



Service Quality Dimensions in Secondary Healthcare Facilities: A Case Study of Major Ibrahim Bello Abdullahi Memorial Hospital, Zaria, Kaduna State, Nigeria

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Abstract

This study assessed service quality dimensions in Major Ibrahim Bello Abdullahi (MIBA) Memorial Hospital Zaria, Kaduna State, Nigeria to determine the most important dimensions of service quality perceived by patients of the hospital. It involves a cross-sectional survey that used a structured questionnaire administered to three hundred and thirty-one (331) adult out-patients of the hospital in the month of March, 2020. Descriptive statistics and principal component analysis were used. Findings indicate that five dimensions of service quality were significant out of the eight measured and the most important dimensions of service quality perceived by the patients were: trustworthiness, infrastructures, safety measures, personnel quality and clinical care processes. It was concluded that service quality dimension is crucial in determining patients' satisfaction; therefore, Hospital management and government should place more emphasis on the important dimensions of service quality; policies and programs should be geared towards improving patient's satisfaction.

Keywords: Dimension, Patients, Service Quality, Secondary Healthcare Facility, Zaria

1. Introduction

In a hyper-competitive and ever-changing environment, businesses/Organisations (private and public) are faced with the challenge of acquiring customers, serving and maintaining relationship with them in order to remain in business and be successful. Businesses are also confronted with challenge of keeping existing customers from switching to other competitors. It is generally believed that maintaining existing customer is better and cheaper than capturing new ones. This is justified in the assertion that the cost of appealing a new customer is far over the cost of keeping existing one (Sarker & Uddin, 2013; Getamesay, 2017). Organisations consider customers as their most important asset and recognized that a high level of customer satisfaction can only be achieved by enhancing service quality. Customers of hospital are the patients and their family (Milakovich, 1995). The health care sector needs to carefully provide quality service and improve on the existing ones continuously because prospective customer/patient has ample option to choose a desired hospital facility. Today's customers are better educated and more informed than in the past, therefore, they prefer to use quality as a yardstick to choose a service or product (Balogun, 2018).



The recent reports of healthcare service quality in Nigeria indicated poor service quality. Nigeria has limited scope of legal coverage for social protection as 90% of the Nigerian's populations are without national health insurance scheme (NHIS) coverage, this has contributed to the persistent and high level of poverty and the weakness of the health system as most vulnerable populations are at the mercy of health care services that are not affordable. There is *political instability, corruption, limited institutional capacity, high maternal mortality, and an unstable economy that are major factors responsible for the poor development of health services in Nigeria* that remained a huge source of concern (Balogun, 2018; Aregbeshola, 2019). This results to loss of confidence in the health care sector and promotes medical tourism by Nigerians to countries such as India, Egypt, South Africa, United Kingdom and United States, among others. Communication is poor, thus creating gap between patients and hospital personnel, between hospital personnel and management, between hospital management and government: Management may not understand the actual dimension of service quality that brings about customers/patients satisfaction; due to these experiences, patients becomes unsatisfied and switch from one hospital to another or from one physician to another (Adepoju, 2018).

There is also the problem of inadequate facilities and funding by government which often results in industrial disputes between government and health workers/unions like the strike action by the National Association of Resident Doctors (NARD) which started on 14th June, 2020 and ended 21st June, 2020 during the peak of the COVID-19 pandemic. In the Abuja declaration of April 2001, the Heads of States of the AU countries (Nigeria inclusive) pledged to set the target of at least 15% of the annual budgets to improve the health sector; but the Nigeria annual budget for health is far less than that (WHO, 2010). There is general rise in interest of healthcare quality and growing consensus that patient satisfaction is an important indicator of health care quality (Al-Damen, 2017) as such, many hospitals are searching for better ways to improve patient care through quality improvement initiatives. Healthcare service quality according to Ovretveit and Twonsend (1992) is "the provision of care that exceeds patient expectations and achieves the highest possible clinical outcomes with the resources available". Mohan and Saikumar (2011) thereby defined patient satisfaction as patients' emotions, feelings and their perception of delivered healthcare services.

The objective of this study is to determine the dimensions of service quality that is most important to patients of MIBA Memorial Hospital Zaria, Kaduna State. The research question raised is "what dimension of service quality is most important to patients of MIBA Memorial Hospital, Zaria? This study is justified in view of the complaints often heard from patients on poor quality of services obtained in the State, and intends to find out what actually determines service quality among the patients as there is no guarantee that what is excellent service today would be applicable for tomorrow in a growing and competitive world. This study adopts Padma, Rajendra and Sai (2009) eight dimensions of measuring service quality which was applied in Indian, tested in Greek (Georgiadou & Maditinos, 2017). In Nigeria, though studies have been carried out on healthcare service quality in some States using different models: Abia



(Iloh, Ofoedu, Njoku, Odu, Ifedigbo, & Iwuamanam, 2012); Bayelsa (Ogaji & Etokidem, 2012); Kwara (Balogun, 2018); Kaduna (Istifanus, 2015). To the best of the researcher's knowledge, no Nigerian study tested Padma's dimension of service quality which gap this study intends to fill, its applicability has not been tested knowing that variations may arise with studies conducted in other countries due to cultural differences.

2. Literature Review

Conceptual framework and Theoretical Framework

Service Quality: Service quality is an outcome of comparison between customer/patient expectations before and after their experience of the service (Gronroos, 1984), and if customers view that their expectations for service performance conform their perceptions of the service, there is notion of service quality (Kitapci, Akdogan & Dortyol, 2014). Service quality models offer a framework for understanding what service quality is, as well as how to measure service quality in each proposed conceptualization (Martinez & Martínez, 2010).

Dimensions of Service Quality: Service quality construct is formed by its dimensions and this does not exist separately from its dimensions. Lehtinen (1982) gave three broad dimensions of service quality to include: physical quality, interactive quality and the corporate image. Gronroos(1984) on the other hand proposed two dimensions of service quality: technical quality and functional quality. Parasuraman, Berry & Zeithmal (1985, 1988, 1991 &1994) opined that quality of a service depend on the service delivery procedure and does not depend exclusively on the outcome service. They developed service quality model known as SERVQUAL which compares expectations and perceptions of customers regarding a particular service. The model initially had 22 items comprising of dimensions of service quality: tangibles, reliability, responsiveness, competency, courtesy, assurance, credibility, security, access, and understanding. Later, some items were merged due to strong correlation to form five dimensions of service quality these are: reliability, responsiveness, assurance, empathy, and tangibles. SERVQUAL has been criticised: Babakus and Boller (1991) performed confirmatory factor analysis on SERVQUAL dimensions and arrived at a poor model fit, it focuses only on functional quality rather than technical quality (Cronin & Taylor, 1992), uses performance and expectation administration (Babakus, Pedrick & Inhofe, 1993) these criticisms led Cronin and Taylor (1992) to disagree with the gaps-score measurement. They proposed their service quality model termed performance-only measurement scale, which they named "SERVPERF" and is being used in a variety of industries.

SERVPERF is a modification of SERVQUAL and it uses the same categories to assess service quality, proposing 22 performance statements instead of 44 expectations and performance statements of SERVQUAL. Rust and Oliver (1994) added "service environment" as a new dimension to Gronroos model. Brady and Cronin (2001) proposed a third order factor model service which consisted of three primary dimensions (interaction quality, physical environment and outcome quality) and nine sub dimensions. Svensson (2004) presented a modified construct of chronological



service quality and highlighted the importance of time, context, and performance threshold, in service-encounter chains.

Health Care Service Dimensions

In the health care setting, various dimensions have been developed or adapted to measure health care service quality which is mostly based/built on either SERVQUAL (Lee & Kim, 2017; Istifanus, 2015; Al-Damen , 2017) or SERVPERF (Adil, Ghaswyneh & Albkour, 2013; Georgiadou & Maditinos, 2017). Duggirala, Rajendran and Anantharaman (2008) proposed seven healthcare service quality dimensions to include: infrastructure, personnel quality, process of clinical care, administrative processes, safety indicators, overall experience of medical care and social responsibility. Itumalla, Acharyulu and Shekhar (2014) proposed that after the support services, then most important factors influencing the overall quality of the hospitalization services are nursing, administrative and medical services, as well as communication with the patient. Padma, Rajendra and Sai (2009) proposed a conceptual framework of service quality in healthcare to consist of eight dimensions namely: infrastructure, personnel quality, process of clinical care, administrative procedures, safety indicators, corporate image, social responsibility and trustworthiness of the hospital which is being adopted in this study because of its ability to handle both the functional and technical aspect of health care services quality. The technical aspect is the quality of medical care provided (outcome of care) while the functional quality considers way care is provided (process of care).

Theoretical Framework

Service quality and customer satisfaction are intertwined (Cronin & Taylor, 1992). Customer satisfaction is a short-term, transaction-specific measure, while service quality is an attitude formed by long-term, overall evaluation of performance.

The underpinning theory in this study is the expectancy disconfirmation theory put forth by Oliver (1980). Customers purchase goods and services having pre-purchase expectations about anticipated performance. Once the product or service has been purchased and used, the outcomes are then compared against expectations. Confirmation occurs when outcomes matches' expectation, Disconfirmation occurs when there are differences between expectations and outcomes which could be positive or negative disconfirmation (Elkhani & Bakri, 2012). Confirmation or positive disconfirmation brings about satisfaction while negative disconfirmation causes dissatisfaction. Satisfaction could be conceptualized as a process which is the dominant view (Oliver, 1980; Parasuraman *et al.*, 1988) or as an outcome during the consumption of a service considered as a post-purchase experience (Vavra, 1997). The process perspective of satisfaction views customer satisfaction as a feeling of satisfaction that results from the process of comparing perceived performance with one or more predictive standards (Khalifa & Liu, 2002) which is rooted in the expectancy disconfirmation theory (Oliver, 1980). This study views service quality that leads to customer satisfaction as a process and not just the outcome.



Empirical Studies

Health care service quality and patients' satisfaction has been well researched in the marketing literature and studies have established link between hospital service quality and patient satisfaction. Choi et al. (2005), conducted a study on South Korean healthcare, the result revealed that the relationship between service quality and patient satisfaction did not vary across patient groups based on gender, age and types of services received. Pakdil & Harwood (2005) studied patient satisfaction in a pre-operative assessment clinic; result showed that positive physician-patient increased patient satisfaction more than any other provider-customer relationship. In the USA, studied hospital services and the result found admission process, physician care, nursing care, compassion to family/friends, pleasantness of surroundings and discharge process to be the key dimensions of service quality (Otani & Kurz, 2004).

Zaneta and Ilona (2011) explored the differences and similarities of health care service quality perception between two groups within healthcare organization: managers of healthcare organization and health care professional. Data was collected from 318 health care professionals and 75 from administrators of health care organization in five hospitals of Lithuania. The research finding shows that the most important quality dimensions for healthcare professionals and Managers of health care organization are those which represent the technical quality. Al-Damen, (2017) researched on Health Care Service Quality and Its Impact on Patient Satisfaction in Al-Bashir Hospital in Jordan. The findings revealed healthcare service quality significantly impacted on overall patient satisfaction and reliability dimension had the greatest influence on patient satisfaction, followed by empathy and assurance. Istifanus (2015) conducted a survey on impact of service delivery on clients' perception by employing SERVQUAL, multiple regression, t and f statistics, ANOVA and principal component analysis. Findings revealed quality service impacting positively and significantly on clients' perception. Empathy and responsiveness were of most important dimension. Mahmoud *et al.* (2019) studied patients' perception of service quality in COHSASA-accredited hospital in Nigeria and the impact of perceived quality on customers' satisfaction and repurchase intentions. Structural equation modeling, factor analysis, and paired-samples t-tests was used, result indicated perceived quality was significantly lower than expected quality despite being accompanied with positive levels of satisfaction and repurchase intentions.

Padma, Rajendran and Lokachari (2010) tested the applicability of Padma's *et al* (2009) dimensions. They conducted a study on service quality and its impact on customer satisfaction in Indian hospital using patients and their attendant's perspective; findings revealed the eight-dimension framework of service quality being validated, interpersonal aspect of care is the most important. Georgiadou and Maditinos (2017) also measured quality of health services provided at a Greek Public Hospital through patient satisfaction. SERVPERF was employed using Padma's *et al.* (2009) dimensions of service quality. The study revealed that only five dimensions were found to be significant, and these dimensions are on a hierarchical scale includes: clinical care, social responsibility, staff quality and infrastructure and hospital reliability.



3. Methodology

The study area was Major Ibrahim Bello Abdullahi (MIBA) Memorial Hospital, which is a secondary health care facility located in Sabon-Gari Local Government Area of Kaduna State. The facility was chosen because of its location which is almost at the centre of Zaria metropolis with patients cutting across different religious, educational and cultural background.

The study was cross-sectional in nature with a population of 1551, consisting of out-patients aged 18 years and above (excluding children because they may not be able to objectively evaluate the services and they cannot give consent) who were attended to at the hospital during the period of study (1st and 31st March, 2020). The Sample size was determined using Yamane (1967) sample size formula with 95% confidence level and margin error of 5% The formula is given as: $n = N / [1 + N (e)^2]$.

Where n is the minimum sample size, N is the population size, and e is the level of precision. The researcher firstly, got figures of out-patients seen at the hospital for two preceding months January (1159) and February (2664) and the average was calculated as 1912 given a sample size of 331 which was used. March ending, the figure of out-patient seen turn out to be 1551, with a sample size of 318 which was not far from the earlier calculated. Random sampling technique was used to select the patients who participated in the study. The data was collected using questionnaire which comprised of 2 sections: Section A contained questions on socio-demographic characteristics of the respondents. Section B contained questions on dimensions of service quality. The conceptual framework of quality of hospital services developed by Padma et al. (2009) composed of eight quality dimensions was adopted for the study along the performance measurement approach (SERVPERF).

Seven-point Likert scale ranging from very high to very low was used to obtain responses from respondents, the measurement scale as per level of performance is interpreted as follows: "1"= very low, "2"= low, "3"= slightly low, "4"= neither low nor high, "5"=slightly high, "6"= high and "7"= very high.

Descriptive statistics, Principal component analysis were employed for the analysis. The Cronbach alpha, the Bartlett's test of sphericity, Kaiser- Meyer-Olkin, Breusch-Godfrey chi-square, Breusch-pagan chi-square χ^2 , variance inflator factor, Kaiser criterion and Scree plot were also employed for validation and analysis.

4. Results

Socio- demographic characteristics of the respondents

Table 1 presents the socio-demographic characteristics of the patients. Most (57.0%) of the patients were females, and 23.0% in both age group of 40- 49 years and equal or greater than 60 years of age. Fifty-six percent were married and most (22.0%) had secondary education. About one-third was business men/ women and they earned monthly income of less than N18, 000 monthly.

The results of the socio-demographic characteristics showed that both sexes, age groups, marital statuses, education and occupation seek for healthcare at the health



facility. Since majority were aged 40-49 years and ≥ 60 years, they are expected to be married at these ages as that is the expectation by most cultures in Nigeria.

Table 1: Socio-demographic characteristics of the respondents (n=331)

Variable		Frequency	Percent
Sex	Male	143	43.0
	Female	188	57.0
Age (in years)	<30	74	22.0
	30-39	53	16.0
	40-49	76	23.0
	50-59	53	16.0
	≥ 60	75	23.0
Marital status	Single	47	14.0
	Married	185	56.0
	Separated	33	10.0
	Widow (er)	66	20.0
Educational status	No formal education	47	14.0
	Quranic	60	18.0
	Primary	67	20.0
	Secondary	105	32.0
	Tertiary	52	16.0
Main occupation	Civil servant	51	15.4
	Business	105	31.7
	Farming	33	10.0
	Artisan	27	8.2
	Student	34	10.3
	Retired	20	6.0
	Unemployed	61	18.4
Monthly income	$\leq 18,000$	114	34.0
	18001-30,000	108	33.0
	30,001- 50,000	25	7.6
	50,001- 100,000	47	14.2
	100,001- 200,000	25	7.6
	>200,000	12	3.6

Source: Survey data (2020)

Also, majority of the patients had between primary and tertiary level of education may be the result of availability of good number of schools in Zaria ranging from secondary and tertiary. Majority of the patients were business men/women probably because of the location of the hospital which is almost at the center of the Sabon-Gari market. The majority earned less than N18,000 per month indicating that these group of patients will have difficulty accessing quality healthcare especially in Nigeria where healthcare fees are paid with out-of-pocket (OOP) expenditure. Studies showed that about 70% of



Nigerians made for treatment with OOP expenditure and only 10% have access to NHIS (Aregbeshola, 2019).

Table 2a: Summary of items measuring the quality of services in a secondary health care facility based on out-patient perspectives

Item	Description of item (1=very low, 2=low, 3=slightly low, 4=neither low nor high, 5=slightly high, 6=high, 7=very high)	Mean	Std. Dev.
in1	Cleanliness and comfort of the hospital	3.02	1.25
in2	Availability of toilets	3.40	1.26
in3	Toilet has running water	2.97	1.40
in4	Presence of security personnel in the hospital	3.52	1.51
in5	Level of availability of prescribed drugs	3.34	1.45
in6	Obtaining prescribed drugs in time	3.32	1.48
in7	Level of availability of doctors as and when required	3.38	1.61
in8	Level of availability of nurse as and when required	3.85	1.66
in9	Level of availability of medical equipment in proper condition	3.16	1.51
in10	Extent to which physical facilities and infrastructure in the hospital are visually appealing	2.74	1.35
Total	Infrastructure	32.70	9.64
pe1	Doctors were caring and responsive	4.21	1.30
pe2	Courtesy shown by the medical record staff to you	4.32	1.52
pe3	Nurses were caring and responsive to you	4.37	1.34
pe4	Punctuality of doctors in the hospital	3.89	1.58
pe5	Doctor was attentive during consultation	4.31	1.45
pe6	Competency and skill of paramedical and support staff	3.85	1.33
pe7	Attention shown by nurses to you	3.70	1.52
pe8	Teamwork demonstrated by the hospital staff	3.75	1.26
pe9	Doctors' friendly and caring attitude with understanding of your feelings and needs	4.01	1.44
pe10	Doctor explaining to you the medical condition	4.14	1.28
Total	Personnel quality	40.53	8.05
pr1	Medical advice and instructions provided by doctors at the end of your consultation	3.82	1.53
pr2	Feeling relief and better when leaving the doctor's consulting room	4.00	1.40
pr3	Explanation offered by the doctor about treatment procedures and outcomes	3.97	1.47
pr4	Information and appraisal provided by doctors about your health, medical test and treatment	3.85	1.52
Total	Process of clinical care	15.63	4.68

Source: Survey data (2020)



Table 2b: Summary of items measuring the quality of services in a secondary health care facilities based out-patient perspectives (Ct'd)

Item	Description of item (1=very low, 2=low, 3=slightly low, 4=neither low nor high, 5=slightly high, 6=high, 7=very high)	Mean	Std. Dev.
ad1	Ease of consulting with doctors (waiting time not more than 30min)	2.82	1.45
ad2	Prompt, simple and clear consultation processes and procedures	3.19	1.47
ad3	Ease of getting diagnostic tests done	3.39	1.17
ad4	Simplified administrative procedures with respect to bill payment	3.28	1.36
ad5	Clear information and instructions provided by the hospital administration to you about hospital rules and procedures	3.35	1.37
ad6	Assistance provided to you by the staff in arranging for additional care	3.33	1.30
Total	Administrative procedures	19.36	5.73
sa1	Adequacy of hygienic practices in the hospital	3.17	1.40
sa2	Availability of dustbins for disposal of wastes in the hospital	3.60	1.38
sa3	Prompt cleaning of vomitus or any waste on the floor by the cleaners	3.31	1.17
sa4	Observing safety in collection of blood samples	3.47	1.18
sa5	No indiscriminate waste disposal in the hospital	3.55	1.26
Total	Safety measures	17.09	4.78
ho1	Sincerity and honesty of staff in providing medical services to you	3.37	1.46
ho2	Good reputation enjoyed by the hospital	3.26	1.37
ho3	Hospital has invested in new technologies and innovative practices	3.29	1.53
Total	Hospital image	9.92	3.31
so1	Fair medical treatment provided to you by the hospital	3.50	1.20
so2	Hospital has functioning social welfare for you	3.43	1.36
so3	Provision of medical services with nominal cost to the needy patients	3.41	1.43
so4	Ethical principles followed by the hospital in delivering medical care	3.20	1.32
Total	Social responsibility	13.55	4.09
tr1	Your level of confidence in the doctor who treated you	4.16	1.22
tr2	Your level of confidence in the nurse who treated you	4.41	1.37
tr3	Presence of correct, accurate and reliable billing system in the hospital	3.77	1.24
tr4	Hospital provided services as promised and on time	3.36	1.37
tr5	Extent to which the services, functioning and administration of the hospital are credible, and maintenance of patient privacy	3.60	1.46
Total	Trustworthiness of the hospital	19.30	5.08

Source: Survey data (2020)

Dimensions of service quality in MIBA Memorial Hospital Zaria, Kaduna State

Tables 2a and 2b present the summary of means of the items used in assessing the dimensions of service quality in MIBA Memorial Hospital Sabo Gari, Zaria, Kaduna State. According to Padma et al., (2009), service quality is determined by 8 dimensions



namely, infrastructure, personnel quality, process of clinical care, administrative procedures, safety measures, hospital image, social responsibility, and trustworthiness. Based on this structuring of service quality, Personnel quality had the highest mean ($\mu = 40.53, \sigma^2 = 8.05$) followed by infrastructure ($\mu = 32.70, \sigma^2 = 9.64$) and administrative procedures ($\mu = 19.36, \sigma^2 = 5.73$). The least mean was hospital image ($\mu = 9.92, \sigma^2 = 3.31$) followed by social responsibility ($\mu = 13.55, \sigma^2 = 4.09$) and process of clinical care ($\mu = 15.63, \sigma^2 = 4.68$).

Table 3: Summary of validation statistics for principal components analysis of the service quality dimensions in a secondary healthcare facility based on out-patients' perspectives

Statistics	Trustworthiness of the hospitals	Infra-structure	Safety measures	Personnel Quality	Process of clinical care
Determinants (D)	0.14	0.06	0.19	0.22	0.31
Bartlett's test χ^2	644.87***	897.2***	550.11***	499.51*	381.93***
KMO	0.79	0.75	0.81	0.70	0.73
Eigen values	6.925	2.459	1.944	1.598	1.415
% of variance	30.11	10.69	8.45	6.95	6.15
Cronbach's alpha	0.82	0.82	0.79	0.77	0.77

Source: Survey data (2020)

Note: KMO = Kaiser–Meyer–Olkin measure of sampling adequacy; ***<0.01

Table 3 presents the summary for the validation statistics of principal components analysis (PCA) of service quality in MIBA Memorial Hospital. Firstly, 24 items were excluded from the analysis due to low correlation between them, meaning that only about half of the items were retained for the analysis. The determinants of the correlation matrixes between the items were greater than 0.00001, which implied that the correlation matrixes were not singular (perfectly collinear) therefore appropriate for PCA (Field, 2018). The Bartlett's test of sphericity was all statistically significant, $P < 0.01$ meaning that the correlation matrixes were significantly different from an identity matrix. The Kaiser–Meyer–Olkin measure of sampling adequacy (KMO) of the extracted dimensions of service quality were all greater than 0.7. The implication is that the sample used for the analysis was good for factorial analysis (Hutcheson & Sofroniou, 1999).

The average communality of the items was 0.62 and with a sample size of over 250, the Kaiser's approach was justified as being an appropriate criterion to determine the number of factors/dimensions to be extracted (Field, 2018). According to the Kaiser's method, only factors with Eigen values greater than 1 should be retained. In this study, five dimensions of service quality in the healthcare facility were extracted namely, trustworthiness of the hospital, infrastructure, safety measures, personnel quality and process of clinical care (Table 3).

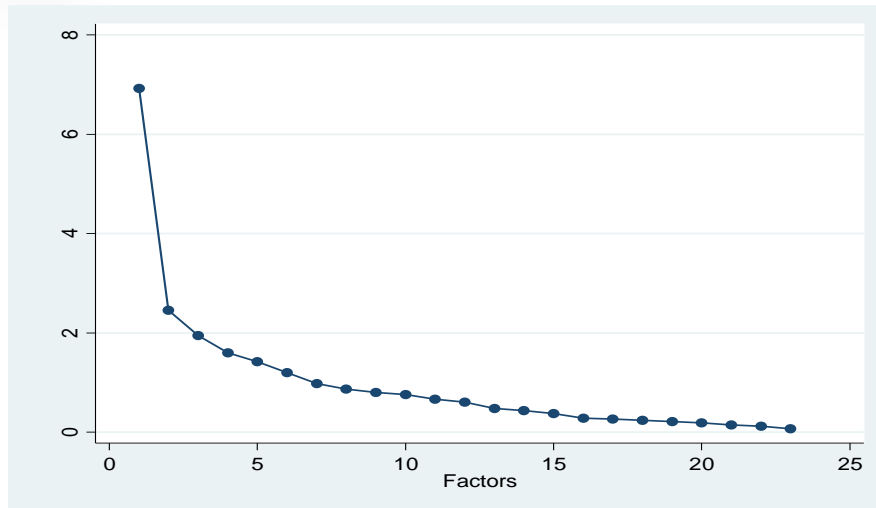


Figure 1: Scree plot of Eigenvalues after principal component analysis of the dimensions of healthcare service quality in MIBA Memorial hospital Zaria, Kaduna State

An analysis of the Scree plot (Figure 1) tended to agree with the number of dimensions proposed by the Kaiser's criterion. However, the Scree plot equally suggested that 1 or 2 dimensions could be retained. This is because, after the second dimension, the curve changed dramatically at almost a consistent rate. As expected, the first dimension (hospitals' trustworthiness) explained more of the variability in the data which was about 30 percent followed infrastructure dimension (about 11%) while the fifth dimension (process of clinical care) was the least significant of the 5 dimensions (about 6%).



Table 4: Summary of principal components analysis of service quality in MIBA Memorial HospitalZaria, Kaduna State based on out-patient's perspectives

Item	Description of item	Extracted dimensions					Com
		Trustworthiness of the hospital	Infras-structure	Safety measures	Personnel quality	clinical care's Process	
tr4	Hospital provided services as promised and on time	0.80	0.05	0.25	-0.03	-0.11	0.62
tr3	Presence of correct, accurate and reliable billing system ...	0.75	0.25	-0.05	0.03	0.03	0.56
tr5	Extent to which the services, functioning and administration ...	0.69	0.00	0.28	0.26	0.16	0.65
tr1	Your level of confidence in the doctor who treated you	0.63	0.24	-0.07	0.16	0.13	0.58
ho2	Good reputation enjoyed by the hospital	0.61	0.04	0.36	0.06	0.10	0.71
so1	Fair medical treatment provided to you by the hospital	0.54	0.05	0.17	0.01	0.49	0.63
in5	Level of availability of prescribed drugs	0.18	0.73	0.13	0.00	0.26	0.57
in1	Cleanliness and comfort of the hospital	0.10	0.71	0.23	0.12	0.20	0.71
in3	Toilet has running water	0.18	0.68	0.23	-0.10	0.05	0.65
in6	Obtaining prescribed drugs in time	0.25	0.61	-0.10	0.30	0.20	0.81
in10	Extent to which physical facilities and infrastructure ...	0.23	0.55	0.10	0.32	-0.32	0.68
in8	Level of availability of nurse as and when required	-0.14	0.54	0.17	0.48	0.25	0.49
sa1	Adequacy of hygienic practices in the hospital	0.14	0.22	0.81	0.09	0.05	0.74
sa4	Observing safety in collection of blood samples	0.05	0.09	0.68	0.31	0.11	0.63
sa3	Prompt cleaning of vomitus or any waste on the floor ...	0.34	0.12	0.62	0.05	0.18	0.55
sa5	No indiscriminate waste disposal in the hospital	0.21	0.19	0.62	-0.07	0.37	0.58
pe1	Doctors were caring and responsive	0.21	0.06	-0.10	0.80	0.13	0.61
pe2	Courtesy shown by the medical record staff to you	0.16	0.08	0.15	0.76	0.10	0.52
in7	Level of availability of doctors as and when required	-0.15	0.57	0.13	0.59	-0.08	0.57
ad5	Clear information and instructions provided by the hospital	0.05	0.06	0.42	0.55	-0.03	0.50
pr3	Explanation offered by the doctor about treatment procedures ...	0.13	0.11	0.14	0.06	0.79	0.63
pr2	Feeling relief and better when leaving the doctor's consulting room	0.09	0.23	0.16	0.39	0.75	0.72
sa2	Availability of dustbins for disposal of wastes in the hospital	-0.03	0.36	0.44	-0.04	0.55	0.65

Source: Survey Data (2019)

Note: Com = Communality; a = Factor loadings; Factor loadings over ≥ 0.40 appear in bold



In terms of factor loadings (Table 4), Trustworthiness dimension had the item “Hospital provided services as promised and on time” highest with loading (0.80). The infrastructure dimension on the other had the highest loading (0.73) with the item “Level of availability of prescribed drugs”. Similarly, safety measures dimension had its biggest loading (0.81) with the item “Adequacy of hygienic practices in the hospital” while the personnel quality dimension had its highest (0.80) with the item “Doctors were caring and responsive”. Finally, the process of clinical care dimension accounted for “Explanation offered by the doctor about treatment procedures and outcomes” with the highest loading of (0.79). The Principal component analysis was relevant in reducing the dimensions of service quality into five.

The results presented revealed that the significant dimensions of service quality in MIBA Memorial Hospital were: trustworthiness of the hospital, infrastructure, safety measures, personnel quality and process of clinical care which are the most important determinants of outpatients’ satisfaction with service quality in the hospital. This showed that the eight-dimension structure of service quality in healthcare proposed by Padma *et al.* (2009) was not warranted/validated by the data of this study, as only five dimensions were important with trustworthiness of the hospital being the most important followed by infrastructure then safety measures, personnel quality and lastly, process of clinical care. This does not align with Padma’s (2010) finding of interpersonal aspect of care being the most important. The findings also showed some consistency with the study by Georgiadou and Maditinos (2017) who found that patients’ satisfaction with service quality was dependent on 5 dimensions of service quality of the general hospital in Kavala, Greek. Specifically, out of the 5 significant dimensions of service quality in MIBA Memorial Hospital, 4 were consistent with those found by Georgiadou and Maditinos (2017). These were hospitals’ trustworthiness, infrastructure, personnel quality and process of clinical care. The only dimension that differs was safety measures as against social responsibility of Georgiadou and Maditinos (2017).

When compared with the study of Duggirala *et al.* (2008), the findings are different as only four dimensions out of seven dimensions were consistent (infrastructure, safety measures, personnel quality and process of clinical care) and the differing dimension is trustworthiness of the hospital in this study and administrative processes, over all experience of medical care and social responsibility in Duggirala *et al.* (2008).

5. Conclusion and Recommendations

Majority of the patients were female, predominantly middle and highest age class, married, had formal education. Business is their main occupation and majority earned less than ₦18,000 per month. The significant dimensions of service quality in MIBA Memorial Hospital Zaria, Kaduna State were trustworthiness, infrastructure, safety measures, personnel quality and process of clinical care.

It was recommended that government should promote policies and programs geared towards alleviating health care burdens on citizens. This becomes necessary because



monthly income of individuals may hamper their accessibility to health care services. National Health Insurance scheme (NHIS) should be made mandatory for all civil servant and non-civil servant (business men/women, farmers, artisans, students, unemployed). Hospital management and government should place emphasis on the important dimensions of service quality; there is a need to make patients more confident in the services they receive, adequate hospital funding and facilities should be top most priority of government, inter-personal relationship between hospital personnel and patients should improve also, medical processes should be carried out with high sense of professionalism as these will help in improve service quality and customers satisfaction. Policies and programs should be geared towards improving patient's satisfaction.

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