INVESTIGATION OF THE EFFECT OF SERVICE QUALITY (SQ) ON PATIENT SATISFACTION (PS) IN GHANA USING THE SERVQUAL MODEL: THE CASE OF GREATER ACCRA REGIONAL HOSPITAL (GARH)

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Abstract

The study's purpose was to investigate the role service quality (SQ) play in achieving patient satisfaction (PS), examine the nature of hospital staff/patience relationship and to explore the challenges faced by healthcare workers in Greater Accra Regional Hospital [GARH], a prime provider of secondary public healthcare in Ghana. The study was based on questionnaires/in-depth interviews completed by 200 respondents selected via convenient sampling. A modified version of the "SERVQUAL" model was used for measuring SQ and consequently PS. Data analysis included descriptive statistics, principal component analyses, exploratory factor analyses with varimax rotation, reliability/validity analyses, and multiple regression analyses. Data elaboration and processing identify main factors affecting the patients' overall preferences where the findings in particular reveal positive results towards SQ and PS. In this circumstance, findings/recommendations established, should be considered crucial for hospital administrators/policy makers when dealing with decisions affecting SQ assessment.

Keywords: Ghana, Patient Satisfaction, Quality Healthcare, Service Quality, Servqual

GANA'DA HİZMET KALİTESİNİN (SQ) HASTA MEMNUNİYETİ (PS) ÜZERİNDEKİ ETKİSİNİN SERVQUAL MODELİ KULLANILARAK İNCELENMESİ: BÜYÜK ACCRA REGİONAL HOSPİTAL (GARH) ÖRNEĞİ

Öz

Çalışmanın amacı, hasta memnuniyetine (PS) ulaşmada hizmet kalitesinin (SQ) oynadığı rolü araştırmak, hastane personeli / sabır ilişkisinin doğasını incelemek ve Greater Accra Regional Hospital [GARH] 'da sağlık çalışanlarının karşılaştığı zorlukları keşfetmekti. Gana'da ikincil halk sağlığı hizmetlerinin ana sağlayıcısı. Çalışma, uygun örnekleme yoluyla seçilen 200 katılımcı tarafından tamamlanan anketlere / derinlemesine görüşmelere dayanıyordu. "SERVQUAL" modelinin değiştirilmiş bir versiyonu, SQ ve dolayısıyla PS'yi ölçmek için kullanıldı. Veri analizi, tanımlayıcı istatistikleri, temel bileşen analizlerini, varimax rotasyonlu keşif faktör analizlerini, güvenilirlik / geçerlilik analizlerini ve çoklu regresyon analizlerini içeriyordu. Veri ayrıntılandırma ve işleme tanımlama Özellikle bulguların SQ ve PS'ye yönelik olumlu sonuçlar ortaya çıkardığı durumlarda hastaların genel tercihlerini etkileyen ana faktörler Bu durumda, oluşturulan bulgular / öneriler, SQ değerlendirmesini etkileyen kararlarla uğraşırken hastane yöneticileri / politika yapıcılar için çok önemli kabul edilmelidir.

Anahtar Kelimeler: Gana, Hasta Memnuniyeti, Kalite Sağlık, Hizmet Kalitesi, Hizmet Kalitesi

INTRODUCTION

Service Quality (SQ) in recent times is deemed highly imperative especially in the field of healthcare in view of the delicate nature of medical care service delivery (Guru, 2003: Monica and Ramanaiah, 2018 etc.). Less Developed countries (LDCs) have commenced embracing canons for accreditation in healthcare so as to direct efforts towards healthcare standardization on a worldwide

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scale and to endeavor to offer their citizenry with healthcare delivery services of international repute (Abuosi, 2015). It has been realized that, so far as the healthcare sector is concerned and in order to have best practices, patients quality perceptions needs to be ascertained and strategies for quality must be prioritized by administrators of healthcare institutions (Chahal & Kumari, 2010). SQ issues in healthcare are very important due to the huge risks related with healthcare delivery functions with vital implication on morbidity, death and long life (Rashid & Jusoff, 2009). Consequently, health facilities are facing immense burden to exhibit superior SQ in their healthcare service delivery so as to achieve high patient satisfaction (PS) (Chahal & Kumari, 2010).

Researchers in developing countries have presented a number of evidences in support of the growing worsening of SQ in the medical care industry, thus making it imperative for SQ management in the medical industry an essential call for interested parties awareness and deliberations (Chahal & Kumari, 2010). Ghana, a lower middle income developing country also finds herself in the same pool/situation (Atinga, Abekah-Nkrumah, & Domfeh, 2011). This notwithstanding, efforts are far advance to scientifically inquire into medical care SQ, which has PS as a gauge and conventionalization of excellence guarantee in Ghanaian medical facilities (Turkson, 2009). Medical and health delivery activities is under the microscopic eye of the ordinary Ghanaian citizen in recent times in view of the rising worries about the quality of medical care in Ghana (Tenkorang, 2016). The incident is being worsened by the day as a result of the relentless news reportage by Ghanaian media houses in view of serious outrages such as lost children, high death rate during child birth, high rate of child death, inadequate state of the art facilities, and negative attitudes and carelessness on the part of some medical practitioners (Yesilada & Direktor, 2010). In addition, the increasing flurry of cases at Ghanaian law courts with respect to undesirable medical practices by some Ghanaian medical practitioners confirms to this escalating apparent actuality (Tenkorang, 2016).

Very few researches have been conducted in the Ghanaian context with regards to SQ in the healthcare sector and PS in public hospitals (Anabila, Anome and Kumi, 2018). Amidst these qualms, further inquiries are required to restructure the delivery of medical services with a more conscious focus on the public healthcare facilities in Ghana (Anabila, Anome and Kumi, 2018). It is also vital, to constantly study PS having healthcare SQ as the main focus because, as far as the healthcare industry/sector is concerned, patients are the main customers and for any business entity to be successful and survive, satisfying your customers even though is necessary, but moving a step further to delight them ensures the continuity, growth, profit making and business survival in this competitive global economy.

1. STUDY OBJECTIVES

The study's objectives were to investigate the role service quality (SQ) play in achieving patient satisfaction (PS), examine the nature of hospital staff/patience relationship and to explore the challenges

faced by healthcare workers in Greater Accra Regional Hospital [GARH], a prime provider of secondary public healthcare in Ghana.

2. LITERATURE REVIEW

2.1. Measuring SQ in Healthcare

Avedis Donabedian, a public health practitioner and academic at the University of Michigan presented a dominant touchstone framework/paradigm/model for assessing quality issues in clinical practice in his 1966 paper: Evaluating the Quality of Medical Care referred to as The Donabedian Model. The conceptual model states that healthcare quality can be analyzed via the structure-process-outcomes categories/elements (Donabedian, 1988). Structure refers to the healthcare delivery setting and infrastructure which consist of the medical facility edifices/structure itself, employees, funding, and equipment. Process represents all the technical activities/acts and medical practitioners-patients transactions which constitute the means/manner of healthcare delivery, including preventive care, examination/diagnosis, treatment, and patient's healthcare education. Lastly, outcomes denote the healthcare influence on the status of patients/populations including knowledge or behavioral changes, changes to the health status of patient's, the satisfaction level of patients vis-a-vis quality healthcare provision (Donabedian, 1988).

The Donabedian framework can be utilized to tackle issues of extensive or constricted spectrum since it does not have an implicit definition of quality care (Donabedian, 1980). He contends that, all three categories/elements have merits and demerits that compel scholars to assess the nexuses between them so as to establish sequence of causal linkages and relationships theoretically expedient for apprehending schemes and also designing clinical trials/experiments and interventions (Donabedian, 2003).

Christian Gronroos (1984), a Finish scholar also proposes a framework for measuring perceived SQ in healthcare. According to him, the measurement of SQ can be viewed from two dimensions: - technical and functional. Technical is defined on the basis of the technical accuracy of the medical diagnoses and procedures, while functional refers to the manner in which the healthcare service is delivered to patients.

According to De Geyndt (1995), Quality of healthcare is a multi-layered and complex phenomenon intertwined with important decisions about what makes up good quality. Thus, the very complex nature of the healthcare quality phenomenon, partly explains the lack of consensus on its definitions, the many methodological approaches to assess it and the diversity of styles to guarantee and improve quality (De Geyndt, 1995). De Geyndt (1995) modelled a three basic element theory which aids in the selection of healthcare SQ elements/inputs. The first element which he called structural elements/inputs is solid and measurable and are an essential but not an adequate circumstance for good quality. The second element/input named process element/input is what is really performed on the patient during healthcare delivery services. The third and last elements/inputs called outcome

elements/inputs are the final consequences resulting/arising from the hospital customer's accurate care processes as well as the apt obtainability of the essential inputs.

Parasuraman et al (1985), proposed first the SERVQUAL scale used to measure SQ on the basis of the gaps model. Parasuraman et al (1985) study, revealed that, individuals who had positive perception of SQ went ahead to recommend the health institution and they established that, SQ is the variance between customer expectation and perception.

They thereafter modified the SERVQUAL model into a five-dimensional model in 1988, which has now come to be known as the R – Reliability; A – Assurance; R – Responsiveness; E – Empathy; T – Tangibility scale/model. Services delivery sector internationally, extensively fall on SERVQUAL model to assess performance including healthcare services.

Some scholars and researchers have criticised the use of the SERVQUAL model of its generality and that it needs to be modified to suit specific industry settings and attributes. This notwithstanding, several other scholars and researchers find it useful for assessing SQ. (Babakus and Mangold, 1992).

2.2. SQ Models

There are extant models on SQ which are utilized in various disciplines including telecommunication, corporate business, engineering, education, IT, healthcare, banking etc. as enumerated in Table 1. A closer study and analysis depicts that, ten of the SQ models have been utilized extensively in the healthcare sector and these models have been asterisked in Table 1.

Table 1: Synthesis of SQ Models.

No.	SQ Models	Authors	Year
1	The Donabedian model***	Avedis Donabedian	1966
2	Technical and functional model ***	Gronroos	1984
3	The GAP model ***	Parasuraman, Zeithmal and Berry	1985 4
	Moore's SQ model	Moore	1987
5	Behavioural SQ model	Beddowes et al	-
6	Attributes SQ model	Haywood-Farmer	1988
7	Service Journey model	Nash Johnson	1988
8	Service Delivery model	-	1988
9	Synthesized model of service quality***	Brogowicz, Delene and Lyth	1990
10	Performance only model ***	Cronin and Taylor	1992
11	The ideal value model of SQ***	Matterson	1992
12	Evaluated Performance & Normal	Teas	1993
13	IT Alignment model	Berkley & Gupta	1994
14	Model of SQ and satisfaction ***	Spreng & Mackoy	1996
15	Attribute and Overall Affect model	Dabholkar et al	1996
16	PCP Attributes model	Philip and Hazlett	1997
17	Retail SQ and Perceived Value model	Sweeney et al	1997
18	SQ, customer value and CS model***	Oh	1999
19	Concurrent Engineering SQ model	-	1999
20	Holistic Model for Total Quality Service	-	-
21	Internal SQ model***	Frost & Kumar	2000
22	Internal SQ DEA model	Soteriov and Stavrinides	2000
23	Antecedents and Mediator model	Dabholkar et al	2000
24	Internet Banking Model	Broderick and Vachirapornpuk	2002
25	IT – Based model	Zhu et al	2002
26	Model of e-SQ	Santos	2003
27	2 Dimensional Model of Service Process	Karl Mayer	2003
28	Domestic Intercultural Service Encounter model	Shirley A, Hopkin et al	2005
29	SERQUAL Model ***	Parasuraman, Zeithmal and Berry	1988

Source: Author's Review. * SQ models utilized in the health services industry**

2.3. Empirical Literature

Turkson in his 2009 study in rural Ghana, revealed that a section of the Ghanaian populace recognise the quality of healthcare delivery services as deficient and therefore opt for other sources of medical care. The conviction and sureness is challenged by consistent lack of medical inputs, patients having to wait for long hours in long queues before receiving medical care and the unfortunate conducts/behaviour of some medical officers. The resultant effect has being truncated patronage of medical services, irrespective of the extensive investment geared towards bringing healthcare services closer to the Ghanaian citizenry.

Turkson an academic at University of Cape Coast, Ghana, established in his findings that the Ghanaian populace in general receive good medical care in his research conducted in rural Ghana in 2009. Atinga et al (2011), inquired into the relationship between five explanatory variables namely communication, provider courtesy, support/care, facility environment and waiting time and their predictive effect on PS in two medical facilities in northern part of Ghana, and established that, three of the five independent variables influences PS so far as healthcare delivery services was concerned. Essiam (2013) evaluated healthcare SQ from the OPD patients' perception- expectations nexus of one

of Ghana's public university hospital and reported that, there were SQ gaps in all the SERVQUAL construct and PS was utmost explained by the perceived dimensions of responsiveness, then empathy, assurance, tangibility, and reliability.

Peprah (2014), undertook a scientific inquiry in a health facility in the upper part of Ghana on the relationship between SQ and PS and established that, PS via SQ was generally considered satisfactory. Ahenkan and Aduo-Adjei (2017) examined PS with the quality of healthcare in two public university hospitals in Ghana and observed that empathy, communication, culture, tangibles and priority are significant predictors of PS. Agyepong, Afi and Kwateng (2018) examined the mediating role of PS in the association between perceived SQ and behavioral intentions (BI) in 35 health facilities in Ashanti Region of Ghana and confirmed the mediating role of satisfaction in the nexus between Perceived SQ and BI in healthcare.

Anabila, Anome and Kumi (2018) examined the roles of SQ and CS and Behavioural Intentions (BI) on 20 public hospitals in Ghana and found out that positive SQ results in CS. Anabila, Anome and Kumi again in 2019 investigated the role SQ play on PS and observed that there was a direct correlation between SQ and PS. Anabila, Anome and Kumi (2019) again investigated the role of SQ, CS and customer loyalty (CL) in Ghana's health sector and a comparative analysis of private and public hospital SQ and found a significant positive relationship between SQ and CS. Also, the study found a significant positive relationship between CS and CL. Finally, SQ was found to be better in private hospitals, resulting higher CS and CL.

Amankwah, Choong and Mohammed (2019), assessed the mediating effect of healthcare Facility Management (FM) SQ on PS and overall healthcare provision in three Teaching hospitals in Ghana and concluded that FM SQ mediates the association between PS and three of the dimensions under main healthcare provision (healthcare delivery quality, healthcare personnel quality and the healthcare resources adequacy) but unsupported relationship between administration process quality and PS. Ofei-Dodoo (2019) utilized WAVE 1 data from a countrywide representative survey (n = 2,967) of patients who received outpatient healthcare to assessed the relationship between treatment outcomes and PS in Ghana and concluded that, there was a strong positive association between PS and treatment outcomes i.e. patients reported positive experiences with all aspects of their primary healthcare services. In a more recent study, Ampaw et al (2020) assessed health-care SQ, PS and continuous service utilization among selected hospitals within the Koforidua municipality of Ghana and observed a significant relationship among perceived SQ, PS and tangibility but an insignificant association among the expectation dimensions.

3. THEORETICAL IMPLICATION

This study deployed a modified SERVQUAL model adopted from Parasuraman et al (1988) made up of six constructs namely Assurance (A), Reliability (REL), Responsiveness (RES), Empathy (E), Tangibility (T), Convenience and Availability (CA). Results from extant literature (Ahenkan and

Aduo-Adjei, 2017; Anabila, Anomi and Kumi, 2018) gives an indication that theoretically, the SERVQUAL model can be utilized as a measure of healthcare SQ in view of the fact that, the constructs actually do measure the dimensions in healthcare environment as it purports; a means of content validating the items/variables under each construct.

Real-world inferences (Ahenkan and Aduo-Adjei, 2017; Anabila, Anomi and Kumi, 2018) suggest that healthcare practitioners do to some extent, render the level of SQ demanded by hospital clients (patients) in the face of the numerous challenges that confront them, notwithstanding the fact that some healthcare providers need to improve some of the SQ dimensions. The implications of using this model in assessing SQ and PS from patient's view point include identifying patient's perceptions/expectations on SQ, bettering SQ management by detecting areas that requires improvement in terms of satisfying patient's needs.

A careful analyses of extant literature (Mensah, Yamoah and Adom, 2014; Ahenkan and Aduo-Adjei, 2017; Anabila, Anomi and Kumi, 2018; Agbi, Dai and Asamoah, 2018) with respect to studies performed utilizing the SERVQUAL model, revealed that numerous scientific inquiries have been conducted in the healthcare sector adopting either Parasuraman et al (1985) GAP model or Parasuraman et al (1988) 5-factor SERVQUAL model in its holistic form or a modified form but limited empirical inquiry has been conducted using this study's adopted 6-factor SERVQUAL model to assess SQ in public healthcare facility in developing economies in general and Ghana in particular. It is the view of the author that, deploying this modified 6-factor SERVQUAL model would be a contribution to existing research literature on the application of the modified SERVQUAL model in the healthcare sector in assessing the role SQ play in PS. This present/current study therefore seeks to empirically inquire into the nexuses between SQ and PS in Ghana focusing on GARH, utilizing the 6-factor modified SERVQUAL model for its analysis.

4. METHODS

4.1. Study Area/Setting

The study was carried out at GARH, a secondary public hospital located in Accra, the capital city of Ghana, specifically in the Osu Klottey sub Metropolis.

The hospital can boast of a state of the art four hundred and twenty bed capacity facility, a wide-ranging diagnostic and treatment facility, having a 24/7 surgery section, delivering section, accident and emergency (A& E) section, pharmacy section, a logistic block, a forty two accommodation facility for employees, an Anesthesia school, a mortuary and employee strength of about 400.

The medical facility's catchment area covers the entire Greater Accra region with an approximate population of about 4,283,322 people, making it the eleventh biggest metropolitan area in Africa [United Nations World Population Prospect, 2019 Review]. Generally, GARH renders services including Medicine, Surgery, Paediatrics and New-born, Obstetrics and Gynaecology, Radiology,

Accident & Emergency (A & E) as well as Pharmacy. GARH in addition, renders Teaching and Training Services for first degree and post first degree programmes with Continuing Professional Development (CPDs) modules inclusive for medical professionals/Practitioners in Ghana.

4.2. Research Design

The mixed-method research design was espoused for this study, utilizing both quantitative and qualitative research techniques for its analysis.

4.3. Data Collection Technique and Research Instruments

This scientific inquiry utilized a modified SERVQUAL model made up of six constructs/dimensions used as main/focal predictor/explanatory variable and twenty four items/variables/indicators and in-depth interviews to harness responses [socio-demographic characteristics, patients perception on SQ, overall SQ satisfaction level, hospital staff-patient relationship and challenges confronted by hospital staff] from patients and hospital workers of GARH as used by numerous researchers and scholars [Min Li et al., 2015; Anabila, Anome and Kumi, 2018] and their definitions are provided in Table 2. There were four variables that were controlled in view of their seemingly likely effect on PS namely age [categorized as 14-20, 21-40, 41-59, Above 60], sex [male = 1 or female = 0], level of education [low, for SHS and below = 0 and High for SHS and above = 1] and number of years of utilizing the health facility [first timer, 1–5 years, 6–10 years, and above 10 years]. With the exception of PS level, which was measured by one questionnaire ranking the PS level of patients at GARH, all the variables utilized to assess SQ from the view point of patients were captured on a four-point Likert scale as follows: Strongly Disagree (SD)= 1; Disagree (D)=2; Agree (A)=3; Strongly Agree (SA)=4.

Table 2: Scales of variables in the model.

Construct	Definition
Assurance **(4)**	Professional and Technical competences as well as knowledge level of medical staff and their ability to instill trust and confidence in patients and overall courtesy of medical staff.
	A1 Health personnel are abreast with modern healthcare delivery.
	A2 Hospital staffs are cordial and approachable.
	A3 Patients feel secure and hopeful whenever they visit the hospital.
	A4 Hospital is interested in solving patients issues at work
Reliability **(4)**	Medical staff ability to perform promised and expected services dependably and accurately.
	REL1 Patients are given accurate diagnosis and appropriate treatment
	REL2 Consultations are thorough and interactive
	REL3 Healthcare delivery process is patient friendly
	REL4 Working processes are clear and concise
Responsiveness **(4)**	Willingness to help patients and provide prompt service.
	RES1 Patients have their problems attended to in good time.
	RES2 Emergencies are attended to promptly.
	RES3 The hospital staffs are never too busy to respond to patients requests.
	RES4 There is 24/7 standby medical team to respond promptly to patient needs
Empathy **(4)**	Caring and individualized attention offered by medical staff to patients.
	E1 Health personnel have patients well-being at heart
	E2 Patients are put first on the hospital's priority list.
	E3 Hospital staffs go the extra mile to help patients with special needs.
	E4 Hospital staff can give personalized care to patients
Tangibility **(4)**	Physical facilities, equipment, and appearance of personnel.
	T1 The hospital have good physical infrastructure.
	T2 The hospital has the right equipment's to provide timely interventions.
	T3 The interior decor and arrangement are neat, tidy and orderly
	T4 Hospital have staff with neat and professional appearance
Convenience & Availability **(4)**	CA1 There is always readily availability of drugs and other medical supplies at the hospital even in emergency situations
	CA2 Ambulance services is readily available at all times
	CA3 Suitable clinic working days and hours
	CA4 Easy access to the clinic from all parts of the city

Source: Modified SERVQUAL model adopted from Parasuraman et al (1988).

In order to ensure that the respondents understood the survey questionnaires and to achieve high internal consistency, a pre-test was conducted with ten respondents. The study's universe comprised all employees as well as patients (in-patients and out-patients) of GARH. A non-probability sampling technique [convenience sampling] was used to select a sample size of 200 respondents comprising, 80 In-patient clients, 60 Out-patient clients, 60 Hospital staff [Doctors-8, Nurses-8, Pharmacist-8, Laboratory Technicians -8, Radiologist-8, Administrators-11, Record keeping officials-

8, Counsellor-1] and all survey participants were made to understand that strict confidentiality and anonymity would be adhered to. Convenient sampling is the technique most often used with inquiries such as this, because only the target hospital patients and employees who were present at the time of the data collection and willing and able to participate in the study were sampled. The author with the aid of five research assistants, who were trained to understand the questionnaire and interview process, administered the resultant questionnaires following purification of the scales to the respondents from 7th September to 28th October 2020, during working hours. Clearance was sort from hospital managers and administrators before conducting the inquiry. The author noted the risk of allowing respondents to take the survey questionnaires home and as such deployed on the spot data collection technique. 225 respondents were sampled, a final figure of 200 was deemed usable after the author had remove those questionnaires that had logic errors or missing values, giving a 91 per cent response rate. The sample size was determined through the formula of standard error of the Mean (Malhotra, 2008) as follows:

$$n = \frac{(SD)^2 \times Z^2}{D^2}, = \frac{0.3826530613^2(1.96^2)}{0.05^2} = 225$$

[Where n stands for sample size; SD for Standard Deviation (approx. = 0.38); Z is standardised error associated with a 95% confidence level which correspond to1.96 on the z-table and D is the level of precision/accuracy or acceptable sample error (0.05).]

4.4. Reliability and Validity

According to Guilford (1946), reliability of study questionnaires as defined by Standard for Educational and Psychological Testing is the extent to which scores on a test are essentially invariant over time. It ensures enhanced clarity of the questions as well as confirms research stability.

In order to test and ascertain the reliability of the items in each construct, the researcher calculated Cronbach's α coefficient; values of 0.7 and above were obtained for the items in each construct which is considered satisfactory (Hair et al, 2016). The values of Cronbach's alpha in this study of SQ effect on PS are as follows: A=0.84, REL=0.85, RES=0.75, E=0.81, T=0.78, CA=0.72 with overall Cronbach's alpha on SQ of 0.79. The composite reliabilities revealed an adequate internal consistency of multiple items for each construct with composite reliability values above 0.70 (Hair et al. 2016). Meanwhile, the questionnaires were developed through borrow/adjust from specialists and in extant literature as a way of content validating how well the chosen items on the questionnaires scale measures the six constructs in this study.

In assessing discriminant validity, the average variance extracted (AVE) computed for each construct were juxtaposed with the squared correlation between that construct and the other constructs. According to Hair et al (2016) and Bagozzi & Yi (2012), the AVE figure computed for every individual predictor variable must be greater than the squared correlation between that construct and the other construct. This present study, recorded AVEs values [0.596-0.706] greater than the squared correlation between a construct and the other constructs, demonstrating satisfactory discriminant validity as depicted in Table 3 (Chin et al., 2003).

Table 3: Squared Correlation Matrix for SQ Dimensions (Discriminant Validity)

	A	REL	RES	E	T	CA
A	0.679**					
REL	0.45**	0.607*				
RES	0.40**	0.20**	0.706*			
E	0.33**	0.05**	0.250***	0.658***		
T	0.26**	0.34*	0.60*	0.45**	0.672*	
CA	0.17*	0.150***	0.25*	0.33*	0.22**	0.596*

Source: Author. Note: Values on the diagonal are Average Variance Extracted (AVE).

***, ** and * significant at 1%, 5% and 10% level, respectively.

4.5. Data Processing and Analysis

In order to perform Exploratory Factor Analysis (EFA), Principal Component Analysis [PCA] was utilized as a means of reducing the dataset. EFA was then done on twenty four items and the results are depicted in Table 4. As a precedence to deploying the EFA in this research, the author examined the data's sampling adequacy and factorability in order to meet all assumptions both statistical and conceptual necessary and required for the EFA. The author then examined the factorability of the data and sampling adequacy, by performing the Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO). The scientific inquiry obtained a very significant Bartlett's test of sphericity (p=0.000). The research also had a KMO value of 0.919 which indorsed it's [dataset] appropriateness and suitability for FA. All constructs/dimensions with a more than one (1) eigenvalue as well as variables/items with a more than 0.4 construct/dimension loadings and items/variables with a less 0.40 cross-loadings relevant to the other constructs/dimensions were used for the analysis (Hair et al., 2016). Thereafter a multivariate/multiple linear regression was performed to ascertain the impact/influence of constructs/dimensions and their predictive power as explanatory variables (independent variables) on PS used as dependent variable.

5 RESULTS

5.1 Socio-demographic characteristics of Respondents

200 respondents participated in the survey. More than half (103) constituting 51.5% were males and the remaining 97 (48.5%) were females. Majority, 92 (46%) were in the age range of 21 - 40 years and were HND, first or second degree holders. Next, 60 (30%) were in age range 41 – 59 and were holders of first and second degrees and then pensioners of 60 years and above were 33 (16.5%). The lowest 15(7.5%), were in age range 14-20 and were student at the basic level. In view of the subjective nature of SQ perception, the study sampled respondents who were 14 years and above in order to obtain a cautious yet accurate assessment. Respondents profile heterogeneity, did not account for any variations in the results and as such the research findings is considered reliable.

5.2 SQ Dimensions and PS

SQ elements were captured on six factors/dimensions that support the overall SQ at GARH. The author performed EFA in order to bring out appropriate factors/dimensions as good explanatory predictors of overall SQ and PS. In ensuring the factorability of the dataset, PCA with varimax rotation was performed and the results are presented in Table 3. The author initially extracted nine factors having eigenvalue greater than 1; and all nine factors together accounted for 70.18 per cent of the SQ total variance. As recommended by scholars and researchers such as Hair et al 2016, this extracted structure was not used in view of the fact that some of the items/variables had low-factor loadings and some items/variables had higher cross-loadings. To obtain an acceptable structure which are significant statistically, all items/variables having a higher than 0.4 cross loadings and constructs/dimensions with a less than 0.4 loadings were deleted and EFA was re-performed.

The author thereafter, performed the EFA again to obtain an acceptable structure after the elimination of the items with cross-loadings higher than 0.4 as well as items with low-factor loading [below 0.4]. Six items/variables from three factors/dimensions i.e. [Culture (C_1=Hospital staff does not discriminate based on religion, C_2= Hospital staff does not discriminate based on tribe), Admission Process (AP_1 = quick filing process, AP_2= Speed and convenient of payment system,) and Appointment (APP_1= Providing useful information by the secretary about the physicians and the clinic, APP_2 = Polite conduct and quickness of the clinic secretary in determining the appointments)] were detached, and EFA was repeated.

Now, six factors/dimensions have been formed for SQ, which accounted for 70.18 per cent of the total variance in SQ.

Table 4: Descriptive statistics of SERVQUAL scale of 24 items

Factors	Items	Mean	SD	Loadings	Eigen value	% of variance Explained	Cronbach alpha	CR	AVE	KMO
I	**Assurance**	**1.19**	**0.694**	**0.82375**	**10.6**	**29.2**	**0.84**	**0.894**	**0.679**	**0.970**
A1		1.18	0.695	0.823						
A2		1.17	0.697	0.862						
A3		1.23	0.688	0.809						
A4		1.17	0.697	0.801						
II	**Reliability**	**1.15**	**0.712**	**0.7775**	**3.7**	**13.68**	**0.85**	**0.860**	**0.607**	**0.920**
REL1		1.14	0.727	0.831						
REL2		1.19	0.693	0.799						
REL3		1.13	0.712	0.775						
REL4		1.14	0.714	0.705						
III	**Responsiveness**	**1.1**	**0.733**	**0.8395**	**2.07**	**9.8**	**0.75**	**0.905**	**0.706**	**0.960**
RES1		1.11	0.733	0.846						
RES2		1.13	0.713	0.824						
RES3		1.05	0.732	0.813						
RES4		1.1	0.754	0.875						
IV	**Empathy**	**1.08**	**0.76**	**0.81075**	**1.92**	**6.7**	**0.81**	**0.885**	**0.658**	**0.890**
E1		1.11	0.764	0.831						
E2		1.05	0.756	0.8						
E3		1.1	0.782	0.819						
E4		1.04	0.754	0.793						
V	**Tangibility**	**1.17**	**0.7**	**0.8195**	**1.75**	**5.5**	**0.78**	**0.891**	**0.672**	**0.880**
T1		1.17	0.717	0.819						
T2		1.11	0.711	0.792						
T3		1.13	0.722	0.827						
T4		1.28	0.646	0.84						
VI	**Convenience/Availability**	**1.06**	**0.7**	**0.775**	**1.35**	**5.3**	**0.722**	**0.855**	**0.596**	**0.890**
CA1		1.1	0.701	0.775						
CA2		1.05	0.696	0.793						
CA3		1.05	0.71	0.767						
CA4		1.02	0.7	0.751						
	TOTAL				**70.18**	**0.792**		**0.882**	**0.653**	**0.919**

Source: Author

All six factors had 4 items each. Factor I measured assurance which produced the most variation explanation having an eigenvalue of 10.6, representing 29.2% of the total variance. Factor II was named reliability, accounted for an eigenvalue of 3.70, representing 13.68% of the total variance. Factor III was named responsiveness, which accounted for a 2.07 eigenvalue, representing 9.8% of the total variance. Factor IV, was named empathy, which accounted for a 1.92 eigenvalue, representing 6.70% of the total variance. Factor V, was named tangibility, which accounted for a 1.75 eigenvalue, representing 5.50% of the total variance. Factor VI, measured convenience and availability, which accounted for a 1.35 eigenvalue, representing 5.30% of the total variance. In order to test and ascertain the reliability of the items/variables in each construct/dimension, Cronbach's α coefficient was calculated for the constructs/dimensions and their values swung from 0.72 to 0.85. The Cronbach's α coefficient value for the overall items of the SQ instrument, was 0.79, and it is deemed greater than the value recommended by Hair et al 2016. As such the SQ instrument is deemed to have the required reliability and stability.

5.3 Predictors of SQ dimension on patent satisfaction

At this stage, the author performed a multivariate regression analysis to ascertain the explanatory potency of the six extracted dimensions of SQ from the FA namely Assurance, Reliability, Responsiveness, Empathy, Tangibility and Convenience and Availability as focal/main predictive variables on PS used as dependent variable with a $p<0.05$ as a statistical standard. The multiple linear regression model having an adjusted R^2 value of 0.56 explained 56% of the variations of the dimensions of SQ on PS. This indicates that all the six variables were good explanatory variables of PS with SQ at GARH. Assurance dimension produced the greatest score having a mean value of 1.19 whilst Convenience and Availability produced the least score with a mean value of 1.06 (Table 5). Table 5 shows that, Assurance with a β value of 0.26 is statistically, a significant predictor of PS having a p-value of 0.000 less than 0.05. Furthermore, reliability, responsiveness, empathy, tangibility and convenience and availability are significantly good SQ predictors of PS.

The comparative analysis of the explanatory variables [factors/dimensions] in terms of their predictive power is ascertained by the standardized β values [the higher the β value, the more important the dimension is].

A comparative analysis from the results in Table 5, shows that the most important predictor of the SQ on PS was Assurance having a β value of 0.26, and statistically significant at $p=0.000<0.05$; followed by Reliability having a β value of 0.18, and significant statistically at $p=0.002<0.05$. Responsiveness is the third best predictor of PS, having a β value of 0.17, and significant statistically at $p=0.003<0.05$. Empathy is the 4th best predictor of PS having a β value of 0.15, and significant statistically at $p=0.005<0.05$. Tangibility is the fifth best predictor of PS having a β value of 0.14, and significant statistically at $p=0.007<0.05$ and the last predictor of PS is Convenience and Availability having a β value of 0.12 and significant statistically at $p=0.008<0.05$.

With respect to the control variables, educational background/level and number of years of facility utilization were the control variables that proofed to be positively and significantly related to PS. Educational background/level recorded a β value of 0.08, and significant statistically at p=0.047<0.05, whilst number of years of facility utilization recorded β value of 0.04, and significant statistically at p=0.042<0.05. As the findings indicates, respondents with relatively high level of education as well as those respondents who have utilized the medical facility for quite some time perceive SQ of the medical facility as good/high, and are comparatively satisfied with GARH services.

Table 5: A multiple linear regression of SQ dimension on PS

Focal/Main Predictors	B	SE	B	t-value	Sig
		Patient Satisfaction			
Assurance	0.31	0.09	0.26	2.88	0.000*
Reliability	0.17	0.08	0.18	2.25	0.002*
Responsiveness	0.26	0.07	0.17	2.42	0.003*
Empathy	0.18	0.06	0.15	2.50	0.005*
Tangibility	0.15	0.05	0.14	2.80	0.007*
Convenience & Availability	0.30	0.03	0.12	4.00	0.008*
Control Variables					
Age	0.03	0.05	0.01	0.17	0.101
Sex	0.05	0.07	0.02	0.26	0.097
Educational background (highest level)	0.09	0.06	0.08	1.28	0.047
No. of years of Facility Utilization	0.06	0.09	0.04	0.42	0.042
Constant	0.31	0.43	0.74	1.72	0.437

*$R^2 = 0.58$ Adjusted $R^2 = 0.56$; F-value= 26.17; p = 0.00, p≤ 0.05 *= sig @ 5%*

Source: Author's Compilation and processing of Field Data (2020) using SPSS 20.0.

The author ensured that the standardised multivariate linear regression model satisfy all the assumptions necessary under multiple linear regression analysis which are the linearity of the phenomenon measured, constant variance of the stochastic disturbance term (homoscedasticity), independence of the error term and normality of the error term distribution. The Standardized regression model was as follows: PS = β_0 + (0.26 × Assurance) + (0.18 × Reliability) + (0.17 × Responsiveness) + (0.15 × Empathy) + (0.14 × Tangibility) + (0.12 x Convenience & Availability) + (0.01 × Age) + (0.02 × Sex) + (0.08 x Educational background) + (0.04 × No. of yrs. of Facility Utilization) + ℓ. Where β_0 and ℓ respectively represent the intercept (constant) and stochastic disturbance term.

The SQ status of the GARHs' general medicine department is presented in Table 5 with their corresponding/respective rankings. It revealed that, 10.12% of the 140 patients evaluated SQ as "poor", 37.14% as "moderate", and 52.74% as "good".

Table 6: SQ Ratings from GARH's Patients' Perspective.

				Status			
	Poor		Moderate		Good		Total
Dimensions	N	%	N	%	n	%	n (%)
Assurance	8	5.71	42	30.00	90	**64.29**	140 (100)
Reliability	6	4.29	48	34.29	86	61.43	140 (100)
Responsiveness	10	7.14	47	33.57	83	59.29	140 (100)
Empathy	13	9.29	61	43.57	66	47.14	140 (100)
Tangibility	23	16.43	59	42.14	58	41.43	140 (100)
Convenience and Availability	25	**17.86**	55	39.29	60	42.86	140 (100)
Total		60.71		222.86		316.43	
Overall	**60.71/6=**	**10.12**	**222.86/6=**	**37.14**	**316/6=**	**52.74**	**100%**

Source: Author's Compilation of Field Data (2020).

5.4 Examining the nature of medical staff - patience relationship at GARH

As part of the objectives of the study and using a five point Likert Scale statements, the study ascertained the views of respondents on medical staff – patient relationship at GARH on a scale of 1 to 5 as follows: Excellent (E)= 1; Very Good (VG)=2; Good (G)=3; Quite Good (QG)=4; Poor (P)=5. Table 6 presents the summary of the results.

Table 7: Hospital Staff - Patient Relationship.

	Excellent	Very Good	Good	Quite Good	Sub-Total	Poor	Grand Total
Frequency (%)	20 (10)	32 (16)	80 (40)	28 (14)	**160 (80)**	**40 (20)**	200 (100)
Patient (%)	8 (40)	12(37.5)	40(50)	20(71)	**80 (50)**	40(100)	120
Hospital Staff (%)	12(60)	20(62.5)	40(50)	8 (29)	**80 (50)**	**0(0)**	80

Source: Author's Compilation of Field Data (2020).

The data gathered from the field indicates that 160 [20+32+80+28] out of the 200 respondents, constituting 80% were of the view that, hospital staffs-patient relationship that exists at GARH was a good relationship. Out of this, 80, representing 50% were patients and the other 80, representing 50% were hospital staff. This is an indication that both patients and hospital staff were on the same page when it comes to their relationship. This notwithstanding, some patients i.e. 40 out of the 200, constituting 20% felt the relationship was appalling.

5.5 Examining the challenges that confront GARH staff

The responses of the respondents revealed that healthcare personnel were saddled with many challenges in their day-to-day activities. The challenges that were enumerated include the following:

Financial Issues at GARH: All 60 hospital workers interviewed were of the view that financial issue was a challenge at GARH. Two main financial issues ware identified. First non-payment of medical bills by some patients who were poor but still needed medical care. Such bills become the cost of GARH. The second was the delay in the payment of medical bills of patients who were on the National Health Insurance Scheme (NHIS) by the National Health Insurance Authority (NHIA). Such situation creates liquidity problems for GARH as the hospital needed to run but payment from NHIA delayed unduly sometimes beyond one year.

Low doctor-to-patient ratio: All 60 hospital workers interviewed expressed their concern at the low doctor-to-patient ratio in Ghana in general. As at March 2020, the doctor-patient ratio in Ghana was 1:10,450 as against 1:5,000 and 1:1,320 recommended by commonwealth and WHO, respectively. As at March 2020, life expectancy in Ghana was 64.17 years; a 0.4% increase from 2019, according to UN World Population Prospect data, and continues to lengthen. However, not only are people living longer, but increasingly people are living longer with chronic diseases. As such there is the need for Ghana's medical, midwifery and nursing training institutions, colleges, universities and research centers to admit and channel out more medical practitioners to salvage the low doctor-to-patient ratio in Ghana as a whole.

Challenges accompanying technological advancement in healthcare delivery functions: All 60 hospital workers interviewed noted the challenges that accompany technological advancement in healthcare delivery functions in Ghana as a whole and GARH in particular in view of the absorptive capacity (technological gap) of hospital workers to technological advancement in healthcare provision. According to Heathfield, Pitty and Hanka (1998) Managers of health facilities must "understand and predict the behavior of systems and provide important knowledge to inform further developments."

Insufficient training for healthcare personnel: All 60 healthcare personnel interviewed were of the view that the GARH staff lack adequate and frequent training programmes needed to augment their skills. Career upgrading is the very essential. Administrators of Health facilities must endeavor to measure, upgrade and refine crucial employee skills for them to remain adept.

Healthcare personnel welfare issues: All 60 hospital workers interviewed indicated that hospital workers welfare concerns such as remuneration, study leave, shift system, transportation allowance etc. is a challenge affecting hospital workers productivity at GARH.
These welfare issues [evident in frequent hospital workers strike actions] go a long way in influencing worker motivation, concentration and hence productivity.

DISCUSSION AND CONCLUSION

This scientific inquiry has established that, there is a direct and significant relationships/correlation as far as the six main/focal explanatory/independent variables [R - Reliability; A – Assurance; R – Responsiveness; E – Empathy; T – Tangibility and CA – Convenience & Availability] and two control variables [Educational level and Number of years of facility utilization] relatedness to PS used as prognostic/criterion/dependent variable are concerned. Assurance dimension contributed the most to PS (β=0.26, p=0.000), and convenience & availability contributing the least to PS (β=0.12, p=0.008). In addition 52.74% of the 140 patients alone felt SQ was good, 37.14% felt SQ was moderate and 10.12% felt SQ was poor.

Again, the research revealed that the relationship that exists between hospital staffs and patients at GARH was generally good. This notwithstanding, the study found that there were areas with respect to SQ dimensions that needed more improvement such as the convenient and availability [issues with unavailability of some drugs, medical supplies and ambulance services even in some emergency cases], tangibility [unavailability of some special medical equipment to aid medical staffs in their line of duty] and empathy constructs having below 50% of patient assessing them as good [some health personnel were considered unfriendly and had empathy issues]. The study further found that, hospital staffs were faced with serious challenges such as healthcare personnel welfare issues, insufficient training for healthcare personnel, challenges accompanying technological advancement in healthcare delivery functions, low doctor-to-patient ratio, financial issues at GARH that needed immediate interventions.

The indication is that amidst all the challenges faced by the hospital staffs, [i.e. not been able to meet the 1:5,000 and 1:1,320 doctor-to-patients ratio recommended by commonwealth and WHO, respectively, financial challenges, hospital staffs welfare issues, training issues, technological advancement challenges] the hospital staffs managed to make do with the little resources they had at their disposal and as much as they could, delivered their very best knowing very well that human life's were at stake in view of the delicate nature of healthcare delivery services and the economic challenges they face in the part of the world they operate in. This was the indication obtained from the study. This notwithstanding, the negative findings [convenient and accessibility issues, negative behaviors on the part of some hospital staff, tangibility issues, non-payment of medical bills in full and on time by NHIA, limited hospital staff training, remuneration issues, low doctor to patient ratio etc.] needs to be taken seriously and addressed immediately irrespective of the fact that some section of the hospital customers (52.74%) felt SQ in general was good and these were the recommendation made by the study.

MANAGERIAL IMPLICATIONS

The study therefore recommended the following:

➢ Managers of hospitals in general and GARH in particular should conventionalise SQ surveys, using the 6 SQ dimensions utilized in this study i.e. empathy, assurance, reliability,

responsiveness, tangibility and convenience and availability scale to track PS levels on a frequent and regular basis, medical staff will be in a position to benefit immensely from such SQ evaluation mechanism as this will result in performance improvement and overall improvement in healthcare SQ issues. Again the six SQ dimensions should be given the utmost attention in an attempt to improve SQ to increase PS, productivity and hence organizational performance.

➢ The Government should channel more resources into the training of medical practitioners to upgrade themselves periodically to ensure that they are in tune with modern public health practices including training programmes on any technological advancement in health practice. Also The NHIA should endeavor to pay all outstanding obligations due their service providers including GARH in full and on time to avoid liquidity challenges for their service providers. In addition, the government should come to the aid of its citizenry especially the venerable in society i.e. the aged and poor who needs medical attention regularly but do not have the means. Furthermore, the government should empower its medical, midwifery and nursing training institutions, colleges, universities and research centers to admit and channel out more medical practitioners to salvage the low doctor-to-patient ratio situation in Ghana as a whole.

➢ Finally, the government should dialogue with hospital staff with respect to their welfare concerns in the area of remunerations, housing facilities, study leaves, shift systems, transportation allowances etc. in order to motivate medical practitioners to give up their best and increase health worker productivity with the overall effect of increasing organizational performance.

LIMITATIONS AND FUTURE RESEARCH

The use of non-probabilistic or non-random sampling technique [such as convenience sampling, purposive sampling, quota sampling, judgemental sampling etc.] as a means of obtaining the sample size in any scientific inquiry weakens the predictive/forecasting power of the research and hence renders the research non representative, i.e. to say it does not allow the study findings to be generalised from the sample to the entire population. This is because the chance of a respondent being included in the sample is unknown. This is a huge limitation of such scientific inquiries. But as explained earlier, the nature of the study is such that it does not allow the author full access to the entire population from whom the sample can be drawn and this is the reason why such a technique was utilized. Future studies in this area should consider placing much emphasize on exploring the policy direction influence of hospital Administrators on medical practitioners productivity and how it affect PS and hence overall organizational performance.

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