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Statistical Analysis of Determinants of Patient Satisfaction in Private Hospitals in Burundi

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Abstract

This paper aimed to determine the factors of patient satisfaction in Bujumbura's private hospitals and so highlighted the determinants of patient satisfaction in Burundi's national reference private hospitals. Patients were satisfied according to the indicators results, such as reliability, helpfulness, assurance services, the tangibility of services, and empathy. Nevertheless, for some indicators of satisfaction as the atmosphere during their stay in the hospital and the individualized interest given by the care to each patient, facilities available for their treatment, and the politeness of staff in public hospitals, a statistically significant difference has been revealed respectively depending on the length of time the patient has been in the hospital, patient's level of education, and the patient's gender (F-exact, p-value < 0.05). The main points of dissatisfaction were the waiting time and too high costs. The high number of people in the shared rooms indicated discomfort related to dissatisfaction with the sanitary facilities and the number of users. The lack of some laboratory services and the use of external pharmacies for the purchase of medicines in private hospitals was also a point of dissatisfaction.

Keywords

Patients' Satisfaction, Health Care, Five Determinants of Satisfaction, Private

Hospitals, Overall Dimensions, Burundi

1. Introduction

As a measure of quality of care, patient satisfaction is one of the main tools used worldwide (Donabedian, 1996) in Germany that addresses the same issue and shows that satisfaction is one of the main objectives of health care with an increasing number of tools or indicators created to assess satisfaction. This is how the notion of satisfaction is integrated into the definition of the evaluation of the quality of care provided by the World Health Organization, WHO (Isabelle, 2007). It is therefore a process that must guarantee the patient the diagnostic and therapeutic acts that ensure the best result in terms of health for his or her greatest satisfaction in terms of procedure, results and human contacts within the health system.

Patient satisfaction is an overall assessment by the customer of their experiences with hospital services and is dependent on the patient's experience in relation to their expectations. Lawton (1993) states that in Canada, satisfaction is based on three major criteria: service performance, defined by objective criteria, service perception based on subjective criteria, and the experience and results obtained from using the service.

Patient satisfaction depends on the process of care, effectiveness and outcomes of treatment (Matabaro & Ildephonse, 2024; Ntampera & Sindayigaya, 2026; Nyabenda & Sindayigaya, 2024; Sindayigaya, 2023b). Patient demands, tight budget controls, regulation and health sector reforms have increased the pressure on health care providers to monitor patient satisfaction in the evaluation and development of health services (Nijimbere et al., 2025; Nyabenda & Sindayigaya, 2023, 2024). Satisfaction then becomes an indicator for assessing the quality of care as it provides information on the success in meeting patients' expectations.

Several authors in the literature on inpatient satisfaction surveys have shown that the concept of satisfaction is multidimensional and that many factors can influence this measure. Studies by González et al. (2005) in Argentina and Andaleeb (1998) in Bangladesh have shown that there is a positive relationship between patients' satisfaction and their overall assessment of the quality of health care received during their hospital stay, as well as on the improvement of their well-being (Cimpaye et al., 2025, 2026; Ciza & Sindayigaya, 2023a, 2023b; Sindayigaya, 2020, 2023a, 2023b, 2024).

A positive relationship between patient satisfaction on the different dimensions and the overall assessment of the quality of care was also noted. It is therefore a model that explains the variation in customer satisfaction with hospital services. This model is based on different factors that include communication with patients, staff competence, and staff behavior, quality of facilities and price of care. Patient satisfaction is seen as a subjective perception that reflects the personal

preferences and expectations of patients. The degree of congruence between consumers' expectations and their perception of the quality of care received. The degree of congruence between the patient's expectations of desired care and services, and their perception of the quality of the service actually provided.

We observe that there are several indicators of client satisfaction, including: Communication and information, Physician competence, Nursing care, Physical environment, Patient-staff interaction/Patient involvement. Communication between patients and health service "providers" can increase patients' satisfaction with the quality of hospital services and care received (Victor et al., 2023; Ciza & Sindayigaya, 2023b, 2023a; Matabaro & Ildephonse, 2024; Sindayigaya, 2025). Dissemination of information, explanation of treatment and involvement of patients in decisions about their treatment are important for patient satisfaction. Through his studies in New-Breton hospitals found that patients place a high value on having their treatment choices clearly explained. Patients appreciate being given the opportunity to discuss issues of concern to them. Physician competence has a strong influence on the assessment of the quality of care provided by hospitals in Canada. When patients perceive that service providers are competent, this perception can help overcome their uncertainties. Technical quality, which includes doctors' professionalism, skills and competencies, is a top priority for patients (Nga Nkouma, 2019).

Thus, patients' expectations and perceptions of the quality of nursing care influence their overall satisfaction. Because of the intangibility of healthcare, patients look for tangible evidence such as equipment, cleanliness of the premises, catering and the physical environment of the service. These indicators make it easier to define their expectations and thus help them to make assessments of the quality of the service. Noise levels, smells, temperature, colors and comfort of the room can influence perceived performance, these factors are called "tangibles". The service provider is also assessed on the basis of his or her behavior and dress. For example, uniforms and identification badges are required in the health sector to indicate the quality of professionals. Similar studies have been carried out in the USA by Bitner (1990) Hospital logistics refers to all techniques and approaches aimed at satisfying patient needs through the optimization of hospital activities.

Patient satisfaction studies have found that the nature and quality of the interaction between the patient and health care professionals is the best determinant of overall satisfaction. According to Lam (1997) indexes that due to the inability of patients to evaluate the "what" (technical aspect) of quality, patients evaluate the "how" of quality, which is, the functional aspect of the medical care process. Physician empathy, understanding and mutual respect are important qualities for patient satisfaction. Positive patient-provider interaction in a clinical setting is considered to lead to greater satisfaction with the care received. The intrinsic relationships between satisfaction and the socio-demographic characteristics of patients including. age, gender, education and income are the determinants of this assessment. Thus, (Nguyen Thi et al., 2002) state that the relationships between

patient satisfaction and socio-demographic factors such as age, gender, education and income have been analyzed and proven in previous research. Age is a strong determinant of satisfaction. Older patients were more satisfied than younger ones. Higher satisfaction was associated with older people and those with lower levels of education.

Although assessing the level of customer satisfaction is important, it is essential for the hospital to work on the factors that explain this satisfaction. Focusing on a few key drivers, rather than all the explanatory variables, allows the hospital to target the key areas for improvement, which can be seen as a gain when resources are limited. In Burundi, better care for patients in private hospitals has always been discussed by patients. Being admitted to a private hospital is always experienced as a refuge for the patient who still claims the poor conditions of hospitalization in the public sector. According to the MSF (2004) report, 17.4% of the sick do not have access to care, mainly because of lack of money (for 81.7% of them). Even among patients who think they are seriously ill, 14.5% do not go for consultation, mainly because of lack of money (for 90.7% of them).

Given the precarious state health policy, medical care is too costly for some private individuals, incompetent human resources for others, and the demand for examinations that are often unnecessary to inflate the bill are the most frequent aspects of the dysfunction of this sector. The various leaders in the health sector have each time recalled the priority of improving the conditions of reception, services, hospitalization and access to care for the sick, but without really succeeding because the private sector is often expensive. Burundi's health policy will be based particularly on the principle of health for all, aiming at greater health coverage and an equitable distribution of care. Equity in access to quality health services: this principle means that the MSP gives each member of the community the same opportunities to access quality health services. It will ensure a fair distribution of resources between regions and communities.

The underlying problem of this study is to find out how satisfied the population is with the private health care services, i.e. what are the dimensions of the health care service; what factors influence patient satisfaction and how can they be evaluated and improved. The purpose of this study is to measure overall and specific patient satisfaction rates and to identify the determinants of satisfaction in private sector hospitals. To define our problem and to meet the objectives of this article we assume that:

- The quality-of-care service has a positive effect on patient satisfaction in private health care facilities;
- Patient satisfaction with health care services in the private sector differs from one institution to another.

The commercialization of health services and the application of marketing concepts (quality improvement, user satisfaction assessment, etc.) within these institutions can help to solve the problems of the sector, to upgrade its performance and to improve the image of the private hospital in the community.

2. Methods and Methodology

The Our survey took place in the major private hospitals in Bujumbura, namely Kira Hospital, Van Norman, Tanganyika care Polyclinik, Polyceb and CMCK located in the city of Bujumbura. The target group consisted of patients who were hospitalized in these hospitals or, failing that, who came on an outpatient basis but had already received care there more than twice. For an infinite target population such as ours, the determination of the sample size is done using the following relationship $n=\frac{z_{\alpha}^{2}\times p(1-p)}{e^{2}}$

With

- z is the confidence level statistic which is equal to 1.96 when the accepted confidence level is 95%;
- p is the proportion of inpatients and we take p = 50%. This is the margin of error that we are prepared to accept. We take 5%.

Taking into account a 10% non-response rate, this gives a sample size of 422.58, or approximately 423 patients. The patients are divided into five strata. After consultation with the managers of these hospitals on the number of hospital admissions, we assigned a weight to each hospital to determine the sample size to be taken from each hospital. Table 1 below summarises the weight and sample size taken from each hospital. The patients interviewed were selected randomly according to the random number table.

Table 1. Distribution of the sample by hospital.

Private Hospitals	Weight	n
CMCK	2.5	106
Kira Hospital	1	42
Polyceb	2	85
Tanganyika care	2	85
Van Norman	2.5	106
Total	10	423

The questionnaire was our instrument used is the data collection questionnaire and for ease of collection; it was programmed in Kobo collect with stringent controls to facilitate the auditing and cleaning of data, collected in real time using smartphones. Data processing and analysis was carried out using Excel and Stata 14 software. The questionnaire used is based on the perception of five dimensions of health service quality with 23 questions that reflect key indicators of each of these dimensions. These are reliability, helpfulness, assurance, tangibility and courtesy.

The questions were presented on a satisfaction scale from 0 to 3 representing the degree of dissatisfaction to very high satisfaction.

After a descriptive analysis of each of the indicators, in order to determine the impact of the health care service on patient satisfaction, the approach used consists of calculating the arithmetic mean of each dimension and comparing it to the following decision criterion:

[0 - 0.99]: Quality of care service has a negative effect on patient satisfaction

[1 - 1.99]: Quality of care service has a moderate effect on patient satisfaction

[2 - 3]: Quality of care service has a positive effect on patient satisfaction (see Figure 1).

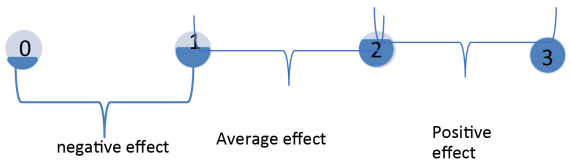

Figure 1. Presentation of scale of satisfaction.

This analysis will be complemented by the Chi-square or Fisher's exact test to determine satisfaction according to different patient groups including gender, age, education level, length of time in hospital (short, medium, long), patient status (inpatient, outpatient/ambulant) and possession of health insurance or free care (yes, no).

3. Analysis Results

3.1. Hospitals Visited

For the private hospital component, 413 patients were interviewed representing a response rate of 97.64% (see Figure 2). As can be seen from the graph opposite, Tanganyika Care Hospital was the most represented, followed by the van Norman Clinic, Polyceb and CMCK, and finally Kira Hospital with 39 patients.

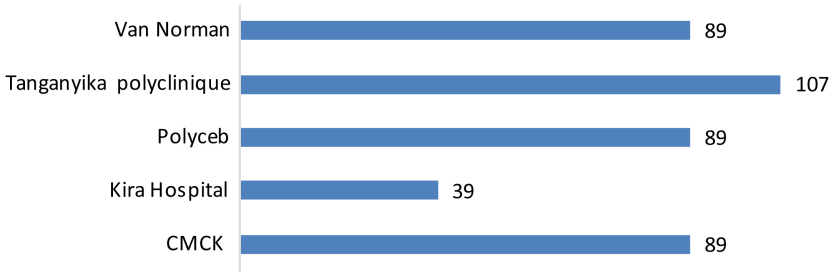

Figure 2. Distribution of respondents by hospital.

Several departments were visited in these hospitals, the main ones being the radiology department with the most respondents, followed by the internal medicine department, pediatrics, surgery and maternity. Most of the respondents were female, as they were the ones who were most likely to be on call when a child was ill.

3.2. Respondents

The majority of respondents were female (57.38%), while 42.62% were male. The 25 - 40 age group was the most represented overall and for females, while the 40 - 55 age group was the most represented for males (see Figure 3). Of these patients, most (33.17%) had secondary education, followed by primary education (27.60%) and higher education (24.46%), and finally those with no education (14.77%).

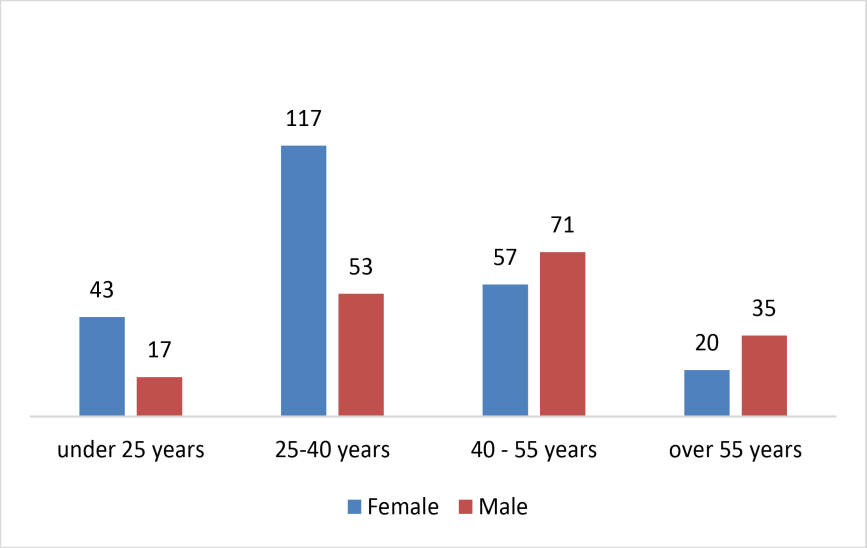

Figure 3. Gender distribution of respondents by age.

3.3. Reliability

In this section we will analyze the patients' perception of the quality of health services provided by the private hospital. The following hypothesis will be tested: "the quality of health services provided by the private hospital has a positive impact on patient satisfaction, in terms of reliability".

3.3.1. Home of the Administrative Service

As can be seen from the previous graph, 96.61% of patients are satisfied (very satisfied and satisfied) with the reception of the administrative service against 3.39% (not very satisfied and dissatisfied) who are dissatisfied with the reception of the administrative service (see Figure 4).

The Fisher exact test shows that the level of satisfaction (from unsatisfactory to very satisfied) differs according to the level of education, however, the difference in overall satisfaction (satisfied and very satisfied) according to the level of education is not statistically significant (p-value > 0.05). The same is true for patients who are hospitalized or not. This observation differs for patients with health insurance or free care (children under 5 years old and pregnant women), where we note the significance of the diversity of satisfaction (F-exact, p-value = 0.025).

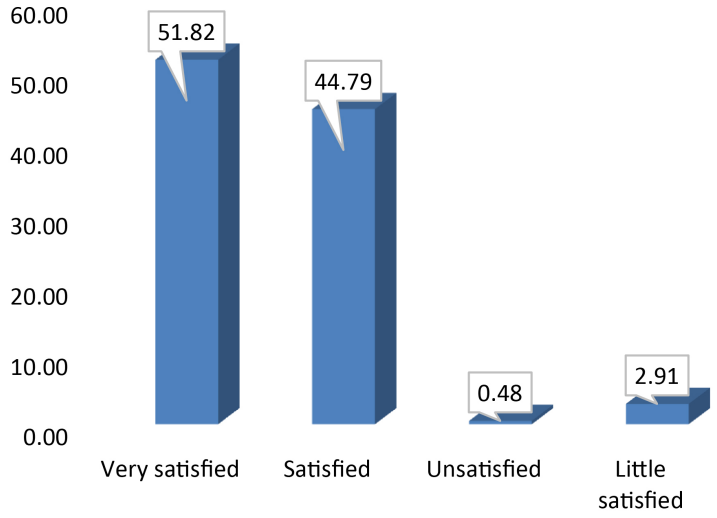

Figure 4. Distribution of respondents on the perception of administrative reception.

3.3.2. Accuracy of Diagnosis

The accuracy of diagnosis is satisfactory, with less than 1% of patients surveyed finding the accuracy of diagnosis unsatisfactory compared to 99.03% of respondents who said they were satisfied with the accuracy of diagnosis of their condition. Overall, the accuracy of the diagnosis is appreciated by all groups of patients. However, most inpatients (61.33%) were very satisfied, while most outpatients (57.76%) were satisfied (see **Figure 5**), and this difference was statistically significant (*p*-value of F-exact < 0.01).

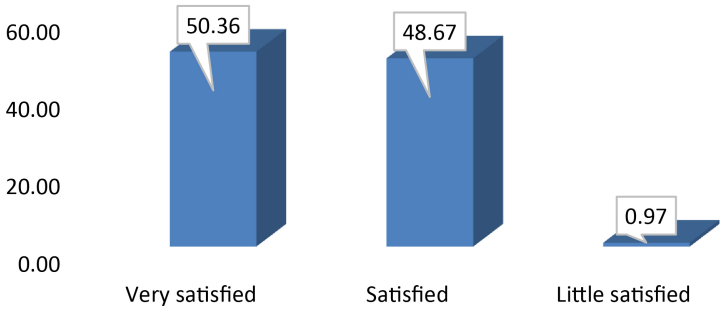

Figure 5. Patients perceptions on diagnostic accuracy.

3.3.3. Respect for the Hours of Care and Doctor's Appointments

The respect of the timetable for the provision of care is highly appreciated in private hospitals. As can be seen from the previous graph, 92.98% (4843% very satisfied and 44.55% satisfied) of patients stated that they were satisfied with the timeliness of care and appointments. Only 7.02% of respondents stated that they were dissatisfied with keeping appointments, mainly for outpatient consultations. The Fisher exact test shows that this level of satisfaction with respect for the timetable of care offers differs according to the patients' level of education. In fact, patients with secondary education and those with university education are the ones who

most mentioned being less satisfied or satisfied, unlike the other patients. It is also noted, thanks to the chi-square test, that this satisfaction differs from one hospital to another. Indeed, among the patients dissatisfied with the timeliness of care, 37.93% are from Kira Hospital, followed by Polyceb with 27.59% and CMCK and Tanganyika Polyclinic with 13.79% of dissatisfied patients on each of them and in last position is the Van Norman Clinic with 6.9% of all respondents (see Figure 6).

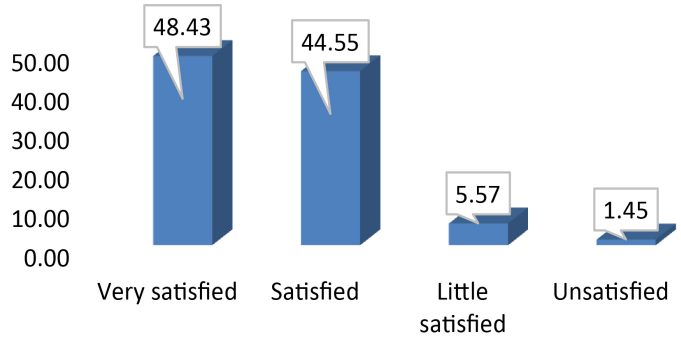

Figure 6. Distribution of satisfaction with the timeliness of care.

3.3.4. Reliability of Care Services (From the First Time)

The majority of patients are satisfied with the reliability of the care services offered in private hospitals. Indeed, 54.72% of the respondents were very satisfied with the reliability of care and 44.07% were satisfied. Only 1.21% reported being dissatisfied. In contrast to the other indicators, satisfaction with the reliability of care services is perceived in the same way for all patient groups and regardless of gender. This was confirmed by the chi-square test and the Fisher exact test (p-value > 0.05) (Figure 7).

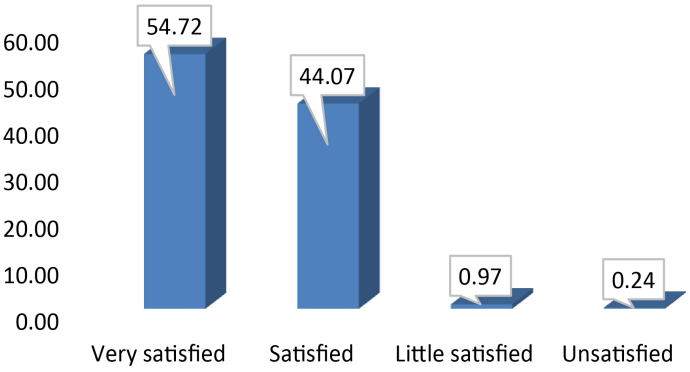

Figure 7. Distribution of perceived reliability of cares.

3.4. Level of Reliability Services

The reliability dimension assesses the ability to deliver the promised service confidently and accurately. It is assessed by the four variables (question) above summarized in Table 2 below.

Table 2. Assessment of service quality through the Reliability dimension.

	Average	Standard deviation	Effect on patient satisfaction
Home of the Administrative Department	2.48	0.58	Positive effect
Accuracy of diagnosis	2.49	0.52	Positive effect
Respecting the hours of care	2.40	0.66	Positive effect
Reliability of care services	2.53	0.53	Positive effect
Reliability dimension	**2.48**	**0.57**	**Positive effect**

As can be seen from Table 2 above, all four indicators of the reliability dimension show that they have a positive impact on patient satisfaction. We therefore conclude that reliability in private hospitals is indeed a reality and that it has a positive impact on satisfaction.

3.5. Helpfulness (Speed)

In this section, we propose to evaluate the quality of health services in private hospitals in terms of helpfulness. The following hypothesis is put forward for verification: "The quality of health services in private hospitals has a positive impact on patient satisfaction in terms of helpfulness".

3.6. Waiting Times for Care

The previous graph shows that waiting times for care are generally satisfactory in private hospitals. Indeed, 87.65% of patients say they are satisfied with the waiting time for care. For the 12.35% of patients who said they were not satisfied with this time, they deplored the time spent waiting for outpatient consultations (see Figure 8). In fact, with the Fisher exact test, it can be seen that satisfaction varies according to whether the patient is hospitalized or not. There is also a statistically significant difference in satisfaction with waiting time according to the level of education. This satisfaction also varies according to the hospital (p-value = 0.00). Most dissatisfaction with waiting time is observed in Kira Hospital and Polyceb, and is mainly among outpatients.

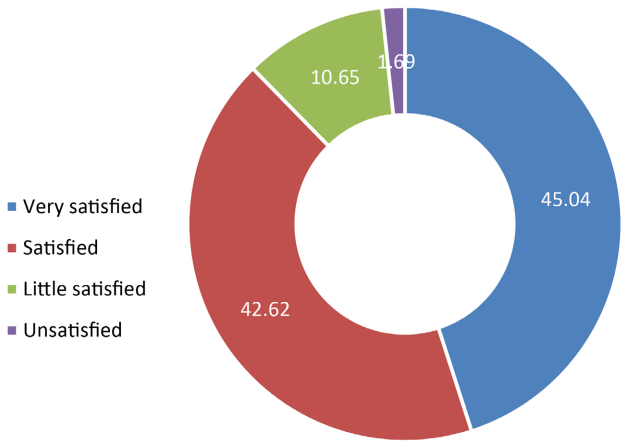

Figure 8. Distribution of satisfaction with waiting time for care.

3.7. Response to Complaints and Requests

The responsiveness of medical staff is crucial to the perception of patient satisfaction. In private hospitals, as can be seen in the graph above, 95.40% of patients say they are satisfied with the response to their complaints and/or requests.

The Fisher exact test shows that satisfaction with responses to complaints and requests does not differ significantly according to certain patient groups, including whether the patient is hospitalised or not, the level of education or whether the patient is insured (or meets the criteria for free care) or not. However, this satisfaction differs according to gender (F-exact, p-value = 0.03). Indeed, among the dissatisfied patients, most of them (68.4%) were male. The same is true according to the hospital (F-exact, p-value = 0.004) where 42.11% of dissatisfied patients were dissatisfied with the responsiveness of the staff to their complaints at Polyceb, 26.32% at CMCK and 21.05% at Kira Hospital. No dissatisfaction was noted at the van Norman Clinic (see Figure 9).

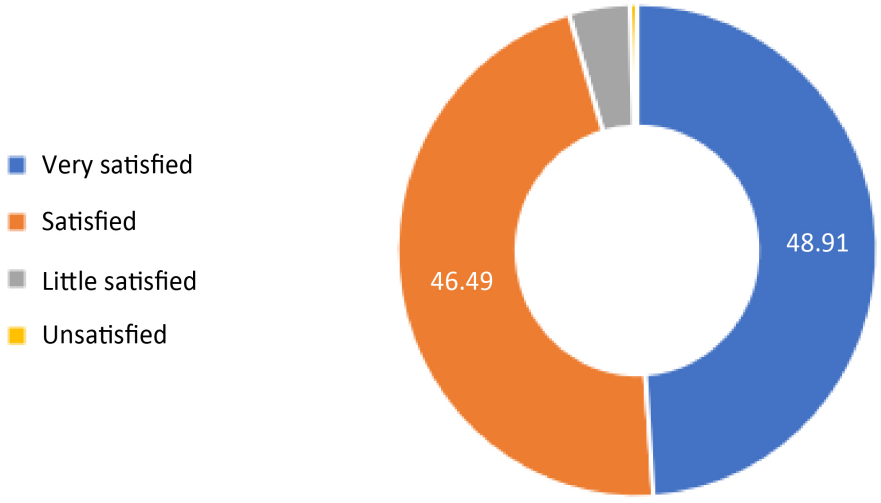

Figure 9. Perceived satisfaction with responses to complaints.

3.8. Ability of Staff to Deliver Services

As can be seen from the graph above, 96.85% (51.33% very satisfied and 45.52% satisfied) of the patients are satisfied with the ability of the private hospital staff to provide services (see Figure 10). The 3.15% declaring dissatisfaction deplored the experience with some of the medical staff not being responsive to them, not always ready to help. Analysis with the F-exact test shows that satisfaction with the ability of the staff varies according to the length of stay in the hospital (p-value = 0.008). It is indeed found that among the dissatisfied patients, most (46.15%) had spent a long time in the hospital. It is also vis-à-vis gender (F-exact, p-value = 0.19) with 76.92% of the dissatisfied patients being male and 58.50% of the satisfied patients being female. This satisfaction does not vary from one hospital to another (F-exact, p-value = 0.37).

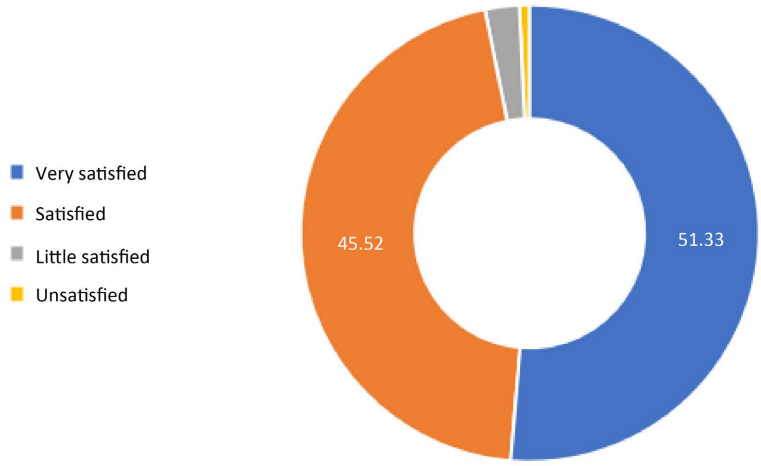

Figure 10. Distribution of satisfaction with staff suitability.

3.9. Simplicity of Care Procedures

The simplicity of the care procedures is satisfactory; indeed, 95.40% (49.15% very satisfied and 46.25% satisfied) state that they are satisfied with the simplicity of the care procedures while only 4.60% state that they are not satisfied (see Figure 11). The Fisher exact statistic (p-value = 0.002) shows that satisfaction with care procedures varies from one hospital to another.

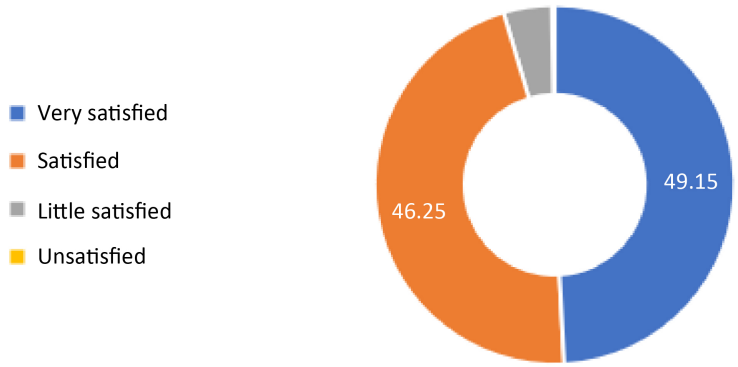

Figure 11. Distribution of satisfaction with simplicity of care procedures.

3.10. Levels of Helpfulness Services

Helpfulness (timeliness) was assessed by the four previous dimensions summarized in Table 3 below. These are the waiting time for care, responses to complaints, the ability of staff to provide care and the simplicity of care procedures. The aim is to check the willingness of the health care staff to interact with patients and to provide a prompt service.

The results of Table 3 show us that the dimension of helpfulness has a positive effect on patient satisfaction, as the overall average is in the range of 2 to 3. The same is true for each of the four indicators of this dimension, where we see that the effect of the latter is positive on satisfaction. We therefore conclude that helpfulness exists and has a positive effect on patient satisfaction in private hos-

pitals.

Table 3. Summary of the assessment of service quality via the Serviceability dimension.

	Average	Standard deviation	Effect on patient satisfaction
Waiting times for care	2.31	0.73	Positive effect
Responding to complaints and requests	2.44	0.60	Positive effect
The ability of staff to deliver the services	2.47	0.58	Positive effect
The simplicity of care procedures	2.44	0.59	Positive effect
Serviceability	**2.42**	**0.62**	**Positive effect**

3.11. Insurance

The next dimension concerns the assurance, the security that the patient has of the health care services received in the medical settings. To assess this, we will start from the patients' perceived satisfaction with the competence of the medical staff, the image of the medical institution in the community, the perceived confidentiality of their information and communication with the caregivers to study the following hypothesis: "The quality of the health services provided by the private hospital has a positive impact on the patients' satisfaction, in terms of assurance (safety)".

3.12. Medical Professional Competence

Although most patients stated that they could not judge the competence of the medical staff, 98.79% had a satisfactory perception of the competence of the medical staff, of which 58.35% were very satisfied and 1.21% were not very satisfied (see Figure 12). It was also found that this view did not vary significantly between the different patient groups, but also remained unchanged for the different hospitals.

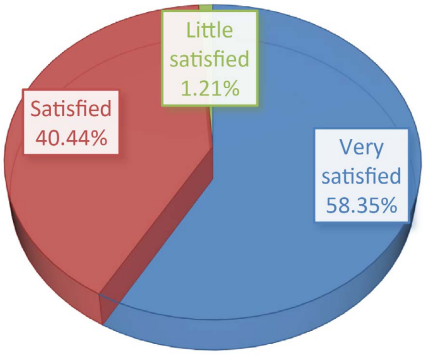

Figure 12. Distribution of satisfaction with the competence of the medical profession.

3.13. Image and Place of the Institution in Society

The graph above shows that the image of private hospitals is highly appreciated.

Indeed 97.58% of the patients are satisfied with the image and the place of the institution in society (see Figure 13). They claim to have the image of private hospitals in the community as institutions offering quality care services but at a very high cost. This satisfaction varies significantly, as observed with the Fisher-exact statistic (p-value = 0.025), depending on whether the patient is hospitalised or not. This finding is also noted according to the hospital, where thanks to the Fisher exact test (p-value = 0.11), it is concluded that the degree of satisfaction with the hospital's image varies from one hospital to another.

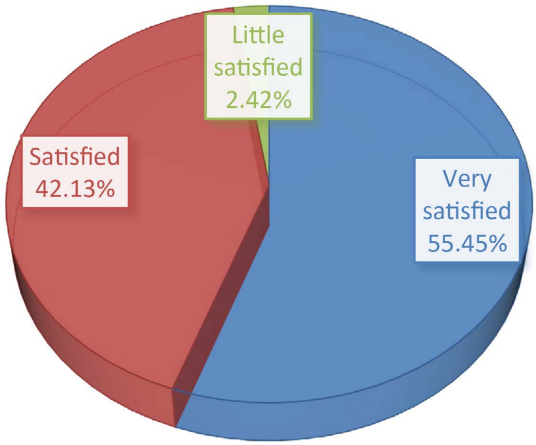

Figure 13. Distribution of image satisfaction in society.

3.14. Confidentiality of Given Information

The confidentiality of the caregivers consists in keeping the professional secret which reassures the patients and influences the image of the hospital. As can be seen from the graph above, 98.31% (58.35% very satisfied and 39.95% satisfied) of the patients were satisfied with the confidentiality of their information, while 1.69% were not satisfied (see Figure 14). According to the Fisher exact statistic, confidentiality does not vary significantly between different patient groups, but also between hospitals.

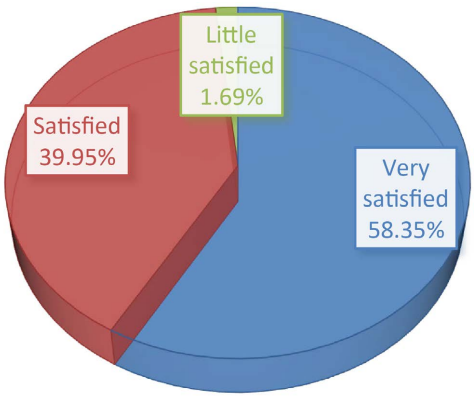

Figure 14. Distribution of satisfaction with confidentiality of information.

3.15. Communication with Care

The above results show that 97.58% of the patients said they were satisfied with the communication with the care. Only 2.42% reported that they were not satisfied with the communication from care during their hospital stay (see Figure 15). Satisfaction with care communication varied significantly according to the time spent in hospital (p-value = 0.009). This was also the case with regard to the patient's gender (p-value = 0.021) and also according to the hospital (p-value = 0.41).

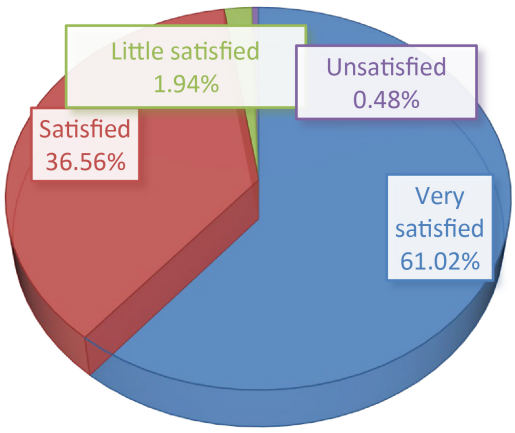

Figure 15. Distribution of satisfaction with communication with care.

3.16. Level of Insurance

The study of the four indicators of patient assurance in private hospitals shows that most respondents are satisfied with their experience during their hospital stay. The following Table 4 concludes on the impact of satisfaction on patient assurance in private hospital settings.

Table 4. Summary of the assessment of service quality via the Insurance dimension.

	Average	Standard deviation	Effect on patient satisfaction
The competence of the medical profession	2.57	0.52	Positive effect
The image and place of the institution in society	2.53	0.55	Positive effect
The confidentiality of your information	2.57	0.53	Positive effect
Communication with carers	2.58	0.56	Positive effect
Insurance	**2.56**	**0.54**	**Positive effect**

The results of the previous Table 4 confirm the hypothesis stated on the assurance dimension. It can be seen that each indicator of assurance varies between 2 and 3 and therefore positively affects patient satisfaction in private hospitals. Overall, the competence of the employees and their ability to inspire confidence has a positive effect on patient satisfaction.

3.17. Tangibility

The dimension of tangibility was studied on the basis of five variables that include all tangible things such as equipment, staff appearance and facilities. To do this, we start from the following hypothesis: "The quality of health services provided by the private hospital has a positive impact on patient satisfaction, in terms of tangibility".

3.18. Comfort of the Rooms

The results of the previous graph show that 94.76% (59.18% very satisfied and 35.58% satisfied) of the patients surveyed are satisfied with the comfort of their room (cleanliness of the premises, toilets and linen, heating, etc.). 5.24% of the patients who are dissatisfied with the comfort of their room deplore the high number of patients in the common rooms (see Figure 16). Most of them pointed to the lack of gender segregated common toilet facilities in some hospitals which do not provide privacy in cases where the patient needs help to get there. From the Fisher-exact statistic (p-value > 0.05), it can be seen that the null hypothesis of independence of satisfaction with room comfort in private hospitals by hospital and different patient groups cannot be rejected.

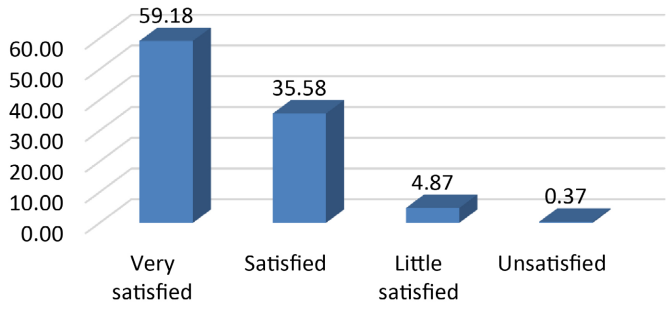

Figure 16. Distribution of satisfaction with room comfort in private hospitals.

3.19. Meals (Variety of Menus, Quantity, Quality, Compliance with Diet)

The catering service is only provided in some hospitals. As can be seen from the graph above, 67.72% are satisfied with the meals received in the hospital in terms of menu variety, quantity, quality and compliance with the patient's diet. However, 32.28% were dissatisfied with this service and complained mainly about the lack of respect for the patient's diet and the irregular availability of the meal (at the right time), but also about the overcharging of this service in relation to the quantity and quality of the meal provided (see Figure 17). It is noticeable that this satisfaction depends on certain groups of patients. Indeed, the Fisher exact test shows that the null hypothesis of independence of satisfaction with the level of education (F-exact < 0.05), the possession of an insurance or free care but also according to age can be rejected.

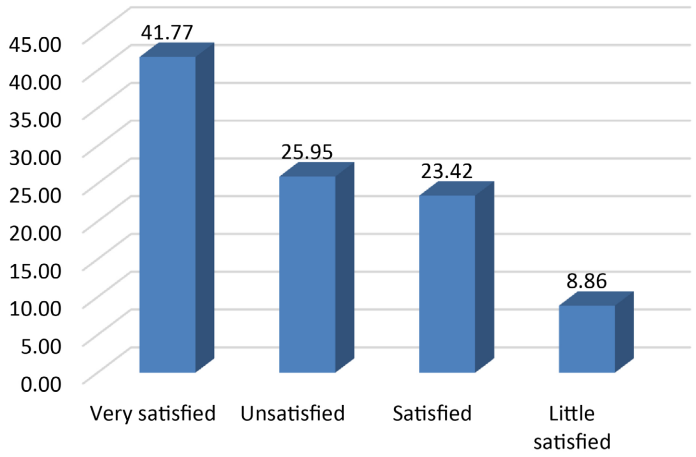

Figure 17. Distribution of meal satisfaction.

3.20. General Atmosphere of the Service (Calm, Security)

The above results show that 95.64% of the patients are satisfied with the general atmosphere of the service (calm, security). We notice 4.36% of the patients who are dissatisfied especially with the security of their property that is stolen. Of these dissatisfied patients, most (61.11%) are observed at the CMCK hospital and 22.22% at the Van Norman clinic (see **Figure 18**). The Fisher exact statistic reveals that satisfaction varies from one hospital to another (p-value = 0.001).

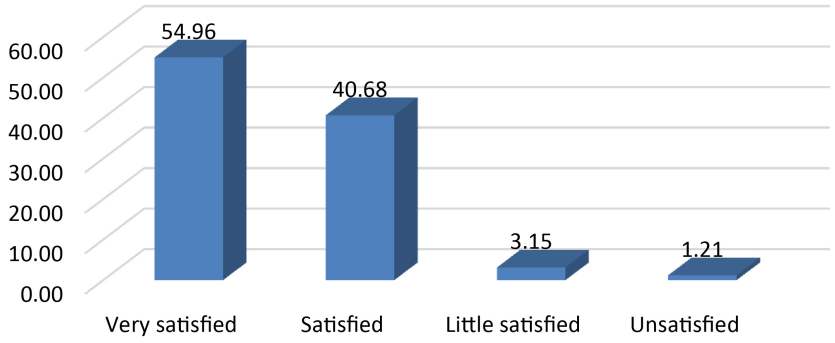

Figure 18. Distribution of atmospheric satisfaction.

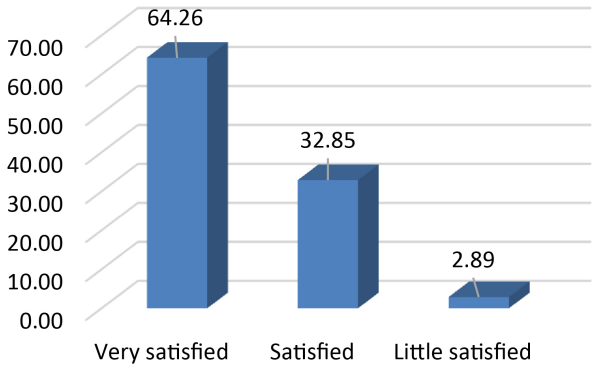

Figure 19. Satisfaction on availability of medical equipment.

From the results of the above graph 64.26% of the patients surveyed are very satisfied with the availability of equipment and medicines and 32.85% are satisfied while 2.89% are dissatisfied (see Figure 19). Patients complain about the non-availability of all tests in some hospitals and are forced to go to other laboratories in other hospitals. The Fisher exact statistic shows that the null hypothesis of independence of satisfaction according to hospital and different patient groups cannot be rejected at the 5% level.

3.21. How to Visit

There is a high level of satisfaction among patients with the organization of visiting arrangements in private hospitals. Indeed, 96.19% (63.98% very satisfied and 32.20% satisfied) of patients are satisfied with the visiting arrangements. However, those who are dissatisfied represent 3.81%. With the Fisher exact statistic, at the threshold of 5%, we can see that the satisfaction of the visiting modalities is dependent on the hospital of the patient (see Figure 20).

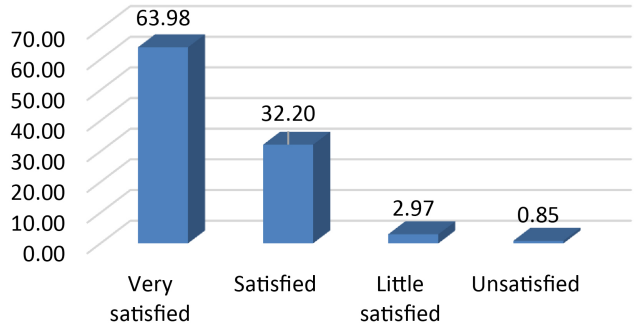

Figure 20. Breakdown of satisfaction with visiting arrangements.

Most of the five indicators of the tangibility dimension showed satisfactory patient satisfaction in private hospitals in Bujumbura.

It can be seen from the results, overall, tangibility has a positive effect on patient satisfaction with an overall average of 2.41. However, in the hospitals with catering services, it can be seen that the meal offered has an average effect, with an average of 1.81. It is therefore concluded that the stated hypothesis that tangibility has an effect on patient satisfaction is accepted (see Table 5).

Table 5. Summary of quality-of-service assessment via the Tangibility dimension.

	Average	Standard deviation	Effect on patient satisfaction
The comfort of your room	2.54	0.61	Positive effect
The meals	1.81	1.23	Average effect
The general atmosphere of the service	2.49	0.62	Positive effect
Availability of equipment and medicines	2.61	0.54	Positive effect
How to visit	2.59	0.59	Positive effect
Tangibility	**2.41**	**0.72**	**Positive effect**

The dimension of courtesy consists of the evaluation of the attitude of the staff towards the patients. We propose to analyze the patients' satisfaction with the behavior of the medical staff during the provision of health care services. The hypothesis is: "The quality of health services provided by the private hospital has a positive impact on patient satisfaction in terms of empathy (courtesy)".

Almost all patients in private hospitals (99.03%) are satisfied with the politeness and friendliness of private hospital staff (see Figure 21). The staff of these hospitals are indeed reminded a lot about good manners during the exchanges with the patients. However, some of the patients mentioned the case of some of the staff for whom the friendliness is not satisfactory, hence most of the patients stated that they were globally satisfied with the politeness instead of very satisfied. Friendliness is assessed in the same way in all hospitals; indeed, the Fisher exact test shows that the null hypothesis of independence cannot be rejected at the 5% level.

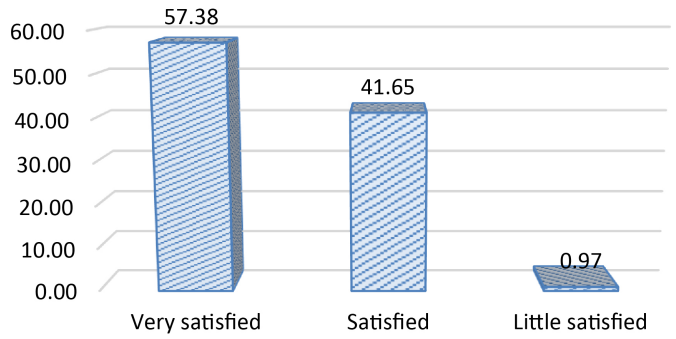

Figure 21. Distribution of satisfaction with staff politeness.

The results of the above graph show that 97.09% of patients are satisfied with the availability of the staff, of whom 57.63% are very satisfied. The 2.91% who found it unsatisfactory mainly deplored the medical staff's attentiveness in certain cases (see Figure 22). The appreciation of the availability of the staff depends on the hospital. This result is found via the Fisher exact statistic, which proves at the 5% threshold that there is a dependence of the level of satisfaction of the availability of the staff with the hospital.

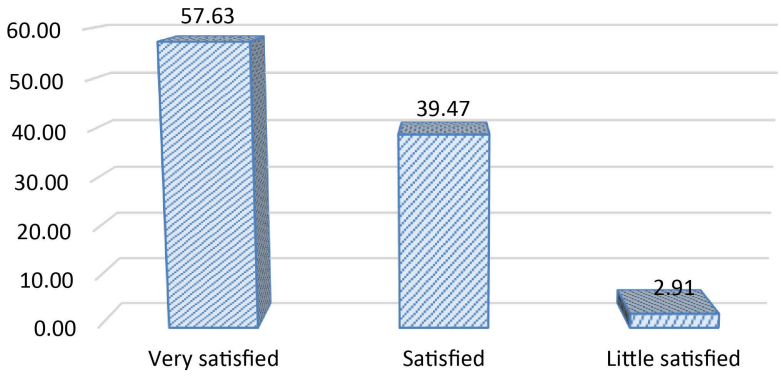

Figure 22. Distribution of satisfaction with staff availability.

Respect for privacy is highly valued in the private hospital setting. It can be seen from the graph above that 98.06% of the patients are satisfied with their privacy (see Figure 23). Satisfaction with privacy is uniformly respected, as confirmed with the Fisher-exact test, for the different groups of patients and in the different hospitals.

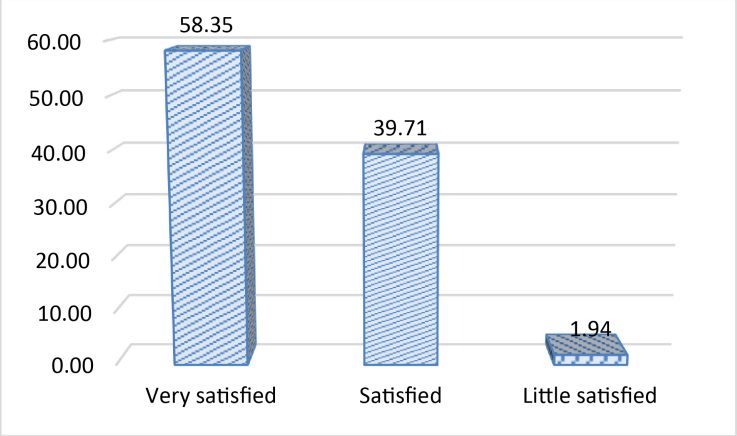

Figure 23. Distribution of satisfaction with privacy.

The individualized interest and attention of the caregiver to each patient is highly appreciated in the private hospital setting (see Figure 24). As can be seen from the graph above, 98.79% (very satisfied and satisfied) say they are satisfied with the way the nursing staff pays attention to each patient.

Table 6 below presents the evaluation of the quality of service through the courtesy dimension.

According to the results of Tab.6 the indicators of the courtesy dimension are all in the range of the positive effect range. It can be seen that individualized attention and consideration for the patient have a significant effect on patient satisfaction. It is therefore concluded that the quality of health services provided by the private hospital has a positive impact on patient satisfaction in terms of empathy (courtesy).

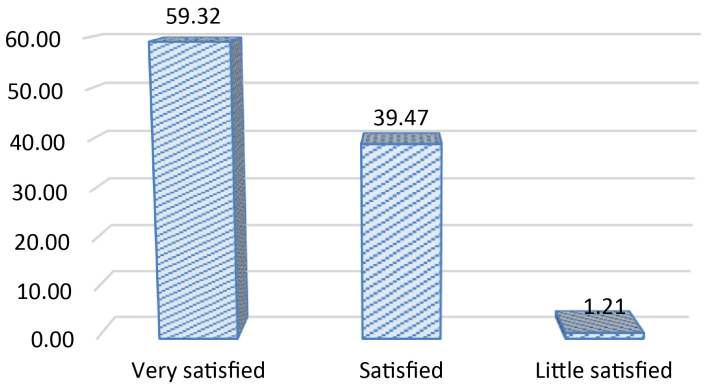

Figure 24. Distribution of the satisfaction of the attention to each patient.

Table 6. Summary of the evaluation of service quality via the Courtesy dimension.

	Average	Standard deviation	Effect on patient satisfaction
Politeness and friendliness of the staff	2.56	0.52	Positive effect
The availability and attentiveness of the staff	2.55	0.55	Positive effect
Respect for your privacy	2.56	0.53	Positive effect
Individualized interest and attention of the caregiver to each patient	2.58	0.52	Positive effect
Courtesy	**2.56**	**0.53**	**Positive effect**

Overall, Figure 25 shows that most patients are satisfied with their stay in private hospitals with an arithmetic mean of 2.42 which falls within the positive effect range. However, the degree of satisfaction differs from one hospital to another. In Tanganyika and van Norman hospitals, most patients (more than 60%) found their stay in these hospitals very satisfactory in contrast to the remaining hospitals such as CMCK, Kira Hospital and Polyceb, where most patients reported being satisfied by 59.55%, 61.54% and 70.79% respectively. The main causes of low satisfaction in these hospitals compared to the others are the high waiting time observed in outpatient clinics as well as the costs considered too high compared to other private and public hospitals.

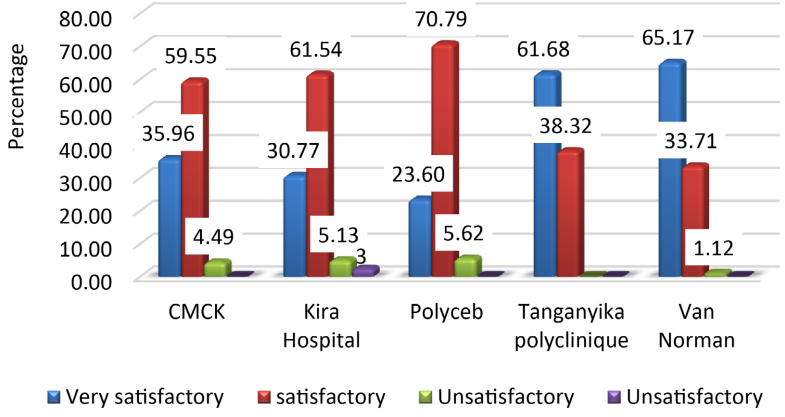

Figure 25. Distribution of overall satisfaction with stay in private hospitals.

This difference is confirmed by the Chi-square test at the 5% level ($chi^2(12) = 61.4723$, p-value = 0.00), which shows that patients' satisfaction with their stay in private hospitals differs significantly from one hospital to another. The second study hypothesis is confirmed.

4. Discussion of the Results

The study showed us that most of the respondents are female, under 55 years of age, the preference of female patients in private hospitals in her study. The reception of the patient constitutes the first care, the quality of which has a strong effect

on staff-patient and patient-future relations. We note that patients in hospitals generally appreciate the welcome they receive. These results are similar to those found in other studies where satisfaction with the reception is reported at more than 65%. This is due to the fact that in private hospitals, the orientation of the patient on arrival is observed. But also, the managerial spirit of patient loyalty, here called customer.

The patients interviewed were unanimous in their satisfaction with the accuracy of the diagnosis. The level of satisfaction with this component is highly valued by both inpatients and outpatients. As this component is not concretely verifiable by the patient, its evaluation will depend on the level of information that the patient receives from the health care staff. The more time the latter takes to provide information about the treatment, the more certain the patient will be that the diagnosis is effective.

The competence of the medical staff, a dimension evaluated by the care provided, was the point of satisfaction of the patients as confirmed by Nguyen Thi et al. (2002) in his study and proved that the care provided by doctors and nurses has a high satisfaction score. The reliability of care is unanimously satisfactory to all patients regardless of their characteristics. Patients are dissatisfied with the reliability of care due to complications after obtaining medical care services.

The level of communication is highly valued by most patients and varies by length of stay and gender. Private hospitals place great importance on communication and seek the best way to provide it to patients (Ciza & Sindayigaya, 2023a).

Our study shows a very high level of satisfaction with the feedback from medical staff to patients' complaints. However, men show a low level of satisfaction compared to women. Patients were unanimously satisfied with staff relations but gender played a role in annoyance. Also, the ability of staff to provide care is mostly appreciated; but then male patients are the most likely to be less satisfied, but also patients hospitalised for a long period. The attitude of discretion is highlighted in patient satisfaction (Ciza & Sindayigaya, 2023b). The confidentiality of information was, in fact, unanimously appreciated by all categories of patients.

The politeness and friendliness of the staff had a positive effect on patient satisfaction for all groups in all private hospitals. Indeed, it was noted that the staff is available and attentive to the patients. This attitude is appreciated because the medical staff treats each caregiver with individual interest and attention. When the medical staff is available, pleasant and listening, while treating patients humanely with understanding leads the patient to be reassured and to have a good relationship and contact with them.

The majority of patients are satisfied with the timetables for the provision of care. Dissatisfaction is reported much more in outpatient consultations than in hospitalizations where late appointments are noted.

The image of the hospital in the community was generally satisfactory, with a reputation for providing quality services. The point of dissatisfaction concerned the level of prices for care, which was considered too high. These results are con-

sistent with those of (Thi et al., 2002), which show low satisfaction with the price of hospitalization.

Although the availability of equipment and medication has a positive effect on satisfaction, as most private hospitals have sufficient equipment, which is appreciated by patients, there have been complaints that not all examinations are available in some hospitals and patients are directed to other hospitals.

The reputation of the hospital depends on the comfort it offers and contributes to the assurance of good care. Comfort is very good in private hospitals. Patients appreciate the general cleanliness in private hospitals.

Regarding the general atmosphere, the majority of patients appreciate the calm and safety of the hospitals. Patients consider the noise level less harmful. However, the point of discomfort was noted among patients in shared rooms who deplored the high number of patients leading to dissatisfaction with the sanitary facilities. The catering service is less appreciated in hospitals and moreover not respected and sometimes overcharged.

5. Conclusion

In general, our study shows that patient satisfaction is quite high with more than 96% of patients being satisfied overall with their stay in the private hospital. Studies on satisfaction in other countries have shown the same finding with a satisfaction score between 60% and 94%. In our study, it was shown that satisfaction is influenced by different dimensions. In private hospitals, reliability and helpfulness were found to have a positive influence on the level of customer satisfaction. The attitude of the caregiver towards the patient from the moment of arrival is a crucial factor in the subsequent relationship with the patient, who finds a shoulder to hold on to, and this is a major element of the quality of care. With regard to the attitude of the staff, the empathy and competence of the employees were shown to have a positive impact on the quality of the services provided by the private hospital. It is also the conditions of stay that positively impact on satisfaction. The study shows that the personal involvement of the caregiver through the manifestation of empathy goes hand in hand with the skills to "give care" while "taking care". The main points of dissatisfaction were the waiting time and too high costs. The high number of people in the shared rooms indicated discomfort related to dissatisfaction with the sanitary facilities and the number of users. The lack of some laboratory services in private hospitals was also a point of dissatisfaction.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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