

# Satisfaction of Nigerian Patients with Health Services: A Systematic Review

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## Abstract

**Background:** There is evidence that there is a link seen between the level of health-care services and patient contentment with those treatments. In Nigeria, we carried out a comprehensive study of patient satisfaction with health care. **Aim:** The researchers wanted to see how patient satisfaction with health services was described and analysed, if there was a reference point measure of satisfaction, what issues service users thought were important in providing high-quality care, and where there were areas of dissatisfaction. **Methods:** We looked through the databases: Medical Literature Analysis and Retrieval System Online, Excerpta Medica dataBASE, Cumulative Index to Nursing and Allied Health Literature, PsycINFO, African Journals OnLine, CDSR, Database of Abstracts of Reviews of Effects, and Health Technology Assessment. Hand searching was used to supplement the searches. Only papers that were published between 2007 and July 2018 were considered. Information from suitable papers were retrieved and examined by two different researchers after the first title, abstract, and full-text assessment. Studies were assessed using the COSMIN Risk of Bias criteria. Content analysis was employed to identify and analyse common topics. **Results:** The total number of references found was 4509. Following the screening process, 45 studies were selected for data extraction. There was no such thing as a satisfaction reference point. Seven themes were found as being significant to patients. Major areas of dissatisfaction were uncovered. **Conclusions:** A multidimensional concept was used to assess patient satisfaction in Nigerian hospitals. The highlighted topics should be included in the creation of rating scales employed in assessing the quality of services in Nigerian health-care institutions. **Systematic Review Registration:** PROSPERO CRD42018108140.

**Keywords:** Health services, Nigeria, patient satisfaction, systematic review

## INTRODUCTION

In most developing countries, the health sector faces the issue of making health-care services readily available, affordable, and accessible, as well as suitable and equally dispersed. In Nigeria, the administration, as well as individually or publicly owned hospitals, is responsible for making health services available to the general public.<sup>[1]</sup> These health facilities' main focus is whether health services are administered effectively to maximise client and stakeholder contentment with the treatments offered.<sup>[2]</sup>

Various scientific proof technologies, such as the utilisation of transportable medical services on vehicles, e-health, and computerised fatality recording, just to name some, have considerably enhanced the quality of health-care services over time.<sup>[3,4]</sup> The issue of proper distribution and diffusion

of these technologies, however, continues to be a difficulty for the sector.<sup>[5]</sup>

There is evidence that there is a link seen between the level of health-care services and patient satisfaction with those treatments.<sup>[6,7]</sup> Significant investigations on the quality of health-care delivery have been conducted through the ages.<sup>[2,8]</sup> In assessing patient satisfaction with health care, both quantitative and qualitative measures are important.

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Quantitative methods, on the other hand, are more popular and widely applied. Qualitative research is unpopular because of the small sample size and extensive time required on data analysis, particularly in scientific proof practice, where numerical and verifiable data, which are more broadly applicable and less labourious, are the focus.<sup>[9]</sup>

Patients' attitudes and contentment with health care in Nigerian health-care facilities have been extensively documented through quantitative research, particularly those that employed surveys.<sup>[10-54]</sup> A systematic review can be utilised to develop effective techniques for assessing patient contentment and novel measuring instruments, focusing on the identified patient primary priorities.

The study's main query was: how were patients' satisfaction with health-care services in Nigerian health-care facilities measured?

As a result, the review had the following goals:

1. To learn more about the methods used in Nigerian hospitals to determine patient satisfaction with health care
2. To determine whether a satisfaction reference point exists
3. To learn about the topics and subjects that are taken into account when evaluating patients' satisfaction with health-care services in Nigeria.

## METHODS

All aspects of our study are covered under the Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement.<sup>[55]</sup> A protocol was established and published elsewhere during the planning phase of this assessment.<sup>[56]</sup>

### Information sources and search methods

The query strategy is based on a high-sensitivity method of finding results. We utilised a mixture of pertinent search terms and Medical Subject Headings as well as other centralised clinical word recognition systems to integrate basic components of our study query. We used search criteria to remove out animal research and papers from before 2007. The author team built and tested a search for Medical Literature Analysis and Retrieval System Online (MEDLINE) first. This MEDLINE search was modified to meet the needs of the other online sources used. All of the search findings were saved locally. After that, they were combined into a single EndNote file.

The following databases were combed through: MEDLINE, Excerpta Medica dataBASE, Cumulative Index to Nursing and Allied Health Literature, PsycINFO (via OvidSP), African Journals OnLine, (CDSR; via Wiley), the Cochrane Database of Abstracts of Reviews of Effects, and the Cochrane Health Technology Assessment database. In the Appendix 1 section, you'll find all of the queries, search dates, and individual number of hits for each of the online sources covered.

### Criteria for inclusion and removal

The following characteristics were found in all of the studies:

1. They should look into patient satisfaction with health-care services in Nigerian health-care facilities
2. They should be performed on individuals who are at least 18 years old
3. Quantitative instruments (questionnaire-based studies) should be used to conduct them
4. Research articles and reviews that are eligible must be original
5. The studies that are included should be published in English
6. A primary result in the studies should be patient satisfaction (see Outcome categories)
7. Between 2007 and 2018, they should be disclosed.

Qualitative research, studies written in languages different from English, and studies conducted prior to 2007 were all omitted.

### Selection of research

Separately, two assessors applied the qualifying standards to the previously selected documents. Following that, the full-text vetting proceeded through similar procedure.

### Types of outcomes

The major outcome examined was patient satisfaction with health care. Any method or methodology used to assess patient satisfaction was also considered.

### Extraction of information

A spreadsheet was created to gather pertinent data from the chosen publications. Two assessors individually extracted significant material from the papers, and any inconsistencies were handled through dialogue. The following information was gathered: year, authors, sample size, study technique, health-care context (hospital or clinic), satisfaction tool utilized, instrument dimensions, format, and psychometric properties examined.

### Bias potential

The validity and reliability of the included studies were checked using the COnsensus-based Standards for the selection of health Measurement INSTRUMENTS (COSMIN) Risk of Bias checklist. The checklist was created specifically to assess the methodological quality of individual studies included in systematic reviews of Patient-Reported Outcome Measures (PROMs). The quality of the individual studies was rated as very good, adequate, doubtful, or inadequate.<sup>[57]</sup> The merit of a study (i.e., its quality) was determined by assigning the lowest possible score to any of the standard questions (the "worst score counts" principle).<sup>[58]</sup> The study and comprehensive explanation of the COSMIN checklist and its application methods were published by Mokkink *et al.*<sup>[59]</sup> The principal reviewer used the COSMIN checklist on every included study for this review, and any doubts were explored.

### Synthesis of information

To achieve our major goals, we conducted a rigorous and detailed narrative synthesis. Only studies that provided

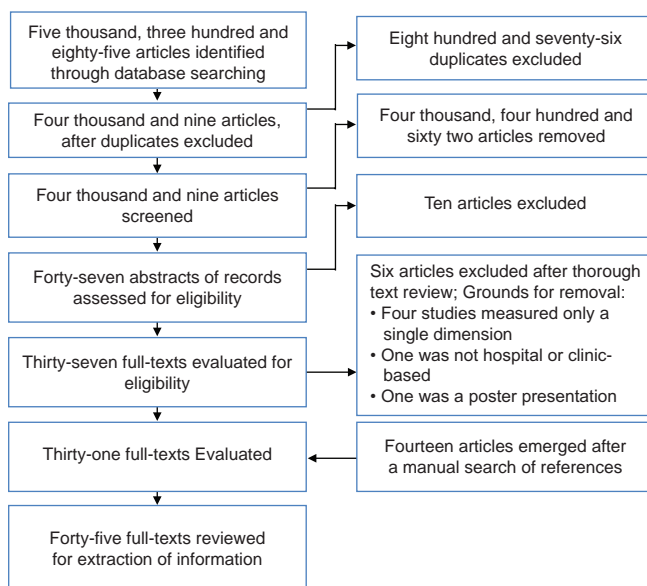
information on one or more assessment components of the COSMIN Risk of Bias checklist were included in our analysis. The most important aspects of these investigations were summarised in a table and split into seven topics that arose from the research that were included.

## SEARCH RESULTS

A search of online sources turned up 5385 results. After the screening procedure, a total of 4509 titles and abstracts were considered. We eliminated 4478 records during title, abstract, and full-text screening. For data extraction, the remaining 31 papers were included, as well as 14 from hand scanning of the reference lists (for a total of 45 studies) [Figure 1].

### Characteristics of the studies that were included

Antenatal, eye care, dental care, antiretroviral, nursing, pharmaceutical, medical, laboratory, physiotherapy, radiography, and psychiatric treatments were among the topics included in this review. The participants in the study ranged in number from 51 (from an outpatient physiotherapy clinic)<sup>[34]</sup> to 2700 (from 17 HIV treatment centres).<sup>[12]</sup> Seven (15.56%) of the studies were conducted with pregnant women in prenatal clinics, while six (13.33%) were conducted with HIV-positive adults. Three studies looked at patients in accident and emergency departments (6.67%). Four of the studies were conducted in outpatient physiotherapy clinics (8.89%). Two studies looked at how satisfied patients were with their dental care (4.44%). Ten of the publications used semi-structured questionnaires, with many of them being administered by an interviewer. The Likert scale was used to scale survey responses in 33 research questionnaires. All except one of the examined studies used cross-sectional designs. Twelve of the studies included had no response rates [Table 1].



**Figure 1:** The flow of information through the various stages of the systematic review

## Measures and techniques for assessing patient satisfaction

Patients' satisfaction with health services was assessed using a variety of measures, but only a few were used by more than one study – even in studies that focused on the same population. The identical satisfaction measurement instrument was employed in two out of six HIV/AIDS clinic trials, for example. The satisfaction questionnaires used in each of the seven trials with pregnant women were unique. The two dental clinic studies, on the other hand, used the same satisfaction tool: the modified Dental Satisfaction Questionnaire [Table 1].

We define a “reference point” measure of patient satisfaction in this study as an evaluation of adequate assessment in terms of reliability (are the results trustable and repeatable?), validity (has an assessment been conducted on what clients consider as important features of value and are they properly examined?), acceptability, and workability (i.e., feasibility).<sup>[60]</sup>

In most (forty-one) of the studies examined, the satisfaction category is multidimensional, spanning two to eight dimensions. However, this was not reported explicitly in four studies.

### The assessments' methodological quality

Twenty-one studies described pretesting with a patient group as part of the workability research, which is a type of procedure for validation. Several of the studies used in this review employed previously validated questionnaires. Only 17 researches, on the other hand, looked at one or more assessment qualities as outlined by the COSMIN criteria. Internal consistency, reliability, content validity, cross-cultural validity, hypothesis testing, measurement error, and structural validity were the primary criteria evaluated [Table 1]. Facts required to answer the research questions were collected from these 17 publications, as specified in the protocol.<sup>[56]</sup> Seven of the 17 studies considered in this review used tools that were tested prior to the start of the main survey. Six studies reported content validity, and it was deemed sufficient in all of them. Pilot studies were conducted in certain studies to determine face and content validity, in addition to guaranteeing practicality.<sup>[12,19,27]</sup> Structure validity was assessed in four investigations.<sup>[12,19,25,32]</sup> If confirmatory or exploratory factor analysis were undertaken, the rating was either very good or adequate. It received an insufficient rating from Boehmer *et al.* because none of these analyses were performed. Two of the listed studies had their internal consistency examined, and the results were very good.<sup>[19,32]</sup> When there was no reported data on unidimensionality/structural validity or only the available Cronbach's alpha value for a multidimensional total scale, the evaluations were doubtful or inadequate.<sup>[12,25,32,34]</sup> Cross-cultural validation was evaluated in eight studies. In six investigations, regression analysis was employed to assess cross-cultural validity, and it was found that populations were identical in significant properties aside from the group variable, indicating that the grading was “adequate” for each study.<sup>[27,28,31,40,43,48]</sup> In one study, the Chi-square was utilised to evaluate the various groups, and the findings were “inadequate.”<sup>[26]</sup> The reviewers

**Table 1: Overview of the studies that passed the requirements for the review**

Study (year)	Sample size	Study location; health-care setting	Pretest; survey design	Name of instrument to assess satisfaction	Construct dimensions (number of dimensions)	Format for survey items; response rate	Measurement properties	Psychometric values	COSMIN rating
Bellow (2018)	500	2 ANCs	Interviewer administered. Cross-sectional	QPCQ	Multidimensional (6)	Likert	Not specified	Not specified	Not possible
Olaleye <i>et al.</i> (2017)	65	Hospital; OPC	Cross-cultural adaptation. Cross-sectional	EPTOPS Questionnaire	Multidimensional (5)	Likert; 92.3%	Not specified	Not specified	Not possible
Michael <i>et al.</i> (2017)	202	NHIS clinic	Pretested, self-administered. Cross-sectional	GPAQ originally in English, translated in Hausa	Multidimensional	Likert; 100%	1. Cross-cultural validation	Chi-square analysis	1. Inadequate
Ogunlade <i>et al.</i> (2017)	428	Z clinic	Adapted, self-administered. Descriptive design	Modified Consumer Quality Index for Accident and Emergency	Multidimensional	Likert; 100%	1. Hypothesis testing	Regression, $F=3.246$ , $df=3,423$ , $R^2=0.016$ , $P=0.022$	1. Adequate
Osiya <i>et al.</i> (2017)	1290	Two hospitals	Self-administered. Cross-sectional	PSQ-18	Multidimensional (7)	Likert; 100%	1. Content validity 2. Cross-cultural validation	2. Mann-Whitney tests and Kruskal-Wallis test	1. Sufficient 2. Adequate
Boehmer <i>et al.</i> (2016)	340	HIV clinic	Pretested in 15 women; cross-culturally adapted, self-completed. Cluster-randomized trial	PSQ	Multidimensional (3)	Likert; 92.10%	1. Content validity 2. Structural validity 3. Internal consistency 4. Cross-cultural validity	$\alpha=0.94$ , IQR=4.61 (intervention arm), 3.84 (control arm)	1. Sufficient 2. Adequate 3. Very good 4. Inadequate
Afe <i>et al.</i> (2016)	120	Psychiatric hospital	Interviewer administered. Cross-sectional	CPOSS	Multidimensional	Likert	1. Internal consistency 2. Structural validity 3. Hypothesis testing	$\alpha=0.91$ , convergent validity 0.30-0.68, correlation $r=0.29$	1. Doubtful 2. Inadequate 3. Very good
Ekpe <i>et al.</i> (2016)	130	Hospital	Pretested; self-administered. Cross-sectional	Structured questionnaire	Multidimensional	Likert; 83.08%	Not stated	Not specified	Not possible
Sowunmi <i>et al.</i> (2015)	253	Hospital	Semi-structured questionnaire. Cross-sectional	Not stated	Multidimensional	Likert; 97.2%	Not stated	Not specified	Not possible
Ochonma <i>et al.</i> (2015)	300	Two radiology centres	Validated questionnaire through pilot study; interviewer administered. Cross-sectional	SQUAT and QUOTE	Multidimensional (3)	Likert; 100%	1. Measurement error	$t(242.13)=-6.960$ , $P<0.001$	1. Adequate
Shagaya (2015)	68	NHIS clinic	Interviewer administered, exit interview. Cross-sectional	Not specified	Multidimensional	Not stated	Not stated	Not stated	Not possible
Okwuonu <i>et al.</i> (2015)	406	Diagnostic centre	Pretested; semi-structured, self-administered. Cross-sectional	Not specified	Not specified	Not specified	Not specified	Not specified	Not possible

*Contd...*

**Table 1: Contd...**

Study (year)	Sample size	Study location; health-care setting	Pretest; survey design	Name of instrument to assess satisfaction	Construct dimensions (number of dimensions)	Format for survey items; response rate	Measurement properties	Psychometric values	COSMIN rating
Agu <i>et al.</i> (2014)	2700	Hospital; 17 HIV treatment centres	Pretested; exit interview, semi-structured. Cross-sectional	Study-specific	Multidimensional (7)	Likert; 59.9%	1. Content validity 2. Structural validity 3. Internal consistency 4. Reliability	$\alpha > 0.7$ , KMO=0.933, Bartlett's test for sphericity=0.905, ICC=0.905 (95% CI 0.8983-0.9115)	1. Sufficient 2. Adequate 3. Inadequate 4. Very good
Nnebe <i>et al.</i> (2014)	280	Primary health clinic	Pretested questionnaire; interviewer administered (exit interview). Cross-sectional	Not specified	Not specified	Not stated	Not specified	Not stated	Not possible
Ezegwui <i>et al.</i> (2014)	307	Eye clinic	Pretested; interviewer administered. Cross-sectional	Not specified	Multidimensional (5)	Likert; 100%	Not specified	Not stated	Not possible
Fatiregun <i>et al.</i> (2014)	800	PHC	Adapted, semi-structured, exit interview. Cross-sectional	Adapted from the protocol of the Addis Ababa University KAPB Study on Immunisation Exit Interview Questionnaire	Multidimensional (5)	Not stated	1. Cross-cultural validation	Regression analysis	1. Adequate
Fadare <i>et al.</i> (2014)	100	Mental health clinic	Validated; interviewer administered. Cross-sectional	TSQM 1.4	Multidimensional (4)	0-100	Not stated	Not stated	Not possible
Okoye <i>et al.</i> (2014)	1637	6 HIV/AIDS clinics	Self-administered. Cross-sectional	PSPS	Multidimensional (5)	Likert	1. Structural validity 2. Internal consistency 3. Reliability 4. Hypothesis testing	$\alpha=0.85$ correlation coefficient, $r < 0.5$ (divergent validity), $r > 0.5$ (convergent validity)	1. Very good 2. Very good 3. Doubtful 4. Very good
Adekanya <i>et al.</i> (2013)	480	Hospital; FMC	Pretested; exit interview. Cross-sectional	Not stated, adapted from literature	Multidimensional (3)	Likert; 88.9%	Not stated	Not stated	Not possible
Adeniyi <i>et al.</i> (2013)	348	Dental clinic	Self-administered. Cross-sectional	Modified DSQ	Multidimensional (7)	Likert; 90.90%	1. Cross-cultural validation	Regression analysis	1. Adequate
Sufiyan <i>et al.</i> (2013)	234	ANCs	Pretested; semi-structured, exit interview. Cross-sectional	Self-developed	Multidimensional	Dichotomous	Not specified	Not specified	Not possible
Babatunde <i>et al.</i> (2013)	250	PHC	Semi-structured; interviewer administered. Cross-sectional	Adapted from QUOTE	Multidimensional	Likert; 100%	Not specified	Not specified	Not possible

*Contd...*



Table 1: Contd...

Study (year)	Sample size	Study location; health-care setting	Pretest; survey design	Name of instrument to assess satisfaction	Construct dimensions (number of dimensions)	Format for survey items; response rate	Measurement properties	Psychometric values	COSMIN rating
Nwaeze <i>et al.</i> (2013)	239	ANC	Interviewer administered. Cross-sectional	Structured Questionnaire	Multidimensional	Dichotomous	1. Cross-cultural validation	Logistic regression; OR=36.50 (CI 3.89-341.65), P<0.05	1. Adequate
Olowookere <i>et al.</i> (2012)	408	ARV clinic	Pretested; interviewer administered. Cross-sectional	PLHIV assessment of satisfaction with care	Multidimensional (4)	Likert; 98%	Not stated	Not stated	Not possible
Iloh <i>et al.</i> (2012)	400	NHIS clinic	Pretested; structured and interviewer administered. Cross-sectional	Not specified	Multidimensional (6)	Likert	Not specified	Not specified	Not possible
Olawoye <i>et al.</i> (2012)	366	2 eye clinics	Pretested; self-administered. Cross-sectional	Self-developed	Multidimensional	Likert	1. Content validity 2. Cross-cultural validation	Logistic regression	1. Sufficient 2. Adequate
Adamu <i>et al.</i> (2012)	100	Teaching hospital	Pretested; structured, and self-administered. Cross-sectional	Not stated	Not stated	Not stated	1. Cross-cultural validity	Regression analysis, OR=1.055 (CI 1.013-1.019)	1. Adequate
Udo <i>et al.</i> (2011)	700	Hospital; obstetric sonographic units. Cross-sectional	Validated instrument; self-completed	Self-developed	Multidimensional (7)	Likert; 92.60%	Not stated	Not stated	Not possible
Mohammed <i>et al.</i> (2011)	300	NHIS clinic	Pretested; interviewer administered. Cross-sectional	Adapted from preexisting instruments	Multidimensional (6)	Likert; 93.30%	1. Hypothesis testing	Not stated	1. Very good
Nwabueze <i>et al.</i> (2011)	150	HIV/AIDS clinic	Pretested on ten patients; interviewer administered. Cross-sectional	Clinical quality Services Branch of the BPHCQ	Multidimensional (6)	Likert; 100%	Not stated	Not stated	Not possible
Udonwa <i>et al.</i> (2010)	425	PHF, 4 immunization centres	Semi-structured, self-administered. Cross-sectional	Not stated	Multidimensional	Likert; 94.60%	Not stated	Not stated	Not possible
Oluwadiya <i>et al.</i> (2010)	250	Hospital; A and E departments	Validated questionnaire; interviewer administered. Cross-sectional	Not stated	Multidimensional	Ordinal, Likert, Dichotomous and open-ended	Not stated	Not stated	Not possible
Campbell <i>et al.</i> (2010)	292	PHC clinic	Interviewer administered. Cross-sectional	Flow analysis chart modified from COPE	Multidimensional	Not specified	Not specified	Not specified	Not possible
Iliyasu <i>et al.</i> (2010)	210	Hospital	Pretested; structured and interviewer administered. Cross-sectional	Adapted from previous instruments	Multidimensional	Likert; 95.70%	Not specified	Not specified	Not possible

Contd...

**Table 1: Contd...**

Study (year)	Sample size	Study location; health-care setting	Pretest; survey design	Name of instrument to assess satisfaction	Construct dimensions (number of dimensions)	Format for survey items; response rate	Measurement properties	Psychometric values	COSMIN rating
Abiodun (2010)	200	PHC centers and clinics	Interviewer administered. Cross-sectional	Self-developed from literature	Multidimensional (8)	Likert; 91.5%	1. Cross-cultural validity	Regression analysis	1. Adequate
Nwabueze <i>et al.</i> (2010)	300	2. HIV clinics	Interviewer administered. Cross-sectional	Clinical quality Services Branch of the BPHCQ	Multidimensional	Likert	Not specified	Not specified	Not possible
Asekun - Olarinmoye <i>et al.</i> (2009)	289	ANC	Questionnaire was developed and pretested in another ANC, semi-structured. Cross-sectional	Not specified	Multidimensional (2)	Likert	Not specified	Not specified	Not possible
Orenuga <i>et al.</i> (2009)	300	Dental clinic	Self-administered. Cross-sectional	Modified DSQ	Multidimensional (5)	Likert	Not specified	Not specified	Not possible
Odebiyi <i>et al.</i> (2009)	639	Physiotherapy outpatient clinics	Self-administered. Cross-sectional	Modified PSQMP	Multidimensional (6)	Likert; 79.8%	1. Content validity		1. Sufficient
Oladapo <i>et al.</i> (2008)	461	ANC	Pretested in 25 women; structured and interviewer administered. Cross-sectional	Adapted from a preexisting validated instrument used by WHO	Multidimensional (7)	98%	Not specified	Not specified	Not possible
Fawole <i>et al.</i> (2008)	395	ANC	Interviewer administered, semi-structured. Cross-sectional	Not specified	Multidimensional	Not specified	Not specified	Not specified	Not possible
Olatunji <i>et al.</i> (2008)	51	Physiotherapy outpatient clinic	Self-administered. Cross-sectional	Self-developed	Multidimensional	Likert	1. Content validity 2. Reliability 3. Internal consistency	2. Test-retest reliability 3. $\alpha=0.93$	1. Sufficient 2. Doubtful 3. Inadequate
Ugwu <i>et al.</i> (2007)	92	Hospital; four ultrasound centres	Questionnaire was drafted and piloted on ten women; readministered on 92 patients, self-completed. Cross-sectional	Not specified	Multidimensional (3)	Likert; 92%	Not specified	Not specified	Not possible
Ariba <i>et al.</i> (2007)	1129	A and E clinic	Pretested; self-administered. Cross-sectional	Not specified	Multidimensional (3)	Likert	Not specified	Not specified	Not possible
Balogun (2007)	200	ANC	Interviewer administered. Cross-sectional	Not specified	Not specified	Not specified	Not specified	Not specified	Not possible

QPCQ: Quality of Prenatal Care Questionnaire; OPC: Outpatient physiotherapy care; EPTOPS: European Physiotherapy Treatment Outpatient Satisfaction Survey; GPAQ: General Practice Assessment Questionnaire; A and E: Accident and emergency; PSQ: Patient Satisfaction Questionnaire, IQR: Interquartile range; CPOSS: Charleston psychiatric outpatient satisfaction scale, SQUAT: Standard quality assurance team, QUOTE: Quality Of health care services through the patient's eyes, CI: Confidence interval, PHC: Primary health care, OR: Odds ratio, ARV: Antiretroviral, PLHIV: People living with HIV, PHF: Primary health facility, BPHCQ: Bureau of PHC Questionnaire, ANC: Antenatal clinic, DSQ: Dental Satisfaction Questionnaire, PSQMP: PSQ for Physiotherapy, TSQM: Treatment Satisfaction Questionnaire for Medication, PSPS: Patient Satisfaction with Pharmaceutical Service, COSMIN: Consensus-based Standards for the selection of health Measurement Instruments, FMC: Federal medical center, ICC: Intra-class correlation coefficient, NHIS: National health insurance scheme, COPE: Coping orientation to problems experienced, KABBP: Knowledge, Attitudes, Beliefs and Practices, KMO: Kaiser-Meyer-Olkin test

assigned “adequate” quality to Osiya *et al.* and Boehmer *et al.* since they believed that the method utilised was suitable despite the fact that it was not explicitly specified.<sup>[19,45]</sup> Because it was uncertain whether the target population was steady during multiple evaluations and whether the time interval across assessments was missed or incorrect, the value of two out of the three studies that investigated reliability was scored “doubtful.”<sup>[32,34]</sup> PROMs are frequently assessed at two-week intervals.<sup>[59]</sup> The grading for Agu *et al.*<sup>[12]</sup> was “doubtful” since no time duration was specified, regardless of the fact that test circumstances were identical and patients were considered to be stabilised, implying that the “worst count principle” was applied.<sup>[58]</sup> Hypothesis testing was used to determine construct validity, which was deemed “adequate” in one of the included investigations<sup>[38]</sup> and “very good” in the other three studies that assessed measurement property.<sup>[25,32,61]</sup> The standard error of measurement is the recommended statistic for assessing measurement error. It was only tested in one trial, and the results were “adequate.”<sup>[62]</sup> Physical facilities, environmental cleanliness, and waiting room comfort were some of the challenges addressed in the clinic/hospital infrastructure domain. Fifteen of the 17 researches looked into the patient–staff relationship. Six studies looked at clinic/hospital infrastructure, while 11 looked at waiting time and convenience. Only one study, Olatunji *et al.*, observed a lack of privacy/secretcy, with 100% satisfaction with privacy and confidentiality.<sup>[34]</sup> Convenience and waiting time were the two biggest sources of dissatisfaction. In one survey, up to 62.2% of respondents were unsatisfied with waiting times.<sup>[38]</sup> Access to care, information and counselling services, appointment dates, and other clinic services are all examples of quality and availability issues. Eleven of the 17 studies found that access, availability, and quality were all very good. Another source of frustration was the cost of service. In one study, however, 81% of women who thought antenatal care was pricey were happy.<sup>[43]</sup>

## DISCUSSION

According to the results of this study, a large percentage of the eligible studies employed multidimensional measures to assess patient satisfaction with treatments in Nigerian health-care facilities. The number of subscales of instruments used in patient-reported outcome research has been shown to vary widely in studies.<sup>[28,29,40,63]</sup> Patient feedback and assessment should be considered in the construction of questionnaires to make sure that the questions are suitable and proper. This can be accomplished by pretesting the questionnaire before distributing it to a larger group of people. Piloting also aids in determining the tool's practicality as well as enhancing the item's build for a better outcome. The instrument was administered in one of two ways: self-completed or by an interviewer. Typically, the interview took place as the patient was about to leave the hospital or clinic (exit interview). Both types of survey administration have advantages and disadvantages. Questionnaires administered by an

interviewer may have the benefit of enhancing participant involvement and overall response rates. However, if the researcher is present during the interviewing procedure, less honest results may be obtained (interviewer bias and social desirability bias). Respondent literacy may be less relevant in an interviewer-administered questionnaire, because the completion of a questionnaire by the intended person is guaranteed. Furthermore, there are fewer missing answers and a clearer understanding of the responses, which might be considered further benefits. This, however, necessitates the use of a skilled and impartial interviewer who is free of any potential conflicts of interest.<sup>[64]</sup> Respondents can answer the questions on their own using the self-completed questionnaire (self-administered). Bias is not a concern, and there is less time spent on administration. It also means that larger groups of people may be questioned more easily.

Nonetheless, selection bias can emerge in both scenarios as a result of greater participation of either people who are extremely dissatisfied with a service or those who are extremely satisfied with a service.<sup>[60]</sup>

Only the use of valid and reliable measurement devices allows for meaningful assessment of patient satisfaction metrics.<sup>[65]</sup> When studies are conducted using result assessment tools of inadequate or uncertain quality, it is unethical because limited resources are wasted. Because the COSMIN Risk of Bias checklist was developed and confirmed expressly for assessing the research quality of tools used to assess PROMs such as satisfaction, perception, and quality of life in health research, it is ideal for this assessment. This study focused on quantitative methodology, such as questionnaire-based research. The most popular way of evaluating patient happiness is the use of satisfaction surveys, such as questionnaires.<sup>[66]</sup> The accuracy of results is ensured when questionnaires are well designed. As a result, a useful patient satisfaction scale should be clear, important, feasible, and valid. Patients are stable on the construct to be assessed when repeated measures are conducted, which is an important assumption for measuring instrument reliability. As a result, strong response and completion rates are required for reliable results. It simply pertains to the consistency of ratings, not to their accuracy. Because content validity is so crucial, evaluating other attributes may be irrelevant if it is deemed insufficient.<sup>[57]</sup> This property's ranking is highly subjective; it is based on the reviewers' judgment. The substance of an instrument's items, on the other hand, will be such that a sufficient reflection of the construct to be examined is demonstrated.<sup>[59]</sup>

When evaluating the internal structure of a measurement scale, qualities such as structural validity, internal consistency, and cross-cultural validity are considered.<sup>[59]</sup> The three attributes were assessed in order to determine how the various components of a satisfaction questionnaire are related to one another. Cronbach's alpha is commonly used to assess internal consistency. When it gets a high rating, it signifies the statistic was calculated for each unidimensional scale or subscale.



**Table 2. Topics examined in the papers that were considered**

Studies	Patient-staff relationship	Clinic/hospital infrastructure	Privacy/confidentiality	Convenience and waiting time	Quality and availability of service	Cost of service	Overall satisfaction
Michael et al. (2017)	Not specified	Not specified	Not specified	Not specified	75.1%–90% were contented with clinic services	Not contented. Only 29.7% were happy	65.8% were happy
Ogunlade et al. (2017)	60% were contented with the nurses	37.2% were happy	Not specified	37.8% contented	Not specified	57.9% happy	33% happy
Osiya et al. (2017)	High contentment. >50% happy	Not specified	Not specified	>50% were happy with time	> 50% were happy	<50% were happy with cost	>50% were happy
Boehmer et al. (2016)	High contentment recorded	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Afe et al. (2016)	High contentment with staff attitude	Not specified	Not specified	Low contentment with waiting time	Not specified	Low contentment with cost of service	High contentment with overall quality of care
Ochonma et al. (2015)	84.7% were happy with good professional conduct (mean values >3.5)	Not specified	Not specified	Neutral to waiting time (mean score=3.12). Mid-point=3.5	Contented with radiological services (mean values >3.5)	Not specified	Happy (mean score=3.69). The mid-point is 3.5
Agu et al. (2014)	Poor staff communication (1.6)	Highly contented (4.1)	Not specified	Not happy with waiting time and duration of interaction with pharmacist	Staff availability was high. (3.6)	Not specified	90% were happy and would come back if need be
Fairegun et al. (2014)	75% were happy with the staff attitude. 44%–47% were not happy with hospital environment	Not specified	Not specified	75% (urban dwellers, n=52), 55% (rural dwellers, n=20) were not happy with waiting time and 42.3%(urban), 65%(rural) were dissatisfied with waiting area	87%–95% contented with vaccination services	Not specified	97%–99% were willing to suggest the facility to friends
Okoye et al. (2014)	High contentment (4.57±0.57)	Not specified	Not specified	Not specified	High contentment with services (>4.2)	Not specified	High contentment (4.68±0.60)
Adeniyi et al. (2013)	99.7% happy	88.5% happy with facilities	Not specified	74.2% contented with patient waiting time	92.3% contented with the quality of care. Poorly organized services	83.3% contented with access and cost	88.5% contented
Nwaeze et al. (2013)	>80% were happy with doctors and nurses' attitudes	>60% were happy with clinic amenities	Not specified	64.9% who thought that total time spent in the ANC was too long were still contented	>70% were happy with routine services/health talk	81.0% who perceived the cost of ANC as expensive was still contented	83.3% would suggest the facility to somebody else
Olawoye et al. (2012)	High contentment reported in both eye hospitals	Not specified	Not specified	49.5%; 63.7% were contented	Not specified	Satisfactory. 76.6%; 96.7%	High contentment. 70.6%, 71%
Adamu et al. (2012)	95.8% happy with nurses. 65% happy with doctors	65% were contented with the cleanliness of the environment	Not specified	50% were happy with wait time	Not specified	Not specified	52.1% happy
Mohammed et al. (2011)	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	42.1% were contented
Abiodun (2010)	Moderate satisfaction with empathy	Not specified	Not specified	Not specified	Moderate contentment with access to care	Not specified	Moderate contentment recorded <6. Maximum=7

Contd...

**Table 2: Contd...**

Studies	Patient-staff relationship	Clinic/hospital infrastructure	Privacy/confidentiality	Convenience and waiting time	Quality and availability of service	Cost of service	Overall satisfaction
Odebiyi <i>et al.</i> (2009)	Satisfied with staff conduct (>50). Maximum 65	Satisfied with the facility (>21). Maximum 35	Not specified	Not specified	Happy with accessibility (>24). Maximum=35. Contented with clinical expertise (>42). Maximum 55 Contented with appointment (>17). Maximum 25	Not specified	Contented (>39). Maximum 50
Olatunji <i>et al.</i> (2008)	100% were contented with the physiotherapist's character	Not specified	100% were happy with privacy	98% were happy with the time spent on treatment	Over 95% were contented with the services	88% were contented with the cost	98% were happy with overall care

ANC: Antenatal clinic

Cross-cultural validation is a feature that determines how valuable items on a modified or culturally adapted scale are in demonstrating their performance on the original version of the scale. The evaluation was carried out on people from various cultural backgrounds, and the results were widely understood. As a result, we took into account not just different ethnic groups or languages but also varied population/group characteristics such as age, sex, and patients as culturally distinct communities. Two or more of these groups' scores were directly compared. Regression or confirmatory factor analysis, as well as differential item functioning analyses, are the recommended statistical tests for the evaluations.<sup>[59]</sup>

The findings of this analysis corroborate prior findings that there is no reference point measure of patient satisfaction with health services.<sup>[66-69]</sup> The feasibility, acceptability, reliability, and validity of a reference point measure of patient satisfaction have all been considered.<sup>[60]</sup> The fact that multiple satisfaction tools are used in the same demographic (e.g., HIV patients) further supports the idea that there is no gold standard measure of satisfaction.

However, the study highlighted seven key elements that are critical in providing high-quality care [Table 2]. The patient–staff relationship was one of the themes that were mentioned in 15 studies. In 11 studies, waiting time/convenience, as well as service quality/availability, was identified as important factors. In eight researches, the cost of service was reported, while 15 studies looked at overall satisfaction. Overall satisfaction was measured by the willingness to return for necessary repeat procedures and the referral of friends and family. Without a doubt, the possibility of social desirability bias exists, as participants may be overstating their happiness with the service.<sup>[70]</sup>

**Limitations**

In the systematic review, we only looked at quantitative studies. Future research could focus on qualitative measurements to extend the perspective on the subject and evaluate the potential benefits and drawbacks of different methodological approaches.

**Implications for practice**

This is the first systematic evaluation of patient satisfaction with health-care services in Nigerian health-care facilities. The primary topics identified will aid in the development of future patient satisfaction measures for effective evaluation of performance level in hospitals and clinics.

Patients must be assessed to determine their satisfaction with therapy and facilities, as well as advancements achieved, as part of efficient performance monitoring in the nation's health-care delivery system.<sup>[71]</sup> It cannot be overstated how important it is to conduct the assessment using reliable and established instruments. As a result, both academics and physicians, as well as governments, will benefit from the findings of this review. Researchers will work to create tools that are both valid and dependable. Clinicians and other health-care staff

should concentrate on addressing patient dissatisfaction, particularly those that affect them, such as high wait times at hospitals and clinics. Patients' satisfaction with health care would improve significantly if local and national governments pursued policies that minimise center overdependence on out-of-pocket spending, as most patients pay hospital costs out of their own pockets. As a result, private health-care spending might be drastically reduced.

## CONCLUSIONS

The review revealed that multidimensional questionnaires were used to assess patient satisfaction with health services in Nigerian hospitals and clinics, which were either self-completed or administered by an interviewer. Within the hospitals and clinics, there was no uniform measure of patient satisfaction. Patient–staff relationships, clinic/hospital infrastructure, privacy/confidentiality, convenience/waiting time, quality/availability of treatment, cost of service, and overall happiness were selected as the seven most important categories for service users. Convenience, wait time, and cost of service were the top sources of dissatisfaction.

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There are no conflicts of interest.

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