Typical Profile of the Most Satisfied Patient in Physiotherapy in Kinshasa Hospitals

Philippe Lubanzadio-Mengi[1, 2, *], Vitalie Faoro[1], Jennifer Foucart[2], Jean Muzembo[3], Véronique Feipel[4], Serge Mayaka[5]

[1]Laboratory of cardiorespiratory Physiology, Faculty of Motor Sciences, Free University of Brussels

[2]Reaserch Unit in Psycho-physiology of Motor Skills, Faculty of Motor Sciences, Free University of Brussels

[3]Section of Motor Sciences and Rehabilitation (SMR), Higher Institut of Medical Technics (ISTM/Kinshasa), University of Kinshasa

[4]Fonctional Anatomy Laboratory, Faculty of Motor Sciences, Free University of Brussels

[5]Health Public School, University of Kinshasa

[*]**Corresponding Author**: Philippe Lubanzadio-Mengi, Faculty of Motor Sciences, Free University of Brussels, Campus Erasme, Route de Lennik 808, CP640 1070 Bruxelles, Tel: +3225553553, E-mail: philippelubanzadio@hotmail.com

Abstract

Introduction: Patient satisfaction is crucial, allowing patients to assess their care process. Satisfaction serves as a measure of the performance of healthcare professionals and healthcare facilities.

This study aims to outline the typical profile of a satisfied patient in order to optimize the quality of care.

Method: The Monnin and Perneger questionnaire was administered to 906 subjects undergoing physiotherapy treatment in Kinshasa hospitals to evaluate their level of satisfaction. Among them, 70 were invited for a semi-structured interview for qualitative analysis. The statistical approach involved ANOVA and Principal Component Analysis (PCA) to determine the typical profile of a satisfied patient. Qualitative analysis provided insight into the interpretation of the quantitative analysis results.

Results: The mean Global Satisfaction Index (GSI) was 3.12 ± 0.46, with 96% of patients satisfied with their physiotherapy treatment. ANOVA showed that GSI was influenced by five variables: level of education, insurance status, employment status, chronicity of the condition, and type of treatment received. In addition to variables such as number of sessions, presence of pain, and gender, the seven factors extracted from PCA confirmed the variables identified in ANOVA.

Conclusion: The typical profile of the most satisfied patient in Kinshasa resembles that of a university-educated individual, employed in a managerial position, insured, suffering from a chronic condition, receiving a combination of individual and group therapy, and attending university hospitals. Healthcare service managers could utilize these satisfaction determinants outlined in the profile to optimize the quality of care.

Keywords: Satisfaction; Well-Being; Quality Of Care; Physiotherapy; Insurance; Chronic Conditions; Healthcare Facilities

Introduction

Healthcare institutions are paying increasing attention to patient satisfaction or service beneficiaries [1-2]. According to Vander Heyden [3], patient satisfaction constitutes a crucial indicator of the quality of care provided and a validated indicator of a healthcare system's effectiveness. Patient satisfaction results from a cognitive and emotional evaluation of services' structures, procedures, and outcomes [4,5]. The patient judges the technical and practical aspects of a treatment or procedure and the reception, waiting time, information provided, staff availability, cost, and environment [4, 6, 7].Medical care and medications are generally available in Kinshasa but are often expensive and sometimes of poor quality. Only patients who can afford it will receive treatment. Access to physiotherapy treatment thus seems to be reserved for patients who have means or those who attend religious institutions where care is inexpensive [8]. As a result, the average rate of healthcare service utilization is estimated at 0.15 consultations per inhabitant per year [9].

Moreover, in Kinshasa, as elsewhere in the DRC, measuring patient satisfaction remains a central and relevant issue since patients contribute to over 50% of healthcare service operating budgets through direct payment due to low public subsidies. Most healthcare costs patients bear constitute a heavy burden, making them increasingly demanding and discerning about the quality of care received [10]. While quality assessment programs have long been practiced in developed countries, they still need to be more boldly implemented in developing countries [1]. In France, the HAS (High Health Authority) regularly requires professional practices to be evaluated among physiotherapists to improve patient care continuously. The most well-known method for this evaluation is the patient satisfaction questionnaire [11]. Patient satisfaction surveys using questionnaires are only just beginning to appear in Congolese hospitals in order to understand patients' expectations and perceptions so as to correct imperfections, improve the quality of care, guide health policies and ultimately strengthen the health system.

To our knowledge, there have not yet been any studies of patients treated in a physiotherapy department in the DRC.It is therefore in this context that a satisfaction survey of Kinshasa patients treated in physiotherapy was initiated in the hospitals and rehabilitation centres of the province of Kinshasa. In an environment where resources are limited and public health needs are high, this study is both timely and justified. We chose the Monnin and Perneger questionnaire [12], a psychometric tool developed to assess the degree of satisfaction of patients exclusively undergoing physiotherapy treatment. The objective of this study is to evaluate patient satisfaction by calculating the Global Satisfaction Index (GSI) from the Monnin and Perneger questionnaire on the one hand and, on the other hand, to outline the typical profile of the most satisfied patient by comparing the GSI with socio-demographic data using ANOVA and PCA (Principal Component Analysis). This typical profile will provide the determinants of satisfaction on which healthcare managers could focus to improve the quality of care.

Methods

Methodology

Similar to the study conducted by Kahumbera and Duranton [13], a mixed methodology combining quantitative and qualitative data collection was employed. This data collection followed the sequential explanatory mixed-methods design proposed by Creswell and Clark [14], which begins with the collection of quantitative data, followed by qualitative data collection to enrich, contextualize, and nuance the quantitative results. As stated by El Achhab et al. [15], priority is given to quantitative data.

Quantitative Part

Population

The study population consisted of patients from Kinshasa undergoing physiotherapy treatment who consented to participate in this survey.

Quantitative data were collected using an accidental sampling technique.The choice of accidental sampling is justified in our study by the fact that the survey is only interested in patients who are or go to hospital for physiotherapy treatment. The advantage of this accidental technique is that we saved time by going directly to target patients in a physiotherapy department. The investigators visited the physiotherapy departments of various hospitals, and any patient they met who agreed to take part in the study was selected, regardless of the number of participants.

As far as the care structures were concerned, all health care structures offering a physiotherapy service were eligible (reasoned choice). The notion of reasoned choice is explained by the fact that our study was only interested in health care facilities with a physiotherapy service. The statistics and annual reports of the Kinshasa provincial health division enabled us to categorise hospitals and rehabilitation centres with a physiotherapy service as follows. To ensure the representativeness of our sample, we carefully selected healthcare facilities across the healthcare pyramid of the DRC, excluding all facilities that did not have a physiotherapy service. The healthcare pyramid defined by the Ministry of Health (DRC) categorizes healthcare facilities according to their capacity and specialization:

Primary Reference Hospitals HGR1: General Reference Hospitals of Health Zones.

Secondary Reference Hospitals HGR2: hospitals with a slightly higher technical platform than HGRs in the HS.

Tertiary reference hospitals: provincial reference hospitals, university clinics HU3, and non-university tertiary level clinics HNU3.

Rehabilitation Centers CRV: the physical disability rehabilitation center CRHP, rehabilitation centers or structures within the "Bondeko Villages" network, and private rehabilitation centers.

Questionnaire completion was conducted face-to-face (95%) and self-administered (5%) for patients who did not have time to complete the questionnaire on-site). Moutte [16] favors face-to-face surveys to enlighten respondents about potential comprehension difficulties.

Out of the 1041 returned questionnaires, 906 were considered eligible after poorly or partially filled questionnaires were eliminated, resulting in a validity rate of 87%.

Material

Kinshasa patients responded to two questionnaires. The first was a socio-demographic questionnaire, and the second was the Monnin and Perneger questionnaire [12], specifically designed for patients who have undergone physiotherapy treatment. This questionnaire consists of 14 items and assesses four dimensions of patient satisfaction: admission, treatment, logistics, and overall evaluation. The questionnaire uses a 5-point Likert scale (very satisfied, somewhat satisfied, neither satisfied nor dissatisfied, rather dissatisfied, and very dissatisfied).

The Global Satisfaction Index is the arithmetic mean of the summation of different patient satisfaction items.

GSI > 2.5 indicates that the subject is satisfied.

Statistical Analysis

After encoding in an Excel file, data from the questionnaires were imported for analysis into IBM SPSS Statistics software (version 25). Classical descriptive statistical tests, Analysis of Variance (ANOVA), and Principal Component Analysis (PCA) were conducted to evaluate the influence of socio-demographic variables on the GSI.

PCA was conducted in 3 main steps:

1. Assumption validation or verification of 3 indices, which are a prerequisite for all variables to meet PCA conditions: correlation matrix (between 0 and 1), Kaiser-Meyer-Olkins (KMO) index > 0.5, and Bartlett's sphericity test with a p-value <0.005.

2. Selection of the method for extracting principal factors or components.

3. Interpretation and labeling of factors.

Qualitative Section

Data Collection for Qualitative Analysis

Our qualitative study used the framework analysis method for thematic or qualitative content analysis. As per Gale [17], our objective was to elucidate themes and models that provide clear insights into patient satisfaction in physiotherapy.

The sample for the qualitative component was drawn from the population of 906 patients surveyed in the quantitative phase. During this phase, investigators selected a group of interested and relevant patients for semi-structured interviews, demonstrating motivation and particular interest in the satisfaction survey. These patients were attuned to the organizational aspects and care processes.

The sole criterion for selection was agreeing to participate in the semi-structured interview. This selected group of patients ensured credibility in the statements and, thus, quality information collection. Following the approach of El Achhab [15], Mayaka [18], and Kahombera [13], participants were selected based on their motivation or interest in the theme under study.

Seventy (70) patients consented to interviews, qualifying for participation in the qualitative component. However, conducting 40 semi-structured interviews, each lasting a minimum of 30 minutes, with these patients (23 men and 17 women) allowed us to achieve both semantic and theoretical saturation thresholds.

Each interview was recorded using a voice recorder. The interview guide covered the following themes related to patient satisfaction:

-Reason for consultation

-Ease or difficulty in obtaining an appointment

-Number of prescribed sessions, number of sessions attended

-Perspective on reception, administrative staff, waiting area

-Perspective on physiotherapy care: initial contact, attentiveness to patient concerns, understanding of the condition, explanation of the condition, treatment plan, consideration of pain

-Competence of the physiotherapist and quality of care

-Logistics: equipment and materials

-Empathy and support

-Communication or information provided to the patient

-Evaluation of overall satisfaction level

Data Analysis

Data analysis and collection were conducted manually, following the steps outlined in Ritchie and Spencer's analytical framework [19].

Each recorded interview was transcribed verbatim. Subsequently, during the familiarization phase, the transcribed text was read and re-read to grasp the content or emerging themes. In the coding phase, short phrases or text excerpts were labeled or coded according to thematic areas related to patient satisfaction. Developing an analytical framework involved grouping or categorizing different themes or sub-themes into a matrix. Finally, there were stages of mapping and interpretation, which involved reviewing all themes to identify trends and relate them to the objective of our research, aiming to provide meaning and a comprehensive understanding of the qualitative data as a whole.

This process facilitated the construction of the following analytical framework, which structured the presentation of our results.

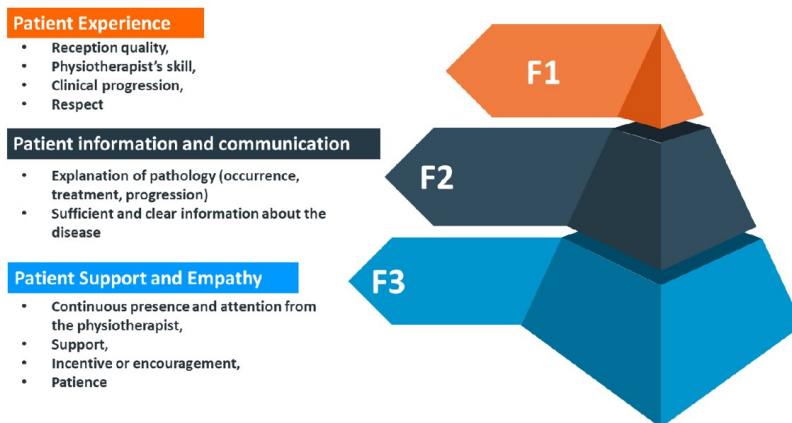The following figure illustrates the analytical framework that structured the presentation of our results.

Figure 1: Kinshasa patient satisfaction framework

F1 : Patient Experience (reception quality, physiotherapist's skill, clinical progression, respect).

F2 :Patient information and communication (explanation of pathology, occurrence, treatment, progression).

F3 : Patient Support and Empathy (continuous presence and attention from the physiotherapist, support, incentive or encouragement, patience).

Results

I. Descriptive Statistics

Socio-Demographic Data

The 906 surveyed patients were all Congolese, comprising 37% males and 63% females. Their average age was 38 (0-86). Most had completed secondary education (30.2%) and university education (27.3%).

Our sample consisted of 59% unemployed and 41% employed individuals, including 7.9% executives, 19.6% employees, and 13.5% self-employed individuals. Most of these patients were outpatients receiving ambulatory care through individual sessions, group sessions, or both. It is also noteworthy that the majority of these patients were uninsured (63.2%).

Monnin and Perneger Questionnaire (PSQ)

Table 1 presents the Global Satisfaction Index (IGS) as the primary quantitative variable, along with the sample size, mean score, standard deviation (SD), and extremes for each clinical category (HGR1, HGR2, HU3, HNU3, CRV).

Table 1: Sample size, mean score, standard-deviation and extremums of GSI

HGR1 (Primary General Referral Hospital), HGR2 (Secondary General Referral Hospital), HU3 (Tertiary University Hospital), HNU3 (Tertiary Non-University Hospital), and CRV (Rehabilitation Center).

GLOBAL SATISFACTION INDEX					
CategorieH/C	Size	Mean	S-D	Minimum	Maximum
HGR1	177	3,19	0,46	1,67	4,17
HGR2	74	3,19	0,43	2,17	4,17
HU3	89	3,22	0,44	1,75	4,08
HNU3	34	3,11	0,61	1,5	4,17
CRV	532	3,06	0,44	1,75	4,33
Total	**906**	**3,12**	**0,46**	**1,50**	**4,33**

The mean Global Satisfaction Index of Patients is 3.12 ± 0.46, with a minimum of 1.50 and a maximum of 4.33. The highest satisfaction index is observed in the University Hospital (HU3) category, with patients displaying an IGS of 3.22 ± 0.44.

Of the 906 patients in the sample, 874 are satisfied (96%), while 32 are dissatisfied (4%).
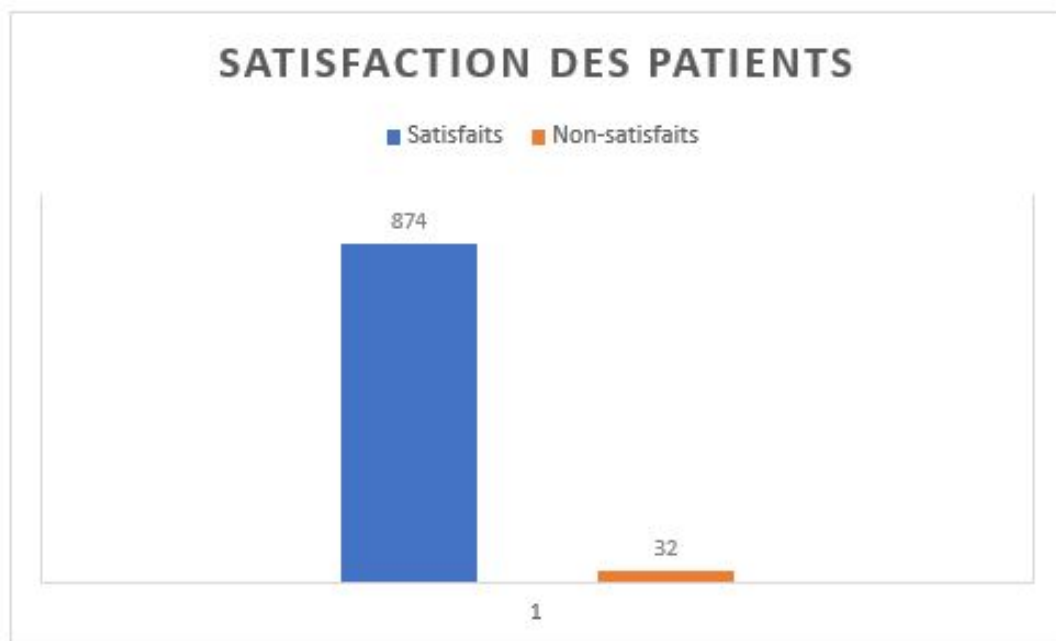

Figure 2: Percentage of satisfied (96%) et unsatisfied (4%) patients

II. Inferential Analysis

Analysis of Variance (ANOVA) on the GSI

A one-way analysis of variance allowed us to identify a statistical relationship between the GSI and socio-demographic data.

Table 2: Sociodemografic Variables statistically linked to GSI

Qualitatives Variables		Mean	S-D	p-Value
Education Level	Primaire	3,015	0,385	0,019*
	Secondaire	3,103	0,489	
	Universitaire	3,168	0,478	
	Pas d'étude	3,138	0,437	
Insurance	Oui	3,166	0,468	0,013*
	Non	3,088	0,448	
Work status	Cadre	3,230	0,481	0,016*
	Employé	3,168	0,489	
	Indépendant	3,044	0,484	
	Chômage	3,101	0,431	
Type of Chronicity	Aigu	3,156	0,463	0,015*
	Subaigu	3,078	0,454	
	Chronique	3,183	0,437	
Type of treatment	Individuel	3,090	0,454	0,000***
	De Groupe	3,218	0,496	
	Indiv/Groupe	3,301	0,392	

The ANOVA revealed a statistically significant relationship between the GSI and the following variables: Education level (university-educated patients are more satisfied than others), Insurance (patients with insurance are more satisfied than those without), Employment status (executives are more satisfied than employees), type of chronicity (chronic patients are more satisfied than acute or subacute patients)

Furthermore, a highly statistically significant relationship was observed between the GSI and the type of treatment (patients combining individual and group treatment are the most satisfied).

III. Principal Component Analysis (PCA)

PCA is based on the specific variance of variables and allows for extracting a minimal number of factors that explain most of the specific variance. In this study, 17 variables, including the IGS, underwent PCA.

The analysis of the correlation matrix revealed a determinant of 0.037 (different from 0.0 and 1.0), a Kaiser-Meyer-Olkin (KMO) index of 0.579 (greater than 0.5), and a highly significant Bartlett's test ($p < 0.001$). All three conditions of the correlation matrix were met for PCA to be applied to our sample (see the annexed table).

The seven principal components extracted from PCA alone encapsulate 63% of the information in the 17 original variables, thereby ensuring minimal loss of information [20]. The seven main factors from our analysis are listed in the framed below.

1.C1 (Patient Level): Patient's Age, Respondent's Age, Education Level, Presence of Pain

2.C2 (Treatment Location): Clinical Category, Treatment Location

3.C3 (Reimbursement): Reimbursement, Insurance

4.C4 (Gender): Sex

5.C5 (Subscription / Health Insurance): Pathology Chronicity, Type of Insurance

6.C6 (Treatment Satisfaction): Type of Treatment, Satisfaction Index

7.C7 (Treatment Duration / Status): Type of Patient (Inpatient/Outpatient), Number of Sessions

These seven components extracted from the PCA represent the explanatory factors or determinants of patient satisfaction. The variables in bold confirm the results obtained from the ANOVA.

IV. Qualitative Analysis

Forty patients, comprising 23 men (57.5%) and 17 women (42.5%), with an average age of 45 (ranging from 15 to 65), constituted the population that enabled the attainment of both semantic and theoretical thresholds.

The qualitative patient satisfaction analysis results are presented as a synthesis of trends across three significant themes constituting our analytical framework. The findings are supported by selected and coded verbatim quotes (Pt: patient, M/F: male or female).

Theme 1: Patient Experience [21, 22, 23, 4, 24]

Adult patients appreciated the welcoming atmosphere, the competence of the physiotherapists, the positive outcomes reflected in symptom improvement, the pleasant environment, and the adherence to appointments.

Parents or guardians of children noted the positive evolution of the condition or disability, functional recovery in daily activities, encouragement from physiotherapists, and adherence to appointments.

-«*The reception is excellent. They do their job very well, and it shows in the results. » (PtM10)*

-«*I am satisfied with my care by the physiotherapist; it is good and effective. I feel a significant improvement compared to the beginning of the illness. The pain decreases as the sessions progress. I could say that I am benefiting from an ideal treatment. » (PtF15)*

-«*At first, my child could not walk alone, but thanks to physiotherapy, the child started to stand with support on a chair and then take a few steps. I can hold and make him walk, which was not the case before. The progress is significant. The child is starting to gain good autonomy. » (PtM5)*

It should be noted that some patients expressed negative feelings about the waiting time for care (due to the large number of impoverished patients) and the distance to travel to the religious health center because they lack the means (high cost) or insurance to attend the private or public clinic near their home, the outdated equipment, and the incorrect diagnosis (see PtM7). Patients criticized the shortcomings of the healthcare system in the DRC.

Theme 2: Patient information and communication [25, 26].

Patients all agreed on the good explanations received from physiotherapists on the onset, evolution and treatment of the pathology. They all welcomed a real treatment plan with short- and medium-term objectives. Finally, they were all happy to have received answers to their questions.

-" *The physiotherapists gave me a good explanation of my symptoms, and told me that my problem was in my neck and not in my shoulder or arm, as was thought at Mama Yemo Hospital. So the origin of the problem was in my neck, then it spread to my shoulder and arm, right down to my fingers. The physiotherapist told me that there are nerves in the neck that are pinched or crushed by the neck muscles; that's what's bothering me, causing this pain in the shoulder and arm with loss of feeling".* PtM7

-" *I'm the child's uncle. I'm happy because we've found a good team of physiotherapists who are solving our child's disability. We're very satisfied because we know enough about the child's illness. The physiotherapists are encouraging us not to give up rehabilitation, especially as the results are becoming visible.* PtM10

Theme 3: Patient Support and Empathy

Patients feel nurtured as part of a family in their care because the physiotherapists are always present and attentive in every phase of the condition's progression. Physiotherapists express their support through encouragement and patience despite delays due to the challenging transportation situation in Kinshasa or rain and despite payment delays.

-"*I feel very supported because he treats me as if I were a member of his family. Sometimes, he treats me even if I am late paying session fees. He gives me advice to alleviate the pain. Moreover, sometimes, when I feel unwell or depressed, he always supports me with his advice and encouragement. May the Lord keep him and bring him protection and blessings.*" PtF15

Discussion

This study aimed to assess patient satisfaction, a validated indicator of healthcare quality and system performance, while delineating the profile of the most satisfied patient. A mixed-methods approach was adopted, combining quantitative analysis based on the Monnin and Perneger questionnaire with qualitative analysis through semi-structured interviews.

Patient Satisfaction

The findings of this study indicate that 96% of patients are satisfied with their physiotherapy treatment, with an IGS score > 2.5. The mean IGS is 3.12 ± 0.40. Devreux [27] obtained an 85% satisfaction rate among patients undergoing physiotherapy in Jeddah hospitals.

The high percentage of patient satisfaction appears to contradict the stark socio-economic reality and overlooks the context of poverty and deficiency in which the Congolese people live. This high satisfaction rate is simply a statistical reality resulting from using a psychometric tool hardly adapted to Congolese social life. Indeed, quantitative results show that patients are satisfied regardless of their employment status (affluent or impoverished patients) or whether they have insurance.

The qualitative analysis, aided by the analytical framework (patient perception, information and communication, patient support, and empathy), nuanced these quantitative results by highlighting elements of patient satisfaction.

Regarding impoverished patients, we note that a significant portion of our population frequents healthcare facilities that guarantee medical care even to the most impoverished individuals, akin to the Bondeko villages or other charitable organizations in Kinshasa. Therefore, the satisfaction of this patient category could be explained by the chance to receive rehabilitation despite their limited means.

"*It is thanks to this Catholic center that my son's disability is being addressed. I do not work and would never have had the means to pay for such extensive treatment.*" PtM40

Another segment of our population consists of affluent patients whose satisfaction could be attributed to their subscription to health insurance, enabling them to access quality healthcare services with reputable specialists without financial constraints.

"The insurance I obtained through my job allows me to access healthcare services even abroad." PtM23

Furthermore, patients are satisfied with the progress and positive evolution of their disabilities or pathologies, underscoring the competence of physiotherapists in Kinshasa.

"After my stroke, I found myself in a wheelchair. Thanks to the concerted efforts of my physiotherapist, I have regained the use of my arms and legs." PtM33

Our study comprises 90% outpatient patients. According to the literature, outpatient patients often exhibit high satisfaction. This is evident in a Brussels study by Lancel et al., which found an overall satisfaction rate of 80% among outpatient patients [28].

The qualitative analysis also allowed patients to express dissatisfaction with the public hospital system, which no longer meets the needs of an impoverished population unable to afford quality care. This situation is corroborated by Wembonyama [9], who highlights the role of confessional healthcare structures in accommodating these impoverished patients. Patients are also dissatisfied with the waiting time (due to the plethora of impoverished patients), lack of health insurance, antiquated equipment, and sometimes incorrect diagnoses.

This survey was conducted against a weakened healthcare system due to inadequate government funding or healthcare system failures in the DRC [8]. Since individuals predominantly bear healthcare costs, access to care is limited for approximately 70% of Congolese living in extreme poverty and facing severe health problems [29]. The latest World Bank report showed that 62% of the Congolese population lives on less than $2.15 daily (World Bank, 2022). The healthcare service utilization rate is 0.15 consultations per year per individual [9].

This context helps contextualize the high satisfaction rate obtained in this study, which surveyed patients, most of whom felt privileged to be cared for in a healthcare system that excludes a large portion of the population. Improvements in their functional status further contribute to satisfaction.

*In the final analysis, the unfavorable socio-economic situation in which the Congolese live did not suggest such a high level of patient satisfaction. In quantitative terms, we believe this was due to the fact that the Monnin and Perneger questionnaire did not correspond to congolese social reality. The results of the qualitative analysis supported the quantitative results and, above all, shed some light on patient satisfaction. The qualitative analysis revealed some negative feelings on the part of patients.

Profile of the Most Satisfied Kinshasa Patient

The profile of the most satisfied patient was studied using ANOVA results on IGS and enriched by PCA results.

ANOVA reveals that the level of education, insurance, employment status, pathology chronicity, and treatment type influence IGS. These elements constitute the typical profile of a satisfied patient in our study:

-Patient attending the HU3 category (university hospital): The highly scientific aspect with professors, researchers, and technological investment in specific university clinics attracts and provides convincing reasons to satisfy patients [4].

-Patient with a university education: Patients with a certain level of education adopt a thoughtful attitude towards the care provided. They ask questions and seek information about the process and progress of their treatment. At the end of this process, the patient may or may not adhere to the proposed treatment.

According to Oliver [30], patient satisfaction could result from both cognitive and affective processes. Beyond the affective approach common to all patients, the cognitive approach concerns patients with a certain level of education, whose judgment of the therapeutic process would be more objective based on careful consideration. University studies provide patients with analytical skills and a more analytical framework for interpreting information.

Furthermore, the literature has shown that the household head's educational level is a significant determinant of healthcare service utilization [29,31].

-Patient with an executive status at work: A good social status provides the opportunity to subscribe to health coverage synonymous with quality medical care and/or not limited by financial constraints.

In the DRC, healthcare costs are predominantly borne by individuals rather than collective financing systems, as in developed countries [32]. In this situation, corporate executives fare well.

-Patient with health insurance: Insurance guarantees access to all healthcare services without restriction. Many patients lack access to care due to lack means and health coverage.

According to a study by Bashi [29], although still limited in number, health mutuals are favorable factors for healthcare service utilization by members.

Defourny [33] bitterly notes that the percentage of the covered population in Africa barely reaches 1% despite the continued development of mutual movements.

Patients with a Chronic condition: Patients with chronic illnesses become allies of healthcare personnel. They actively participate in the care process and are better informed about the treatment process or short—to medium-term goals. According to Le Bot [34], this observation should encourage physicians and caregivers to adopt a specific approach to chronic patients by teaching them to manage their lives with pain or disability, especially since long-term prescriptions have a high cost. Our study comprises 14% of chronic patients.

-and especially patients benefiting from a combination of individual and group treatment. Combining these two therapeutic approaches allows patients to benefit from personalized guidance specific to their pathology and a different didactic approach with several other patients in a group dynamic, mutual motivation, and encouragement. This combination, beneficial for functional recovery, was widely praised in our study. However, it is essential to incorporate patient adherence or voluntary engagement for such an approach, as some patients may be satisfied with individual treatment alone, which remains as comfortable as it is effective. This is the case in the study by Malandj [8], which considers treatment individualization as a significant determinant of patient satisfaction, mainly when it facilitates communication of the therapeutic approach and allows active patient participation in decision-making regarding care. Conversely, Cedraschi and Genevay [35] argue in favor of group management for subacute or chronic low back pain: sharing experiences, putting into perspective the multiplicity of reactions that facilitate a shift from one's point of view, and mobilizing various resources of group members. Similarly, Fernandez et al. [23] have shown that patient friendship can accelerate satisfaction and service quality without stress or service failure.

PCA

In addition to employment status, the results of PCA confirmed all variables related to IGS found in ANOVA. PCA also highlighted the presence of pain, gender, and number of sessions as determinants of patient satisfaction.

In conclusion, the typical profile of the most satisfied patient in Kinshasa resembles an individual who attends tertiary university hospitals, holds a university degree, occupies an executive position at work, has health insurance coverage, suffers from a chronic

condition, and undergoes individual and group treatments. This profile is further enriched by the determinants or explanatory factors of patient satisfaction identified by PCA: the presence of pain, gender, and the number of physiotherapy sessions.

Study Limitations

-The number of outpatients was ten times greater than the number of inpatients. Inpatient adherence was more difficult to obtain from the interviewers. This could be explained by the patient's condition, and the difficulty of finding the time to answer the satisfaction questionnaire with all the care that follows one another during the day.

-For a city of 17 million inhabitants, our study population of 906 patients remains very small. The power of a study is high if the number of participants is large. Nevertheless, each care facility visited received at least 4 visits from a pair of investigators over a 2-week period. Data collection was stopped when there were no new participants.

-A telephone survey using the hospital's patient database would have made it possible to reach a larger population and possibly ensure a random selection of the population. In our case, however, the sampling technique used is justified.

These limitations do not impact the validity of all the results obtained in our study, which used an innovative methodological approach, with justified accidental sampling. Indeed, the results obtained on patient satisfaction are supported by the literature and can be generalized to the various provinces of the DRC and to developing countries, particularly in Africa.

Conclusion

The findings of this survey reveal that 96% of Kinshasa patients in our sample are satisfied with their physiotherapy care. However, this high satisfaction rate does not accurately reflect the actual sentiments of most patients, who are immersed in a dire socio-economic situation and a deficient healthcare system. Qualitative analysis has provided a nuanced and contextualized interpretation of these results. The outpatient status of the patient, attendance at charitable healthcare facilities (for impoverished patients), possession of health insurance coverage (for affluent patients), and particularly the positive evolution of the disability or pathology are the main determinants explaining this high percentage of patient satisfaction.

The typical profile of the most satisfied Kinshasa patient is a university-educated individual, holding an executive position in their job, possessing health insurance, suffering from a chronic condition, and undergoing a combination of individual and group treatment in a tertiary university clinic. This profile is also influenced by determinants such as the presence of pain, gender, and the number of physiotherapy sessions. This profile should enable healthcare policymakers to adopt preventive measures to improve patient care.

The dual quantitative analysis combining ANOVA and PCA has allowed for a precise definition of the typical profile of the satisfied patient. In light of our survey, combining individual and group treatment appears to be a better approach to satisfying the patient. The perception of the quality of care inevitably depends on the socio-economic level.

Practical Implications

-The perception of care quality depends on the socio-economic level.

-Our study confirmed and advocated for the combination of individual and group treatment, as seen in neurological rehabilitation or back school programs (for low back pain), where an individual approach in the cabin is always followed by group treatment in a large room.

-The dual approach in quantitative analysis has proven beneficial in two respects:

1) PCA has highlighted synthetic factors composed of socio-demographic variables, entirely overlooked by ANOVA, which prove to be determinants of patient satisfaction, even though PCA represents only 63% of the information in all variables.

2) The precise (arithmetic) definition of the typical profile is the sum of the results of ANOVA and PCA.

-Western psychometric tools are hardly adapted to African social realities and may produce quantitative results that are entirely out of line with the socio-economic situation of poor countries.

Future Directions

The typical patient profile outlined in this study only encompasses some categories of the Kinshasa population. Healthcare service managers will need to work on expanding it to cover all categories of the Kinshasa population.

Appendix

Socio-Demographic Data

The table below represents the count and percentage of different socio-demographic variables:

Table3: Percentage of qualitative variables

Variables	Effectif (N=906)	Pourcentage (%)
Gender:-Men	337	37
-Women	569	63
Congolese Nationality	906	100
Education Level :- Primary	126	14
- Secondary	274	30,2
-University	248	27,3
-No study	258	26
Work Status :-Cadres	72	7,9
-Employees	178	19,6
-Indépendants	122	13,5
-Unemployeeds	534	58,9
Chronicity :-Acute	265	31,5
-Subacute	495	54,6
-Chronic	126	13,9
Patients :-Interns	90	9,93
-Externs	816	90,07
Therapy :-Individual	768	84,8
-Group	60	6,6
-Individual + Group therapy	78	8,6
Insurance :-Yes	333	36,8
-No	573	63,2

II. Principal Components Analysis procedure

1) Correlation Matrix

Matrice de corrélation	
Déterminant	0,037
Indice KMO	0,579
Test de sphéricité de Bartlett	0,000

2) Method for Extracting Factors or Principal Components

Variance totale expliquée		
Valeurs initiales propres		
Composantes	**Total**	**% cumulé**
1	2,559	15,054
2	2,110	27,467
3	1,496	36,265
4	1,351	44,212
5	1,102	50,592
6	1,087	57,086
7	1,013	63,048
8	0,954	68,659
9	0,901	73,959
17	0,201	100,00

Observing the table of explained variance above and analyzing the initial eigenvalues of each of our 17 variables, we note that only 7 obtain an eigenvalue > 1. These variables condense 63% of the information in all 17 base variables. PCA allowed us to reduce or factorize our 17 base variables into seven principal components or factors for a more straightforward analysis.

3) Interpretation and Labeling Of Factors

Variables de base	Composantes Principales						
	1	2	3	4	5	6	7
Age du patient	0,825						
Age du répondant	0,743						
Etudes	0,642						
Douleurs	0,590						
Lieu de traitement		0,912					
Catégorie Clinique		0,908					
Remboursement			0,946				
Assurance			0,785				
Sexe				0,812			
Patient aigu/chronique					0,803		

Type d'assurance					0,617		
Type de traitement						0,760	
Indice de Satisfaction						0,728	
Nombre de séances							0,767
Patient interne/externe							0,590

This matrix presents the seven principal components retained. Each column has the weight or coefficient of base variables whose value is greater than or equal to 0.5. These variables and the principal components (factors) they form constitute the main determinants of patient satisfaction.

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Declaration of Interests

Authors declare that they have no intrest in the conduct of this study.

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