

# Health Information Management Personnel Service Quality and Patient Satisfaction in Nigerian Tertiary Hospitals

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## Abstract

This study assessed the relationship between perceived service quality of health information management personnel and patient satisfaction in selected tertiary hospitals in Nigeria. A cross sectional survey was conducted with 280 patients from three tertiary hospitals in a Nigerian State. A self-administered questionnaire was distributed to outpatients who were literate, willing and attending the clinics for at least a second time. Perceived service quality was measured using a modified version of Service Quality (SERVQUAL) scale. Patient satisfaction was measured on a 4-point Likert-type scale developed by the researchers. Collected data were subjected to statistical analysis using mean, standard deviation and regression analysis. The surveyed patients were moderately satisfied with the services of the health information management personnel. Accordingly, patients' perception of the health information management personnel service quality was found to be average. In addition, the research has shown that patients' perception of health information management personnel service quality significantly influence their level of satisfaction in the studied tertiary hospitals ( $R = .62$ ,  $F_{5,274} = 35.95$ ,  $p = .000$ ). Patient perceptions of service quality determine their overall satisfaction levels with the health information management personnel services. The tangible service quality dimension had more influence on patients' satisfaction.

**Keywords:** health information management, healthcare quality assessment, hospital, Nigeria, patient satisfaction

## 1. Introduction

The healthcare delivery system of a nation relies to a large extent on the efficacy of its hospitals delivering quality healthcare services. It is essential to mention that there are three levels of health care system in Nigeria: primary, secondary, and tertiary. This study focused on tertiary hospitals because they have a more structured health information management department when compared with other types of hospitals. Tertiary hospitals stand at the peak of health care in Nigeria offering specialised healthcare services with referrals from primary and secondary health facilities. In every tertiary hospital in Nigeria, the first port of call is the health information management department, also known as the health records unit.

The health information management department, apart from being patients' first port of call, serves a number of other functions in a hospital. They provide health records management functions which include creation, maintenance, and disposal of patients' records. This is followed with coding and indexing of these records to reflect the respective diagnoses and surgical operations of the conditions suffered by patients. Also, the department ensures the prompt availability of patients' records to authorised caregivers, thereby allowing for consistency in treatment. This is an indication of the custodian services rendered by the health information management department.

Specifically, personnel working in the department render some patient-centric services such as initiating patients into the hospital register, thereby generating a unique identifier while also capturing patients' personal identifying information; retrieval of patients' health records during subsequent visits, handling and monitoring movements of patients' case notes. They are also charged with stamping and registration of official documents such as death certificates and sick leave, as well as assigning and recording patients' next appointment dates. The above mentioned indicates the pivotal role being played by the health information management department in the overall hospital service delivery. Hence, one could posit that patients' satisfaction with the quality of services delivered by

the health information management department could contribute to determining their satisfaction with the overall hospital services. However, studies documenting the influence of patients' perception of the health information management personnel service quality on satisfaction is scarce. Hence, this study intends to contribute to the hospital service quality discourse by examining patients' satisfaction with the quality of services delivered by health information management personnel.

The concept of patient satisfaction has been an ongoing concern for hospital administrators and researchers alike. This is because it is seen as the driving force of every healthcare delivery service and an indicator of effectiveness as well as how it can be improved. Also, patients' level of satisfaction with hospital services could determine their continued patronage of the hospital or otherwise. Studies have shown that patients who are satisfied with healthcare services will more likely seek medical advice, adhere to treatment recommendations, keep appointments, and refer other patients to their physician (Ferris et al., 1992). In a similar context, the philosophy of patients' satisfaction is founded on the concept that patients' experience of care ultimately translates into their actual response to care (Worthington, 2004). It has to be emphasised that, understanding patients' satisfaction is for four distinct purposes: to compare health care programs or systems; to evaluate the quality of care; to identify which aspects of a service need to be changed to improve patient satisfaction; and to assist organizations in identifying customers likely to stop using their service (Jackson, Chamberlin, & Kroenke, 2001). Results from this study could assist management of hospitals to evaluate the quality of service being rendered by the health information management department, as well as to identify which aspects of service needs improvement.

Patient satisfaction can be seen as the extent to which patients feel that service providers are meeting their needs and expectations. It is the degree of agreement between a patient's expectations of ideal care and his perception of the real care received (Aragon & Gesell, 2015). Various studies have examined patients' satisfaction in different contexts. For example, a study revealed that patients of public hospitals in Nigeria are usually not satisfied with hospital services as they perceive the services delivered by service providers as being poor (Adeyemo, 2005). However, another study revealed that the majority of the patients studied at the National Hospital Abuja, was satisfied with the services provided by their doctors. They also compared patient satisfaction across various personnel members, such as the doctors, nurses and health records officers and found that while patients' were satisfied with the overall services received, health records service point recorded the largest number of dissatisfied patients (Ogunfowokan & Mora, 2012).

In addition, a study assessed patients' satisfaction with eye care services in a Nigerian teaching hospital and found the majority of the patients to be satisfied. Specifically, the patient were more satisfied with the attitude of the doctors and nurses than with the medical records personnel (Ezegwui, Okoye, Aghaji, Okoye, & Oguego, 2014). Similarly, a study of children attending outpatient clinics of the University of Nigeria Teaching Hospital revealed that the majority of the respondents were satisfied with the overall quality of care. However, while the majority were very satisfied with the quality of doctors' services, they were least satisfied with the quality of medical records services (Eke et al., 2014).

Various factors are responsible for the level of patients' satisfaction. Studies have shown that patients' relationship with care providers, communication, outcome of care are factors that influence their level of satisfaction (Crow et al., 2002; Heidegger, Saal, & Nuebling, 2006). Also, it has been noted that the concept of satisfaction is influenced by cultural, socio-demographic, cognitive and affective components (Taheri, Kargar Jahromi, & Hojat, 2015). However, studies have posited that patients' satisfaction is more influenced by their perception of service quality (Essiam, 2013; Negi, 2009; Ramez, 2012). For the purpose of this study, patient satisfaction is conceptualized as the degree to which patients' perceive that the health information management personnel are meeting their needs in terms of the service being provided in their unit.

The most widely used scale for measuring service quality from the service recipient point of view is SERVQUAL as developed by Parasuraman et al. (Parasuraman, Zeithaml, & Berry, 1985, 1988). They described service quality as a measure of the degree of gap between a customer's perception and expectation of service received. Also, they identified five service quality dimensions: reliability; assurance; tangibles; responsiveness; and empathy. Reliability is seen as the ability to perform promised service dependably and accurately; assurance is the knowledge and courtesy of employees and their ability to inspire trust and confidence; tangibles are the physical facilities, equipment, and appearance of personnel; responsiveness refers to the willingness to help customers and provide prompt service; and empathy refers to caring and individualised attention provided to consumers.

Service quality has been widely studied in the health sector using the SERVQUAL model. In a study of patients in an outpatient department of an Indian hospital revealed that service quality gaps existed across the five dimensions of the SERVQUAL model, with statistically significant gaps across the dimensions of tangibles and

responsiveness (Chakravarty, 2011). Likewise, a study assessing patients' assessment of dental care services in a Nigerian hospital revealed there were marked statistically significant quality gaps in assurance and tangibles (Adebayo, Adesina, Ahaji, & Hussein, 2014). Also, a study conducted in a general hospital in Lagos, Nigeria, revealed that majority of the patients rated the overall service quality as good, while the assurance domain was revealed to be the most important predictor of perceived service quality (Ogunnowo, Olufunlayo, & Sule, 2015).

Considering the relationship between service quality and patient satisfaction, a study of government hospitals in Saudi Arabia revealed that service quality has a significant impact on patients' satisfaction. Furthermore, empathy had the greatest influence on patient satisfaction (Alghamdi, 2014). Also, another study revealed a causal relationship between service quality and patient satisfaction in the context of a South Korean general hospital (Cho, Lee, Kim, Lee, & Choi, 2004). Similarly, a Ghanaian study found that perceived responsiveness best explained patients' satisfaction (Essiam, 2013). Also, a study revealed a positive and significant relationship between hospital service quality and the five dimensions of SERVQUAL (Kazemi, Ehsani, Abdi, & Bighami, 2013). On the other hand, a survey found empathy and assurance to be positively related to patients' satisfaction in a Turkish hospital (Kitapci, Akdogan, & Dortyol, 2014).

The foregoing is an indication that perceived service quality could predict patient satisfaction. However, while most studies have assessed patient satisfaction with service quality of overall hospital services and specifically some other clinical areas, to the knowledge of the researchers, none has focused on the health information management department in Nigerian hospitals. Also, considering the strategic role this department play in teaching hospitals in Nigeria, and patients' level of dissatisfaction with their services as reported by studies (Eke et al., 2014; Ezegwui et al., 2014; Ogunfowokan & Mora, 2012), the aim of this study is therefore to assess the extent to which patients' perceived health information management personnel service quality influences their level of satisfaction.

Specifically, this study assessed:

- (i) patients' level of satisfaction with the health information management department services;
- (ii) patients' perceived service quality of the health information management department; and
- (iii) the influence of patients' perceived service quality on the level of satisfaction with the health information management department.

## 2. Method

### 2.1 Sampling and Data Collection

The survey was carried out among outpatients in three (3) tertiary hospitals in Ogun State, a South Western State of Nigeria. Patients' participation was limited to those who were above 18 years of age, attending the clinics for at least a second time – this is to ensure they have interacted with the health information management personnel, could read and write, and agreed to fill in the informed consent form.

Three hundred and sixty (360) patients who fit into the required criteria were approached to participate in the study. However, a total of 342 patients, representing 95% response rate eventually agreed to participate in the study and were administered the survey instrument after filling the informed consent form. The researchers together with two well-trained research assistants distributed and retrieved copies of the questionnaire from the patient. This was done either while waiting to see the doctors or after meeting with the doctors.

### 2.2 Measures

There are two major variables of interest to this study: patient satisfaction and perceived service quality. Since there is a paucity of literature examining patients' satisfaction with the services of health information management personnel, the researchers developed a 4-point Likert-type scale measure. The patient satisfaction measure was developed taking cognisance of key health information management services such as promptness in attending to patients, the manner of attending to patients, securing patients' records, ensuring confidentiality of patients' records, as well as other general services. Patients' were asked to answer the questions on a 4-point scale (1 = highly dissatisfied, 4 = highly satisfied). It, therefore, follows that the maximum points obtainable on the scale are 20 points which would indicate a high level of satisfaction. Consequently, a score below 7 points indicates a low level of satisfaction, scores between 8 and 13 points indicates a moderate level of satisfaction, and score above 14 points indicate a high level of satisfaction.

In measuring patients' perceived health information management personnel service quality, the researchers modified an existing SERVQUAL scale as developed by Parasuraman et al (Parasuraman et al., 1988) and as adapted by similar studies assessing patients' perceived service quality (Essiam, 2013; Kazemi et al., 2013; Ogunnowo et al., 2015). The SERVQUAL scale is based on the five dimensions of service quality: reliability,

assurance, tangibles, responsiveness and empathy. In all, a 20-item scale was developed, that is, 4-item each per service quality dimension using a 4-point scoring system (1 = strongly disagree, 4 = strongly agree). Hence, the maximum score obtainable is 80 points – scoring below 27 points would indicate a poor perception of service quality, between 28 and 54 points indicates an average perception, while above 55 points indicates a good perception.

A pre-test of the instrument was conducted using 35 outpatients in a tertiary hospital that was not part of the study. Adjustments were made where necessary, and the Cronbach's alpha for the patient satisfaction measure was 0.87, while that of the perceived service quality was 0.81.

### 2.3 Ethical Approval

Ethical approval for the study was obtained from the Babcock University Health Research Ethics Committee. All patients who partook in the study gave their written informed consent. Patients' confidentiality and anonymity were ensured as no identifiable information was collected. They were also assured that their responses would not be used against them in the hospital.

### 2.3 Data Analysis

Data collected were examined for completion, namely, 280 copies of the questionnaire were found suitable for analysis. Hence, data was coded and analysed using computer-assisted statistical software of IBM-SPSS version 21. The data collected were analysed using descriptive statistics such as mean and standard deviation, as well as a multiple regression analysis.

## 3. Results

### 3.1 Demographic Information of Respondents

The study analysed data using complete responses from 280 participants. The result revealed the majority of the respondents (38.9%) are between 21-25 years. Also, 117 (41.8%) males and 163 (58.2%) females participated in the study. The demographic information of the respondents is further shown in Table 1.

Table 1. Demographic characteristics of respondents

Variables	Frequency (n = 280)	Percentage (%)
<b>Age</b>		
21-25	109	38.9
26-30	102	36.4
31-35	48	17.1
36-40	19	6.8
41 and above	2	0.7
<b>Gender</b>		
Male	117	41.8
Female	163	58.2
<b>Marital Status</b>		
Single	106	37.9
Married	166	59.3
Divorced	7	2.5
Widowed	1	0.4

### 3.2 Patient Satisfaction

Table 2 shows patients' level of satisfaction with the health information management personnel services. A total point of 13.22 scored by the respondents indicates they were moderately satisfied with the services of the health information management personnel. Particularly, they were more satisfied with the level of confidentiality and safety of their health records in the department (Mean = 2.68 ± 0.93).

Table 2. Patients' level of satisfaction with health information management personnel services

I am satisfied with the...	HD (%)	D (%)	S (%)	HS (%)	Mean (SD)
level of confidentiality of my health records	35 (12.5)	75 (26.8)	114 (40.7)	56 (20.0)	2.68 (.93)
safety measures put in place to preserve/keep my health records	32 (11.4)	79 (28.2)	115 (41.1)	54 (19.3)	2.68 (.91)
promptness of health records personnel in locating my file	35 (12.5)	84 (30.0)	108 (38.6)	53 (18.9)	2.64 (.93)
way and manner I am attended to in the health records department	35 (12.5)	94 (33.6)	96 (34.3)	55 (19.6)	2.61 (.94)
general services rendered by the health records personnel	35 (12.5)	96 (34.3)	93 (33.2)	56 (20.0)	2.61 (.94)
Total mean score					13.22

Legend: HD – Highly Dissatisfied, D – Dissatisfied, S – Satisfied, HS – Highly Satisfied.

### 3.3 Patients' Perceived Service Quality

Table 3 reveals patients' perceived health information management personnel service quality. The mean total score of 52.14 indicates patients perceived the quality of the health information management personnel service to be average. Specifically, the responsiveness dimension rated highly (Mean = 2.71) in comparison to other dimensions of service quality. This implies that patients perceive health information management personnel to be more willing to help, and they also provide prompt service.

### 3.4 Influence of Perceived Service Quality on Patients' Satisfaction

A multiple regression analysis was conducted to test the influence of perceived health information management personnel service quality on patients' satisfaction. The analysis as shown in Table 4a reveals that the perceived service quality dimensions (reliability, assurance, responsiveness, empathy, and tangibles) significantly influence patients' satisfaction with health information management personnel services ( $R = .62$ ,  $F_{5,274} = 35.95$ ,  $p = .000$ ). In addition, the  $R$  square = .40 reflects that the perceived service quality dimensions together account for about 40% of the total variance in patients' satisfaction with health information management personnel services. A further analysis as shown in Table 4b reveals the relative influence of each of the perceived service quality dimension on patient satisfaction. The service quality dimension of tangibles is found to be the only dimension of the five having a significant relative influence on patient satisfaction ( $\beta = .342$ ,  $t = 5.006$ ,  $p = .000$ ).

Table 3. Patients' perception of health information management personnel service quality

Dimensions of Service Quality	SD (%)	D (%)	A (%)	SA (%)	Mean (SD)
<b>Reliability</b>					
The health records personnel ensures accuracy of my record at all times	35 (12.5)	80 (28.6)	106 (37.9)	59 (21.1)	2.68 (.95)
I receive services required whenever I visit the health records personnel of the hospital	42 (15.0)	77 (27.5)	106 (37.9)	55 (19.6)	2.62 (.97)
I regard the services of HIM personnel as dependable and one of a kind	38 (13.6)	81 (28.9)	107 (38.2)	54 (19.3)	2.63 (.95)
I can depend on the services delivered by the health records personnel to me at all times	37 (13.2)	87 (31.1)	106 (37.9)	50 (17.9)	2.60 (.93)

						2.63
<b>Assurance</b>						
My health records are secured in the custody of health records personnel	43 (15.4)	87 (31.1)	97 (34.6)	53 (18.9)		2.57 (.97)
I do not have reasons to complain about any missing health records in my file	43 (15.4)	78 (27.9)	108 (38.6)	51 (18.2)		2.60 (.96)
My health records are always intact and accessible on request	40 (14.3)	84 (30.0)	99 (35.4)	57 (20.4)		2.62 (.97)
HIM personnel are committed to providing quality services to patient always	42 (15.0)	82 (29.3)	101 (36.1)	55 (19.6)		2.60 (.97)
						2.60
<b>Responsiveness</b>						
I am contented whenever I have encountered with Health records personnel in this hospital	33 (11.8)	76(27.1)	108 (38.6)	63 (22.5)		2.72 (.94)
I receive prompt attention with Health records personnel, and they are willing to attend to my query	35 (12.5)	74 (26.4)	110 (39.3)	61 (21.8)		2.70 (.95)
I am willing to return to the healthcare facility because of the prompt attention of the Health records personnel in the tertiary hospital	33 (11.8)	79 (28.2)	101 (36.1)	67 (23.9)		2.72 (.96)
Health records personnel are sensitive to patients' plight	37 (13.2)	80 (28.6)	98 (35.0)	65 (23.2)		2.68 (.97)
						2.71
<b>Empathy</b>						
I receive prompt attention and adequate care in my visit to health records unit in the hospital	38 (13.6)	81 (28.9)	97 (34.6)	64 (22.9)		2.67 (.98)
I am not delayed on the queue	64 (22.9)	94 (33.6)	77 (27.5)	45 (16.1)		2.37(1.00)
I am impressed with the ingenuity of health records personnel in service delivery to patients	43 (15.4)	81 (28.9)	97 (34.6)	59 (21.1)		2.61 (.98)
I appreciate the zeal of health records personnel in quality service delivery	45 (16.1)	80 (28.6)	101 (36.1)	54 (19.3)		2.59 (.97)
						2.56
<b>Tangibles</b>						
There is facility put in place for proper storage of patients health records	45 (16.1)	71 (25.4)	100 (35.7)	64 (22.9)		2.65 (1.00)
There are no instances of records misplacement	64 (22.9)	100 (35.7)	67 (23.9)	49 (17.5)		2.36 (1.02)
There are computers put in place to enhance easy retrieval of health records in hospitals	58 (20.7)	71 (25.4)	95 (33.9)	56 (20.0)		2.53 (1.03)
Patients' health record is not exposed to illicit access by the hospital staff	48 (17.1)	74 (26.4)	94 (33.6)	64 (22.9)		2.62 (1.02)
						2.54
Total mean score						52.14

Legend: SD – Strongly Disagree, D – Disagree, A – Agree, SA – Strongly Agree

Table 4a. Multiple Regression Analysis

	Sum of Squares	df	Mean Square	F	Sig.
Regression	84.56	5	16.91	35.95	.000
Residual	128.89	274	.47		
Total	213.45	279			

$R = .63$ ;  $R\text{ Square} = .40$

Table 4b. Coefficients of variance of perceived service quality dimensions on patient satisfaction

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.099	.245		-.405	.686
Reliability	.153	.077	.155	1.978	.049
Assurance	.108	.084	.109	1.286	.200
Responsiveness	.116	.072	.117	1.620	.106
Empathy	.082	.144	.044	.568	.571
Tangibles	.606	.121	.342	5.006	.000

#### 4. Discussion

This study revealed three major findings in line with the objectives. First, patients' overall level of satisfaction with the health information management personnel services in the hospitals studied was found to be moderate. While studies that have expressly assessed patients' satisfaction with health information management personnel services seems scanty, some have done so in a rather comparative manner. For instance, studies have revealed patients are usually least satisfied with the health information management personnel services in comparison with services provided by doctors and nurses (Eke et al., 2014; Ezegwui et al., 2014; Ogunfowokan & Mora, 2012). Since this study did not set out to compare patients' satisfaction across various service points, it can be asserted that this study's findings do not correspond with the studies above. It is necessary to point out, however, that patients' moderate level of satisfaction with the health information management personnel services indicates the need for improvement in service delivery. This improvement is needed more in the way and manner in which they attend to patients while rendering their service. While this study has not revealed that health information management personnel are ill-mannered, a more courteous approach in attending to patients will improve their level of satisfaction.

Secondly, this study revealed patients' perception of the quality of health information management personnel service to be average. This is expected, considering they also had a moderate level of satisfaction with the health information management personnel services. Studies on service quality in the health sector have usually focused on the doctors' services or overall healthcare services. This study also brought to light the fact that the patients rated the service quality dimension of responsiveness highly, while tangibles were rated least. This implies that patients perceive health information management personnel to be willing to help and that they also provide prompt service. However, they did not perceive their physical facilities and personnel appearance adequate. The low score on the tangibles dimension is accepted because most of the teaching hospitals in the country still depend on manual means of keeping records, which have numerous limitations, one of which is misplacement of patients' records. This is a call for improvement in other dimensions of service quality such as reliability, assurance, empathy, and tangibles.

Thirdly, the study revealed that perceived health information management personnel service quality significantly influenced patient satisfaction. This is expected and in line with similar studies in the health sector (Alghamdi, 2014; Cho et al., 2004; Kazemi et al., 2013). Furthermore, the service quality dimension of tangibles was found to be the only service quality dimension to have a significant relative influence on patient satisfaction. This is contrary to studies that found the responsiveness, empathy, and assurance dimension contributes more to patients' satisfaction (Essiam, 2013; Kitapci et al., 2014). While these are studies based on overall hospital services, this

study focused on services rendered by the health information management department.

## 5. Conclusion

Health information management personnel play a vital role in creating, managing, storing and retrieving patients' records in a hospital. They are usually the first point of call in a Nigerian public hospital, and their promptness in retrieving patients' records sometimes determine a patients' waiting time. Hence, patients' perception of the health information management personnel service quality could determine their satisfaction with their services, which has overall implications on patients' satisfaction with the overall hospital service. While previous studies have focused on other aspects of hospital service quality, this study provides empirical evidence on health information management personnel service quality. This study has revealed that patients' perceived service quality significantly influence their satisfaction with health information management personnel services. However, a recurring service quality dimension of interest is tangibles. It is therefore recommended that management of hospitals, federal and state governments alike equip the health information management department with modern technologies that could improve their service delivery. While not to undermine the results of this study, a limitation in this study is that patients' were surveyed in tertiary hospitals alone. Thus, findings reported here may not be generalised across the different types of hospitals.

## Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

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