Patients' Profiles and Their Satisfaction with the Quality of Health Services Offered in Primary Healthcare Centers in Anambra State, Nigeria

Chidimma Obiejesi[1], Ronald Ferrer[1], Ebere Muoghalu[2]*

[1]Graduate School of Allied Health Sciences, University of the Visayas, Cebu City, Philippines
[2]PEP / Field Presence, World Health Organization FCT Field Office, Federal Capital Territory, Nigeria

Abstract

Background: The primary healthcare center (PHC) is the initial point of contact for individuals seeking healthcare within their community. Its purpose is to deliver comprehensive health services that cater to patients' unique needs and expectations. However, patient satisfaction from primary health centers has received negligible attention. This study aimed to evaluate patient satisfaction levels with healthcare services provided by primary health centers in Anambra State, Nigeria. **Methods and Materials:** We conducted a cross-sectional study in twelve primary health centers with a descriptive design employing Chi-square, Cramér's V, and linear regression to assess the relationship between patient profile and their satisfaction. Servqual dimensions were used to investigate whether a statistically significant correlation exists between patient profile and patient satisfaction level. **Result:** A total of 385 individuals responded to the survey. The responsiveness dimension of the Servqual dimension had the lowest mean score among the five dimensions assessed. No significant correlations were found between patient satisfaction levels and patient profiles: sex, age, marital status, highest educational attainment, and average monthly income. **Conclusion:** When assessed with the Servqual dimension, patients' satisfaction with the quality of health services offered in the PHCs in Anambra state indicated a suboptimal level of satisfaction. Enhancements in infrastructure and healthcare worker training are essential to elevating the quality of health services provided.

Keywords: Patient satisfaction; Servqual dimensions; Patient profiles; Primary health center; Health services

Introduction

The Primary Healthcare Center (PHC) serves as the first point of contact for individuals' healthcare needs within a community. This concept emphasizes a shared responsibility for addressing healthcare needs and their determinants, involving not only the government but also the community as a whole. There is a significant need to comprehend the importance of patient satisfaction in providing high-quality health services [1]. The degree of patient satisfaction is a reliable measure of service quality, reflecting the patient's verdict towards their experiences while using the health services. According to Peprah and Atarah [1], healthcare service quality is a metric that helps identify areas for improvement. Patient satisfaction levels provide actionable insights into the strengths and weaknesses of healthcare services, informing quality improvement initiatives.

When patients are not satisfied with the level of care provided in PHCs, they tend to discontinue these services and potentially seek other healthcare providers such as traditional health givers, secondary, tertiary, and private health facilities. This may result in low turnout in the PHCs, which can lead to delays or interruptions in treatment plans. In some cases, individuals may stop seeking healthcare services, which may lead to poor health outcomes. The patients' reliance on alternative health services suggests dissatisfaction with their experiences in PHCs. The quality of health services rendered

in healthcare centers has been confirmed to affect patients' continued use of health services [2].

Nigeria's healthcare system undoubtedly faces significant challenges, including inadequate funding and severe staff shortages. The country allocates 3.5% to 6.24% of its total budget to health financing, indicating insufficient expenditure on health [3]. Additionally, according to Global Health Workforce [4], Nigeria is one of 36 African countries facing a critical shortage of health workers. For example, the nurse-to-patient ratio is alarmingly low, standing at 1:1160 – far below the WHO-recommended standard of 1:5 [5]. Geographical and distributional inequalities also plague the system, with rural areas facing severe service limitations [6]. These issues collectively undermine the quality and accessibility of healthcare services in Nigeria.

The primary healthcare system is severely underdeveloped, with only a few facilities providing adequate services [7-8]. As a result, patients' expectations and needs are often ignored, unlike in developed countries, where patient satisfaction is a top priority [9]. Nigerian patients are not consulted or involved in designing and implementing healthcare services; instead, they are merely recipients of care, without a voice. This is particularly concerning, as those who can afford better care often seek it elsewhere, leaving the under-resourced public healthcare system to struggle. Thus, this study examines the profiles of patients and their satisfaction levels in utilizing

services provided by PHCs in Anambra State, Nigeria, from April to July 2024, and assesses potential correlations between patients' demographic profiles and the level of satisfaction.

Methods and Materials

This study employed a descriptive-correlational research design, specifically a cross-sectional survey, which involved collecting data from a large group of individuals at a single point in time [10]. The descriptive design was used to analyze the frequency and percentage of the patient profiles, including age, sex, marital status, average monthly income, and highest educational attainment [10]. Additionally, this study design assessed and described patient satisfaction levels regarding the quality of healthcare services provided in 12 PHCs in Anambra State. The correlational aspect of the study examined the relationships between patient profiles and patient satisfaction levels. The study variables were categorized into independent variables (patient profiles) and dependent variables (patient satisfaction level). The variables were observed and measured without manipulation, preserving a natural setting. This study is based on two theoretical frameworks: the SERVQUAL Model, also known as the Gap Model, and the Disconfirmation Expectancy Theory, also referred to as the Expectation Theory [11]. The SERVQUAL Model, developed by Parasuraman et al. [12] in 1985, assesses customer satisfaction across five dimensions: reliability, responsiveness, assurance, tangibles, and empathy. The Disconfirmation Expectancy Theory, introduced by Richard Oliver in 1977, explains consumer satisfaction and post-purchase behavior [13]. It posits that customer satisfaction is determined by the gap between their expectations and the actual performance of a product or service.

Tangibles refer to the physical aspects, such as facilities, equipment, and staff appearance [11]. Reliability involves delivering services consistently and accurately, significantly impacting service quality and patient satisfaction [11]. Responsiveness is the eagerness to attend to customers and provide timely services [12]. Assurance consists of the technical knowledge and professionalism of the health worker, as well as their capacity to instill confidence and trustworthiness [11]. Finally, the dimension of empathy entails paying individualized attention to customers [11]. The SERVQUAL Patient Satisfaction Questionnaire was adapted for healthcare to measure patients' satisfaction with the services they received and had two parts. The first part collected personal information about the patients, such as age, sex, marital status, education, and income. The second part asked patients about their satisfaction with the healthcare services, using a 5-point scale: 5 – Very satisfied, 4 – Satisfied, 3 – Neither satisfied nor dissatisfied, 2 – Dissatisfied, 1– Very dissatisfied.

2.1 Research Area
Anambra State, Nigeria, in the southeastern part of the country, served as the study location. Primary Health Center covers an estimated population of 10,000 to 20,000 individuals in the state. It is meant to be in every ward of a local government area [14]. The state has approximately 150 or more public primary health centers, with Anambra South having the highest number of primary health centers.

2.2 Respondents
Before collecting data, ethical approval was obtained from the University of the Visayas Research Board. All respondents volunteered to participate in the study and signed an informed consent form. The study respondents were patients (18 years and above) of selected primary health centers in Anambra State who attended the health center from April to July 2024. The sample size is 385, where the Cochran's formula was used for sample size calculation, at a 95% confidence interval and a 5% margin of error. Of 385 distributed questionnaires, 380 were completed, yielding a 98.7% response rate. The data collected from the respondents for this research work was solely used for research purposes.

2.3 Sampling Design.
Quota sampling was used to select 385 respondents from 12 primary health centers. This technique ensured a representative sample that reflected the diverse characteristics of the population.

2.4 Statistical Data Analysis
This study used various statistical methods to analyze patient data. Frequency distribution and percentages were used to describe patient profiles and mean scores. Standard deviation was used to measure patient satisfaction levels. The chi-square test, Cramér's V, and linear regression analysis were used to examine relationships between variables and identify significant correlations. The assumptions of the chi-square, Cramér's V, and linear regression tests were checked before they were carried out.

Results

Table 1 presents the demographic distribution of respondents using PHCs. It shows that more females (61.1%) use PHCs than males. Respondents aged 35-64 (55.5%) are more likely to use PHCs, older patients (16.8%) have low turnout, possibly due to access barriers or previous dissatisfaction. Married individuals (49.7%) constitute the majority of other civil status groups, while widows/widowers (1.1%) were the smallest group.

The table below illustrates patient satisfaction levels across various SERVQUAL dimensions: the respondents' mean scores were reported. The mean scores and the factor mean were calculated on a five-point scale and coded as follows: Mean Score 0.01 - 1.00 = "Strongly Dissatisfied," Mean Score 1.01 - 2.00 = "Dissatisfied," Mean Score 2.01 - 3.00 = "neither satisfied nor dissatisfied," Mean Score 3.01-4.00 = "Satisfied," and Mean Score 4.01 -5.00 = "Strongly Satisfied."

Chi-square and Cramér's V tests were used to answer the research question and test the hypothesis. The null hypothesis posits that "no significant association exists between patients' characteristics and satisfaction levels." This hypothesis is rejected if the chi-square test yields significance values below the 0.05 threshold, indicating a statistically significant relationship at a 95% confidence level.

Table 1. Demographic Distribution of Respondents

Characteristics	Frequency	Percentage
Sex		
Male	148	38.9
Female	232	61.1
Age		
18 – 34	105	27.6
35 – 64	211	55.5
65+	64	16.8
Marital Status		
Married	189	49.7
Single	175	46.1
Divorced	3	0.8
Widow/Widower	4	1.1
Separated	9	2.3
Average Monthly Income		
$12.6	5	1.3
$13 -$32	111	29.2
$32 -$6	193	50.8
$64 - $158	71	18.7
Level of Education		
Primary Education	96	25.3
Secondary Education	148	38.9
Higher Education	122	32.1
Post-Graduate Education	14	3.7

Table 2. Service Quality in the Five Dimensions of Servqual

Statements Tangibility	Mean Score	Standard Deviation	Descriptive Interpretation
The primary health center has modern service facilities	2.35	0.84	Neither satisfied/dissatisfied
The primary health center has a clean and tidy environment	3.06	0.98	Satisfied
The health workers are well-dressed	3.39	0.82	Satisfied
The appearance of the environment showed that it is a health center.	3.29	0.91	Satisfied
Factor mean	**3.02**	**0.89**	**Satisfied**
Reliability			
The primary health center can provide the promised services	2.72	0.99	Neither dissatisfied/satisfied
The health workers have a strong sense of responsibility and provide timely services	2.60	0.96	Neither dissatisfied/satisfied
The health workers have excellent skills	2.62	0.97	Neither dissatisfied/satisfied
The health personnel can record the condition accurately	2.60	0.97	Neither dissatisfied/satisfied
The primary health center should inform the patient of the exact time of medical treatment	2.71	0.98	Neither dissatisfied/satisfied
Factor mean	**2.65**	**0.90**	**Neither dissatisfied/satisfied**
Responsiveness			
Healthcare personnel can provide services on time	2.61	0.96	Neither dissatisfied/Satisfied
Health workers can handle patients' complaints quickly	2.52	0.93	Neither dissatisfied/Satisfied
Results of laboratory tests can be obtained quickly	2.59	0.96	Neither dissatisfied/Satisfied
Health workers are always available	2.73	0.99	Neither dissatisfied/Satisfied
Factor Mean	**2.61**	**0.96**	**Neither dissatisfied/Satisfied**
Assurance			
Healthcare personnel are trustworthy	2.90	1.00	Neither dissatisfied/Satisfied
Patients feel safe when they see a nurse/healthcare provider	3.26	0.91	Satisfied
Primary health centers attach great importance to protecting patients' privacy	3.05	0.98	Satisfied
Health workers keep patients informed of treatment plans and medication	2.69	0.98	Neither dissatisfied/Satisfied
Factor Mean	**2.98**	**0.97**	**Neither dissatisfied/Satisfied**
Empathy			
Primary healthcare workers treat patients equally	2.61	0.97	Neither dissatisfied/Satisfied
Primary health centers always adhere to the interests of the patients	2.55	0.94	Neither dissatisfied/Satisfied
Healthcare workers do not accept bribes	3.21	0.94	Satisfied
Healthcare providers can accurately understand the needs of the patients	2.86	1.02	Neither dissatisfied/Satisfied
Patients are able to get along with primary health personnel during visits to the primary health centers	3.25	0.93	Satisfied
Factor Mean	**2.89**	**0.96**	**Neither dissatisfied/Satisfied**

Table 3. Relationship between Respondents' Profiles and Their Level of Satisfaction

Variable	Dimension	Chi-square	p-value	Cramér's V
Age	Tangibility	3.184	0.247	0.074
Sex	Tangibility	2.083	0.371	0.060
Educational attainment	Tangibility	2.091	0.403	0.064
Average monthly income	Tangibility	1.831	0.611	0.092
Marital Status	Tangibility	2.461	0.421	0.060
Age	Responsiveness	4.045	0.117	0.081
Sex	Responsiveness	2.391	0.383	0.071
Educational attainment	Responsiveness	2.111	0.223	0.061
Average monthly income	Responsiveness	2.031	0.603	0.091
Marital Status	Responsiveness	2.781	0.401	0.064
Age	Reliability	4.104	0.147	0.060
Sex	Reliability	3.024	0.465	0.713
Educational attainment	Reliability	2.182	0.423	0.071
Average monthly income	Reliability	1.172	0.722	0.082
Marital Status	Reliability	3.511	0.331	0.734
Age	Assurance	3.281	0.371	0.074
Sex	Assurance	2.803	0.651	0.069
Educational attainment	Assurance	2.191	0.513	0.063
Average monthly income	Assurance	2.331	0.530	0.083
Marital Status	Assurance	2.570	0.422	0.074
Age	Empathy	4.284	0.457	0.079
Sex	Empathy	2.874	0.409	0.061
Educational attainment	Empathy	2.891	0.421	0.066
Average monthly income	Empathy	2.331	0.821	0.095
Marital Status	Empathy	2.515	0.612	0.074

Analyzing the respondents' opinions using chi-square and Cramér's V's value revealed that the patient profile does not have a significant influence on the perceived quality of healthcare services provided by primary health centers in Anambra State. The dependent variable was chosen because the question is an indicator of patient satisfaction; this question also focuses on understanding patient satisfaction. It also reflects the patients' experience with the health workers' communication and guidance, which is a critical aspect of patient-provider interaction and can significantly impact patient satisfaction. The question also aligns with the five dimensions of the Servqual and is also measurable and quantifiable for linear regression analysis [12].

Table 4. Regression Results

Factors	Beta	95% CI	P-value
Higher level education	0.005	-0.038, 0.042	0.922
Marital status	-0.016	-0.030, 0.022	0.768
Average monthly income	0.080	-0.003, 0.020	0.136
Sex	0.058	-0.042, 0.155	0.263
Age	-0.102	-0.007, 0.0001	0.054

Note: Dependent Variable = I usually receive a satisfactory consultation, explanation, and guidance from nurses in the healthcare centers, R^2 = 0.020, F-stat = 1.493. P-Value of F-Stat. = 0.191.

From Table 4, the unstandardized beta (B) for level of education is 0.002, meaning that as education increases, satisfaction slightly increases, but the effect is negligible. The standardized beta (0.005) reinforces that education has almost no predictive power in explaining satisfaction. Similarly, marital status has negative beta coefficients (B=-0.004, β= -0.016), implying that being in a different marital category slightly decreases satisfaction, but the effect is very small and statistically insignificant (p=0.768). Average monthly income has a positive but weak relationship with satisfaction

(β=0.009, β=0.080), suggesting that higher income may lead to slightly better satisfaction, though the effect is not significant (p=0.136). Gender has a small positive impact (β=0.056, β=0.058), meaning males or females may have slightly different experiences with nurse consultations, but the effect is weak and not statistically meaningful (p=0.263). Age has a negative effect on satisfaction (β = −0.003, β=−0.102), suggesting that as people get older, they tend to be slightly less satisfied with nurse consultations. This effect is more substantial than the other variables, and the p-value (p=0.054) is close to significance, indicating that age may be a relevant factor in predicting satisfaction. Overall, all confidence intervals cross the null; hence, none of the independent variables show a strong or statistically significant effect on patients' satisfaction.

Discussion

This study assessed patient satisfaction levels with healthcare services provided by primary health centers in Anambra State, Nigeria. Our study indicates that patients' satisfaction with the quality of health services provided at the 12 included PHCs in Anambra State, as assessed using the SERVQUAL dimensions, was suboptimal. The study's respondents were predominantly female, married, and within 35-64 years age bracket. Most had secondary education or less (64.2%), which may influence their healthcare choices [15]. Those with higher education were less represented, which could be due to better access to quality healthcare. The average monthly income was 51,000-100,000 naira ($32-$63).

The study revealed a notable disparity in patients' satisfaction levels with various aspects of primary healthcare services. While patients expressed satisfaction with the physical facilities (tangibility) of primary health centers, their feelings towards other service dimensions (reliability, responsiveness, assurance, and empathy) were neutral. Satisfaction with specific aspects of tangibility, such as the cleanliness and tidiness of the environment, the appearance of the health center, and the attire of health workers, is encouraging. Nevertheless, there is room for improvement. For instance, providing pipe-borne water, a reliable power supply, adequate infectious waste management, and functional toilet facilities could further enhance the overall satisfaction with the tangibility dimension. Similarly, studies [16-17] reported high satisfaction rates with the cleanliness of hospital environments. This finding aligns with the Servqual model, which emphasizes the importance of tangible aspects in shaping patient satisfaction [17]. Satisfaction with tangibility is consistent with previous studies, such as Peprah and Atarah's [1], which found that patients were highly satisfied with the tangible aspects of healthcare services. These research findings underscore the importance of a clean and tidy environment and have consistently shown that a clean environment positively correlates with patient satisfaction [17].

The study findings on the reliability dimensions of primary healthcare services in Nigeria reveal concerning trends. Respondents' neutral sentiments towards reliability suggest inconsistent experiences, with some services meeting expectations while others fall short. Studies [16, 18] reported low scores in the reliability dimension compared to other evaluated dimensions when patient satisfaction and service quality were assessed in a tertiary hospital in Southeast Nigeria, suggesting that inconsistent experiences with healthcare services are a common issue in various health facilities. The inconsistency in reliability scores may be due to factors such as variability in staff performance, inadequate resources and equipment, lack of training for health workers, and poor compensation and benefits for staff, leading to issues like long waiting times, communication gaps, and poor referral links, which have been cited as major contributors to low reliability scores in previous studies [16, 19-20]. The inability of PHCs to deliver expected services has far-reaching implications. It could result in adverse health consequences, higher morbidity rates, and increased mortality, which calls for improving the quality of health services.

The responsiveness dimension is a critical aspect of healthcare services, and the study's findings highlight the need for improvement. Nigeria's severe shortage of healthcare workers, with a nurse-to-patient ratio significantly lower than the WHO-recommended standard (5), contributes significantly to the neutral sentiments and potential dissatisfaction expressed by respondents. Additional challenges, such as a lack of staff accommodation, functional laboratories, and equipment, contribute to poor health outcomes, delayed treatments, and misdiagnosis. With other studies pointing at similar cases [1, 21] of low responsiveness scores with patient satisfaction, the most sustainable thing to do to improve the situation is to address the shortage of healthcare workers, improve staff accommodation, and provide functional laboratories and equipment by the government and healthcare administrators to enhance the responsiveness dimension. Additionally, efforts should be made to improve communication gaps, waiting times, and referral links by training the staff of PHCs on the importance of good communication.

This study revealed a neutral sentiment among respondents regarding the "assurance" dimension of primary healthcare services, indicating unmet expectations and potential erosion of trust. The findings suggest that patients may harbor concerns about healthcare provider competence, privacy, confidentiality, and inadequate information sharing about treatment plans and medications. The results underscore the need for targeted improvements in primary healthcare services to foster patient trust, ensure privacy and confidentiality, and enhance overall satisfaction, as professional conduct exhibited by healthcare providers impressed patients [19] positively. The low assurance dimension scores, when compared to the results of studies [19, 21], suggest inconsistent experiences with healthcare services as a common issue that needs urgent

attention. To address this, periodic training for health workers, better staffing, and a conducive work environment could enhance competence, motivation, and patient care, ultimately leading to better job satisfaction, as previously suggested [19].

The empathy dimension of primary healthcare services received low satisfaction ratings, primarily due to inadequate facilities, unfavorable working conditions, and insufficient training for healthcare workers. These issues hinder patient-centered care, erode trust, strain patient-provider relationships, and compromise care quality. The low satisfaction rating of the empathy dimension by respondents aligns with the studies by Shariff et al. [22] and Zun et al. [20], which reported that service quality fell short of expectations, particularly in the empathy dimension, as measured by the SERVQUAL model. This underscores the need for targeted improvements in Nigeria's healthcare system. It is crucial to prioritize patient needs and train healthcare workers to demonstrate concern and provide client-centered care, as studies by Kashif et al. [23] and Papanikolaou and Zygaris [24] highlighted empathy as a vital dimension in healthcare service quality. To enhance empathy in healthcare, emphasis should be placed on training healthcare workers, collecting patient feedback, supporting staff well-being, and fostering a culture of patient-centered care. This approach can lead to better patient outcomes and satisfaction.

Furthermore, patient demographics (age, marital status, income, sex, and education) did not significantly impact satisfaction levels. Similar to previous findings, this study found no statistically significant correlation between patients' age, sex, educational levels, average monthly income, marital status, and level of satisfaction [26–31]. Importantly, the regression model explained only a small proportion of the variance in patient satisfaction ($R^2=0.02$), suggesting that sociodemographic factors alone may not be strong predictors of patient satisfaction.

Previous studies have also highlighted inadequate equipment and facilities as major challenges in Nigeria's healthcare system, negatively impacting patient satisfaction. This was evident in assessing patient satisfaction with emergency care services at a University Teaching Hospital in South-west Nigeria [32]. Studies have consistently shown that patient satisfaction is influenced by communication, accessibility, and hospital environment [21, 33]. To improve patient satisfaction, healthcare providers must prioritize environmental cleanliness, patient privacy, communication, and interpersonal skills [21]. Addressing these issues is crucial to enhancing patient satisfaction and healthcare outcomes in Nigeria.

Our study has some limitations. The findings are limited by quota sampling, which may introduce bias due to its non-random nature. Furthermore, the choice of sampling method was necessitated by the difficulty in accessing data for all

patients attending PHCs in Anambra State, which further underscores the lack of generalizability of these results. Finally, while p-values were used to assess statistical significance in patient satisfaction, they should be interpreted with caution, as they may reflect the certainty or practical relevance of observed differences.

Conclusion

In conclusion, patient satisfaction was assessed using the SERVQUAL dimensions (reliability, assurance, tangibility, empathy, and responsiveness). Patient demographics, including age, marital status, sex, education, and income, did not significantly influence overall patient satisfaction. However, there may be a correlation between patient satisfaction and the quality of health services offered in primary health centers. Based on the respondents' comparison of their actual experiences with their pre-existing expectations before visiting the facilities, there is a pressing need to deliver precise, reliable, high-quality services. This can be achieved by training staff, improving infrastructure and systems through government funding and donations, and addressing staffing shortages by employing more health workers and providing accommodation for 24-hour availability. The government, through the Anambra State Primary Healthcare Development Agency and Local Government Authority, is responsible for implementing these solutions.

References
1. Peprah A. A and Atarah B. A. Assessing Patients' satisfaction using SERVQUAL model: A case of Sunyani Regional Hospital Ghana. IJBSR. 2014 4(2), 133-143 https://doi.org/10.18533/ijbsr.v4i2.404
2. Afolabi A. Comparison of Client Satisfaction with Quality of Care Among Nhis Enrollees in Private and Public Primary Health Facilities in Ogun State, Nigeria. Public Health. 2018;
3. Okechukwu C. Trends and challenges of health care financing in Nigeria. Int J Med Case Rep Rev. 2023; 2(5):1-12. doi: 10.59657/2837-8172.brs.23.03
4. Global Health Workforce. Health workers for all and all for health workers: the human resource for health crisis. Geneva: Global Health Workforce; 2013.
5. Nurses verification row, sign of troubled health system. Punch Newspaper. 2024 Feb 15. Available from:https://punchng.com/nurses-verification-row-sign-of-troubled-health-system/#google_vignette
6. Hafiz D, Abubakar U. Shortages and inequalities in geographic distribution of healthcare workers in Katsina State, Nigeria. Gasau Int J Manage Soc Sci. 2023; 6(2):95-105. Available from: https://gijmss.com.ng/index.php/gijmss/article/view/165
7. Chinawa J. M. Factors militating against effective implementation of primary health care (PHC) system in Nigeria. ATMPH. 2015. 4 (8), 5–9. DOI:10.4103/1755-6783.156701
8. Olusoji D. Perception and Patient Satisfaction: A case study of Olabisi Onabanjo University Hospital Sagamu, Nigeria. 2009. Corpus ID: 53818790
9. Adewole I. Thirty-six states and the FCT to share $1.5m FG fund for primary health care. Information Nigeria. 2016 Jul 12. Available fromhttps://www.informationng.com/2016/07/36-states-and-the-fct-to-share-1-5m-fg-fund-for-primary-healthcare.html
10. Thomas L. Cross-sectional study | definition, uses & examples. Scribbr; 2022 [cited 2025 Feb 12]. Available from:: https://www.scribbr.com/methodology/cross-sectional-study/
11. Cuofano A. What is SERVQUAL model? SERVQUAL Model in a nutshell [Internet]. 2023 [cited 2025 Feb 12]. Available from: https://fourweekmba.com/servqual-model/

12. Parasuraman, A., Zeithaml, A. and Berry, L. A conceptual model of service quality and its implications for future research. JM. 1985. 49 (4), 41-50. DOI:10.2307/1251430

13. Swamidass, P.M. Expectation Theory: Encyclopedia of Production and Manufacturing Management. Springer, Boston, MA; 2000. Available from: https://doi.org/10.1007/1-4020-0612-8_303

14. National Primary Health Care Development Agency (NPHCDA). Minimum standards for primary health care in Nigeria. 2012. Available from:. http://ngfrepository.org.ng:8080/jspui/handle/123456789/3153

15. Oyekale TO, Oyekale AS. Patients' satisfaction and quality of care in Nigerian hospitals. Journal of Healthcare Management. 2018; 17(2):137-146.

16. Obi IE, Ndu AC, Agu KA, Omotowo BI, Agunwa CC, Idoko AC. Patient satisfaction with services at a tertiary hospital in South-East Nigeria. Malawi Medical Journal. 2018; 30(4):270-275. DOI: https://dx.doi.org/10.4314/mmj.v30i4.

17. Umoke M, Umoke PCI, Nwimo IO. Patients' satisfaction with quality of care in general hospitals in Ebonyi State, Nigeria, using SERVQUAL theory. SAGE Open Med. 2020;8:2050312120945129. doi: 10.1177/2050312120945129

18. Mohebifar R, Hasani H, Barikani A, Rafiei S. Evaluating Service Quality from Patients' Perceptions: Application of Importance-performance Analysis Method. Osong Public Health Res Perspect [Internet]. 2016 Aug [cited 2023 Feb 20]; 7(4):233–238. Available from: https://doi.org/10.1016/j.phrp.2016.05.002

19. Edsan DT, Sokan-Adeaga AA, Rasaq NO. Assessment of satisfaction with delivery care among mothers in selected health care facilities in Ekiti state. J Public Health Res [Internet]. 2022 [cited 2023 Feb 20]; 11(4):134–141. Available from: doi: 10.1177/22799036221127572

20. Zun A.B., Ibrahim M. I. and Hamid A. A. Level of Satisfaction on Service Quality Dimension Based on Servqual model Among Patients Attending 1Malaysia Clinic in Kota Bharu, Malaysia. OMJ. 2018. 33(5), 416 – 422. DOI: 10.5001/omj.2018.76

21. Babatola, O. H, Popoola R. O, Olatubi, M. I. and Adewoyin F. R. Patients' satisfaction with health care services in selected secondary health care facilities in Ondo state, Nigeria. JFMDP. 2022. 8 (6), 145-155. Available from: doi.org/10.23937/2469-5793/1510145

22. Sharifi T, Hosseini SE, Mohammadpour S, et al. Quality Assessment of services provided by health centers in Mashhad, Iran: SERVQUAL versus HEALTHQUAL scales. BMC Health Serv Res [Internet]. 2021 [cited 2023 Feb 20]; 21:397. Available from: http://doi.org/10.1186/s129913-021-06405-4

23. Kashif SM, Raufi D, Rakhshani T, Hashemi H. Evaluation of the quality of health services based on the SERVQUAL model in Ahwaz health care centers, Iran. Can J Health Res [Internet]. 2019 [cited 2023 Feb 20]; 4(1):1-5.doi: 10.29252/cjhr.4.1.1

24. Papanikolaou V, Zygiaris S. Service quality perceptions in primary health care centres in Greece. Health Expect [Internet]. 2014 Apr [cited 2023 Feb 20]; 17(2):197–207. Available from: https://doi.org/10.1111/j.1369-7625.2011.00747.x

25. Fifield J, Bell GA, Hirschhorn LR, Kibria SPS, Kim J, Makumbi F, et al. Person-centred care in Uganda: analysis of responsiveness, patient satisfaction, patient-reported health outcomes, and trust among adults. Int J Qual Health Care Commun [Internet]. 2022 [cited 2023 Feb 20]; 2(1). Available from: https://doi.org/10.1093/ijcoms/lyac005

26. Silalahi J, Rantetampang AI, Msen Y, Mallongi A. The factors influencing patient satisfaction in internal room Men Puncak Jaya Hospital. Int J Sci Healthc Res [Internet]. 2019 [cited 2023 Feb 20]; 4(2):11-29.available from: https://ijshr.com/IJSHR_Vol.4_Issue.2_April2019/IJSHR002.pdf

27. Alrabaie AM, Alzaydi MD. Patients' satisfaction with primary health care centers' services in Taif, Saudi Arabia (2019). Am J Med Sci Med [Internet]. 2021 [cited 2023 Feb 20]; 9(2):34-42. Available from: Doi: 10.12691/ajmsm-9-2-1

28. Isreal-Aina YT, Odunubun ME, Aina-Isreal O. Parental satisfaction with quality of health care of children with sickle cell disease at the University of Benin Teaching Hospital, Benin City. J Community Med Prim Health Care [Internet]. 2017 [cited 2023 Feb 20]; 29(2):33-45. available from:

29. Shaahu VN, Osungbade KO, Owoaje ET, Adedokun BO. Patient satisfaction with care provided at the antiretroviral clinic of the Federal Medical Centre, Makurdi, Nigeria. J Community Med Prim Health Care [Internet]. 2014 [cited 2023 Feb 20]; 26(2):59-76. Available from: eISSN: 1115-4608

30. Omorgbe CE. Socio-economic factors influencing in-patient satisfaction with health care at the University of Benin Teaching Hospital (UBTH), Benin City, Nigeria. Int J Nurs Midwife Health Relat Cases [Internet]. 2018 [cited 2023 Feb 20]; 4(4):63-80.

31. Olamuyiwa T, Adeniji F. Patient's satisfaction with quality of care at a National Health Insurance Clinic at a tertiary center, South-South Nigeria. J Patient Exp [Internet]. 2021; 8:1-7. Available from: doi.org/10.1177/2374373520981471

32. Deji-Dadaa OO, Dada SA, Ogunlusi JD, Solomon OA. Patients' satisfaction with emergency care services in a University Teaching Hospital in South-West, Nigeria. Afr J Emerg Med. 2021;11 (2):321-324. doi: 10.1016/j.afjem.2021.03.015

33. Mohamed EY, Sami W, Alotaibi A, Alfarag A, Almutairi A, Alanzi F. Patients' satisfaction with primary health care centers' services, Majmaah, Kingdom of Saudi Arabia. Int J Health Sci [Internet]. 2015 Apr [cited 2023 Feb 20]; 9(2):163-170.

Kangirsuk, Nunavik, Quebec, Canada © Evelyn Rogan

McGill Journal of Global Health
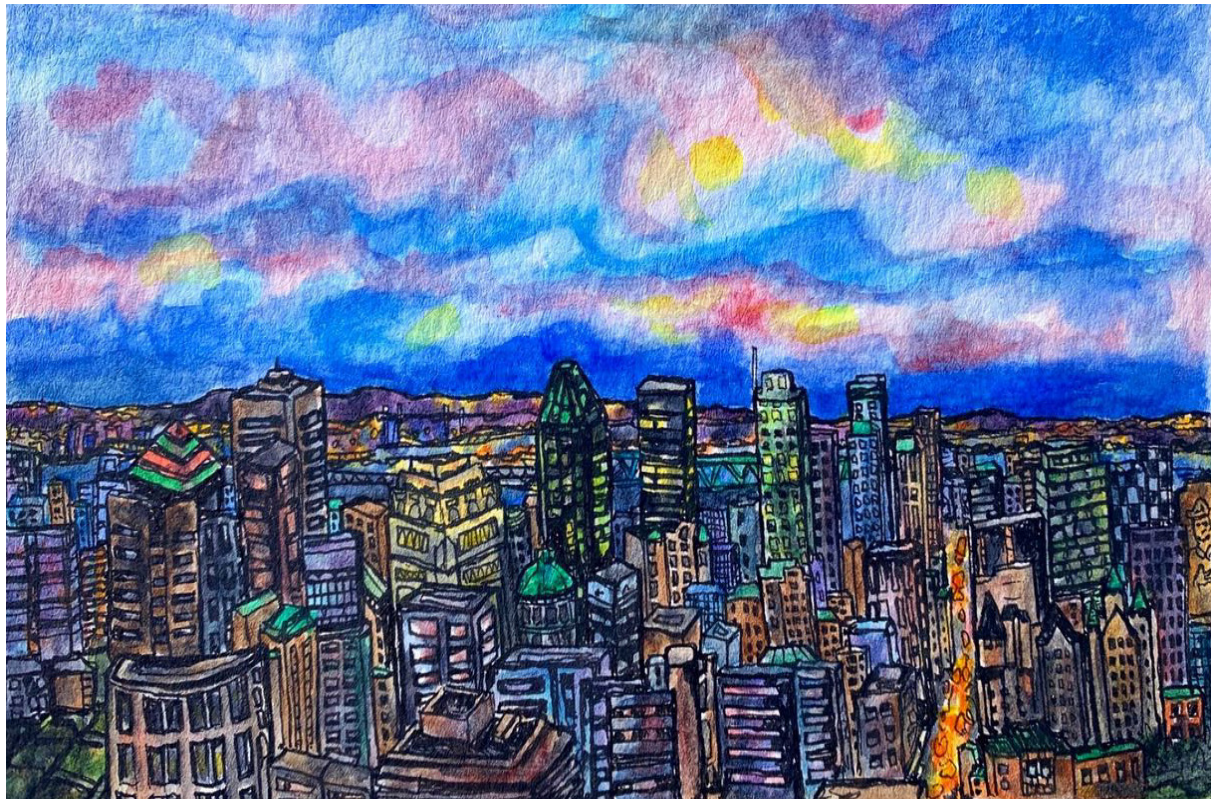
Mount Royal, Quebec, Canada © Evelyn Rogan