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Secondary Health Care Service Quality and patients' Satisfaction in Ogun state, Nigeria

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ABSTRACT

Secondary health care is a medical facility that offers specialized services with a more comprehensive range of diagnostic services. Patients from the primary healthcare facilities are referred to secondary healthcare facilities due to their wider range of services. The aim of this study is to investigate the effects of Secondary health care service quality on patients' satisfaction in Ogun State government-owned hospitals in Nigeria. The objective is to examine the dimension of service quality (tangibles, reliability, responsiveness, assurance and empathy) on patients' satisfaction in Ogun State government-owned hospitals in Nigeria. Survey research design was used collect information from the respondents using the personal contact method. The target population included all out-patients from six government-owned hospitals. A multi-stage sampling techniques was incorporated which resulted in data collection of 450 patients using convenience sampling. The data was analyzed using Covariance-Based Structural Equation Modelling (CB-SEM). The findings from the results showed that the reliability and assurance dimension of service quality significantly influenced patients' satisfaction. In contrast, tangibles, responsiveness, and empathy do not significantly influence patients' satisfaction. This study contributes significantly to contemporary issues in the Nigeria health sector by looking at how Ogun State government-owned institutions can improve on the quality of services they delivered to their patients.

1. Introduction

The quality of healthcare offered to patients mirrors the values and goals of the medical institution (Akinyinka *et al*, 2019). "Healthcare is a service offered to persons who are simultaneously patients in a traditional sense and customers in a modern sense" and healthcare facilities are expected to consistently improve their service quality, and patient satisfaction levels to maintain stipulated physician ethics obligations (Michael *et al*, 2022). According to the World Health Organization (WHO), quality of care is "the extent to which health care services provided to individuals and patient populations improve desired health outcomes." Quality health care is in essence, health care that is safe, effective, timely, efficient, equitable, and people-centered (Akinyinka *et al*, 2019). Tasso *et al*. (2012), describe patient satisfaction as the "service experience that meets consumer expectations. „According to Tan *et al.* (2019), the healthcare sector revolves around providing superior medical services to patients. Therefore, patient perception of service quality is significant for the lasting performance of the healthcare industry. The healthcare business focuses on service quality, including everything from providing the appropriate care at the exact time, affordable rate, and the proper environment. The balance between cost-effectiveness and quality care is crucial because it impactsa patient'slife and death (Gardner *et al.*, 2018).

"Quality in healthcare is a production of cooperation between the patient and the healthcare provider in a supportive environment. Personal factors of the provider and the patient, and factors about the healthcare organization, healthcare system, and the broader environment affect healthcare service quality" (Ali Mohammad, 2014).

With the complexity of the healthcare industry's service delivery, healthcare personnel must provide patients with high-quality healthcare services to ensure patient satisfaction (WHO, OECD 2018). Service performance influences all firms, large and small, profitable or not-for-profit, international or local (Kaplan and Norton, 2000). As a result, many businesses, including health care institutions, actively investigate, analyze, and implement marketing activities to increase consumer satisfaction. Customers who are pleased

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with an organization's services will become loyal to such an organization, which results in continuous patronage (Kabu and Sonia, 2017).

1.1. Statement of the Problem

According to Okafor (2017), Nigeria's health sector faces a significant human resource shortage. Okafor also stated that it is harder to decipher why there is still a vast medical workforce shortage despite its sizeable human resource base. Agnieszka *et al* (2021) in their analysis of their research, discovered that patients' dissatisfaction was primarily related to the "attitude of a doctor and the remaining medical and non-medical personnel about the patient, and the lack of understanding of information related to the condition of the patient's health." This thought elucidates the critical factors Dzomeku (2011) mentionedthat contribute to patients' dissatisfactions, whichinclude health care staff's poor attitude, patient neglect, and financial aspects. Because of the unacceptable behavior of health care workers, patients will only refer to the hospital as a last resort in the future.

Hence, health care providers must continuously ensure the care they provide is efficient, compassionate, patient-centered, and meets the needs of the patients to determine their care quality. An examination of the literature revealed that numerous studies on service quality and customer satisfaction had been conducted (Uvais and Sulaiman 2017; Panichpathom, 2016; Sharma, 2014; Rahman *et al.*, 2014; Hou *et al.*, 2013; Barbera *et al.*, 2011). However, research has revealed that most studies have been conducted in the United States of America, China, India, Malaysia, Poland, and several other countries. The gap in this study is that there is a shortage of available literature to investigate Nigeria's health sector and despite numerous studies, the health sector has received relatively little attention. These facts suggested that there had not been enough focus on the quality of services provided to patients in Nigeria. As a result, the article seeks to fill this gap by conducting detailed research on how service quality impacts patient satisfaction in the secondary health care institutions, focusing on State Hospitals in Ogun State to shed light on patients' perceptions of how these hospitals deliver services.

1.2. Objectives of the study

The main objective of this study is to examine the effect of secondary healthcare service quality dimensions on patients' Satisfaction in Ogun state, Nigeria. However, other specific objectives are to:

(i) Investigate whether the tangibles aspect of the hospitals has a significant effect on patients' satisfaction.
(ii) Examine whether the reliability of the hospitals has a significant effect on patients' satisfaction.
(iii) Find out whether the responsiveness of the hospitals has a significant effect on patients' satisfaction.
(iv) Determine whether the assurance provided by the personnel of the hospitals has a significant effect on patients' satisfaction.
(v) Examine whether the empathy shown to patients by the hospitals has a significant effect on patients' satisfaction.

2. Literature review

2.1. Concept of Service Quality

Service quality is defined as "the extent to which a customer's perception of service meets or surpasses expectations" (Shi *et al.*, 2014; Zeithaml *et al.*, 1996). Recently, researchers in marketing and management services have shown a strong interest in service quality (Kim *et al.*, 2017). In addition, its structure and measurement scales have also received considerable interest (Shi *et al.*, 2014). In a range of areas, including the banking industry, telecommunications, education, hospitality industry, health management, and tourism, service quality has gotten a lot of attention. Service quality is based on several dimensions, it has been referred to as a concept with several scopes, each of which impacts differently on customer pleasure (Paul *et al.*, 2016).

2.1.1. Dimensions of Service Quality

Parasuraman *et al.* (1985) proposed the SERVQUAL survey statements from their ground-breaking research, which provided a concrete basis for examining service quality. The statements in the research instrument were the best for determining the level of service quality. It began with ten constructs and 97 survey items, but the measurement scale was reduced to five-dimensional constructs, which comprised tangibles, responsiveness, assurance, reliability, and empathy (Ansa, et al. 2021)

2.1.1.1. Tangibles

Tangibles are the facilities of the company that provides services. It includes the company's employees and the equipment used in the business operation. In industries, tangibles symbolize top quality (Ngaliman*et al.*, 2019).

2.1.1.2. Reliability

As defined by (Ngaliman*et al.*, 2019), reliability is the capacity to perform service accurately and consistently. Questions like whether this is the first time the firm has provided the service? Is the company true to its word? If service providers want to be trusted, they must answer these questions. The capacity of the service provider to provide service to the consumer as anticipated is referred to as the reliability component of service quality (Parasuraman *et al.*, 1985). It also includes how a service provider will respond

to customer grievances, provide excellent service as expected by customers the first time, provide assistance on time, and update customers on when services will be provided.

2.1.1.3. Responsiveness

The responsiveness component of service quality concentrates on rapidly and attentively responding to customers' wants, grievances, and complaints. A company is sensitive when it informs customers how long it will take to get answers or solve problems. If a service provider wants to succeed, responsiveness must be evaluated from the consumer's perspective. (Ngaliman*et al.*, 2019)

2.1.1.4. Assurance

Employees' expertise, politeness, communication skills, and trust mean assurance (Parsauraman*et al.*, 1991). It also refers to the service providers' expertise, politeness, honesty, and security. In hospitals, assurance entails pleasant and courteous health care professionals, an experienced and competent management team, and simple access to account information. For example, assurance is a critical quality that people use to assess a hospitals or surgeon's ability to provide correct and successful medical and health care operations (Zeithaml *et al.*, 1990).

2.1.1.5. Empathy

Because patients feel distinct in this regard, empathy entails caring for them and providing them with customized care through company personnel (Zeithaml *et al.*, 1990). Health care personnel should strive to learn their patients' names, desires, and wants and take action to meet them to build empathy. Some service providers can achieve more empathy than others by providing patients with customized services.

2.1.2. Customer Satisfaction

Kotler and Caslione (2009) define satisfaction as "a person's sense of joy or frustration as a result of assessing a product's performance concerning his or her expectations." It is a key factor for service providers (Anabila, 2019). The notion of a service provider to remain competitive, efficient, and please its customers is based on the concept of customer satisfaction (Paul *et al.*, 2016). As a result, the extent to which consumers are pleased with the services of an organization is a yardstick to assess the immediate and forthcoming achievements of a company. Therefore, the result can manifest in the form of increased customer repeat patronage, positive word of mouth, increased profit, etc. (Meesala and Paul, 2018). Anabila (2019) found a favourable link between consumer happiness, loyalty, and repeat purchase intentions. Customer loyalty is also an essential aspect of the health care sector to sustain a profitable business and long-term customer relationships (Nawaz *et al.*, 2016; Anabila, 2019; Chotivanich, 2014). This study view customer satisfaction as patient satisfaction and it is defined as the situation when patient is adequately satisfied with the kinds or quality of services they received from various hospital.

2.1.3. Health Care Service Quality and Patients Satisfaction

Satisfaction and quality continue to be two distinct yet intertwined notions. It does, however, imply a reasonable causal link between the two, with service quality predicting consumer satisfaction Alternatively, while top quality may not always result in customer happiness, it cannot be attained without first stressing the superiority of the goods and services presented to customers (Ehigie and Jesse, 2018). Patient satisfaction, for example, is predicted by a variety of factors, including communication skills, physician's expertise, hospital location and environs, hospital medical facilities, and medical workers' interpersonal behavior, among others (Krowinski and Steiber, 1996; Tucker and Adams, 2001).

Furthermore, several studies that researched the influence of service quality on client satisfaction have reported a positive connection between the variables. (Parasuraman *et al.*, 1985; Parasuraman *et al.*, 2005). In Aliman and Mohamad (2013)'s study, for example, service quality characteristics (consistent and dependable) were significant determinants of patients' gratification in a Malaysian hospital. In another study conducted by Amin and Nasharuddin (2013) in Malaysian hospitals, they found that all five aspects of health service quality: patient's admission procedure, medical service procedure, overall service experience, patient's discharge procedure, and hospital's social responsibility were positively connected with patient's pleasure with health care delivery. Furthermore, Al-Neyadi*et al.* (2016)

2.1. Theoretical Review

The SERVQUAL THEORY is adopted and it is designed to measure the service quality as perceived by the customers who are patients in this study.

2.2.1. The SERVQUALModel

The healthcare sector is not different from other service provider companies because it is a service-based industry that renders essential health-related services to patients in need. (Laroche, Ueltschy, Abe, Cleveland, and Yannopoulos, 2004). According to the SERVQUAL paradigm, consumers evaluate service effectiveness in five dimensions: reliability, tangibles, assurance, responsiveness, and empathy. Therefore, patients' perception of the care quality offered by any health care institution depends on how these dimensions are harnessed to give patients an excellent experience beyond their expectations of the hospitals and its personnel (Zeithaml *et al.*, 1996).

This proclamation emphasizes the concept that when patients' needs are satisfied, the level of health care service is perceived. As a result, the gap model was proposed as the study's theoretical foundation. The Q = P-E model is used to operationalize this perceived five-dimensional service quality concept. In other words,

perceived quality (Q) rises when observations of service (P) exceed expectations of service (E) in each area (Parasuraman *et al.*, 1988; Lim and Tang, 2000).

2.3. Empirical Review

Al-Damen (2017) investigated the influence of health care service quality on patient satisfaction in Jordan's Al-Bashir Hospital. The findings indicated that reliability, empathy, and assurance significantly influenced patients' satisfaction. On the contrary, responsiveness and tangibles proved otherwise.

Potluri and Angiating (2018) investigated service quality and customer satisfaction in Adamawa State's health care industry, Nigeria. The findings from the inferential statistics revealed no link between tangibles and overall patient satisfaction. Sathish *et al.* (2018) examined the impact of service quality on customer satisfaction in a multi-specialty hospital in South India. The findings revealed that tangibles, reliability, responsiveness, assurance, and empathy did not influence total patient satisfaction.

Service quality and customer satisfaction in Ghana hospitals were studied by Boadi *et al.* (2019). The findings indicated that five elements of the SERVQUAL scale, except assurance, had a positive, direct, and significant influence on customer satisfaction.

Umoke*et al.* (2020) used SERVQUAL theory to investigate patients' satisfaction with the quality of healthcare in Ebonyi State general hospitals, Nigeria. According to the result, patients were pleased with responsiveness, assurance, empathy, tangibility, and reliability.

3. Research method

3.1. Research Design

The survey research design was adopted. The survey method was employed to rapidly describe the opinions of a large population of individuals on specific issues (Helvaci, 2015) and cost-efficiently (Goel *et al.*, 2016).

3.2.1. The Population of the Study

The target population consisted of all out-patients who visited the General Out-patient Department (GOPD) for appointments and care related to health problems at six government-owned hospitals in Ogun State. The choice of these hospitals was because they were built to provide state-of-the-art, world-class facilities with cutting-edgemedical technology to serve health care seekers. The conditions for inclusion are that the patient would have attended hospitals for medical help on more than three occasions, must be well-educated and interested in participating in the study. On the contrary, in-patients were excluded.

3.3. Sample Size and Sample Technique

The sample size was determined by conducting a power analysis using the Monte Carlo simulation technique with non-normal ordinal factor indicators (Muthén and Muthén, 2002) using Mplus version 7.2 software (Muthén and Muthén, 2017). The simulation study was based on a Confirmatory Factor Analysis (CFA) model. The power analysis estimation procedure was estimated with 10,000 repetitions in line with the recommendation of (Muthén and Muthén 2017). When estimated, the simulation result showed that the sample size of 450 was adequate to achieve a statistical power greater than 0.8

This research used convenience sampling to select respondents. Convenience sampling refers to obtaining a sample from conveniently and readily available individuals to give the required information. Population frames are unnecessary when this sampling technique is used, making it more preferred to the probability sampling techniques (Salkind, 2009). Therefore, because the total number of out-patients could not be ascertained, the convenience sampling technique was used to select the participants.

3.4. Methods of Data Collection

As presented in Table 1, previously validated survey scales were adopted and modified to operationalize the research model's constructs. All survey scale items were measured using a five-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Similarly, the survey items were verified by specialists in the health care industry and academics. Therefore, slight corrections were made to the original questionnaire to capture the study's goal based on their recommendations.

Table 1. Description of Questionnaire Constructs

Construct	Number of Items	Source
Perceived Service Quality Components		
Tangible (TAN)	3	Parasuraman *et al.*, 1988
Reliability (REL)	4	Parasuraman *et al.*, 1988
Responsiveness (RESP)	4	Parasuraman *et al.*, 1988
Assurance (ASS)	3	Parasuraman *et al.*, 1988
Empathy (EMP)	3	Parasuraman *et al.*, 1988
Patient Satisfaction (PS)	5	Andaleeb and Millet (2010)

The questions and wordings were tested on 40 out-patients to confirm that the wording, phrasing, and sequencing were appropriate. The result was used to improve the questionnaire before it was eventually used for data gathering.

3.5. Data Collection Procedures

All data was obtained from October 2020 to December 2020. Self-administered questionnaires were provided to patients who met the inclusion criteria. The research's intent was explained in clear terms, while the privacy of responses was assured. Participants were told to give their truthful answers to the copies of the questionnaire. After completion, the collected copies of the questionnaire were immediately recovered from the participants.

3.6. Method of Data Analysis

Descriptive statistics were adopted to describe the respondents' demographic characteristics. The CB-SEM was used to evaluate the relationship between the exogenous variables (tangible, reliability, responsiveness, assurance, and empathy) and the endogenous variable (patient satisfaction). The reason for adopting CB-SEM was because it is a robust statistical analysis of testing hypotheses (Mahadzirah, *et al.* 2019). Similarly, it offers a versatile structure for developing and evaluating complex relationships between multiple variables that allow researchers to assess the theory's validity using empirical methods (Beran and Violato, 2010). All analyses were calculated using R software (R Core Team, 2020) and IBM SPSS statistical software version 26 (SPSS, Chicago, IL). The choice of this software was because they were designed to run on all versions of the Windows operating system.

4. Data analysis and results

4.1. Data Cleaning and Test of Assumptions

The hypothesized model was presented in Figure 1. The model examined service quality such as tangibles, reliability, responsiveness, assurance, and empathy on patient satisfaction in the Ogun State secondary health institutions. It was hypothesized that all service quality would positively impact patient satisfaction.

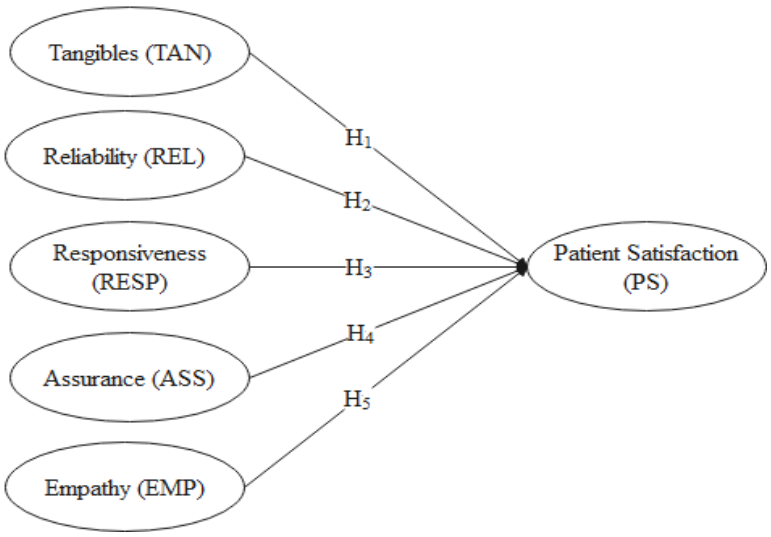

Figure 1. Hypothesized model of health care service quality and patient satisfaction

Four hundred and fifty copies of the questionnaires were issued to the participants. All copies of the questionnaire were successfully retrieved because close contact was established with the participants throughout the completion process. It was essential to develop a close relationship with the participants to minimize non-response bias, likely from the respondent's inability to complete the questionnaire's survey scale items.

There was no sign of univariate or multivariate outliers in the data set. Furthermore, there were no copies of the questionnaire with missing responses. The assumption of multivariate normality was not met as the Mardia's test (Mardia, 1970) of multivariate normality revealed significant probability value (kurtosis = 61.809; $p < 0.001$, skewness = 12858.575; $p < 0.001$). The fact that the data set violated the assumption of multivariate normality was not surprising as it is recognized that multivariate normality of observed variables is rarely satisfied in practice (Micceri, 1989). As a result, the Mean and Variance-Adjusted Weighted Least Squares (WLSMV) estimator method was used. The WLSMV is a robust approximation that does not presume naturally distributed variables and serves as the best choice for modeling categorical or ordered data (Brown, 2006). This paragraph should be shared under another heading. Please order the information shared in the article to be coherent.

4.2 Demographic Characteristics of Respondents

The respondents' demographic characteristics presented in Table 2 revealed that male patients dominated the research more than females. Concerning their age, 82% were adults above 26 years old. This result suggested that adult individuals dominated the patient. Regarding respondents' marital status, the majority (82%) were married. Finally, regarding their educational qualification, 99% were well-educated.

4.3 Measurement Model

Listed in Table 3 were the summarised CFA results to determine the model's measurement fit. The results revealed that each item loads on its respective primary constructs. In addition, the standardized factor loading estimates, the associated *t*-statistics, Cronbach's alpha, and the composite reliability were reported.

Table 2. Demographic Characteristics of the Respondents

Variable	Sample Composition	Frequency	Percent
Gender	Male	241	54
	Female	209	46
	Total	**450**	**100**
Age	Less than 25	79	18
	26 to 35	65	14
	36 to 45	94	21
	Over 45	212	47
	Total	**450**	**100**
Marital status	Single	79	18
	Married	371	82
	Total	**450**	**100**
Highest educational level	Primary school? education	26	6
	Secondary education	83	18
	NCE/OND	51	11
	Graduate	201	46
	Postgraduate	56	12
	Professional	33	7
	Total	**450**	**100**

As indicated in Table 3, the CFA model standardised factor loading estimates were above 0.70 and statistically significant at a 1% significance level. The social sciences' minimum threshold recommendation is usually 0.40 (Ford *et al.*, 1986). The overall model fit statistics (see Table 4) revealed that the measurement model supported the data very well as all the model fit statistics were above the recommended cut-off values. Also, the results of the Cronbach's alpha, composite reliability, McDonald's omega reliability coefficient, and ordinal reliability coefficient test for each construct were within the acceptable thresholds of above 0.7 and not higher than 0.95 (Nunnally and Bernstein, 1994; Hair *et al.*, 2014).

Having established the fit of the measurement model, the descriptive statistics, which include the scale means, standard deviation, and intercorrelation among constructs, were presented in Table 5. The convergent validity of the constructs was determined by examining the Average Variance Extracted (AVE). The results in Table 4 revealed that the AVE ranges from 0.528 to 0.614.)

Discriminant validity is reviewed by comparing the AVE's square root (boldfaced) with all the inter-factor correlations. Based on the result in Table 6, it was concluded that discriminant validity was established as the square root of the AVE in the diagonal was higher than their off-diagonal row and column values (Fornell and Larcker, 1981).

4.4 Common Method Variance

Since data was gathered at a single point, the probability of a common method bias (CMB) polluting the results was investigated. Harman's single-factor method was used to evaluate all variables since researchers commonly used it (Podsakoff and Organ, 1986). It is not denied, however, that the approach has its advantages and disadvantages. According to Podsakoff and Organ, a significant CMB will result in one general factor accounting for most covariances in variables. However, after performing an unrotated factor analysis revealed using all the 17 items loading on one latent factor, the result showed that the average variance explained by the single factor was 29%. This value was below the recommended threshold of 50%. It was therefore concluded that CMB did not affect the results of the study.

Table 3. CFA and Reliability Results

Items	SFL	*z*-value
Tangibles (TAN)	α = 0.906	*CR* = 0.910
	ω = 0.884	*OR* = 0.923
Tan1	0.786[a]	
Tan2	0.805	17.393***
Tan3	0.818	16.631***
Reliability (REL)	α = 0.853	*CR* = 0.860
	ω = 0.833	*OR* = 0.907
Rel1	0.832	11.156***
Rel2	0.782	11.822***
Rel3	0.704	10.206***
Rel4	0.647	10.206***
Responsiveness (RESP)	α = 0.853	*CR* = 0.860
	ω = 0.833	*OR* = 0.907
Resp1	0.594[a]	
Resp2	0.727	6.205***
Resp3	0.962	6.000***
Resp4	0.802	5.880***
Assurance (ASS)	α = 0.775	*CR* = 0.786
	ω = 0.804	*OR* = 0.860
Ass1	0.720[a]	
Ass2	0.887	6.197***
Ass3	0.604	6.166***
Empathy (EMP)	α = 0.840	*CR* = 0.847
	ω = 0.835	*OR* = 0.901
Emp1	0.668[a]	
Emp2	0.673	6.860***
Emp3	0.838	10.911***
Patient Satisfaction (PS)	α = 0.761	*CR* = 0.776
	ω = 0.796	*OR* = 0.811
Ps1	0.752[a]	
Ps2	0.822	6.732***
Ps3	0.813	7.221***
Ps4	0.799	9.845***
Ps5	0.887	7.170***

Source: Author's computation (2021)

*Notes: *** implies that all the factor loadings have a p-value of < 0.001; SFL = Standardised factor loadings; CR = Composite Reliability; α = Cronbach's alpha; ω = McDonald's Omega reliability coefficient; OR = Ordinal reliability coefficient.*

[a] denotes a constrained relationship to 1.00 to ensure model identification.

Table 4. Model Fit Statistics

Index	Cut-off point	Actual value	References
Chi-square		251.162	
Degree of freedom		146	
p-value (Chi-square)		0.000	
CMIN	< 3	1.720	Joreskog (1969)
CFI	≥ 0.90 and ≤ 0.94 ≥ 0.95	0.922	Bentler (1990)
TITLE	≥ 0.90 and ≤ 0.94 ≥ 0.95	0.918	Tucker and Lewis (1973)
GFI	≥ 0.90 and ≤ 0.94 ≥ 0.95	0.992	Joreskog and Sorbom (1981)
SRMR	< 0.08	0.038	
RMSEA	< 0.08	0.062	Steiger and Lind (1980)

Source: Author's computation (2021)

Notes: CMIN = Chi-square divided by degree of freedom; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; GFI = Goodness-of-Fit Index; SRMR = Standardised Root Mean Square Residual; RMSEA = RootMean Square Error of Approximation.

Table 5. Means, Standard Deviations, and Correlations for Constructs

				Intercorrelation of constructs					
	Mean	SD	AVE	1	2	3	4	5	6
TAN	3.682	1.024	0.593	1.000					
REL	3.910	0.714	0.613	0.538***	1.000				
RESP	4.162	0.689	0.557	-0.049	-0.061	1.000			
ASS	4.107	0.666	0.528	0.380**	0.068	-0.063	1.000		
EMP	4.253	1.224	0.511	0.256***	0.226***	0.415***	0.241**	1.000	
PS	3.198	1.875	0.614	0.379**	0.124***	0.568***	0.145**	0.256**	1.000

Source: Author's computation (2021)

*Notes: AVE = Average Variance Extracted; SD = Standard deviation; **p< 0.05; ***p< 0.001; the mean and SD are based on arithmetic average of items scores measuring respective latent variables.*

Table 6. Discriminant Validity

	TAN	REL	RESP	ASS	EMP	PS
TAN	**0.770**					
REL	0.289	**0.783**				
RESP	0.002	0.004	**0.746**			
ASS	0.144	0.005	0.004	**0.727**		
EMP	0.425	0.156	0.235	0.112	**0.715**	
PS	0.334	0.125	0.418	0.215	0.117	**0.784**

Source: Author's computation (2021).

Notes: Square root of the AVERAGE (boldfaced); Off-diagonal values are the squared correlation between constructs

4.5 Structural Model

Concerning the structural relationships proposed in the hypothesised model, the results in Table 7 revealed that the hospitals' tangibles aspect had no significant and negative effect on patient satisfaction (γ_{11} = -0.482, *z*-value = -0.968, p> 0.05); therefore, H_1 was supported. Reliability of the hospitals had a significant and positive effect on patient satisfaction (γ_{12} = 0.195, *z*-value = 2.634, p< 0.05); therefore, H_2 is not supported. Responsiveness of the hospitals had no significant and negative effect on patient satisfaction (γ_{13} = -0.451, *z*-value = -0.614, p> 0.05); therefore, H_3 was supported. The assurance provided by the personnel of the hospitals had a significant and positive effect on patient satisfaction (γ_{14} = 0.551, *z*-value = 4.007, p< 0.05); therefore, H_4 is not supported. The empathy shown to patients by the hospitals had no significant and negative effect on patient satisfaction (γ_{15} = -0.689, *z*-value = 0-.106, p> 0.05); therefore, H_5 was supported. Overall, the explained variance for the dependent variable patient satisfaction was about 55%

Table 7. Structural Model Test

Hypothesized relationship	Standardized estimate	*z*-values
TAN -> PS	-0.482	-0.968
REL -> PS	0.195	2.634***
RESP -> PS	-0.451	-0.614
ASS -> PS	0.551	4.007***
EMP -> PS	-0.689	-0.106
Model fit statistics		
χ^2	251.162	
Degree of freedom	146	
CFI	0.930	
TLI	0.918	
GLI	0.992	
RMR	0.038	
RMSEA	0.062	
Squared multiple correlations		
PS	0.553	

Source: Author's computation (2021)

*Note: ***p< 0.001*

5. Discussion of Results

The study looked at the effect of secondary health care service quality on patient satisfaction at government-owned hospitals in Ogun State. Based on the statistical analysis results, successfully presented evidence in favoured opposition to the hypotheses. First, the study discovered that the hospital's tangibles

had no statistically significant influence on patient satisfaction. The results, on the other hand, did not support Boadi *et al.* (2019), Essiam (2013), or Yousapronpaiboon and Johnson (2013) as tangibles were discovered to have a substantial influence on patient satisfaction levels. Secondly, there was a statistically significant effect of reliability on patient satisfaction. The researchers perceive that the hospitals delivered on their promises, did their jobs correctly the first time, and did so regularly. Mohamad (2013) in their investigations, they discovered that reliability had a significant influence on patient satisfaction. In contrast, Essiam (2013) and Sathish *et al.* (2018) found that reliability did not affect patient satisfaction.

Thirdly, the findings indicated that responsiveness had no statistically significant influence on patient satisfaction. This evidence suggested that the hospital employees did not provide patients timely service, are too busy to reply to patients' concerns, are constantly hesitant to assist, and are still not ready to aid patients as. As a result of these activities, the patients were dissatisfied. The finding was consistent with the findings of earlier research such as Al-Damen (2017), Potluri and Angiating (2018), and Sathish *et al.* (2018). They found that in their study that responsiveness did not have a substantial influence on patients' satisfaction. In contrast, Boadi *et al.* (2019), Essiam (2013), and Yousapronpaiboon and Johnson (2013) did not support our result.

Fourth, the findings showed that assurance had a statistically significant and beneficial influence on patient satisfaction. This study suggested that individuals felt comfortable throughout their hospital visits. Furthermore, the hospitals had knowledgeable employees to answer their questions, and the actions of the personnel instilled confidence in them. These actions resulted in patient satisfaction. As a consequence, the findings of Al-Damen (2017), Essiam (2013), and Yousapronpaiboon and Johnson were supported (2013). In contrast, the results did not support Sathish *et al.* discovery's (2018).

Fifth, the study found that empathy had no statistically significant impact on patient satisfaction. The finding suggested that hospital employees did not have the patients' best interests at heart, did not comprehend their specific requirements, and refused to give them special attention, resulting in patient unhappiness. The result was consistent with prior research by Sathish *et al.* (2018). In their study, they discovered that empathy had a substantial impact on consumer loyalty. In contrast, the findings contradict the findings of Al-Damen (2017), Boadi *et al.* (2019), Essiam (2013), and Yousapronpaiboon and Johnson (2013).

6. Conclusion

The research examined service quality on patients' satisfaction in the Ogun State government-owned hospitals. Service quality construct was measured with the SERVQUAL scale, which comprised tangibles, reliability, responsiveness, assurance, and empathy to determine their effect on patients' satisfaction. After analyzing the data collected by administering copies of the questionnaire from the 450 patients, the study provided insightful results. Findings revealed that two dimensions, reliability and assurance had a significant effect on patient satisfaction. On the contrary, three dimensions, tangibles, responsiveness, and empathy, had no significant effect on patient satisfaction.

7. Recommendations

Based on the study findings, it is advised that the hospital management should continue to guarantee that the hospital delivers on its commitments, performs services correctly the first time, and maintains consistency in its performance to ensure that patients have continuous access to efficient treatments. Secondly, they should guarantee that employees provide quick service to patients, avoid being too busy to react to their demands, and are eager and ready to support patients in maintaining their satisfaction. Third, they should continue to ensure that patients feel comfortable during their hospital visits, appoint skilled health care staff to answer patients' concerns, and instill trust in patients at all times. Finally, they should have the patients' best interests at heart, understand their unique requirements, and provide extra attention to satisfy them.

8. Implications for Management

This study's findings have far-reaching implications for the management of the State Hospitals and others in the health care industries in Nigeria. The study established that health care service quality had a mixed effect on patient satisfaction. Hence, the health care industry management will find the study results beneficial. It will enable health care industries' authorities to improve on the most crucial healthcare service qualities that satisfy patients. The study's findings will allow the health care industry authorities to identify areas where they lag in delivering better health care service quality and make the necessary amendments at the right time. Furthermore, the findings will allow healthcare industries to concentrate on the most crucial health care service qualities according to their degree of importance to understand better how to retain loyal patients.

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