Patients’ satisfaction with quality of care in general hospitals in Ebonyi State, Nigeria, using SERVQUAL theory

MaryJoy Umoke¹, Prince Christian Ifeanacho Umoke², Ignatius O Nwimo³, Chioma Adaora Nwalieji¹, Rosemary N Onwe⁴, Nwafor Emmanuel Ifeanyi⁵ and Agbaje Samson Olaoluwa²

Abstract
Background: Patient satisfaction is an essential parameter in the assessment of quality of care and healthcare facility performance.
Objective: To investigate patients’ satisfaction with quality of care in general hospitals in Ebonyi State, South East, Nigeria, using the SERVQUAL.
Methods: A cross-sectional descriptive study design was employed on a sample of 400 patients using a 27-item structured open-ended patients’ satisfaction questionnaire with a multi-stage cluster sampling technique. Patients included in the study were those who must have come for an outpatient clinic within the period, be 18 years and above, and those who gave consent to participate. Of 400 questionnaires administered, 396 (99%) were retrieved. SPSS version 20 was used for data analysis. Descriptive statistics, such as frequencies, percentages, mean score (x), and standard deviation, were employed for interpretation.
Results: Out of 396 patients, 156 (39.4%) were male and 240 (60.6%) were females. Most patients were 18–39 years (233 (58.8%)), had secondary education (139 (35.1%)), married (221 (55.8%)), earned <18,000 (170 (42.9%)), and were traders (136 (34.3%)). Patients were satisfied with tangibility (2.57 ± 0.99) and reliability (2.84 ± 0.95) and very satisfied with responsiveness (3.06 ± 0.63), assurance (3.07 ± 0.63), and empathy (3.12 ± 0.57).
Conclusions: Patients were satisfied with the quality of care. However, satisfaction was highest with empathy and lowest with tangibility. Thus, managers should focus their quality improvement efforts on areas of the neat appearance of health workers, waiting facilities for attendants and patients, and hygienic conditions at the hospital. Also, biannual assessment of patients’ satisfaction should be done and the results generated use judiciously to provide a platform for health sector reform.

Keywords
Patients, satisfaction, quality healthcare, SERVQUAL, hospital

Introduction
Healthcare providers generally want their patients to be satisfied by attending to their healthcare problems.¹ Patients’ satisfaction is an essential ingredient in measuring quality healthcare as it gives insight on the workers’ progress toward patients’ desire. It is a major factor in patients’ expectations.² In the past years, patients have started to demand their right to be served better as a result of their becoming more knowledgeable and savvy to the type of care and treatment options they may receive.³ It was observed that patient satisfaction is affected by the attitude of health workers toward patients, ability to offer immediate attention, waiting time, ability to

¹School Health Programme Unit, Ebonyi State Ministry of Health Abakaliki, Abakaliki, Nigeria
²Department of Human Kinetics and Health Education, University of Nigeria, Nsukka, Nigeria
³Department of Human Kinetics and Health Education, Ebonyi State University, Abakaliki, Nigeria
⁴Department of Economics, Ebonyi State University, Abakaliki, Nigeria
⁵Virology Centre Laboratory, Alex Ekwueme Federal University Teaching Hospital Abakaliki, Ebonyi State, Nigeria

Corresponding author:
MaryJoy Umoke, School Health Programme Unit, Ebonyi State Ministry of Health Abakaliki, PMB. 053, Abakaliki 480214, Nigeria.
Email: maryjoy4umoke@gmail.com
send information, and the tolerance by physicians to plainly explain to the patient what was wrong before giving detailed message concerning their drugs and the environment.4

Aikins et al.5 stated that the extent of one longed service as against persons’ expectations is known as satisfaction. The extent of patients achieving fulfilled expectations when they visit the clinic to a greater extent will make them obey personnel of the hospital, thus, reducing patient complaints, high profitability, higher patients return, and more referrals.6–8 Aigbavbo and Thwala9 observed that patient satisfaction is a judgment, feeling, or response that patients received, provided a pleasurable level of fulfillment is achieved.10 Contrarily, patient satisfaction or dissatisfaction is not an emotion or feeling but the assessment of an emotion.11,12 Zarei et al.13 stated that charge for services, quality of procedure, and excellence of communication had the utmost effect on the general patients’ happiness.

There are so many factors that affect the satisfaction and dissatisfaction of patients in hospital facilities. These factors include access, health personnel, financing, waste disposal, and government policy.14,15 Others are admission procedure, diagnostic services, technical services, communication, and interpersonal manner of the physicians, accessibility, and convenience.15 Lekidou et al.16 opined that patients decide on the quality of health organization as it relates to compassion, consistency, reply, information, and care they receive.

The major instrument designed in rating the level of patient satisfaction of services is the SERVQUAL scale that was developed by Parasuraman et al.,17 which produced significant progress to the knowledge and measurement of assumed quality of service. It was further designed by Zacharias et al.18 and Yen et al.19,20 Initially, the SERVQUAL model was not intended to only rate healthcare services satisfaction, but was used in interpreting the level of attention on health services in facilities by several studies both in western and eastern countries.21 SERVQUAL has five (5) major areas of measurement such as tangibility, reliability, responsiveness, assurance, and empathy.17,22–27

Tangibility is the physical evidence of the service, for instance, the appearance of the tools, equipment, and physical facilities used to provide the service.28–30 These have a psychological effect on the recovery process of the individual and hence must be kept clean at all times.30 Reliability is the ability to perform the promised service accurately.17 Responsiveness is the readiness and willingness of employees to assist customers by providing prompt timely services.31,32 Assurance is the knowledge of employees and their ability to have trust and confidence toward customers.28,33,34 Hospitals should provide patients with proper diagnosis at first instance.35 Empathy is the caring, individualized, and customized attention provided to patients by health workers due to the pains that there are passing through.36,37 The use of the SERVQUAL as an instrument for getting patient satisfaction cuts across the original in the organization of service centers like offices, shops, and hospitals.38,39 According to Offei et al.,39 the SERVQUAL model is not only concerned from the view of consumers but also supportive in guiding employees to examining service lapses between what is expected and obtainable. Notwithstanding, Parasuraman et al.,17 Kennedy et al.,40 Jemmasi et al.,41 and Ahuja et al.,42 have substantially clarified it. SERVQUAL model has been widely used in the healthcare services by Aikins et al.,7 Amole et al.,12 Irfan et al.,24 Szyca et al.,43 Khamis and Njau,44 and Yeboah et al.45

For most countries, research works of patients’ satisfaction with hospitals are done most often and the feedbacks gotten are made available to the public together with other indicators of healthcare quality. The hospitals in the developed countries are aware of the consequence of delivering patient approval as a tactical variable and a vital determinant of long-term feasibility and success.12 In Nigeria, there is no official policy on patient satisfaction that has been launched to the best of the researcher’s knowledge. However, the Federal Government (FG) has done something close to proper service in any formal institution which is the SERVICOM.46

The main purpose of the study was to determine patients’ satisfaction with the quality of care in general hospitals in Ebonyi State. Specifically, the study sought to determine the level of satisfaction of patients with tangibility, reliability, responsiveness, assurance, and empathy.

Methods

Study design and setting

A descriptive study design was conducted at the General hospitals in Ebonyi State from April to December 2016. A descriptive survey design was used to ascertain patient satisfaction with quality of care in general hospitals. The state runs a three-tier healthcare system which are primary, secondary, and tertiary levels. The FG is responsible for tertiary healthcare which is the apex of the healthcare delivery and provides specialized services through the Federal Teaching Hospital Abakaliki (FETHA, Vesico-Vaginal Fistula (VVF) Center). The state provides care through the 13 general hospitals and six rural mission hospitals, while the Local Government Council take care of primary healthcare services.47 All the general hospitals are in rural area.

Study population

The population of the study was 1,363,633. All adults from 18 years and above in Ebonyi State. Projected from the 2006 census of 2,710,845 with a projected growth rate of 2.8% for the year 2016.48

Sample and sampling technique

The sample size of the study was 400 outpatients in six out of 13 general Hospitals in Ebonyi State determined using
Yaro Yamane formula (Appendix 1). According to Uzoagulu,49 the Yaro Yamane formula is used to determine a sample for a finite population. A multi-stage cluster sampling procedure was used for the study. First, clustering the state into three zones, namely, Abakaliki, Afikpo, and Onueke. In the second stage, we chose two general hospitals per zone totaling six. Third, the sample size for each hospital in the zone identified in stage one: Abakaliki zone (131), Onueke zone (119), and Afikpo zone (150) (Appendix 2). In the fourth stage, the respondents were selected using a simple random technique of balloting without replacement. This procedure yielded 400 outpatients used in the study.

The inclusion criteria included patients who must have come for an outpatient clinic in a general hospital within the period, 18 years and above and must have given consent to participate while exclusion criteria included patients below 18 years, inpatients, and those who refuse to give consent to participate in the study.

Ethical approval

Ethical approval for the study was obtained from the Department of Human Kinetics and Health Education, Faculty of Education, Ebonyi State University Review Board (EBSU/FOE/KHE/018). Informed consent was obtained from all respondents before the study.

Instrument for data collection

The instrument used in collecting data was a 27-item self-administered questionnaire titled patients’ satisfaction with quality of care in general hospitals in Ebonyi State which consists of two sections: section A elicited socio-demographic characteristics of respondents, while section B elicited information on tangibility—3, reliability—6, responsiveness—4, assurance—3, and empathy—5. The items were measured on a four-point Likert-type scale through 1–4 which indicates 1—very dissatisfied, 2—dissatisfied, 3—satisfied, and 4—very satisfied. This type of scale is often assumed to be an equal-interval scale, where “very satisfied” is one unit better than “satisfied,” “satisfied” is one unit better than “dissatisfied” and so forth. The questionnaire was developed in English and interpreted by the research assistants in Igbo—a local language in Nigeria. The questionnaire was then piloted with a convenient sample of n = 30 patients among the study population. However, we included the patients in the local government areas (LGAs) and hospitals but not sampled for the study for validity and reliability. Minor adjustments were made based on the pilot testing. The respondents were informed of the purpose of the study and assured of confidentiality and their right to withdraw from the study. The internal consistency of the instrument was computed using Cronbach’s alpha. The process yielded an overall reliability of the coefficient of 0.795. Data were collected for 2 weeks with an average of 10 exit interviews per day by six trained research assistants.

Statistical analysis

Data generated were analyzed using Statistical Package for the Social Sciences (SPSS) version 20; descriptive statistics such as frequencies and percentages, mean score, and standard deviation were employed to analyze the data. Criterion means adopted from Likert-type’s scaling using the upper and lower limits of each scale was applied to categorize the different constructs being studied for description, thus 0.1–1.0 was adjudged to be very dissatisfied, 1.1–2.0—dissatisfied, 2.1–3.0—satisfied, and 3.1–4.0—very satisfied. This was used by Uzoagulu49 and Otani et al.50

Results

Of 400 questionnaires administered, 396 (99%) were retrieved. A total of 400 patients consented and filled the questionnaire; four questionnaire lacked sufficient demographic details and were discarded. Out of 396 patients’ questionnaire analyzed, 156 (39.4%) were male and 240 (60.6%) were females. On age, patients within 18–39 years (233 (58.8%)) were more while the least was 61 years (43 (10.9%)). Based on education, the majority had secondary education (139 (35.1%)) and the least had tertiary education (71 (17.9%)). The majority of the respondents were married (221 (55.8%)), while a few (10 (2.5%)) were divorced. Those who earned $18,000 (170 (42.9%)) were more, while earners of $60,000–$79,000 (13 (3.3%)) were the least, and traders (136 (34.3%)) were more to artisans (65 (16.4%)), as shown in Table 1.

Generally, patients were satisfied with tangibility (2.57 ± 0.99) and reliability (2.84 ± 0.95). While they were very satisfied with responsiveness (3.06 ± 0.63), assurance (3.07 ± 0.63), and empathy (3.12 ± 0.57). In tangibility, waiting facilities for attendants and patients had the highest mean score (2.70 ± 1.00), while the neat appearance of health workers scored the least (2.49 ± 0.98). On the items of reliability, following treatment protocols (3.01 ± 0.78) was highest, whereas maintaining error-free records scored the least (2.74 ± 1.73). On responsiveness, willingness of the health workers to listen (3.10 ± 0.92) was highest, while information about the condition of the patient by the health workers (3.03 ± 0.71) had the lowest mean score. On the items of assurance, instructions on medications/follow up care (3.07 ± 0.71) were highest, whereas thoroughness of medical examination scored the least (3.06 ± 0.73). Finally, on empathy, patients’ satisfaction was more on health workers’ willingness to attend to them (3.21 ± 0.69), but least was on concern shown to patients’ family (3.00 ± 0.76), as shown in Table 2.

Discussion

Patients’ satisfaction with quality of care using the five service quality dimension (SERVQUAL)

Tangibility. Tangibility focuses on infrastructural facilities like labs, equipment, hygienic conditions of toilets, healthy hospital
Tola52 argued that affordability and quality had a significant
impact on patient satisfaction. However, Ode-
to52 waiting time and meeting patients' previsit expectations may
have an impact on patient satisfaction. Zarei et al.53 reported that a short
waiting time and a strong negative correlation (r = -0.438, p < 0.00) between nurse vacancy rates and mean satisfaction level with services performed by nurses. Oggunfowokan and Mora56 reported that the least preference was for tangibility.

Table 1. Socio-demographic characteristics of respondents.

| Demographic variable       | Frequency | Percentage (%) |
|----------------------------|-----------|----------------|
| **Sex**                    |           |                |
| Male                       | 156       | 39.4           |
| Female                     | 240       | 60.6           |
| **Age in years**           |           |                |
| 18–39                      | 233       | 58.8           |
| 40–60                      | 120       | 30.3           |
| 61 and above               | 43        | 10.9           |
| **Educational level**      |           |                |
| None                       | 86        | 21.7           |
| Primary education          | 100       | 25.3           |
| Secondary education        | 139       | 35.1           |
| Tertiary education         | 71        | 17.9           |
| **Marital status**         |           |                |
| Single                     | 100       | 25.3           |
| Married                    | 221       | 55.8           |
| Widowed                    | 65        | 16.4           |
| Divorced                   | 10        | 2.5            |
| **Income Level**           |           |                |
| <18,000                    | 170       | 42.9           |
| 18,000–39,000              | 112       | 28.3           |
| 40,000–59,000              | 80        | 20.2           |
| 60,000–79,000              | 13        | 3.3            |
| >80,000                    | 21        | 5.3            |
| **Occupation**             |           |                |
| Trading                    | 136       | 34.3           |
| Artisan                    | 65        | 16.4           |
| Farming                    | 127       | 32.1           |
| Civil servant              | 68        | 17.2           |

environments, health conditions, proper seating facilities for
visitors, cleanliness of toilets, cleanliness of the patient room,
facilities of hospital’s research, pharmacy facilities, overall
tangible infrastructure, and so on. The result showed that the
respondents were satisfied (x = 2.57 ± 0.99). In the same vein,
Iloh et al.,51 Odetola,52 Ibraheem et al.,53 Rehaman and Hus-
This study found that, for reliability, most patients
were satisfied (x = 2.84 ± 0.68). This is in line with the find-
ings of Mendoza Aldana et al.,53 who reported that reduction
in waiting time and consulting time improves clients’ satis-
Reliability. Reliability is the ability to execute the promised
services consistently and accurately, that is, when something
is promised, it is done and provision of services at the time
promised. This study found that, for reliability, most patients
were satisfied (x = 2.57 ± 0.99). In the same vein,
Iloh et al.,51 Odetola,52 Ibraheem et al.,53 Rehaman and Hus-
Reliability is about knowledge, skills, and expertise
of the health workers involved in delivering services and
the ability to create trust and confidence among their patients.
This study found that, for reliability, most patients
were satisfied (x = 2.57 ± 0.99). In the same vein,
Iloh et al.,51 Odetola,52 Ibraheem et al.,53 Rehaman and Hus-
Assurance. Assurance is about knowledge, skills, and expertise
of the health workers involved in delivering services and
the ability to create trust and confidence among their patients.
This study found that, for reliability, most patients
were satisfied (x = 2.57 ± 0.99). In the same vein,
Iloh et al.,51 Odetola,52 Ibraheem et al.,53 Rehaman and Hus-

in their study reported that patients were satisfied with the competences of health workers who attended to them. In contrast, Khamis and Njau reported patients’ dissatisfaction with assurance, and this was supported by Opara et al.

**Empathy.** Empathy is about the individual attention and care provided to the customers by the service provider and its human resource. The result of the study showed that most respondents were satisfied with the attitude of the entire health workers (x̄ = 3.12 ± 0.57). Similarly, Babić-Banaszak et al., Hojat et al., and Mead and Bower reported the same. Amole et al. and Doris et al. stated that empathy was very significant. This is supported by Iliyasu et al., Ross and Venkatesh, and Derksen et al. In contrast, Ghosh, Imam et al., and Hutchinson et al. reported dissatisfaction.

Furthermore, in the five service quality dimensions of SERVQUAL, patients in this study were more satisfied with the empathy (x̄ = 3.12 ± 0.57) and showed the lowest satisfaction in the tangibility (x̄ = 2.57 ± 0.99). In the same vein, Otani et al. study revealed that staff care is the most influential attribute to patients in rating their overall hospital experience. Despite the above findings discussed, the study also had some limitations: first, data did not provide information on patients’ health status before seeking medical attention; The study did not evaluate patients’ satisfaction in a public hospital when compared to private health facilities in the state.

### Conclusion

Conclusively, study of service quality as a multidimensional construct makes clear the effective areas of service quality in establishing patient satisfaction. This study indicated that patients showed the highest satisfaction with empathy and lowest satisfaction in the tangibility. Thus, managers can focus their quality improvement efforts on areas of neat appearance of health workers, waiting facilities for attendants and patients, and hygienic conditions at the hospital. Also, patients’ satisfaction data should be used judiciously to provide a platform for health sector reform

| S. No. | Variables | x̄  | SD  | Dec. |
|--------|-----------|-----|-----|------|
| **Tangibility** | Neat appearance of health workers | 2.53 | 1.00 | S |
| 1. | Waiting facilities for attendants and patients | 2.70 | 1.00 | S |
| 2. | Hygienic condition at hospital | 2.49 | 0.98 | S |
| **Grand mean** | | **2.57** | **0.99** | S |
| **Reliability** | Maintaining error-free records | 2.74 | 1.73 | S |
| 4. | Health workers interest in solving problems | 2.82 | 0.85 | S |
| 5. | Charges for services received | 2.85 | 0.78 | S |
| 6. | Providing services as promised | 2.76 | 0.83 | S |
| 7. | Following treatment protocols | 3.01 | 0.78 | S |
| 8. | Time spent with the health worker | 2.83 | 0.73 | S |
| **Grand mean** | | **2.84** | **0.95** | S |
| **Responsiveness** | Responding quickly to patients | 3.03 | 0.72 | S |
| 10. | Explanation of tests, diagnosis, and treatment | 3.08 | 0.74 | VS |
| 11. | Information about the condition by health worker | 3.03 | 0.70 | S |
| 12. | Willingness of the health worker to listen | 3.10 | 0.92 | VS |
| **Grand mean** | | **3.06** | **0.63** | VS |
| **Assurance** | Thoroughness of medical examination | 3.06 | 0.73 | VS |
| 14. | Instructions on medications/follow-up care | 3.07 | 0.70 | VS |
| 15. | Competence of health workers | 3.07 | 0.71 | VS |
| **Grand mean** | | **3.07** | **0.63** | VS |
| **Empathy** | Health workers willingness to attend to them | 3.21 | 0.69 | VS |
| 17. | Given individual attention | 3.11 | 0.75 | VS |
| 18. | Individualize patients specific need | 3.11 | 0.71 | VS |
| 19. | Concern to patients family | 3.00 | 0.76 | S |
| 20. | Referral to the higher level of care when need arise | 3.15 | 0.74 | VS |
| **Grand mean** | | **3.12** | **0.57** | VS |

VS: very satisfied; S: satisfied.
because a significant portion of the data is attributed to factors peculiar to the patients though may or may not imply excellence of services generally.

Acknowledgements
We appreciate Mr and Mrs Lawrence Nwafor, Professor O.C. Ene, Mrs Josephine Elechi, and Mrs Chinyere Nwanoke for their moral support.

Declaration of conflicting interests
The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical approval
Ethical approval for this study was obtained from Department of Human Kinetics and Health Education, Faculty of Education, Ebonyi State University Review Board (EBSU/FOE/KHE/018).

Funding
The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was self-sponsored.

Informed consent
Written informed consent was obtained from all subjects before the study.

ORCID iDs
MaryJoy Umoke https://orcid.org/0000-0002-8697-8514
Ignatius O Nwimo https://orcid.org/0000-0002-5998-8282

Supplemental material
Supplemental material for this article is available online ('Questionnaire on patients’ satisfaction with quality of care using SERVQUAL-docx').

References
1. Hachem F, Canar J, Fullam F, et al. The relationships between HCAHPS communication and discharge satisfaction items and hospital readmissions. *Patient Exp J* 2014; 1(2): 71–77.
2. Xesfingi S and Vozikis A. Patient satisfaction with the healthcare system: assessing the impact of socio-economic and healthcare provision factors. *BMC Health Serv Res* 2016; 16: 94.
3. Penson DF and Wei JT (eds). *Clinical research methods for surgeons*. Humana Press, 2007. http://dx.doi.org/10.1007/978-1-59745-230-4
4. Wong EL, Coulter A, Cheung AW, et al. Validation of inpatient experience questionnaire. *Int J Qual Health Care* 2013; 25(4): 443–451.
5. Aikins I, Ahmed M and Adzimah ED. Assessing the role of quality service delivery in client choice for healthcare: a case study of Bechem government hospital and green hill hospital. *Eur J Logist Purchas Supply Chain Manage* 2014; 2(3): 1–23.
6. Dawn AG and Lee PP. Patient expectations for medical and surgical care: a review of the literature and applications to ophthalmology. *Surv Ophthalmol* 2004; 49(5): 513–524.
7. Choi KS, Cho WH, Lee S, et al. The relationships among quality, value, satisfaction and behavioral intention in health care provider choice: a south Korean study. *J Bus Res* 2004; 57(8): 913–921.
8. Raposo ML, Alves HM and Durate PL. Dimensions of service quality and satisfaction in health care: a patient’s satisfaction index. *Serv Bus* 2009; 3(1): 85–100.
9. Aigbavboa C and Thwala W. A theoretical framework of users’ satisfaction/dissatisfaction theories and models. In: *2nd international conference on arts, behavioral sciences and economics issues*, Pattaya, 17-18 December 2013.
10. Rama M and Kanagaluru SK. A study on the satisfaction of patients with reference to hospital services. *Int J Bus Eco Manag Res* 2011; 1: 3.
11. Groene O. Patient centredness and quality improvement efforts in hospitals: rationale, measurement, implementation. *Int J Qual Health Care* 2011; 23(5): 531–537.
12. Amole BB, Oyatoye EO and Kuye OL. Determinants of patient satisfaction on service quality dimensions in the Nigeria teaching hospitals. *EMI* 2015; 7(3): 3–20.
13. Zarei E, Daneshkohan A, Pouragha B, et al. An empirical study of the impact of service quality on patient satisfaction in private hospitals, Iran. *Glob J Health Sci* 2015; 7(1): 1–9.
14. Ejim A. Building a solid healthcare system in Nigeria. *The News*, 24 March 2014, p. 51.
15. World Health Organization (WHO). *Guidelines for drinking-water quality, 3rd edition: volume 1—recommendations. Incorporating first and second addenda*. Geneva: WHO, 2008. https://www.who.int/water_sanitation_health/publications/gdwq3rev/en/ (accessed 23 May 2020).
16. Lekidou I, Trivelas P and Ipsilantis P. Patients’ satisfaction and quality of care: an empirical study in a Greek central hospital. *Man Int Bus Econ Syst* 2007; 1(1): 46–59.
17. Parasuraman A, Berry LL and Zeitham VA. Understanding customer expectations of service. *MIT Sloan Manag Rev* 1991; 32(3): 39–48.
18. Zacharias MLB, Figueiredo KF and Araujo CAS. The influence of banking service customers’ satisfaction level on the perception of switching costs and on behavioral loyalty. *JOSCM* 2009; 2(1): 1–13.
19. Yen YX, Wang EST and Horng DJ. Suppliers’ willingness of customization, effective communication, and trust: a study of switching costs antecedents. *J Bus Ind Mark* 2011; 26(4): 250–259.
20. Yen Y, Wang E and Horng D. Suppliers’ willingness of customization, effective communication, and trust: a study of switching costs antecedents: a review. *J Bus Syst Rev* 2013; 2(1): 17.
21. Andaleeb SS. Service quality perceptions and patient satisfaction: a study of hospitals in a developing country. *Soc Sci Med* 2001; 52(9): 1359–1370.
22. Torres EL and Guo KL. Quality improvement techniques to improve patient satisfaction. *Int J Health Care Qual* 2004; 17(6): 334–338.
23. Yoon WC. Measuring customer satisfaction level in a casual dining restaurant. In: *Proceedings of fifth annual graduate education and graduate students research conference in hospitality & tourism*, 6-8 January 2004, pp. 269-272. 365. Human Sciences Stillwater.
24. Irfan SM, Aamir I and Farooq MM. Patient satisfaction and service quality of public hospital in Pakistan: an empirical assessment. *Middle East J Sci Res* 2012; 12(6): 870–877.
25. Yavas U, Karatepe OM and Babakus S. Who is likely to quit nursing jobs? A study in the Turkish Republic of Northern Cyprus. *Health Mark Q* 2013; 30(1): 80–96.

26. Pai YP and Chary ST. Dimensions of hospital service quality: a critical review: perspective of patients from global studies. *Int J Health Care Qual Assur* 2013; 26(4): 308–340.

27. Arasli H, Ekiz EH and Katircioglu ST. Gearing service quality into public and private hospitals in small islands: empirical evidence from Cyprus. *Int J Health Care Qual Assur* 2008; 21(1): 8–23.

28. Nuti S, Bonini A, Murante AM, et al. Performance assessment in the maternity pathway in Tuscany region. *Health Serv Manage Res* 2009; 22(3): 115–121.

29. Lobo A, Duarte P, Carvalho A, et al. The association of equity, accessibility, and price with primary healthcare user’s satisfaction. *West J Nurs Res* 2014; 36(2): 191–208.

30. Murante AM, Seghieri C, Brown A, et al. How do hospitalization experience and institutional characteristics influence inpatient satisfaction? A multilevel approach. *Int J Health Plann Manage* 2014; 29(3): e247–e260.

31. Westaway MS, Rheeder P, Van Zyl DG, et al. Interpersonal and organizational dimensions of patient satisfaction: the moderating effects of health status. *Int J Qual Health Care* 2003; 15(4): 337–344.

32. Essiam JO. Service quality and patients satisfaction with healthcare delivery: empirical evidence from patients of the out-patient department of a Public University Hospital in Ghana. *EJBM* 2013; 5(28): 52-59.

33. Krogstad U, Hofoss D and Hjortdahl P. Doctor and nurse perception of inter-professional co-operation in hospitals. *Int J Qual Health Care* 2004; 16(6): 491–497.

34. Seghieri C, Sandoval GA, Brown AD, et al. Where to focus efforts to improve overall ratings of care and willingness to return: the case of Tuscan emergency departments. *Acad Emerg Med* 2009; 16(2): 136–144.

35. Veillard J, Champagne F, Klazinga N, et al. A performance assessment framework for hospitals: the WHO regional office for Europe PATH project. *Int J Qual Health Care* 2005; 17(6): 487–496.

36. Saltman R and Bankauskaite V. Conceptualizing decentralization in European health systems: a functional perspective. *Health Econ Policy Law* 2006; 1(Pt 2): 127–147.

37. Saltman R and Busse R. Balancing regulation and entrepreneurialism in Europe’s health sector: theory and practice. In: Saltman R, Busse R and Mossialos E (eds) *European observatory on health care systems, regulating entrepreneurial behaviour in European health care systems*. Buckingham: Open University Press, 2002, pp. 3-52.

38. Weaklim D. *Development of quality indicators based on patients’ perceptions of quality of health service monitoring at health centres in Ghana*. Liverpool: Liverpool School of Tropical Medicine and the Eastern Regional Health Administration, 1994.

39. Offei AK, Bannerman C, Kyeremeh K, et al. *Healthcare quality assurance manual*. Accra, Ghana: Ghana Health Service. http://beepdf.com/doc/40767/healthcare_quality_assurance_manual.html (2004, accessed 9 August 2012).

40. Kennedy DM, Caselli RJ and Berry LL. A roadmap for improving healthcare service quality. *J Healthc Manag* 2011; 56(6): 385–400; discussion 400-402.

41. Jemmari M, Strong KC and Taylor SA. Measuring service quality for strategic planning and analysis in service firms. *JABR* 2011; 10(14): 24–34.

42. Ahuja M, Mahlawat S and Masood RZ. Study of service quality management with SERVQUAL model: an empirical study of Govt. /NGO’s eye hospitals in Haryana. *IJCMS* 2011; 2(2): 310–318.

43. Szycza R, Rosiek A, Nowakowska U, et al. Analysis of factors influencing patient satisfaction with hospital treatment at the surgical department. *Pol Przegl Chir* 2012; 84(3): 136–143.

44. Khamis K and Njau B. Patients’ level of satisfaction on quality of health care at Mwananyamala hospital in Dar es Salaam, Tanzania. *BMC Health Serv Res* 2014; 14: 400.

45. Yeboah MA, Ansong MO, Yeboah FA, et al. Empirical validation of patients’ Expectation and perception of service quality in Ghanaian Hospital: an integrated model approach. *Am J Soc Sci* 2014; 3(3): 143–160.

46. The SERVCOM Book. *Service compact with all Nigerians* (1st ed.). Nigeria, 2006, p. 17.

47. Ebonyi State Ministry of Health. Malaria elimination programme. Report of 2017 Annual Operational Plan Development Workshop, Abakaliki, Nigeria, November 2016.

48. National Population Commission of Nigeria. National Bureau of Statistics. *The Ebonyi state 2016 population projected from 2006 census*. Report of the Ebonyi State Ministry of Health, Abakaliki, Nigeria, January, 2016.

49. Uzoagulu EU. *Practical guide to written research project report in tertiary institutions*. Enugu, Nigeria: Cheston Publishers, 2011.

50. Otani K, Waterman B, Faulkner KM, et al. Patient satisfaction: focusing on “excellent.” *J Healthc Manag* 2009; 54(2): 93–102; discussion 102-103.

51. Iloh GU, Ofoedu JN, Njoku PU, et al. Evaluation of patients’ satisfaction with quality of care provided at the National Health Insurance Scheme clinic of a tertiary hospital in South-Eastern Nigeria. *Niger J Clin Pract* 2012; 15(4): 469–474.

52. Odetola TD. Health care utilization among rural women of child-bearing age: a Nigerian experience. *Pan Afr Med J* 2015; 20: 151.

53. Ibraheem WA, Ibraheem AB and Bekibele CO. Socio-demographic predictors of patients’ satisfaction. *Afr J Health Sci* 2013; 12: 87–90.

54. Rehman B and Husnain M. The impact of service quality dimensions on patient satisfaction in the private healthcare industry in Pakistan. *J Hosp Med Manag* 2018; 4(1): 1-8.

55. Mendoza Aldana J, Piechulek H and al-Sabir A. Client satisfaction and quality of health care in rural Bangladesh. *Bull World Health Organ* 2001; 79(6): 512–517.

56. Ogungifowokan O and Mora M. Time, expectation and satisfaction: patients’ experience at National Hospital Abuja, Nigeria. *Afr J Prim Health Care Fam Med* 2012; 4(1): 398.

57. Ghosh S. An analytical study on patients’ satisfaction and medical facilities provided by public hospital: with special reference to Dhubri civil hospital, Jhagarpar. *Int J Healthcare Sci* 2014; 2(1): 107–115.

58. Umeano-Enemuoh J, Onwujekwe O, Uzochukwu B, et al. Patients’ satisfaction and quality of care in a tertiary institution in Southeast Nigeria. *Int Res J Basic Clin Stud* 2014; 2(2): 14–19.

59. Wonters E, Heunis C, van Rensburg D, et al. Patient satisfaction with antiretroviral services at primary health-care facilities in the Free State, South Africa—a two-year study using four waves of cross-sectional data. *BMC Health Serv Res* 2008; 8: 210.

60. Imam SZ, Syed KS, Ali SA, et al. Patients’ satisfaction and opinions of their experiences during admission in a tertiary
care hospital in Pakistan—a cross sectional study. *BMC Health Serv Res* 2007; 7: 161.
61. Iliyasu Z, Abubakar IS, Abubakar S, et al. Patients’ satisfaction with services obtained from Aminu Kano Teaching Hospital, Northern Nigeria. *Niger J Clin Pract* 2010; 13(4): 371–378.
62. Opara AC, Enato EFO and Akoria OA. Assessment of patient satisfaction with pharmaceutical services in Nigerian Teaching Hospital. *Int J Pharm Pract* 2004; 12(1): 7–12.
63. Uchendu OC, Ilesanmi OS and Olumide AE. Factors influencing the choice of health care providing facility among workers in a local government secretariat in South Western Nigeria. *Ann Ib Postgrad Med* 2013; 11(2): 87–95.
64. Naz A, Daraz U, Khan T, et al. An analytical study of patients health problems in public hospitals of Khyber Pakhtunkhwa Pakistan. *IJSS* 2012; 3(5): 133-143.
65. El-Nassir GA and Mohammed N. Patient satisfaction with preoperative care and its relationship with patients’ characteristics. *Thed J Cairo Univ* 2013; 81(2): 1–10.
66. Chirdan O, Lar L, Afolaranmi T, et al. Client satisfaction with maternal health services comparison between public and private hospitals in Jos Nigeria. *Jos J Med* 2013; 7: 1–9.
67. Adekanye AO, Adefemi SA, Okuku AG, et al. Patients’ satisfaction with the healthcare services at a north central Nigerian tertiary hospital. *Niger J Med* 2013; 22(3): 218–224.
68. Li X, Zhang H, Wang J, et al. Assessing patient satisfaction with medication related services in hospital settings: a cross-sectional questionnaire survey in China. *Int J Clin Pharmacol Ther* 2014; 52(7): 587–597.
69. Megbelayin EO, Babalola YO, Kurawa MS, et al. How satisfied are patients attending a Nigerian eye clinic in University of Calabar Teaching Hospital. *Int Arch Integr Med* 2014; 1(4): 1–9.
70. Ugwu AC, Ahamefule K, Egwu OA, et al. Patient satisfaction with obstetric ultrasonography. *Radiol Technol* 2007; 79(2): 113–118.
71. Kroneman MW, Maarse H and van der Zee J. Direct access in primary care and patient satisfaction: a European study. *Health Policy* 2006; 76(1): 72–79.
72. Clever SL, Jin L, Levinson W, et al. Does doctor-patient communication affect patient satisfaction with hospital care? Results of an analysis with a novel instrumental variable. *Health Serv Res* 2008; 43(5 Pt 1): 1505–1519.
73. Peprah AA and Atarah BA. Assessing patient’s satisfaction using SERVQUAL model: a case of Sunyani Regional Hospital, Ghana. *Int J Bus Soc Res* 2014; 4(2): 133–143.
74. Babić-Banaszak A, Kovačič L, Mastilica M, et al. The Croatian health survey—patient’s satisfaction with medical service in primary health care in Croatia. *Coll Antropol* 2001; 25(2): 449–458.
75. Zamil A, Areiqat A and Tailakh W. The impact of health service quality on patients’ satisfaction over private and public hospitals in Jordan: a comparative study. *Int J Mark Stud* 2012; 4: 123–137.
76. Abodunrin OL, Adecomi AA and Adeoye OA. Clients’ satisfaction with quality of healthcare received: study among mothers attending infant welfare clinics in a semi-urban community in south-western Nigeria. *SJAMS* 2014; 2(7): 45–51.
77. Ndambuki J. The level of patients’ satisfaction and perception on quality of nursing services in the Renal unit, Kenyatta National Hospital Nairobi, Kenya. *Open J Nurs* 2013; 3: 186–194.
78. Eke CB, Ibekwe RC, Muoneke VU, et al. End-users’ perception of quality of care of children attending children’s outpatients’ clinics of University of Nigeria Teaching Hospital Ituku–Ozalla Enugu. *BMC Res Notes* 2014; 7: 800.
79. Somayeh A, Meena C and Hamin H. Quality of care and patient satisfaction amongst Caucasian and non-Caucasian patients: a mixed-method study in Australia. *Int J Qual Reliab Manag* 2016; 33(3): 298–320.
80. Assefa F, Mosse A and Hailemichael Y. Assessment of clients’ satisfaction with health service deliveries at Jimma University specialized hospital. *Ethiop J Health Sci* 2011; 21(2): 101–109.
81. Adebayo ET, Adesina BA, Ahaji LE, et al. Patient assessment of the quality of dental care services in a Nigerian hospital. *J Hosp Admin* 2014; 3(6): 20–28.
82. Hojat M, Gonnella JS, Nasca TJ, et al. Physician empathy: definition, components, measurement, and relationship to gender and specialty. *Am J Psychiatry* 2002; 159(9): 1563–1569.
83. Mead N and Bower P. Patient-centeredness: a conceptual framework and review of the empirical literature. *Soc Sci Med* 2000; 51(7): 1087–1110.
84. Doris CV, Linda HA, Douglas MS, et al. Nurse burnout and patient satisfaction. *Med Care* 2004; 42(2): 1157–1166.
85. Ross DS and Venkateshi R. An empirical study of the factors influencing quality of healthcare and its effects on patient satisfaction. *IJIRSET* 2015; 4(2): 54–59.
86. Derksen F, Bensing J and Lagro-Janssen A. Effectiveness of empathy in general practice: a systematic review. *Br J Gen Pract* 2013; 63(606): e76–e84.
87. Hutchinson PL, Do M and Agha S. Measuring client satisfaction and the quality of family planning services: a comparative analysis of public and private health facilities in Tanzania, Kenya and Ghana. *BMC Health Serv Res* 2011; 11: 203.

**Appendix I**

### Yaro Yamane formula for determining sample size

The formula is stated thus

\[ n = \frac{N}{1 + \left(\frac{e}{N}\right)^2} \]

where \( n \) is sample size; \( N \) is the estimated population size which is 1,363,633; \( e \) is the allowable error of five percent (0.05); and 1 is the constant, our sample size \( (n) \) can be computed; thus

\[ n = 1,363,633/1 + 1,363,633 \times (0.05)^2 \]

\[ = 399.9 \approx 400 \]

For each zone, each proportion is worked out from respective population as thus

\[ N \times n/N \]

where \( N \) is the estimated population size, \( n \) is the sample size, and \( N \) is the zones population.
Abakaliki education zone: 448,538
\[ = \frac{448538 \times 399.9}{1363633} = 131.539 \]

Onueke education zone: 407,737
\[ = \frac{407737 \times 399.9}{1363633} = 119.573 \]

Afikpo education zone: 518,818
\[ = \frac{518818 \times 399.9}{1363633} = 151.149 \]

Appendix 2

Total Ebonyi state population for each zone.

| Zones/LGA | No. of respondents above 18 | Total population |
|-----------|----------------------------|------------------|
| ABAKALIKI |                           |                  |
| A Abakaliki | 95,989                  | 199,978          |
| B Ebonyi  | 80,245                   | 167,177          |
| C Izzi    | 148,089                  | 308,518          |
| D Ohaukwu | 124,215                  | 258,782          |
|           | **448,538**              | **934,455**      |
| ONUEKE    |                           |                  |
| A Ezza North | 92,128                  | 191,933          |
| B Ezza South | 84,274                  | 175,570          |
| C Ishielu | 95,563                   | 199,089          |
| D Ikwo   | 135,772                  | 282,858          |
|           | **407,737**              | **849,450**      |
| AFIKPO    |                           |                  |
| A Afikpo North | 99,082                  | 206,420          |
| B Afikpo South | 99,373                  | 207,028          |
| C Ivo     | 76,501                   | 159,377          |
| D Ohaozara | 94,030                   | 195,896          |
| E Onicha  | 149,832                  | 312,150          |
|           | **518,818**              | **1,080,871**    |
|           | **1,363,633**            | **2,864,776**    |

LGA: local government areas.