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Study of Patient Satisfaction in the Outpatient Department in a Private Clinic

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Abstract

Introduction: Patient satisfaction is a state of pleasure or happiness experienced by patients, a process and attitude, and it must be constantly monitored and measured. We aimed to check the impact of socio-demographic factors on the overall evaluation of clinical care by the patient; evaluate the impact of several elements of healthcare on overall patient satisfaction and demonstrate the effect of medical interventions on patients' overall assessment of health care services. **Method and Results:** This cross-sectional study from November to December 2022 aimed to determine the factors of satisfaction among patients aged at least 18 years in the outpatient department of a private clinic. The study involved 305 participants, with 225/298 (76%) being satisfied overall and 74/298 (24%) uncertain. Partial satisfaction Marital status (P-Value = 0.01), occupation (P-Value < 0.001), and in unit (P-Value = 0.002) were found to be statistically significant, in the overall level of satisfaction. Patient satisfaction was highest among the age group less than 30 years (88.5%). The independent variables were grouped into nine components: clinic/hospital cleanliness, clinic reception, medical infrastructure, medical exam, doctor service, nurse service, staff behavior, service delivery, and general satisfaction. The analysis used Spearman's correlation, chi-square tests, and binary univariate and multivariate logistic regression using 0.05 significance levels to check for any association between the independent and dependent variables. The majority of participants were satisfied, with 88.5% of them being satisfied overall. The minimum level of satisfaction was observed on service delivery (62.1%) and medical infrastructure (64.4%). Age, marital status, medical infrastructure, hospital cleanliness, medical exam, clinic reception, doctor service, nurse service, staff behavior, and service delivery had significant associations with patient satisfaction at a 0.05 level of significance independently. Those over 50 years, divorced or widowed, and those with satisfaction with medical infrastructure, hospital cleanliness, medical exams, clinic reception, doctor service, nurse ser-

vice, staff behavior, and service delivery were more likely to have full overall satisfaction. After controlling for other variables, only medical infrastructure, service delivery, staff behavior, medical exams, and clinic cleanliness had a significant association with overall patient satisfaction at a 0.05 level of significance. **Conclusion:** After controlling the variables only, medical infrastructure, service delivery, staff behavior, medical exam, and clinic cleanliness had significant associations with overall patient satisfaction at 0.05 level of significance. The study concluded that healthcare characteristics affect patient satisfaction, and close monitoring should be done by management.

Keywords

Health Service, Quality Care, Patient Satisfaction, Management

1. Introduction

Quality care in healthcare is essential for equitable, integrated, efficient, and timely delivery (WHO, 2018). A person-centered approach is crucial for monitoring healthcare service quality and understanding patient satisfaction levels (WHO, 2021; Babatola et al., 2022). Patient satisfaction is a state of pleasure or happiness experienced by patients, a process and attitude, and it must be constantly monitored and measured (Vaz, 2018). Because patient perceptions give a means of assessing the quality of care received in healthcare, patient satisfaction continues to be the most intriguing topic for both organizations and studies (Raikhola, 2025). Health services, including university hospitals, public hospitals, and private hospitals, aim to achieve the highest possible quality of care (Fufa & Negao, 2019). In developing countries, many patients bypass nearby public hospitals to go to more distant health facilities, highlighting the need to improve service quality (Mohd & Chakravarty, 2014). Customer feedback is a critical marketing and strategic planning tool in many industries (Nkabinde et al., 2021; Saldivar et al., 2019). The quality of health services has become challenging for researchers, hospital administrators, policymakers, and healthcare providers to meet the needs of patients, which helps to enhance satisfaction and loyalty (Adomah-Afari & Buckman, 2024). In developed countries, patient satisfaction surveys have become mandatory to evaluate health facilities' performance (Olomi et al., 2017). However, patient satisfaction in sub-Saharan countries, particularly in primary health care, is still an unstudied topic (Nunu & Munyewende, 2017). Public health services are now facing increasing competition from the private sector and increasing expectations from clients (Geberu et al., 2019). Enhancing Service in order to sustain high acceptance in any healthcare system, delivery is essential (Bhattacharjya & Das, 2014). Outpatient Department (OPD) services are crucial for hospital management, as they face problems such as overcrowding, delays in treatment, and lack of proper direction (Saldivar et al., 2019; Yakubu et al., 2018). Surveys are a good way to determine patient satisfaction and take measures to avoid customer disappointment (Asefa et al., 2014; Jalem, 2020).

However, only a few studies have investigated the interaction between ambulance satisfaction and related factors (Taneja et al., 2021). Patient satisfaction with the quality of outpatient treatment in hospitals has been studied both in developed and developing countries (Thuy et al., 2021; Stefanovska, & Petkovska, 2014; Ahmed et al., 2015). In some countries, patient satisfaction rates are very low, such as in Tanzania, where it is 20%. The health structure of Cameroon is divided into three levels: central, intermediate, and peripheral, represented by regional health services (Njong & Tchouapi, 2020). The doctor-patient ratio in Cameroon, which is 1:10,000, poses a challenge to the quality of health services, particularly in the outpatient department of private clinics (Kindzeka, 2018). This practice contributes to absenteeism in public health facilities and diverts users to private health centers (Njong & Tchouapi, 2020; Fonyuy & Wayih, 2019). Patients in private hospitals pay more for quality services, and accurate information about their needs is required before using health organizations (Munteh & Fonchin, 2020). Patients carry certain expectations before their visit, and the resultant satisfaction or dissatisfaction is the outcome of their current experience (Pawaskar & Velhal, 2023). Unlike the more equipped public structures, which employ the majority of the country's health experts, patients seem to prefer private health establishments that offer quality care, in contrast to the poor diagnosis and poor treatment in public health centers (Owusu et al., 2024). Patients expect higher service quality than additional services, leading to dissatisfaction and turning to competitors (Manzoor et al., 2019). For example, the limitation of the duration of medical consultation observed in public hospitals seems to be detrimental to patient satisfaction, unlike that of private hospitals. (Bhatt et al., 2024; Simanjuntak et al., 2025). Therefore, patient satisfaction with outpatient care in private clinics, where health workers seem more fulfilled and motivated. So, in this study, we aimed to determine the factors of satisfaction of patients aged at least 18 years in the outpatient department of a private clinic.

Objectives of the study:

- To check the impact of socio-demographic factors on the overall evaluation of clinic care by the patient.
- To evaluate the impact of several elements of healthcare on overall patient satisfaction.
- To demonstrate the effect of medical interventions (receptionists, nurses, physicians) on patients' overall assessment of health care services.

2. Materials and Methods

2.1. Type of Study

We conducted evaluation cross-sectional studies to assess factors that influence patient satisfaction with care.

2.1.1. Study Period

The study data was conducted at "Les Promoteurs de la Bonne Santé" clinic for a period of one month, from November to December 2022.

2.1.2. Study Population

The study population consists of patients admitted on an outpatient basis, on which the data source was the private clinic "Les Promoteurs de la Bonne Santé" (PBS) as a sample. The hospital was selected as the study population because this hospital is the largest hospital in the private sector, located in the heart of Cameroon's political city, and provides a range of services to a large majority of patients coming from all over as well as from other parts of Cameroon, even from different African countries.

The target population consisted of OPD patients aged 18 years and older.

Sampling size

A sample size of 292 with 95% confidence and $P < 0.05$ was calculated using the simplified Yamane formula from the average number of monthly hospital admissions admitted to this private hospital (Fonyuy & Wayih, 2019; Munteh & Fonchin, 2020).

$$n = N/1 + N(e)^2$$

where n = the sample size, N = the average monthly admission recorded in the OPD ward in 2021 (730), and e = the level of precision, which is 0.05.

From the 2021 records, the average monthly hospitalization was 1081 consultations in the OPD ward.

Hence, the sample size for this study is $n = 1081/1 + 1081(0.05)^2$, giving a sample size of 292 participants.

The final sample size after research was increased to 305 participants.

2.1.3. Ethical Clearance

Permission to conduct the study was requested upon submission of the synopsis, and the study was approved by the clinic's Ethics Committee "Promoteurs de la bonne santé". Written and verbal consent was requested from patients after they had been informed verbally and in writing about the purpose of the study via the synopsis and the questionnaire. Participants were also informed that participation in the study was voluntary and that refusal to participate did not change their hospital care. Participant identification numbers instead of names were used to ensure confidentiality. The participants completed the questionnaires themselves in private, without any influence, and were assisted by the collectors when the need arose. In addition, the participants had also consented to the data being published for the purpose of perfecting the provision of the services.

2.2. Data Collection

2.2.1. Questionnaire

The survey tool for data collection was a structured interview questionnaire used as a measurement tool in this survey. Data have been accumulated using a self-administered questionnaire.

We used the Patient Satisfaction Questionnaire (PSQ-18) model to establish ours. The PSQ-18 was developed by Marshall and Hays to explore patient satisfaction towards healthcare service in various clinical settings, including outpatient

departments (Taneja et al., 2021; Ali Jadoo et al., 2020; Manzoor et al., 2019).

The questionnaire was developed in French and English versions, which are the two official languages of the country.

Patients included in the questionnaire a total of 62 items of background characteristics and satisfaction items spread across 2 sections.

The first section with 11 items, entitled Socio-demographic and economic profile of patient attending Out Patient Department. Where included are socio-demographic status, age, sex, residence, literacy, religion, marital status, and origin. Socio-economic status was about occupation and medical insurance.

The second section had 55 items divided into 9 domains, which were cleanliness of the clinic, clinic reception, quality of the medical infrastructure and facilities, medical examination and treatment, doctor services, nurse services, behavior, professional competence of medical and service staff, outcome of service delivery, and general satisfaction.

We conducted two pre-tests with the completed questionnaire, which allowed us to identify some difficulties or correct them to improve the understanding of the respondents. The questionnaire used had face validity and was established by experts. It was tested on a subset of 10 participants.

Satisfaction was assessed by using Likert's five rating scale (1 = very much dissatisfied, 2 = dissatisfied, 3 = uncertain, 4 = satisfied, 5 = very much satisfied) (Bhattacharjya & Das, 2014; Thuy et al., 2021).

2.2.2. Testing

Two pre-tests had been done, respectively, 05 and 07 days before the start of the study in two different groups of 05 people chosen arbitrarily, and 2 experts were also asked to evaluate the clarity and representativeness of the questionnaire regarding patient satisfaction. This made it possible to check the good readability and understanding of the respondents and, in the end, to correct the various errors on the questionnaire. The questionnaire was finalized after two more trials, converted, returned for correction, demonstrated validity, and was recognized by experts. It has been piloted with a subset of participants.

2.2.3. Recruitment of Participants

The participants were approached at the clinic entry point by 2 data collectors trained for the study. Whether they met the inclusion criteria. Only respondents who had consented to participate in the study were assured of complete anonymity and confidentiality.

Inclusion and Exclusion Criteria

A Clinical outpatient was selected according to inclusion and exclusion criteria.

During this duration, patients from medicine, surgery, ENT, and ophthalmology OPDs were chosen because in these OPDs patients are comparatively in better condition to express their feelings. The study participants belong to almost all socioeconomic classes.

1) Includes criteria:

- All patients enrolled in a clinic aged at minimum 18 years or older (old or new) who come to the outpatient clinic for consultation during the study period.
- Illiterate in the company of educated people.

2) Exclusion criteria:

- Patients under the age of 18, neurologically ill, unconscious, or mentally ill, who were not responsible and unable to express their opinions clearly. Patients treated as outpatients and requiring hospitalization were excluded from the study, as were those requiring emergency care.

2.3. Data Analysis

2.3.1. Statistical Analysis

The quantitative data recruited from the questionnaire was entered into Excel, and after analysis, the said data was transferred to IBM SPSS (International Business Machines Statistical Package for the Social Sciences), version 26. A descriptive analysis. A calculation of the mean, standard deviation, and frequencies was performed for socio-demographic variables, such as unit visited, frequency of visit, and other elements of patient satisfaction.

For inferential analysis, logistic regression was carried out as the variables did not have a linear relationship. Hence, independent variables were converted into categorical variables.

2.3.2. Variables

1) Dependent Variable

The important variable here was the overall satisfaction. Which was obtained by summing up the score of each component of satisfaction.

An overall total score of 250 was obtained after summation. Scores below 84 were considered as unsatisfying, between 84 and 167 were considered as uncertain or partial satisfaction, and above 167 was considered as satisfied. We obtained no score below 84, which then made our dependent variable binary (i.e., have just 2 categories), either satisfied or uncertain.

2) Independent variable

The independent variables were grouped into 09 components:

Clinic/hospital cleanliness, clinic reception, medical infrastructure, medical exam, doctor service, nurse service, staff behavior, service delivery, general satisfaction

Each component consists of a number of questions, and each question has a minimum score of 1 and a maximum score of 5. For each study participant, the total score for each component was calculated and classified as either "unsatisfied", "uncertain", or "satisfied".

All components were scored depending on the participants' choice for sections.

Inferential analysis and logistic regression

Logistic regression was performed for inference analysis as the variables did not have a linear relationship. Therefore, independent variables were transformed

into categorical variables.

All components were scored based on participants' choice of section. Each component consists of a number of questions, and each question has a minimum score of 1 and a maximum score of 5. For each study participant, the total score for each component was calculated and classified as either "unsatisfied", "uncertain", or "satisfied".

Table 1 explains that Logistic regression was performed for inference analysis as the variables did not have a linear relationship. Therefore, independent variables were transformed into categorical variables.

Table 1. Categorical variables classified according to participants' section choice.

Component	Number of Questions	Total Score	Unsatisfied Score	Uncertain Score	Satisfied Score
Clinic/Hospital Cleanliness	4	20	<7	7 - 13	>13
Clinic Reception	9	45	<15	15 - 29	>29
Medical Infrastructure	7	35	<11	11 - 22	>22
Medical Exam	7	35	<11	11 - 22	>22
Doctor Service	5	25	<9	9 - 17	>18
Nurse Service	4	20	<7	7 - 13	>13
Staff Behavior	5	25	<9	9 - 17	>18
Service Delivery	6	30	<11	11 - 20	>20
General Satisfaction	3	15	<6	6 - 10	>10
Overall Satisfaction		250	<84	84 - 167	>167

All components were scored based on participants' choice of section. Each component consisting of a number of questions and each question having a minimum score of 1 and maximum score of 5.

For each study participant, the total score for each component was calculated and classified as either "unsatisfied", "uncertain" or "satisfied".

Analyses were performed using Spearman's correlation, chi-square test, and binary univariate and multivariate logistic regression with a significance level of 0.05 to test associations between independent and dependent variables. Results of simple logistic regression analysis were presented as betas, crude odds ratios with 95% confidence intervals (CI), and p-values. After the full interview, all recorded information was transcribed into a Word document. A total of 305 questionnaires were distributed. 298 were correctly completed, and usable forms were analyzed. The remaining 07 were in incomplete form. 90% of completed surveys were written in French.

3. Result

Socio-demographic characteristics of the study participants

Table 2 is summarized by category and frequency according to participants' socio-demographic and economic variables. The mean age was 41.67 years (SD = ±14.5); the most represented age group was 30 - 49 years (51.7%). The majority of participants were female (196, 65.8%) and from urban areas (259, 86.9%). Many of the participants were educated and had studied up to at least university level (194, 65.5%). The Catholic religion was most represented (136, 45.6%). Most participants reported not having medical insurance (208, 69.5%).

Table 2. Socio-demographic characteristics of participants.

Variable	Categories	Frequency Distribution n (%)
Age		
Mean (41.67)	0 - 30	61 (20.5)
Median (39.0)	30 - 49	**154 (51.7)**
SD (14.46)	≥50	83 (27.8)
Gender	Male	102 (34.2)
	Female	**196 (65.8)**
Residence	Urban	259 **(86.9)**
	Rural	39 (13.1)
Marital Status	Married	164 **(55.0)**
	Single	95 (31.9)
	Divorced	15 (5.0)
	Widow	24 (8.1)
Religion	Catholic	136 **(45.6)**
	Protestant	91 (30.5)
	Muslim	25 (8.4)
	Other	46 (15.4)
Literacy	Illiterate	4 (1.4)
	Primary	22 (7.4)
	Secondary	78 (26.2)
	Graduate and above	**194 (65.1)**
Medical Insurance	Yes	90 (30.5)
	No	**208 (69.5)**
Total		**298**

Figure 1 shows that among the study participants, the majority **(93/298, 31%)** reported business as their occupation, while a few reported being farmers **(10/298, 3%)** and unemployed **(16/298, 5%).**

Figure 2 shows that the majority, **133/298 (44.6%),** of the study participants visited the medical unit, gynecology and obstetrics **(39/298, 13.1%),** and **ophthalmology (38/298, 12.8%).**

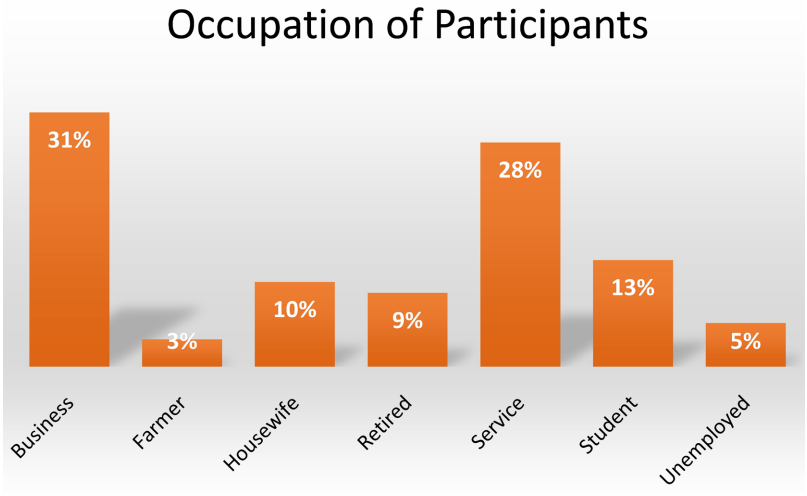

Figure 1. Distribution of study participants across occupation groups.

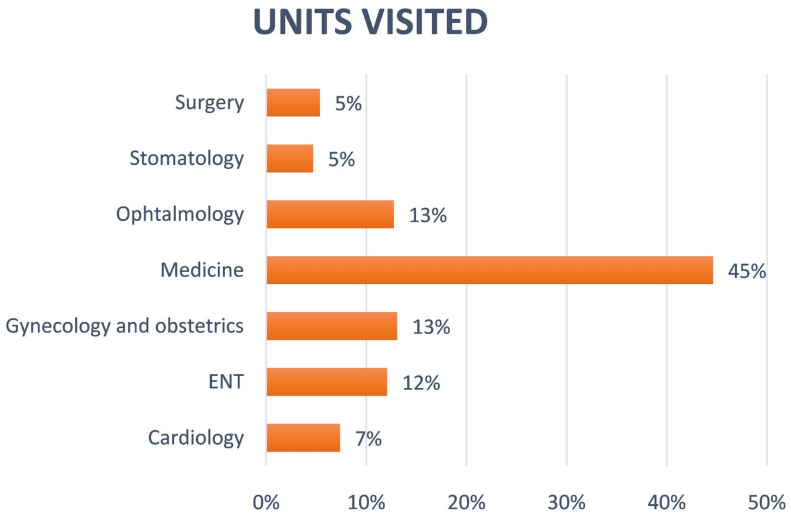

Figure 2. Distribution of participants by unit visited.

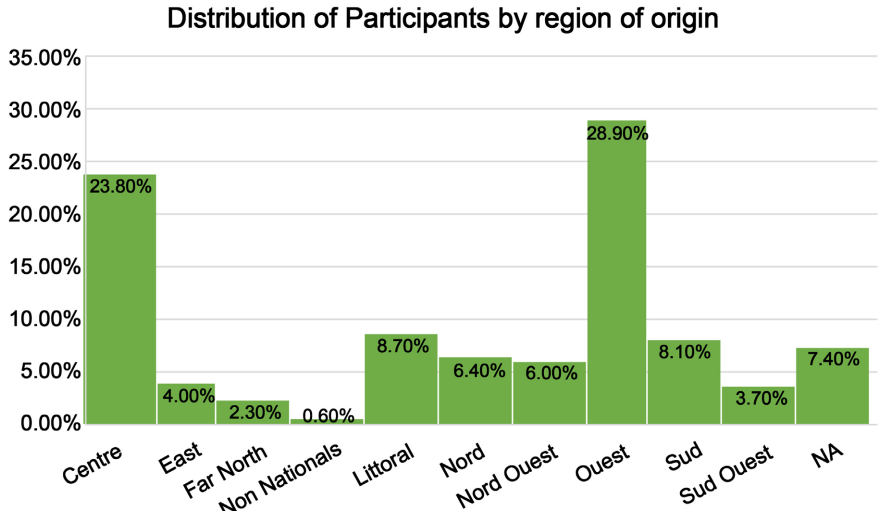

Figure 3. Distribution of participants by region of origin.

Figure 3 shows that most participants had as region of origin, West **86/298 (28.90%)** and Centre **71/298 (23.80%)**. **2/298 (0.6%)** were non-Cameroonian and the least represented region of origin was Far North **7/298 (2.3%)**.

According to Figure 4, most **192/298 (64.4%)** participants reported having visited the hospital facility.

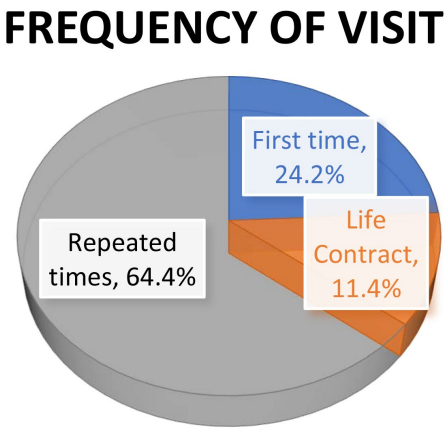

Figure 4. Frequency of hospital visits by study participants.

Level of Satisfaction

The majority of the study participants **(225/298, 76%)** were satisfied overall, and **74/298 (24%)** were uncertain/partially satisfied (Figure 5).

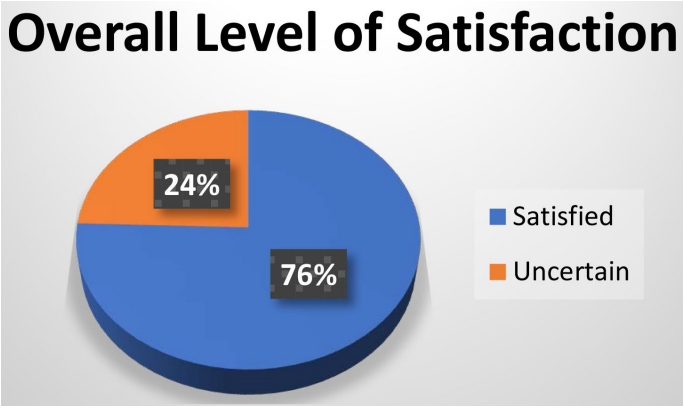

Figure 5. Overall level of satisfaction of study participants.

As shown in Table 2, Marital status (*P*-Value **= 0.01**), occupation (*P*-Value **<0.001),** unit (*P*-Value = **0.002**) were found to be statistically significant across the overall level of satisfaction

Table 3. Patients Overall Satisfaction with sociodemographic characteristics.

Variable	Cateogies	Satisfied n (%)	Partially Satisfied n (%)	*P*-Value
n		225	73	

Continued

Age (mean (SD))	<30	54 (88.5)	7 (11.4)	0.420
	30 - 49	111 (72.0)	43 (30.0)	
	≥50	60 (72.3)	23 (27.7)	
Sex	Female	143 (73.0)	53 (27.0)	0.312
	Male	82 (89.4)	20 (16.0)	
Residence	Urban	196 (75.7)	63 (24.3)	1.000
	Rural	29 (74.3)	10 (25.7)	
Level of Education	Graduate and more	152 (78.3)	42 (21.7)	0.181
	Illiterate	4 (100)	0 (0.0)	
	Primary	14 (63.6)	8 (36.4)	
	Secondary	55 (70.5)	23 (29.5)	
Occupation	Business	56 (60.2)	37 (39.8)	**<0.001**
	Farmer	8 (80.0)	2 (20.0)	
	Housewife	20 (64.5)	11 (35.6)	
	Retired	24 (88.9)	3 (11.1)	
	Service	67 (81.7)	15 (18.3)	
	Student	34 (87.2)	5 (12.8)	
	Unemployed	16 (100)	0 (0.0)	
Religion	Catholic	108 (79.4)	28 (20.6)	0.325
	Muslim	20 (80.0)	5 (20.0)	
	Others	31 (87.4)	15 (32.6)	
	Protestant	66 (72.5)	25 (27.5)	
Marital Status	Divorced	7 (46.7)	8 (53.3)	0.011
	Married	120 (73.1)	44 (26.9)	
	Single	80 (84.2)	15 (15.8)	
	Widow	18 (75.0)	6 (25.0)	
Time of Visit	First time	58 (80.6)	14 (19.4)	0.127
	Life contract	29 (85.2)	5 (14.8)	
	Repeated times	138 (71.9)	54 (28.1)	
Medical Insurance	Yes	68 (74.2)	23 (25.8)	0.951
	No	157 (75.8)	50 (24.2)	
Unit	Cardiology	21 (95.5)	1 (4.5)	0.002
	ENT	21 (58.3)	15 (41.7)	
	Gynecology and obs	29 (74.4)	10 (25.6)	
	Medicine	103 (77.4)	30 (22.6)	
	Ophtalmology	31 (81.6)	7 (14.6)	
	Stomatology	12 (92.3)	1 (7.7)	
	Surgery	7 (43.7)	9 (56.3)	

As shown in Table 3 above, patient satisfaction was highest among the age group less than 30 years (88.5%). The majority of those satisfied were males (89.4%) and had an urban area as their residence (75.7%). Concerning the variable level of education, those illiterates had the highest level of satisfaction (100%), followed by graduates with (78.3%). The satisfaction rate was highest among the unemployed and the retired, with 100% and 88.9%, respectively. For religion, the level of satisfaction was highest among the category of the religious variable (87.4%), followed by Muslim (80.0%). Concerning the variable marital status, single participants had the highest level of satisfaction (84.2%). For the time of visit, those who had a life contract with the clinic were found to be more satisfied as compared to others (85.2%). Those who visited the cardiology unit were more satisfied (95.5%), followed by those who visited the stomatology unit (82.3). The variable's occupation, marital status, and unit visited were found to be statistically significant with *p*-values of **<0.001**, **0.011,** and **0.002,** respectively.

Hospital characteristic of the study participants

Table 4. Descriptive statistics of components health care quality satisfaction (n = 298).

Independent Variable		Point Scale	Mean (SD)	Number	Percentage (%)
Clinic Cleanliness	Satisfied	14 - 20	17.0 (2.3)	279	**93.6%**
	Uncertain	7 - 13		19	6.4%
Clinic Reception	Satisfied	30 - 45	32.0 (6.4)	203	68.1%
	Uncertain	15 - 29		94	31.5%
	Unsatisfied	0 - 14		1	0.3%
Medical Exam	Satisfied	23 - 35	26.0 (5.5)	218	**73.2%**
	Uncertain	11 - 22		80	26.8%
Medical Infrastructure	Satisfied	23 - 35	24.8 (5.0)	192	64.4%
	Uncertain	11 - 22		106	35.6%
Doctor Service	Satisfied	18 - 25	21.4 (3.2)	248	**83.2%**
	Uncertain	9 - 17		49	16.4%
	Unsatisfied	0 - 8		1	0.3%
Nurse Services	Satisfied	14 - 20	16.0 (3.0)	228	76.5%
	Uncertain	7 - 13		69	23.2%
	Unsatisfied	0 - 6		1	0.3%
Service Delivery	Satisfied	21 - 30	22.1 (4.2)	185	62.1%
	Uncertain	11 - 20		113	37.9%
Staff Behaviour	Satisfied	18 - 25	20.1 (3.6)	205	68.8%
	Uncertain	9 - 17		93	31.2%
General Satisfaction	Satisfied	11 - 15	12.6 (1.7)	228	76.5%
	Uncertain	6 - 10		25	8.4%
	Unsatisfied	0 - 5		45	**15.1%**

Table 4 shows that 93.6% of participants were satisfied with the clinic's cleanliness, with a mean score of 17 points (±2) out of 20. The lowest score was 10 points while the highest was 20 points. Most of the participants were satisfied with the doctors' service (83.2%) with a mean score of 21.4 (3.2) out of 25, followed by the medical exam (73.2%) with a mean score of 26.0 (5.5) out of 25. The average score for assessing patient satisfaction consultation was 16 points (±3). The minimum level of satisfaction observed for variable service delivery was (62.1%) and medical infrastructure (64.4%). The variable general satisfaction had the highest level of dissatisfaction (15.1%) as compared to the other variables.

Inferential analysis summarizes the univariate logistic regression results as follows in Table 5. Age, marital status, medical infrastructure, hospital cleanliness, physical examination, hospitalization, physician services, nursing services, staff behavior, and service delivery were significantly associated with patient satisfaction at an independent significance level of 0.05. Patients over 50 years old, divorced or widowed, were satisfied. Also, those with satisfaction with medical infrastructure, hospital cleanliness, medical exams, clinic reception, doctor service, nurse service, staff behavior, and service delivery. Overall, they were satisfied.

Table 5. Univariate evaluation to discover determinants of affected person satisfaction.

Variable	Category	Coeffcient (B)	*P*-Value	Odds Ratio	Confidence Interval
Sex	*Female	0			
	Male	0.4184	0.159	0.658	0.3614 - 1.1625
Age	*<30	0			
	30 - 49	0.048	0.877	1.049	0.575 - 1.912
	≥50	1.115	**0.018****	0.328	0.130 - 0.828
Residence	*Rural	0			
	Urban	−0.070	0.859	0.932	0.442 - 2.107
Marital Status	*Divorced	0			
	Maried	−1.137	**0.038****	0.321	0.107 - 0.944
	Single	−1.808	**0.002****	0.164	0.050 - 0.520
	Widow	−1.232	0.078	0.292	0.070 - 1.124
Religion	*Catholic	0			
	Muslim	−0.036	0.947	0.964	0.300 - 2.630
	Others	0.624	0.100	1.866	0.875 - 3.9012
	Protestant	0.379	0.231	1.461	0.783 - 2.719
Level of Education	*Graduate and more	0			
	Illiterate	−14.280	0.984	−14.279	NA - 1.030
	Primary	0.727	0.127	0.727	0.780 - 5.170
	Secondary	0.414	0.172	0.414	0.827 - 2.729
Frequency of Clinic visit	*First time	0			
	Life Contract	−0.3365	0.554	0.714	0.214 - 2.072
	Repeated times	0.4831	0.153	1.621	0.853 - 3.241

Continued

Medical Insurance	*No	0			
	Yes	0.060	0.836	1.062	0.593 - 1.862
Medical Infrastructure Satisfaction	*Uncetain/Partial	0			
	Satisfied	3.775	**<0.001****	0.023	0.010 - 0.054
Clinic Cleanliness Satisfaction	*Uncetain/Partial	0			
	Satisfied	2.068	**<0.001****	0.126	0.046 - 0.347
Medical exam Satisfaction	*Uncetain/Partial	0			
	Satisfied	3.857	**<0.001****	0.021	0.010 - 0.045
Clinic Reception Satisfaction	* Unsatisfied	0			
	Satisfied	4.5877	**<0.001****	9.827	3.969 - 300.148
	Uncetain/Partial	19.245	**<0.001****	2.280	2.280 - 4.219
Doctor Service satisfatcion	*Satisfied	0			
	Uncertain/Partial	0.955	**0.004****	2.599	1.349 - 4.947
	Unsatisfied	15.892	0.985	7.983	5.945 - NA
Nurse Service Satisfaction	*Satisfied	0			
	Uncertain/Partial	1.911	**<0.001****	6.759	1.237 - 3.750
	Unsatisfied	−12.859	0.988	2.603e−06	NA - 3.471
Staff Behaviour Satisfaction	*Uncertain/Partial	0			
	Satisfied	2.817	**<0.001****	16.737	8.942 - 32.786
Service Delivery Satisfaction	*Uncertain/Partial	0			
	Satisfied	3.771	**<0.001****	43.452	19.093 - 117.849

This is a reference category. *Significant result at significance level 0.05.

Table 6. Multivariate binary analysis to find determinants of patient satisfaction—final logistic regression.

Variable	**Category**	**Coeffcient (B)**	***P*-Value**	**Odds Ratio**	**Confidence Interval**
Clinic Cleanliness Satisfaction	*Uncertain/Partial	0			
	Satisfied	0.935	**<0.001****	0.73	0.553 - 0.948
Medical Infrastructure Satisfaction	*Uncertain/Partial	0			
	Satisfied	1.971	**<0.001****	0.139	0.046 - 0.422
Staff Behaviour Satisfaction	*Uncertain/Partial	0			
	Satisfied	1.565	**<0.001****	0.209	0.075 - 0.586
Medical exam Satisfaction	*Uncertain/Partial	0			
	Satisfied	2.384	**<0.001****	0.092	0.033 - 0.261
Service Delivery Satisfaction	*Uncertain/Partial	0			
	Satisfied	3.526	**<0.001****	0.136	0.041 - 0.450

*Reference category. **Significant result at 0.05 level of significance.

We used the identified the variables that were significantly associated with over-

all satisfaction to get the final logistic regression, as summarized in Table 6. With multicollinearity check using the variance inflation factor, there was correlation between nurse service and service delivery; doctor service and service delivery; and clinic reception and service delivery. Hence, doctor service, nurse service and service delivery were also removed from the removed from the logistic regression. After controlling the variables, only, medical infrastructure, service delivery, staff behavior, medical exam, clinic cleanliness had significant association with overall patient satisfaction at 0.05 level of significance. Age was not significant in the final model so it was removed. Those that were satisfied on each of the above-mentioned significant variables were most likely to have an overall patient satisfaction.

The Nagelkerke r-squared for this logistic regression equation was 0.768, explaining **76.8%** of the variance in the data. Hosmer and Lemeshow's test (**chi-square = 3.51**, $P = 0.48$) shows that the model fits well. The data were classified correctly **91.6%** of the time.

4. Discussion

Patient satisfaction is acknowledged as a crucial factor in determining the caliber of patient care services provided by healthcare organizations. Ferreira et al. (2023) in Portugal reported that satisfaction with providers' attitudes toward these services is expected to impact prognosis and treatment outcome.

Determinants of satisfaction with health care services may be related to the behavior and attitude of healthcare workers that attend to patients' health care needs. This study aimed at assessing the level of patient satisfaction using a questionnaire detailing element of various aspects of a healthcare facility in a private clinic. The study's findings revealed that for a healthcare facility like the one used in the study, the overall patient satisfaction was 76%, and the components with the highest level of satisfaction were hospital cleanliness and doctor service. After performing a logistic regression, factors like age, marital status, medical infrastructure, hospital cleanliness, medical exam, clinic reception, doctors' service, nurses' service, staff behavior, and service delivery were significantly associated with patient satisfaction independently. After adjusting for all the variables, only medical infrastructure, service delivery, staff behavior, medical exams, and clinic cleanliness were maintained in the model, and the others were removed due to multicollinearity between nurse service, doctor service, and service delivery. The overall satisfaction in this study was 76%, and this finding is incomparable with that of Fufa & Negao (2019), with 27% in Ethiopia; this discrepancy could be explained by the fact that the two studies were carried out in different countries, and ours was in the capital city of Cameroon, where hospitals have higher standards as compared to health facilities in other towns.

Just like Mukhtar et al. (2013) in their study assessing patient satisfaction in Lahore, they observed that 94% of participants were satisfied with the doctors. Our study revealed similar findings, with 93% being satisfied with the doctor's service. This could be explained by the fact that doctors are well-trained and know

how to deal with patients correctly. On the contrary, Richardson et al. (1973) in their study found out that patient satisfaction was only at 54%. This disparity could be explained by the fact that their study was carried out in the 20th century while ours is very recent, and technology has improved in recent years. The finding is similar to a cross-sectional study conducted in Accra, Ghana, where Owusu et al. (2024) found that 90.9% were satisfied with the health service provided to them and maintained that these high overall satisfaction rates can be explained by the fact that the hospital is situated in an urbanized area, specifically in Ghana's most developed city, which has top-notch medical facilities, sophisticated diagnostic tools, top-tier hospitals, and specialized medical personnel. This is demonstrated in our study by a comparison of Accra with Yaoundé, Cameroon. Swastika Chandra et al. (2019) in India, in their study entitled "Factors Associated with Patient Satisfaction in Outpatient Department of Suva Sub-divisional Health Center", in 2018, they found out that the elderly (50+) people were more satisfied as compared to other age groups. Adomah-Afari and Buckman (2024) in Ghana obtained a 58.6% chance that respondents aged at least 47 years old would be satisfied with the quality of service compared to others. These findings were similar to ours and could be attributed to the fact that the elderly population is usually faced with a life-threatening diagnosis and has fewer expectations from their doctors. Also, from their younger times, there might have been a change and an important improvement in the health services overall. Therefore, the older age group may be satisfied due to the changes compared to their experience in hospitals. Just like Fufa and Negao (2019) in Ethiopia, our study did not reveal any association between the level of education and the level of patient satisfaction, even though one could say that education permits patients to make well-informed health decisions. An educated patient better understands what constitutes the right care and is not willing to settle for less service delivery. We could say that only 1.4% of our participants were illiterate, which could be a sort of bias in assessing the level of education as a factor influencing satisfaction. In contrast, Sharew et al. (2018) in their study in Ethiopia revealed that patients who had high educational status were significantly less likely (80%) to be satisfied compared with those who had no formal education. From a general socio-economic and demographic point of view, this study found that education level, ethnicity, religion, and marital status were not substantially connected with patient satisfaction; however, other studies like Bhatt et al. (2024) in Nepal, have reported significant relationships between these characteristics and patient satisfaction.

Our study revealed no association between sex and patient satisfaction, unlike Geberu et al. in Ethiopia in 2019, whose study revealed that female patients were 7 times more likely to be satisfied than male patients. This could be due to cultural variability in both studies. Kabatooro et al. (2016) in South Africa also assessed patient satisfaction and found out that marital status was not associated with level of satisfaction. Our study reveals that both married and single participants were significantly more satisfied as compared to the widowed and divorced partici-

pants. Kabatooro et al. (2016), similarly revealed from their study that there is no association between religion and the level of satisfaction. The findings from this study are consistent with those of our study, whereby religion was not associated with the overall patient satisfaction. This could be explained by the fact that everyone, regardless of their religion, foremost, seeks health care with the primordial goal of getting well before other components of satisfaction can come in.

In this study, female patients were more satisfied with health services (73%), but this satisfaction was not significant ($P = 0.312$). This argument is also supported by Raikhola (2025). Sharing the idea that there is no evidence to support the hypothesis that gender significantly influences patient satisfaction in private hospitals, although he suggests the findings might be pointing to a pattern that can be investigated with other variables or a bigger sample size. The findings of Babatola et al. (2022) in a Nigerian study showed that female patients in the study were significantly more satisfied with health services than male patients ($P = 0.01$). The same in the study by Ali Jadoo et al. (2020), where there was no statistically significant difference between genders ($P = 0.281$) and the purpose of the visit ($P = 0.110$) and satisfaction with health services.

At the level of patient education, 78.3% of patients graduated and more, but this result was not significant ($P = 0.181$). Elias et al. (2022) found that patients with no education and secondary education were more likely to be shorter than those with university education. Their negative relationship between education level and satisfaction level .75.7% of patients were living in urban areas, but this percentage was not significant in this study. These differences may be due to the diversity of ethnic group doctors in hospitals, patients' perspectives on the services provided by healthcare facilities, communication and decision-making skills of clinicians, and the technical quality of the facility, providers, and logistics items, without considering religious factors in healthcare services.

Olomi et al. (2017) in Tanzania described that service satisfaction of patients living in rural areas was higher (67.9 ± 6.7) than that of urban patients (56.2 ± 7.5). And they argue that the reason may be the number of patients living in rural areas. Areas are less aware of their rights to quality of care, and others may not differentiate quality care hospitals from poor care hospitals because they are not exposed to such a quality care environment. All this contradicts Taneja's assertion (2021) that socio-demographic education level can influence patients' expectations about the health care delivery system and also facilitate the search for different departments in the hospitals.

Hospital cleanliness was found to be one of the greatest determinants of patient satisfaction in our study; this is in accordance with Njong and Tchouapi (2020) in their study "Assessing User Satisfaction with the Quality of Healthcare Services in Cameroon" in 2020, which found out that hospital cleanliness was also a determinant of patient satisfaction. This could be explained by the fact that a clean environment is appealing and gives comfort; therefore, patients will obviously feel comfortable in a clean hospital. Our findings could also be similar to this study because it was carried out in the same country, but nevertheless other studies, even

in different contexts, like Zhou et al. (2022) *in China*, in their study "Factors Associated with Outpatient Satisfaction in Provincial Tertiary Hospitals in Nanchang, China: A Structural Equation Modeling Approach", report similar findings. In contrast, Bhattacharjya and Das (2014), in their study, detected that only 14.6% of respondents were satisfied with the toilets and that cleanliness, ventilation, sitting facilities, inquiry services, drinking water, and toilets.

The number of times patients had visited the hospital was not associated with patient satisfaction in our study. On the other hand, Chandra et al. (2019) in their study reported that those who visited the health facility more than three times were more likely to be fully satisfied than those who came for the first time. They explained their findings with the fact that continuity of care could increase patient level of satisfaction. Our findings could give us information about the consistency of the quality-of-service delivery, which could be the same for every patient, regardless of the number of times they visited the health facility.

Our study findings revealed most of the participants reported to be satisfied with the doctor's service, and the doctor's service was significantly associated with patient satisfaction. Manzoor et al. (2019), in their study entitled "Patient Satisfaction with Health Care Services: An Application of Physician's Behavior as a Moderator", reported that patient satisfaction with the physician's behavior tended to increase the level of patient satisfaction. This could be due to the fact that patients visit health facilities with the main aim of obtaining optimum care and a solution to their health condition. When the doctor is welcoming, understanding and able to provide the appropriate solution to their health condition, it is obvious that their level of satisfaction will be high. According to the study of Pawaskar and Velhal (2023), physicians were observed to be kind, listened to patients, gave them a chance to discuss their conditions and worries, offered prescription dosage and timing instructions, suggested follow-up care, and attended to patients' comfort throughout examinations. But regarding dissatisfaction of patients about doctors with service, we noted 0.3%; Chandra et al. (2019) in their research justified it by the fact that the participants concerned were probably coming for the first time for a consultation because the number of visits or the trust in the doctor increased patient satisfaction.

Nurses account for a large percentage of healthcare workers in many hospitals. This proportion could be as high as 70%; in Cameroon, there are health facilities with a maximum of 2 to 3 medical doctors, and the rest of the personnel are nurses. This is because of their important role in practice care. Nurses are the only set of health professionals that care for patients throughout their period of hospitalization. This makes interaction with nurses and the level of satisfaction with the care received from them an important factor in assessing patient satisfaction. Our study found out that 76.5% of the participants were satisfied with nurse service, and the logistic regression analysis identified nurse service to be significantly associated with patient satisfaction. Sharma et al. (2014), in their study in India in 2014, aiming to assess patient satisfaction about hospital services, also found out

that 65% of their study participants were satisfied with nurse services. In contrast, Md Ziaul Islam et al. (2008), in their study assessing patients' satisfaction with health care services provided at the outpatient department of Dhaka Medical College Hospital in 2009, reported that 41.06% were dissatisfied with respect to the nurse's willingness to listen with compassion and reassure the patients with their problems. In our study, 0.3% of participants were not satisfied with the nursing service. This discrepancy could be explained by the fact that Ziaul's study was carried out in 2009, and ours was carried out more than 10 years later, with a lot of adjustments and improvements in the nursing training. Sharew et al. (2018) in Ethiopia explained This disparity in satisfaction levels could result from variations in how satisfaction is operationalized and methods for assessing satisfaction levels.

Many complementary skills, such as empathy and compassion, have been taught to nurses; therefore, this could explain the increase in the satisfaction level with nurses' training. The contrast could also be as a result of different contexts. The variable general satisfaction had the highest level of dissatisfaction (15.1%) as compared to the other variables, but it was not significantly associated with patient satisfaction. This can be explained by the fact that the population studied was only a part of the patients attending the clinic, as demonstrated by Simanjuntak et al. (2025) in his study. This may suggest that understanding these differences in a comparative study of satisfaction between OPD patients and general patients is essential to identify gaps in service delivery and ensure that patients receive equitable care. Samy et al. (2015), in their study, which aimed at assessing patient satisfaction from medical service provided by the university outpatient clinic, Taif University in Saudi Arabia, reported that the clinic setup/infrastructure was associated with patient level of satisfaction. These findings are consistent with ours, with medical infrastructure being identified as a factor associated with overall patient satisfaction. Farah Ahmed et al. (2015) in Israel assessed OPD patient satisfaction with health care services in 2015 and reported that they were treated with respect by the registration staff. They agreed that the doctors were available for the consultation, listened to the problems attentively, they gave them an opportunity to find out about their illness, and believed that the doctor gave them sufficient time. Almost half of the patients agreed that the doctors performed physical examinations with respect after taking permission. More than 64.6% of patients believed that nurses and other personnel treated them with respect. These findings go in the same direction as ours, whereby 68.8% of participants reported being satisfied with the staff behavior. It was found to be a factor influencing the level of satisfaction of patients. Our study revealed that service delivery was strongly associated with patient satisfaction. There was multicollinearity between service delivery and doctor service, which led us to maintain service delivery in our model. Just like in our study, Ehsan Zarei et al. (2014) in Iran found out that service delivery was highly associated with patient satisfaction. This could be due to the fact that service delivery engines several important and sensitive aspects, such as laboratory exams, prescriptions, availability of drugs, and so on.

Implications of the Study

The results of this study have ramifications for research, practice, education, and policy. Specifically, it improves patient outcomes, which is a priority of government and funding agencies. Therefore, it will be of the utmost significance to policymakers and, more specifically, to healthcare professionals to provide quality care in meeting the needs of patients and families as a whole. To understand patients' perspectives deeply, future study areas should be considered at all levels of healthcare facilities. This study's findings are applicable globally and can serve as a starting point for researchers studying global health, especially in Cameroon and other developing countries. Patient experiences, expectations, and perceived requirements are used to evaluate patient satisfaction, which is a relative phenomenon. Patient satisfaction scores are influenced by both medical and nonmedical factors. One of the most significant quality measures in healthcare institutions is patient satisfaction. When patients feel that the quality of the care and services they receive in a healthcare setting is favorable, satisfactory, and meets their expectations, this is when satisfaction is attained. We anticipate the implementation of large-scale research and internal initiatives to improve quality in hospitals at various levels across the nation in the future. These efforts will enable a global and evolving understanding of patient satisfaction, thereby contributing to the ongoing improvement of health services at the national level.

5. Conclusion

Patient satisfaction is a state of pleasure or happiness experienced by patients. The aim of this cross-sectional study for one month was to determine the factors of satisfaction of patients aged at least 18 years in the outpatient department of a private clinic. We did it for one month. Analysis was done using Spearman's correlation, chi-square tests, and binary univariate and multivariate logistic regression using a 0.05 significance level to check for any association between the independent and dependent variables. The majority of the study participants (225/298, 76%) were satisfied overall, and 74/298 (24%) were uncertain/partially satisfied. Marital status (P-Value = 0.01), occupation (P-Value < 0.001), and units (P-Value = 0.002) were found to be statistically significant in the overall level of satisfaction. Patient satisfaction was highest among the age group less than 30 years (88.5%). The minimum level of satisfaction was observed in the variable service delivery (62.1%) and medical infrastructure (64.4%). Age, marital status, medical infrastructure, hospital cleanliness, medical exam, clinic reception, doctor service, nurse service, staff behavior, and service delivery had a significant association with patient satisfaction at the 0.05 level of significance independently. Those over 50 years old, those divorced or widowed, and those with satisfaction with medical infrastructure, hospital cleanliness, medical exams, clinic reception, doctor service, nurse service, staff behavior, and service delivery were more likely to have full overall satisfaction. With the multicollinearity check using the variance inflation factor, there was a correlation between nurse service and service delivery;

hence, doctor service, nurse service, and service delivery were also removed from the logistic regression. After controlling the variables, only medical infrastructure, service delivery, staff behavior, medical exams, and clinic cleanliness had a significant association with overall patient satisfaction at the 0.05 level of significance. It was concluded that healthcare characteristics affect patient satisfaction; therefore, close monitoring should be done by management.

Limitations

The main limitations of the study could be attributed to the lack of evaluation of patient satisfaction among younger patients. Additionally, some study participants chose not to reply, which made it challenging to generalize our study's findings to all users of outpatient services.

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Data Availability Statement

All data generated or analyzed during this study are included in this published article.

Context of the Study

The study was carried out as part of the end of MBA training in hospital administration at JSS HAER.

Conflicts of Interest

The authors declare that they have no competing interests.

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Appendix

Study of Patients Satisfaction in Outpatient Department in Private Clinic

N°……**Questionnaire**

Dear respondents, please take a few minutes to complete this questionnaire. The objective of the study is to evaluate the level of satisfaction of the patients received on an outpatient Department at the Clinic "Les Promoteurs de la Bonne Santé". Thanks!

NB: In front of each proposed variable, please fill or tick the only box corresponding to your opinion.

I-Sociodemographic and economic characteristics of patients attending Out Patient Department in "Les Promoteurs de la Bonne Santé"

Variables	Characteristics
1-Mention your Age (at less 18 years)	……..years
2-Sex	Male
	Female
3-Residence	Rural
	Urban
4-Literacy	Illiterate
	Primary
	Secondary
	Graduate and above
5-Occupation	Service
	Business
	Housewife
	Student
	Retired
	Unemployed
	Farmer
6-Religion	Muslim
	Protestant
	Catholic
	Others
7-Marital statut	Maried
	Single
	Divorced
	widow

8-Origine (Cameroon region or country)	
Continued	
9-How long have you patronized the services of this clinic?	First time Repeat time Lifetime contract
10-Medical insurance	Yes No
11-OPD visit	Surgery Medecine Gynecology ENT Ophtalmology Stomatology

II-Response according of the satisfaction

II-1 About the cleanliness of the clinic

Variables	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
12-The hospital entrances and corridors were clean and tidy.					
13-Well dressed and groomed staff					
14-Modern and up-to-date equipment					
15-The examination and waiting rooms were clean.					

II-2 About the clinic reception

Variables	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
16-Customers can find out information and register for examination by phone, the website of the hospital conveniently					
17-Receptionist was helpful and concerned about patient complaint					
18-Assess for registration, payment, examination, testing, screening					
19-Diagrams, signs showing directions are clear and easy to understand and easy to find					
20-The pathways in the hospital are flat and easy to move around					
21-Visual appeal of physical facilities					
22-Assess the waiting time for registration procedures					
23-Drinking water facility					
24-Washing hands water facility					

NB: in front of each proposed variable, please tick the only box corresponding to your opinion.

II-3 About the quality of the medical infrastructure and facilities

Variables	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
25-Having clean, cool lounge/lounge in the summer; Airtight and warm in winter					
26-The waiting room has enough seats for the patients and relatives and is in good use					
27-The waiting room has full fan (air conditioner) in regular operation					
28-The waiting room has facilities to help patients feel comfortable such as television, pictures, leaflets, drinking water...					
29-The toilets are convenient, in good use, clean					
30-The environment campus surrounding is green, clean and beautiful					
31-Medical examination and treatment area ensures, security, order and prevents theft for people					

II-4 About the medical examination and treatment

Variables	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
32-Medical staffs welcome and guide patients to examination make affable procedures					
33-The waiting period before admission to the doctor was appropriate					
34-Assess the time to be examined and advised by a doctor					
35-The examination room temperature was moderate and calm					
36-The examination rooms were private.					
37-Assess waiting time for testing and screening					
38-Assessing the waiting time for receiving results of tests and screenings					

NB: in front of each proposed variable, please tick the only box corresponding to your opinion.

II-5 About Doctor services

Variables	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
39-The doctor receives the patient with cheerfully and treats kindly and respectfully					

40-The doctor introduce himself and gets to know the patient to facilitate communication between them
Continued
41-Adequacy of consultation duration to listen to patient's complaints and answer all his questions
42-Doctor Perceived concern and explained the case to the patient.
43-The doctor speaks to the patient in words that fit the patient's language and understanding.

II-6 About nurse services

Variables	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
44-The nurse introduce herself and gets to know the patient to facilitate communication between them.					
45-The nurse treats patients in a humane and respectful way					
46-The nurse administered medicines, conducted tests at appropriate times and explained everything she did to the patient.					
47-The nurse responded quickly when needed					

NB: in front of each proposed variable, please tick the only box corresponding to your opinion.

II-7 About the behavior, professional competence of medical and service staffs

Variables	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
48-Doctors and nurses have the polite words, attitudes and communication					
49-Service staff (nurse, guard, accountant...) have the right words, attitudes and communication					
50-Be respected by medical staff, treat fairly,					
51-Be care and help, empathy, encouragement					
52-Professional qualifications of doctors and nurses meet expectations					

II-8 About the outcome of service delivery

Variables	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
53-The results of the examination met the expectation of patients					

54-Invoices, receipts, prescriptions and medical examination results are provided and explained in full, clear, transparent
Continued
55-Assess the level of trust in the quality of health services
56-Assess the level of satisfaction with the price of medical services
57-Convenience to reach in pharmacist
58-Convenience to reach investigate site

II-9 About the general satisfaction

Variables	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
59-Satisfaction without patient service					
60-Wish the clinic for future visit					
61-Would like to recommend this clinic for a relative					

NB: in front of each proposed variable, please tick the only box corresponding to your opinion.