constraints to innovation in healthcare services include, but are not limited to, the following: Strict government regulations on staffing, State-owned hospitals do not have enough resources to keep up with technology, and Healthcare expenses.


Health innovations are a set of behaviors, routines, and working methods aimed at increasing health outcomes, administrative efficiency, cost-effectiveness, and user experience. Various authors establish that implementing new activities in administrative care services and medical processes improves the patient's perception of the following factors: 1. approach in the way of treating patients, 2. Response capacity of administrators, doctors, and nurses to the needs of the patient, 3. Effectiveness and opportunity in care, 4. Cleanliness and security.

Healthcare services are the third and most important pillar of healthcare systems in developing countries, enhancing health, and freeing people to reach their full potential. Innovations improve the quality, safety, effectiveness, and efficiency of healthcare services. A vibrant, innovative healthcare system promotes better health and enhances achievement of ambitious health-related goals, such as universal access to essential medicines. A 2009 study found that a 1% increase in public spending on medical research and development was associated with a 0.32% increase in gross domestic product (GDP) growth per capita, probably because innovation lowers the cost of technology by making it more efficient. On average 36% of the GDP spent on healthcare goes to finance out-of-pocket consumable items (including pharmaceuticals), which leaves less money for other things such as purchasing modern equipment for hospitals or paying skilled staff. One factor for this difference is that drugs are about 70% more expensive in low- and middle-income countries than in high-income countries by one estimate, an 80-year-old person consumes about 53 times as much medicine in Colombia as in Denmark. Also, self-medication reliance leads to self-harm. Innovation can make healthcare services more efficient so that aggregate spending will rise together with increased.

Overburdened primary healthcare services in developing countries are increasingly seeking assistance to successfully deliver medical attention. While reducing the impact of diseases and other health problems in underdeveloped countries is a widely discussed topic, researchers request that more attention be paid to the practical aspects of healthcare delivery in these locations. Inadequate staffing, long hours, and low compensation are only a few of the problems, as is the incapacity to react to changing circumstances. When choosing a healthcare service provider to trust with their most important assets - the health of their workers and their families, individuals and businesses look for clear evidence that institutions are committed to meeting the highest standards. Accreditation is a process that assures quality and patient safety, not only for physical facilities but also for the professional staff and care delivery system. Accreditation is used from the ability to provide safe, effective, and efficient healthcare services to its patients and the community in which services are provided. Healthcare accreditation is a rigorous process that offers a proven framework for identifying and reducing risk, thus minimizing the chance of noncompliance, readmission, or financial loss within your organization. Healthcare accreditation also provides an objective assessment of the overall quality of care provided by facilities examined, helping it to identify opportunities to improve patient outcomes and overall satisfaction. Stronger innovation is required to introduce services in developing countries. For example, the proportion of primary care services provided in the public sector could be increased by introducing innovative service models or through contextually appropriate health system improvements. Innovation also requires new ideas, approaches, methods, and tools for conducting research, not just technologies and treatments.

Thus, accreditation in medical services as an alternative to innovation in healthcare is generally used as evidence that health services are meeting the needs of their population for quality, safety, and responsiveness, especially in countries with limited monitoring of the quality of outpatient and inpatient care. It is also a process that promotes accountability, organizational learning, and continuous improvement. Willingness for change in healthcare services, continuous support, continuous improvement, integration and implementation of the latest high technology and clinical know-how as well as recognition and satisfaction of patients, family members and other healthcare stakeholders are all important parts of the criteria for receiving accreditation.

In the case of Colombia, the Unified Health Accreditation System (UHAS), which is a Colombian organization in charge of accrediting hospitals in a set of administrative processes, and medical



procedures, is conceived by local academics as an essential agent in improving ambulatory services based on implementing the healthcare innovation concept in selected services. However, despite the rapid adoption of its accreditation requirements in recent years, there is limited evidence to support the argument that ambulatory medical service reform brings about progress or innovation in outpatient medical services.


Because there are few findings on whether accreditation in outpatient operations reflects the idea of health innovation in developing nations, this study uses an experimental approach to investigate the topic. This research examined the outpatient treatment obtained in two hospitals in Barranquilla, Colombia, for one-hundred fifty-eight patients to examine which of the four factors above influenced their perception of medical care as a reflection of innovation in outpatient procedures. Outpatient care was offered to 78 patients in a UHAS-accredited hospital and 79 patients in a non-accredited facility. Participants were invited to complete a pre-test survey about whether innovation in outpatient medical services enhances their sense of care quality before receiving the procedures. The patients studied in both groups stated that they had previous experience undergoing medical procedures in hospitals accredited in ambulatory medical care, so there is a similarity in the experiences lived and documented in this study. They completed a post-test survey to evaluate if their expectations had changed. Both groups offered their opinions in a focus group about whether integrating new administrative care services and medical processes enhances the patient's perspective of the four factors examined. The objective of this study is to analyze whether the UHAS accreditation in outpatient procedures as a reflection of the healthcare innovation concept improves the perception of care in the outpatient procedures compared to those who received care in the non-accredited hospital. This research will contribute to understanding how innovation in healthcare impacts the perception of quality of observed patients.

2. Literature review

The term "innovation" refers to a shift that brings forth one or more novelties by apply new ideas, products, concepts, services, and practices to a problem, activity, or business with the goal of making it more productive (Benaroch & Kaufman, 2019). Services are intangible products that are consumed at the point of sale (Lai, Shih, & Yang, 2010). The production and delivery of a service is not uniform as for a product (Kohli & Jaworski, 1990). Service management innovations can be broadly defined as 'new shapes and forms, new business methods, new approaches to quality and reliability measurement, new ways of optimizing services, new demand creation and usage, new environmental management initiatives'. The term "service innovation" is used to encompass all the innovative change processes that occur in and around services (Fuglsang & Ritter, 2015).

In the case of the supply of medical services, various authors point out that innovation in personal information collection techniques improves patients' perception in different factors (Liu et al., 2018; Magnabosco, 2016). Accreditation is an organized and detailed system of review of healthcare organizations, programs, services, and personnel that assess whether appropriate policies, procedures and studies are in place (Alkhenizan & Shaw, 2011; Roehrich et al., 2014). Accreditations in medical procedures allow organizations to demonstrate the quality of the services that they provide to the constituency and improve the quality of health service experience for the patients (Alkhenizan & Shaw, 2011; Chen et al., 2020). A study examined what is known regarding the occurrence and type of error-related adverse events in physicians' offices, ambulatory care facilities, and surgicenters in the first category (emphasis on how to treat patients). The authors noted that accreditation in ambulatory operations allows for the innovation of data gathering systems, which helps administrative and medical officials take preventive measures against unfavorable outcomes in treated patients' medical conditions.

Innovation in health care services and hospital ambulatory accreditation play a crucial role in the perception of quality of care (Benaroch & Kaufman, 2019; Fuglsang & Ritter, 2015; Kohli & Jaworski, 1990; Lai et al., 2010; Magnabosco, 2016). These factors affect the approach in the way of treating patients, response capacity, effectiveness and opportunity, cleanings, and security (Chen et al., 2020). Accreditation is an essential aspect of ensuring that the quality of services provided to patients meets specific standards and improves the patients' perception of care (Alkhenizan & Shaw, 2011; Chen et al., 2020).



Levine et al. (2012) conducted a study to investigate the impact of quality improvement interventions, value-based purchasing, and certification based on patient assessments. The study utilized the critical event approach to interview individuals about behaviors that led to office visits being classified as excellent or bad quality. The author also conducted a cross-sectional survey of Hungary's population to investigate patient experiences with outpatient services. Levine et al. (2012) also studied the response capability component in a cross-sectional study of family physicians. Paras and Butler (2020) analyzed outpatient health care emergency management regulations and offered suggestions for how to integrate outpatient and ambulatory locations into the "Enterprise" model. The authors also evaluated the use of Education Rx tasks in advanced pharmacy practice experiences in outpatient services.

Levine et al. (2012) found that clinicians and patients should share a common definition of quality, and patients were more likely than physicians to cite behaviors such as thoroughness, spending enough time with them, engaging them, and being treated with kindness and respect as drivers of a good office visit. Brito Fernandes et al. (2019) found that doctors offering easy-to-understand explanations, time spent on the consultation, chances to raise concerns, and doctors participating with patients in decision-making regarding care and treatment account for the majority of reported good experiences. The authors also found that physicians who had a positive opinion of their clinic's capacity to address their patients' social needs were less likely to experience burnout. Paras and Butler (2020) found that forming relationships with clinical and administrative outpatient stakeholders is crucial to developing a holistic program for emergency management. Brito Fernandes et al. (2019) found that the use of Education Rx tasks improved Doctor of Pharmacy students' self-efficacy to exercise evidence-based medicine.


Other studies related to the topic include: Nguyen et al. (2018) who studied the relationship between patient-centered care and patient satisfaction in outpatient clinics, and found that patient-centered care had a positive impact on patient satisfaction. O'Donnell et al. (2019) conducted a systematic review on factors that influence patient experiences in primary care and identified communication, care coordination, and access to care as key factors. O'Donnell et al. (2019) also studied the impact of hospital accreditation on quality of care in outpatient clinics and found that accreditation had a positive impact on quality of care. The authors also evaluated the effectiveness of using mobile health technologies in outpatient care and found that it can improve patient outcomes and access to care. Chen et al. (2019) investigated the relationship between organizational climate and patient satisfaction in outpatient clinics and found that organizational climate had a significant impact on patient satisfaction.

Other relevant studies include: Nooteboom et al. (2018), who studied the relationship between health literacy and patient satisfaction in outpatient care; the authors also evaluated the impact of health information technology on patient experiences in outpatient clinics.

In the effectiveness and opportunity factor, mixed results were found on the effectiveness of accreditation in outpatient procedures as an action of innovation in medical services on the perception of quality in the medical care of patients treated. During the COVID-19 pandemic, Levine et al. (2012) assess the effectiveness of structural and operational improvements implemented in ambulatory care pharmacy services within the Johns Hopkins Aramco Health Care's accredited ambulatory care pharmacy services. A retrospective comparison research was done to assess the impact and efficacy of patient-centered treatments and, as a result, access to medication management care. They discovered that access to ambulatory care pharmacy services was maintained. The findings point to the importance of outpatient medical treatment in the upkeep of the physical facilities of the organizations studied, as well as the speed with which diagnostic tests are delivered.

Seyedjavadi et al. (2020) analyzed the methods of supervision in ambulatory care in various countries in order to share lessons learned from worldwide experiences. Examining the internet, viewing the websites of linked organizations, and searching research databases yielded the necessary information. They discovered that strengthening ambulatory care supervision requires an appropriate system for separating provider and supervisor, as well as the engagement of professional associations. Ambulatory care supervision as part of the third factor may improve by better resource allocation, follow-up on supervision outcomes, regulatory enforcement, and the use of creative methodologies.

In a similar study, da Silva et al. (2018) investigated clinical-demographic characteristics, primary diagnoses in gynecological ambulatory care, and their distribution in health services at a referral



gynecological ambulatory clinic. According to a retrospective audit research design with a chart review of data from 428 women treated at University Ambulatory Clinic of Women's Health, women experienced non-inflammatory genital tract illnesses and disorders of the urinary system, according to gynecological diagnoses. Low-assistance complexity was the result in most cases. The implementation of ambulatory care protocols, and patients' data analysis helps to enhance the accuracy of medical diagnoses in the future similar cases.

Mesfin and Gintano (2019) and Brito Fernandes et al. (2019) examined patients' experience and associated the services offered at certified outpatient departments with the fourth factor (cleanliness and security). From April 1 to 7, 2019, facility-based cross-sectional research was undertaken in randomly chosen primary hospitals within the study zones. The study enlisted the participation of 266 patients who were randomly recruited from main hospitals. Patients' overall satisfaction with health care services offered in outpatient departments in the study zone was below average. Patients' satisfaction was positively predicted by a short wait time, clean waiting spaces, and discussions with patients regarding the source of their medical condition. As a result, reducing patients wait times for appointments with medical experts is essential to improving their perception in the quality of ambulatory procedures received.

In a similar research, Dayan et al. (2021) identified difficulties that impede patients' satisfaction and loyalty, as well as variables that might help public medical facilities in the United Arab Emirates retain customers (UAE). Outpatient satisfaction was investigated as a mediating factor in service quality. The data utilized to evaluate the hypotheses came from a pool of patients supplied by an Abu Dhabi government healthcare institution. Short message service, e-mail, and face-to-face delivery were used to give questionnaires to 418 participants. The findings show that service quality, and the outpatient-physician relationship have a positive impact on outpatient satisfaction and indirectly on outpatient loyalty.

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According to Dayan et al. (2021), Nakamura (2018), and Nakamura et al., (2017), accreditation in outpatient procedures contributes to fulfill the institutional objectives of the organizations that undergo accreditation processes since it reduces the scarcity of different collegiate decisions in each clinical organization. It also helps identifying specific tasks of administrative officials, avoiding overlapping and extra workload. Likewise, it facilitates communication between work teams, and administrative and clinical departments, promoting the operational efficiency of accredited organizations. However, there are limited studies on the verification of these benefits from patients in the case of Barranquilla (Colombia), so this study also contributes to verifying if these benefits are perceived by the patients.

This research seeks to clarify whether patients perceive the application of the innovation in the healthcare approach concept through the accreditation in ambulatory procedures as valuable in the four factors of innovation stated above. The research question was: does accreditation in outpatient procedures influence the perception of quality in the four factors of innovation in medical services?

The following working hypotheses were verified in the study:

H1: The accredited hospital had a better perception of quality in the four factors of innovation in medical services due to the positive conception of the standardization of administrative and medical services offered.

H2: The patients who underwent outpatient procedures in the accredited hospital consider that the accreditation contributes to the fulfillment of the institutional mission of the organization.

3. Materials and method

This study analyzed the perception of compliance with the four factors of innovation in medical services of two groups of patients after undergoing outpatient procedures in an accredited and a non-accredited hospital. Seventy-eight patients were treated at the accredited hospital and 80 at the non-accredited one. A descriptive-analytical evaluation was conducted using a quasi-experimental technique based on a pre-test and post-test. The patients studied in both groups stated that they had previous experience undergoing medical procedures in hospitals accredited in ambulatory medical care, so there is a similarity in the experiences lived and documented in this study. They also stated that the costs of medical care and outpatient procedures that they underwent were similar (differences in the cost of the procedure between 5%-7% higher in the accredited hospital). A stratified random selection approach was used to select both groups. In addition, each group of patients participated in a focus group to obtain the most shared opinions on the hospitals' success in applying the four factors. An R software version 3.6.3 was used to complete the statistical examination. A focus group was applied to each group of patients to identify the most shared ideas about whether accreditation in outpatient procedures contributes to compliance with the four factors studied. In addition, a Tau-Kendall correlation coefficient analysis was applied to verify the perception of association between the four factors and the organizational mission of the observed hospitals. The focus groups corroborate the participants' impressions presented in the pre-test and post-test.

Both groups completed a Likert pre-test questionnaire on their initial expectations about compliance with the four factors on a scale of 1-5, with 0 representing the lowest perception score and 5 the

highest. Based on the assessment scale used in the questionnaire (1 terrible; 2 bad; 3 average; 4 good; and 5 excellent), a criterion of three qualification levels was established: From 1 to 3.5 (terrible, bad, and fair); ii) the good, which included averages from 3.6 to 4.5; and iii) excellent, from 3.6 to 4.5. (Pedraza Melo et al., 2014). Participants provided written informed consent on published anonymous information that is guarded by the organization Education For All Online for being the financier and supplier of the analyzed data. The questionnaires were completed following the ethical compliance parameters of the funding organization. The pre-test was applied before the patients of both hospitals underwent the scheduled outpatient procedures, previously explaining their participation in the present study and that their information would be anonymous. Before the study, similarity in the population characteristics of both groups (gender, age, highest level of education attained) was verified. Both hospitals stated their intention not to be identified in this study due to potential conflicts of interest with the results presented here.

The selection of patients was made individually by the members of the present group of researchers and without logistical or administrative support from the hospitals observed. The patients' selection was made individually and without logistical or administrative support from the hospitals observed. The outpatient procedures which the study population underwent the most were arthroscopy, cataract surgery, biopsy, and endoscopy. The Education For All Online delivered the pre-test, post-test data, and shared ideas in the focus groups examined in this experiment within the framework of the project "Innovation in health care services and hospital ambulatory accreditation as a determinant of perception of quality of care: a quasi-experimental study for Colombia" under grant 2021-01-2.

4. Results

Working with a confidence level of 90%, a relationship between the type of hospital and age is evident, thus attending accredited clinics a younger average than those who attended non-accredited hospitals (Table 1).

Table 1. Average Patients' Ages who attended the 2 Groups of Hospitals.

Hospital	N (%)	Mean (SD)	Median	Min-Max	Statistics (P-value).
Accredited	78	49 (13)	47	21-90	1
Not accredited	80	54 (14)	55	18-84	
Total					

The graduate-level was the highest educational level (39.87%). The number of female users is very close to doubling the number of males. On the other hand, the only high school user who attended an accredited clinic was a woman. The number of men who attended accredited and non-accredited hospitals was the same (Table 2).

Table 2. Distribution of sample Variables in Accredited and Non-accredited Hospitals).

Variables	Total n= 158 (%)	Hospital		Statistics (p-value)
		Accredited n = 78 (%)	Not accredited n = 80 (%)	
Gender	Male	58 (36.70)	29 (36.17)	0.19
	Female	100 (63.29)	51 (63.75)	
Education level	College level	33 (20.88)	19 (24.35)	
	Undergraduate	58 (36.70)	31 (39.74)	

level			
Graduate level	63 (39.87)	27 (34.61)	36 (45)
High School	4 (2.53)	1 (1.28)	3 (3.75)

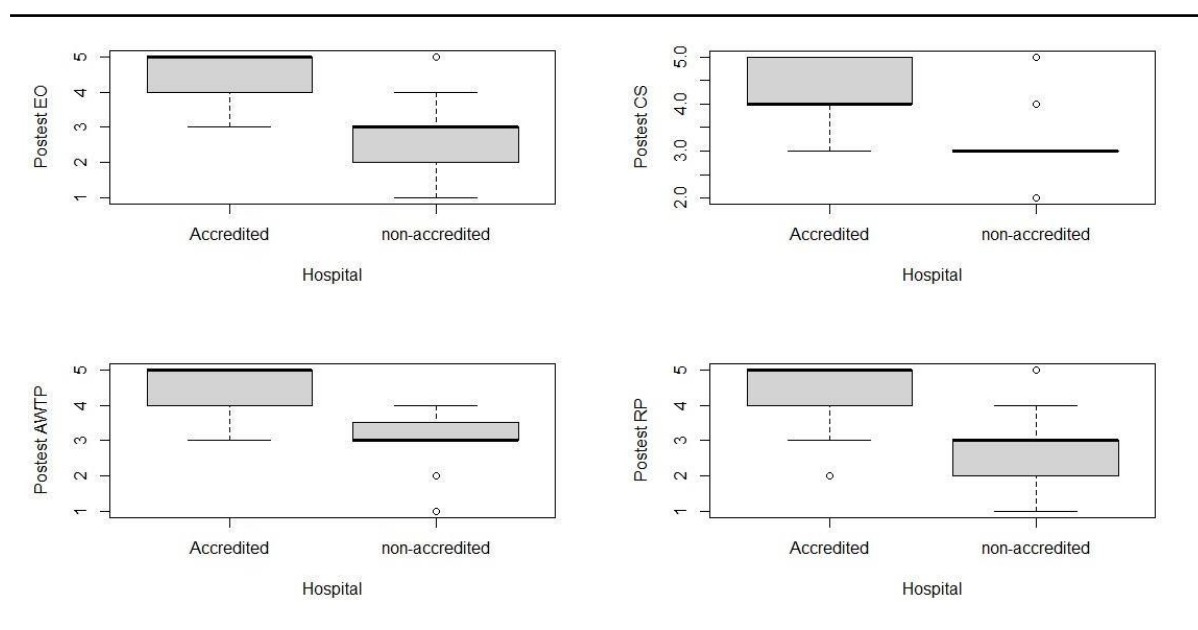
The results from the pretest are comparable, despite the lower sense of service quality. This is further supported by the p-value (0.39), indicating no link between consumers' perceptions and the type of hospital they consult (Table 3). Table 4 shows a high relationship between the type of hospital and the perception of compliance with the four factors. P-value shows a high relationship in both variables with a 95% confidence level (Table 3).

Table 3. Relationship between the type of hospital and the perception of compliance with the four factors.

Post-test variables	Hospitals	Average	Median	Min-Max	P-value
AWTP	Accredited	4.667	5	3-5	< 2.2e-16
	Not accredited	3	3	1-4	
RP	Accredited	4.63	5	2-5	< 2.2e-16
	Not accredited	2.55	3	1-5	
EO	Accredited	4.5	5	3-5	< 2.2e-16
	Not accredited	2.712	3	1-5	
CS	Accredited	4.10	4	3-5	< 2.2e-16
	Not accredited	3.1	3	2-5	

Biopsy was the most performed procedure in the non-accredited hospital, whereas cataract surgery was the most performed procedure in the accredited one. There is no significant association between the selected ambulatory intervention and whether a facility is accredited. It's more interesting to examine how individuals' perceptions of accredited hospitals shifted. Such preferences are shown in the following figure (Figure 1).

Figure 1. Relation between variables in accredited and non-accredited hospitals (Post-test).



The p-value shows a relationship between all the complementary questions and the factors under

study. The accredited group does value the quality of the accredited hospital in fulfilling the institution's mission (Table 4).


Table 4. Correlation results.

Questions	Post-test			
	AWTP	RP	EO	CS
	P-value	P-value	P-value	P-value
On a scale of 0 to 5 where 0 is the lowest perception and five is the highest, do you think the hospital where you were treated provided you a timely medical diagnosis? (Q1)	1.074e-13	< 2.2e-16	4.864e-16	2.231e-09
On a scale of 0 to 5, where 0 is the lowest perception and five is the highest, do you consider that the hospital where you were treated gave you timely medical treatment? (Q2)	< 2.2e-16	< 2.2e-16	< 2.2e-16	8.95e-13
On a scale of 0 to 5, where 0 is the lowest perception and 5 is the highest, do you consider the hospital where you received support before, during, and after your outpatient procedure? (Q3)	1.675e-13	1.427e-08	5.246e-13	0.0003412

Focus groups outcomes

Each group used a focus group approach to communicate their ideas on patients' perceptions of quality over the course of two one-hour sessions. The most important ideas are presented here. The focus group was divided into three parts. In the first, the patients introduced themselves and indicated the medical procedures they underwent. In the second part, they expressed their ideas about whether the hospital where they were treated met the four factors of innovation in medical services. In the third part, the participants expressed suggestions to improve ambulatory care based on their experiences. In the accredited group, 8 patients underwent arthroscopy, 25 cataract surgery, 22 biopsy, 17 endoscopy, and 6 other outpatient procedures. In the accredited group, 8 patients underwent arthroscopy, 25 cataract surgery, 22 biopsy, 17 endoscopy, and 6 other outpatient procedures. In the second part of the focus group of the accredited group, the participants stated that the four factors of innovation in medical services were fulfilled. The most shared ideas of each factor were the following: In the first factor, the information provided by the administrative officials about the medical services was adequate and facilitated the decision-making on whether to undergo the selected medical procedure in the accredited hospital. The accredited group reported satisfaction with the processes for gathering information before physician consultations. All patients treated in the accredited hospital expressed that physicians made an effort to make them understand their health status, medical procedures to be performed, and the post-operative follow-up. Patients were willing to pay more for the procedures they needed if it meant more time for medical consultations, more meticulous post-operative care, and clear communication with their doctors and nurses. They also mentioned that the accredited hospital used personal data gathering techniques to help outpatient diagnosis be more precise. The non-accredited group reported difficulty in getting their personal information collected.

They complained that "the receptionist took too long to ask for their data and do an initial evaluation before providing medical treatment" and that "administrative employees believed we knew the processes of personal and medical registration before being treated." Participants treated in the accredited hospital in ambulatory care by the UHAS Ambulatory Accreditation program were more satisfied with the period of ambulatory consultation and contact with their health care professionals according to both groups' assessments. The accredited hospital outperformed the non-accredited facility on the four factors indicated above, resulting in a higher level of satisfaction.



According to patients, the importance of continuity of quality of treatment throughout the process of reception, attention, and follow-up is justified by the ambulatory accreditation program examined. In the final section, the accredited group believed that individualized follow-up enhanced the perception of the effectiveness of implementing the innovation factors through an accreditation program. The patients of both groups also stated that although the clinical facilities offer security services, these do not depend also on the location where they are, so there are locations perceived as more insecure than others, which increases the perception of robbery risk. Patients in both groups stated that while nurses have a good disposition to address patients' concerns about medical procedures, the staff is largely made up of recent nursing graduates with limited practical experience in the area, which might raise questions about your suitability to do their job. The limited detailed answers about the procedures performed made them think about the high dependence that hospitals have on general practitioners and specialists to resolve doubts of the observed patients. Although both hospitals have recently graduated nurses, the accreditation places a greater emphasis on protocol compliance and data analysis, which leads to compliance with the four health innovation factors studied.

The shared ideas of both groups support H1 that the accredited hospital had a better perception of quality in the four factors of innovation in medical services due to the positive conception of the standardization of administrative and medical services offered. It also confirms H2 or that the patients who underwent outpatient procedures in the accredited hospital consider that the accreditation contributes to the fulfillment of the institutional mission of the organization.

5. Discussion

The pre-test and post-test results show a significant difference in satisfaction with the ambulatory medical care received within the groups where patients treated in the accredited hospital polled higher. The findings show that the four factors of innovation contribute to patients' satisfaction with ambulatory medical care. The UHAS accreditation is effective in achieving the four factors of innovation in medical services of the observed hospital. The rigor in monitoring the four factors of outpatient care enhances the willingness to undergo the selected ambulatory procedures as long as the response capacity of the administrative and medical officials towards patients is optimal. The limitations in the quality of non-accredited hospital health services were confirmed by respondents in the focus group when asked what they proposed for improvement in the provision of medical services received. Patients in both groups state that hospitals' voluntary actions to accrediting processes generates more incentives to accomplish the institution's vision and goal than just managers' discretionary actions, supporting the findings of various authors that external audits are necessary to ensure innovation in care systems for patients undergoing low-complexity medical procedures. The growing interest among healthcare executives in obtaining some distinguished accreditation in health management is due to an increase in patient and user demands in terms of quality levels as a result of socio-economic development and access to all types of information, both medical and related to benefits and rights.

This new health user profile, which is much more demanding and informed, aware of their rights, and, in some cases, even with some technical knowledge of the various therapeutic alternatives for their illness, poses a significant challenge to health institutions. Organizations that decide to become accredited in health must voluntarily do a self-assessment to ensure that they meet the requirements before proceeding. It's also critical that they establish a patient safety policy. The self-assessment of conditions to begin an accreditation process in outpatient procedures provides an opportunity to find health-care innovation methods that promote compliance with the four parameters examined here. Several authors, however, point out that accreditation processes are also influenced by the desire to demonstrate results that aren't always fully implemented in the patients being treated. This is the case with the newly graduated nurses who, according to the patients in the focus groups, appeared to have little practical knowledge of their profession. The high level of systematized information on the state of innovation in health in developing countries (as in this case study) constitutes a barrier to planning and developing policies and strategies that promote it effectively in the city studied. The lack of initial baseline data against which to compare progress can hamper proper monitoring and evaluation of accreditation processes. The four factors of innovation in healthcare encourage the documentation of personal information. Hence, the approach toward innovation in health through the accreditation of ambulatory procedures supposes a contribution to achieving a high quality of care. In terms of how the four factors should be applied, the findings imply that they should be implemented in the most


balanced way possible to produce a high level of patient satisfaction, as proven in the study. All of these aspects must be accompanied by open and consistent communication with doctors, allowing for the collection of data on their health progress.

6. Conclusions

The study hypotheses were verified, confirming that local accreditation in ambulatory medical care is a viable option for expanding medical procedure innovation. Based on the four factors of healthcare innovation, the patients polled at the accredited clinic were willing to accept higher financial charges in exchange for better quality time. Data collection and the statistical results confirm that both groups surveyed had different perceptions of the quality of care received. While the accredited group positively evaluated the innovative actions of the accredited clinic, the accredited group enhanced their initial perception. This study also highlights the importance of using non-conventional quasi-experimental designs to understand ambulatory care perception in developing countries. The respondents did not provide specific information on their daily activities related to their medical procedures, which limited the scope of this study. Locally accredited hospitals face a challenge in applying outpatient care protocols with a precision that minimizes patient safety risks. Implementing the four factors of innovation in medical services materialized in the accreditation studied contributes to mitigating such risks.

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