Healthcare Quality Factors That Influence Patients' Choice of Hospital in the Private Sector

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Abstract

Delivered healthcare can be measured and identified customer needs can be met and exceeded. There must be a process of identifying and evaluating the customer needs–their expectations and their experiences. This expectation-experience gap is the basis of customer perception of quality.

Patients' perception of quality was evaluated using a modified SERVQUAL tool that is based on the identification of the expectation-experience gap. The study used a questionnaire to answer paired questions of patients' expectation and experience using a five point Likert scale. Data was collected from 1172 patients from eligible private hospitals across Kenya. The results were grouped in to four dimensions – Interpersonal, Environment of Care, Administrative and Access. These factors were regressed against future behavioral intention (intention to return and intention to refer others to the institution).

Results showed a clear hierarchical quality dimension determinants in the following diminishing order of influencing patients' future behavioral intentions - Interpersonal, Environment of Care, Administrative and Access. There was significant regional variation of the impact of the dimensions on future behavioral intention

Being a perception study, no in-depth attempt was made to explain the perception of the various customers. This is left as an opportunity for further study by others.

Keywords: *Health care quality, Patient perception, Expectation - experience gap, Regional variation of quality, Modified Servqual*

1. Introduction

The patient is not only interested in what he or she receives as an outcome of the process, but in the process of delivery of healthcare itself, that is, how the healthcare is delivered is also important to the patient. From the patients' perspective, this may be what they consider as the entirety of the service they have received. This quality dimension is called functional quality. The functional quality dimension cannot be evaluated as objectively as the technical dimension. The functional dimension is perceived in a very subjective way. This perceived service is the result of a patient's view of a bundle of service dimensions, some of which are technical and others functional in nature. When this

perceived service is compared with the expected service, one then gets the perceived service quality (Grönroos, 1984). In the context of healthcare, perception of quality is thus a function of both process and outcome (González, Quesada, Mack, & Urrutia, 2005).

Core to healthcare is the performance of the clinician, including that of physicians, nurses, nutritionists, physiotherapists and all other professionals involved in patient care. Clinician performance can be technical or interpersonal (Donabedian, 1983). Technical quality assessment is easier to measure as it is fairly standardised and varies from patient to patient in a predictable and usually predetermined manner. It is measured based on existing knowledge and against best practice of the time. Quality of care is deemed to have been achieved to the highest level if knowledge and practice as it is known then has been applied even if the outcome is adverse. As an example, if the patient with myocardial infarction was given treatment as per best practice, highest level of quality is deemed to have been achieved even if the patient dies.

The interpersonal interaction is tailored to enhance delivery of technical quality. However, interpersonal interaction must be within cultural contexts and in an acceptable format that includes privacy, confidentiality, informed choice, concern, empathy, honesty, tact and sensitivity. The interpersonal relationship between clinician and patient may hamper or enhance technical quality. Thus clinician performance must be both technically as well as service delivery based.

Quality is the driver of customer satisfaction. Therefore customer satisfaction is improved by improving quality. Thus improving quality influences future behavioral intention of the customer. The intention is either to return or refer others favorably to the institution. Poor quality has a large negative impact and likelihood of non-return (69.5%) as well as to inform others (one customers informs nine others) about adverse experience (Lee, et al., 2006).If this is so, then quality may be a driver for future patronage either directly or through influencing of others.

Inasmuch as technical quality is mandatory and a pre-requisite to sustainability of an institution, information on it is usually not available to patients or patients are not able to interpret it accurately. Information on functional quality is the only one that informs the patient on the quality of the hospital (Babakus & Mangold, 1992). Patients' intention to re-visit a hospital or to inform others favorably of their experience at a hospital is determined by their satisfaction level. In turn, their satisfaction is determined by the perceived value of care received which in turn is determined by quality of medical care received as perceived by the patient. There is a significant and positive correlation between satisfaction and intention to revisit the hospital or to inform others favorably about the hospital (Kim, et al., 2008; Kazemi, et al., 2013; Murti, et al., 2013).

Understanding patient satisfaction is important in gaining better insight and influencing healthcare delivery which has an effect on patients' willingness to adhere to treatment plan and intention to return. Patient satisfaction, in turn, is a complex phenomenon involving clinical outcome, empathy of the clinician, physical ambience, financial and geographical access and efficacy

among other attributes many of which may vary from region to region depending on local and cultural context (Grönroos, 1984). This therefore implies that knowing the needs of the patients is imperative and that the organization may then put structures, systems and processes in to place to meet and potentially exceed these expectations of the patient.

The concept of "perceived quality" being a gap between customer expectation and experience was well articulated in a seminal paper by Grönroos (1984). Technical quality is a prerequisite to satisfaction but once present does not contribute further to patient satisfaction. Absence of positive treatment outcome is a cause of dissatisfaction but its presence (positive treatment outcomes) does not guarantee satisfaction. (Grönroos, 1984). Thus patient satisfaction, of necessity must include the other components of quality namely service and interpersonal interaction (Mosadeghrad, 2012). Further not all satisfiers carry equal weighting. Some attributes delight customers in a manner that is proportional to the magnitude of the attribute. Other attributes cause dissatisfaction in their absence but do not increase the level of satisfaction proportional to the magnitude of the attributes. Lastly some attributes absence does not cause dissatisfaction but when present, delight the customer in a manner that is far higher than the magnitude of the attribute (Tan & Shen, 2000).

Indeed, quality must encompass all the parameters that impact patient satisfaction.

2. Objectives and Hypotheses

The objective of this study was to determine what quality dimension informs patient's choice of a healthcare provider in the private sector in Kenya and their hierarchy of importance.

Hypothesis 1 – Not all quality of care factors are of equal importance to patients in determining perceived quality of care and future behavioral intention

Hypothesis 2 – There is no regional variation of perception of quality

3. Conceptual Framework

The study is grounded in the Expectancy – disconfirmation theory. Perception of quality and satisfaction is an outcome of an initial standard and some perceived discrepancy from that reference point. The expectations then form the reference point around which one makes a comparative judgment implying that performance below the reference point is negative disconfirmation and that above the reference point is positive disconfirmation. (Oliver, 1980; Oliver, 1977).

The conceptual framework is illustrated graphically to show the relationship between the variables in Figure 1 and the operationalization of the variables in Table 1.
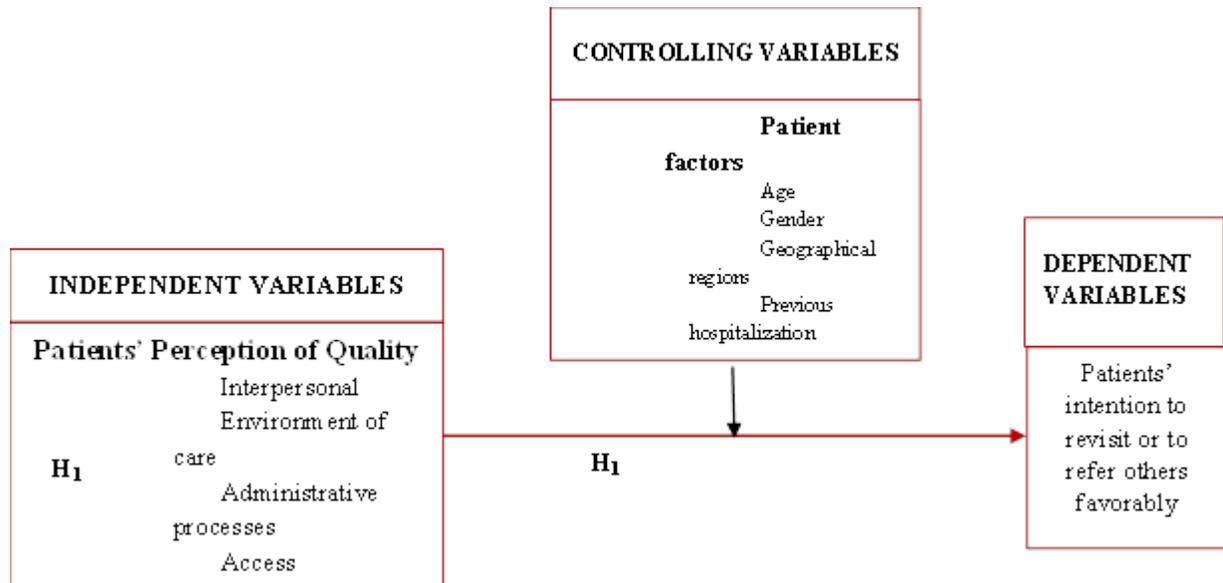
Table 1 - Operationalization of Key Variables

Key variables	Indicator
Interpersonal	1 – Doctor listens to patient
	2 – Doctors are courteous
	3 – Doctors spend enough time with me
	4 – Nurses are courteous
	5 – Nurses are efficient
	6 – Clinical staff are professional
Environment of care and Hospitality services	8 – Food and Catering
	9 – Staff smartly dressed
	10 – Privacy
	11 – Linen is clean and adequate
	12 – Washroom are clean and functioning
	13 – Physical facility
	14 – Quiet and pleasant
	15 – Room temperature
	16 – Room cleanliness
	17 – Parking
	18 – Security
Administrative processes	20 – Admission process
	21 – Billing process
	22 – Discharge process
Access	24 – Physically easily accessible
	25 – Signage within and around the hospital
	26 – Affordability
Clinical outcome	28 – Clinical outcome is acceptable
Future Behavioral Intention	34 – Intention to refer family and friends
	35 – First choice for readmission

NB: Number – indicates the question number as it appears on the questionnaire

4. Methodology

Healthcare in Kenya is provided by either the public sector or the private sector. This study looks at the private sector. Hospitals in Kenya are organized in to six levels – level one is the community health center practicing predominantly primary healthcare, level two hospitals continue with promotive and preventive healthcare but begin to undertake curative care of common ailments, mainly on an outpatient basis. By level three, hospitals offer maternity and nursing services. Level four hospitals are secondary care hospitals offering in-patient, outpatient and theatre services. Level five hospitals are regional referral hospital. These are at least 30 beds and have the ability to treat acute life threatening illness as well as manage chronic illnesses. Level six are national referral hospital. These have the ability to treat complex illnesses (Muga, et al., 2015). The elementary units in this study is the patients and the sampling units is the level five and six hospitals that admit these patients. All the private hospitals in Kenya are registered by Kenya Medical Practitioners and Dentists Board and are available on their website (Kenya Medical Practitioners And Dentists Board, 2015). At that time, there were 2884 registered private health facilities in the country of which 702 admit inpatient. Of these, level five and six hospitals were 15 (Kenya Medical Practitioners And Dentists Board, 2015). One of the hospitals has a maximum capacity of 18 beds and admits from a single doctor (the proprietor) and was therefore omitted from the study. Of the 14 eligible hospital, 12 (86%) participated in the study. The second stage was that of the discharged patients in each hospital were sampled sequentially until the sample size was reached. All patients that were on the discharge list for the day were recruited down the list without omitting or skipping any. Those in the Paediatric wards or less than eighteen years participated by proxy with the parents or guardians giving consent and also completed the questionnaire. Patients answered paired questions for experience and expectation.

In this study, a 95% confidence level was used, a significance level of less than 0.05 and a margin of error of less than 5% to calculate the sample size.

Data was coded and entered in to a Microsoft Excel® data sheet at the end of each day. This step acted as a quality control to ensure that each enumerator's quality was acceptable. At the end of the study, the data was transferred to the IBM SPSS© version 24, 2016 data analytics software for processing.

4.1 Measurement instrument

This study used the SERVQUAL but modified for local use. Thus, for the current study, the scale items and the six dimensions associated with them were extracted and adapted after reviewing multiple studies (Parasuraman, Zeithaml, and Berry, 1985, 1994; Babakus and Mangold, 1992; Cronin Jr and Taylor, 1994; Fogarty, Catts, and Forlin, 2000; Gill and White, 2009; Brahmbhatt, Baser, and Joshi, 2011; Chahal and Kumari, 2012; Kazemi, Ehsani, Abdi, and Bighami, 2013; Ghosh, 2015; Naik, Anand, and Bashir, 2015; Legido-Quigle et al (2008);

Andaleeb, 1998; Alhassan, et al., 2015; Chahal and Kumari, 2012; Tokunaga and Imanaka, 2002; González, et al., 2005).

The variables from the above studies were affinity grouped, duplicates removed and adapted within the Kenyan cultural context and 32 variables were developed within the six dimensions developed above.

Two column questionnaire was used and thought to be more appropriate for this study in order to have the paired questions side by side for respondents to compare expected and experienced measures for the each variable simultaneously. This format has been shown to be valid and reliable (Parasuraman, et al., 1985). At the end of each section there was an open ended section for the respondent to add additional information appertaining to the section. Further, there were additional two questions which assessed future behavioral intention, whether the respondent would wish to be readmitted in the same hospital or whether they would refer a family member to the hospital. All questions were positively worded. Babakus and Mangold (1992) showed that a mixture of negatively and positively worded statements created confusion (Babakus & Mangold, 1992). The questions were put on a five point Likert scale of 1 to 5 where 1 is least likely and 5 most likely.

5 Analysis

168 respondents who had inconsistent and incomplete responses were deleted from further analysis. 36 cases were judged as significant outliers and after deleting them from the dataset, a total of 1172 cases were retained for further analysis

The Cronbach alpha was 0.906 which indicates a high level of internal consistency.

5.1 Factor Analysis

The initial communalities were 1 and after extraction the scores ranged from 0.427 to 0.897. Using the Hair Jr et al, (2010) argument, the factor scores are above 0.4 and this is an implication of good internal consistency of factor loadings of the latent variables.

Four latent factors were extracted with the first latent factor explaining 40.1% of extraction and up to the fourth latent variable cumulatively accounted for 60.3% variance of the extraction. There were four Eigen values which were greater than 1 which were used for further analysis. Based on EFA results, eleven unobserved or latent or unmeasured factors/constructs were formed using regression scores of each observed variable retained in EFA.

Table 2: Principal Component Analysis and Varimax rotation with Kaiser Normalisation

	Components			
	Environment of Care	Inter personal	Access	Administrative
Linen is clean and adequate	**0.72**	0.23	0.14	0.05
Stay was quiet and pleasant	**0.72**	0.32	0.11	0.05
Room cleanliness	**0.70**	0.31	0.17	0.04
Cleanliness and functioning of the washrooms	**0.70**	0.25	0.07	0.09

Physical facility is adequate	**0.67**	0.33	0.20	0.08
Non-clinical staff smartly and clean	**0.66**	0.31	0.15	0.09
Privacy during my care	**0.64**	0.44	0.18	0.00
Food and catering	**0.62**	0.02	0.08	0.30
Room temperature	**0.61**	0.06	0.16	0.19
Security during my stay	**0.58**	0.35	0.24	-0.03
Clinical outcomes	0.39	**0.58**	0.25	0.06
Doctors' courtesy	0.22	**0.85**	0.15	0.06
Doctors listen to me	0.21	**0.84**	0.17	0.07
Doctors spend enough time with me	0.27	**0.80**	0.16	0.09
Doctors and nurses are professional	0.30	**0.80**	0.13	0.07
Nurses are courteous	0.34	**0.70**	0.12	0.16
Physically easily accessible	0.21	0.20	**0.82**	0.07
Signage within hospital	0.23	0.09	**0.81**	0.11
Affordability of services	0.16	0.23	**0.64**	0.21
Billing process	0.12	0.10	0.13	**0.93**
Discharge process	0.13	0.13	0.10	**0.92**
Admission process	0.22	0.20	0.34	**0.51**
Nurses are efficient[*]	0.04	0.33	-0.01	0.08
Medical and diagnostic equipment[*]	0.42	0.48	0.28	0.01
Parking for myself and visitors[*]	0.40	0.03	0.32	0.14

Bold and shaded area are the significantly aligned areas and * implies Factor dropped from analysis

The variables realigned and some were dropped off. "Parking for family/myself and friends", "Nurses are efficient" and "Medical and Diagnostic Equipment" were dropped off as they scored less than 0.5. Clinical outcomes realigned itself to "Interpersonal" dimension (See table 2).

The latent variable were evaluated for quality by performing exploratory data analysis.

Data was assessed for normality, linearity, skewness, kurtosis and multicollinearity. None was of critical significance

After performing principal analysis, the regression factors using Pearson correlation coefficients of the latent variables showed no correlation among variables.

Data was also analysed by geographic regions. The regions were defined along administrative boundaries where there were more than one level five and six private hospitals. This definition resulted in three regions–Nairobi, Rift Valley and Coast.

6. Results

Almost two in every three patient respondents were females (with a female to male ratio of 1.48). This predominance of female patients' respondents persisted across all regions with a ratio of 1.69, 1.27 and 1.38 for Nairobi, Coast and Rift Valley regions respectively even though Nairobi region had a higher proportion of female patient respondents.

Three quarters of the patient respondents were below 45 years old. Coast region had a large under five year old patient respondents. The predominance of the 25 to 45 year old persisted across the regions.

Majority (63%) of the patients were admitted for the first time and stayed in the general wards and majority of patient respondents (88%) stayed less than 6 days. This persisted across all the regions. The coast region had a slight preponderance of patients' respondents who were admitted for more than five times prior

Patient Respondents and future behavioral intention (Intention to Recommend/ Refer Others and Intention to be Re-Admitted)

Cognizant of the potential controlling variables, regression models where the controlling variables were included were performed. The coefficient of determination (R^2) was 12.8% respectively. This is an implication that the four response variables explain 12.8% of the variance associated with patient recommending the hospital in future. The resultant Fishers test statistics is significant ($F_{(9, 1171, 95\%)} = 20.11$, p-value = 0.000) for the model. This is an implication that the regression equation is sufficient for the associated goodness of fit statistics (Table 3). In both models, the explanatory variables are all significant with p-values less than 0.01 while the control variables have no effect on the association between outcome and the explanatory variables except for mode of referral which has a significant influence (p-value < 0.05).

Table 3 - Regression coefficients of patient-respondents

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Future Behavioral Intention is intention to recommend or refer others favorably					
(Constant)	0.09	0.20		0.46	0.00***
Environment of Care and hospitality	0.22	0.03	0.23	8.29	0.00***
Interpersonal	0.29	0.03	0.27	9.47	0.00***
Access	0.09	0.03	0.10	3.62	0.00***
Administrative	0.12	0.02	0.14	5.02	0.00***
Ward Admitted	0.03	0.05	0.01	0.50	0.62
Gender	0.02	0.05	0.01	0.36	0.72
Age band (Respondent)	0.01	0.02	0.02	0.54	0.59
Source of admission	-0.02	0.06	-0.01	-0.43	0.67
Mode of referral	-0.09	0.04	-0.07	-2.24	0.03*
Future Behavioral Intention is intention to be readmitted should the need arise					
(Constant)	0.24	0.20		1.21	0.23
Environment of Care and hospitality	0.20	0.03	0.21	7.54	0.00***
Interpersonal	0.23	0.03	0.22	7.68	0.00***
Access	0.14	0.03	0.16	5.50	0.00***
Administrative	0.12	0.02	0.13	4.63	0.00***
Ward Admitted	-0.02	0.05	-0.01	-0.37	0.71

Gender	0.01	0.05	0.01	0.18	0.86
Age band (Respondent)	0.01	0.02	0.02	0.72	0.47
Source of admission	-0.07	0.06	-0.04	-1.24	0.22
Mode of referral	-0.08	0.04	-0.06	-1.96	0.05

Note: ***p value < 0.001, ** p value < 0.01 and * p value < 0.05

From Table 3, standardized coefficients indicate how much the dependent variable varies with an independent variable, when all other independent variables are held constant. In general, a multiple regression analysis was run to predict future behavioral intention from environment of care and hospitality, interpersonal, administrative, access and clinical and equipment with and without control variables. All the explanatory variables were statistically highly significantly predicting future behavioral intention. In addition, mode of referral is a significant controlling variable.

In the second equation (see table 3) that measures the determinants of quality factors with intention to be readmitted should the need arise, the adjusted coefficient of determination (R^2) obtained is 11.2% respectively. This is an implication that the four response variables explain 11.2% of the variance associated with patient expressing the wish to be readmitted to the same hospital. The resultant Fishers test statistics is significant ($F_{(9, 1171, 95\%)}$ = 17.437, p-value = 0.000) for the model. This implies that the regression equation is sufficient for the associated goodness of fit statistics. The regression coefficients are shown in the Table 4. The explanatory variables are all significant with p-values less than 0.01. The control variables have no effect on the association between outcome and the explanatory variables (p-value > 0.05).

Clearly these quality factors exhibit a hierarchical importance in influencing Future Behavioral Intention in order of magnitude of Interpersonal Dimension; Environment of Care and Hospitality; Administrative; Access; and Clinical Outcomes and Medical Equipment. All these dimensions explain 12.8% of the Future Behavioral Intention of recommending the hospital to others and 11.6% of the Future Behavioral Intention of readmission should the need arise.

Further, in the open ended responses majority (38.4%) were about environment of care followed by Interpersonal (29.6%), Administrative processes (17.6%) and Access related (5.2%). Of the open ended questionnaire answers related to Interpersonal dimension 21.7% were related to doctors and 42.1% were related to nurses. Of those related to doctors 76.9% were positive and complimentary. Of the commentary on nurses, positive and complimentary ones made up 40.6%.

Environment of care had the highest number of commentaries (38.4% of all commentaries) and with the widest spread in the open ended section of the questionnaire. Of these the 16.3% were about facility and maintenance, 13.2% related to meals, 11.6% were related to linen and 8.2% were related to security. However, the highest (18.8%) were complimentary.

The open ended questionnaire answers related to the access dimension constituted 71.4% related to financial access (of these, 76.7% complained about expensive services), 13.1% were related to in-hospital signage and only 4.8% related

to hospital access. Compliments were 8.3% of Access related commentary.

Hypothesis 1 – The null hypothesis "Not all quality of care factors are of equal importance to patients in determining perceived quality of care and future behavioral intention" <u>thus cannot be rejected</u>.

6.1 Regional variation of perception of quality

The regions were defined along administrative boundaries. Regions were considered relevant only if they had more than one level five and/or level six private hospitals. This definition resulted in three regions–Nairobi, Coast and Rift Valley regions.

Comparisons on various constructs were conducted by use of ANOVA. The mean differences were tested at 5% level of significance. The interpersonal aspects did not reveal significant differences across regions. Accessibility depicts significant differences across all pair-wise comparisons between regions with p-values below 0.001. Clinical outcomes and equipment do not show significant difference between Nairobi and Coast Regions (p-value=0.275), on Environment of care and hospitality; there is no significant differences between Coast and Rift Valley regions (p-value =0.156). On the other hand, administrative aspects do not reveal significant differences between Nairobi and Rift valley region. In recommending friends and family members, there are no significant differences across regions whereas intention to be readmitted has significant differences across regions with exception of Nairobi compared to Coast region as shown in Table 4.

Table 4 - Mean Differences by regions

Dependent Variable	(I) Geographical Region	(J) Geographical Region	Mean Difference (I-J)	Std. Error	Sig.
Environment of care and hospitality	Nairobi region	Coast region	-0.34	0.082	0.00***
		Rift Valley region	-0.21	0.07	0.00**
	Coast region	Nairobi region	0.34	0.08	0.00***
		Rift Valley region	0.13	0.09	0.16
	Rift Valley region	Nairobi region	0.21	0.07	0.00**
		Coast region	-0.13	0.09	0.16
Interpersonal	Nairobi region	Coast region	0.00	0.08	0.98
		Rift Valley region	0.04	0.07	0.58
	Coast region	Nairobi region	-0.00	0.08	0.98
		Rift Valley region	0.04	0.09	0.69
	Rift Valley region	Nairobi region	-0.04	0.07	0.58
		Coast region	-0.04	0.09	0.69
Administrative	Nairobi region	Coast region	0.29	0.08	0.00***
		Rift Valley region	-0.05	0.07	0.49
	Coast region	Nairobi region	-0.29	0.08	0.00***
		Rift Valley region	-0.34	0.10	0.00***

Dependent Variable	(I) Geographical Region	(J) Geographical Region	Mean Difference (I-J)	Std. Error	Sig.
	Rift Valley region	Nairobi region	0.05	0.07	0.49
		Coast region	0.34	0.10	0.00***
Access	Nairobi region	Coast region	0.42	0.08	0.00***
		Rift Valley region	-0.34	0.07	0.00***
	Coast region	Nairobi region	-0.42	0.08	0.00***
		Rift Valley region	-0.76	0.09	0.00***
	Rift Valley region	Nairobi region	0.34	0.07	0.00***
		Coast region	0.76	0.09	0.00***
Would you recommend the hospital to family and friends	Nairobi region	Coast region	-0.03	0.08	0.73
		Rift Valley region	-0.14	0.07	0.06
	Coast region	Nairobi region	0.03	0.08	0.73
		Rift Valley region	-0.11	0.09	0.24
	Rift Valley region	Nairobi region	0.14	0.07	0.06
		Coast region	0.11	0.09	0.24
Would you wish to be readmitted, as a first option, to this hospital should you fall ill in the future	Nairobi region	Coast region	-0.08	0.08	0.35
		Rift Valley region	-0.27	0.07	0.00***
	Coast region	Nairobi region	0.08	0.08	0.35
		Rift Valley region	-0.20	0.09	0.04**
	Rift Valley region	Nairobi region	0.27	0.07	0.00***
		Coast region	0.20	0.09	0.042*

Note: ***p value < 0.001, ** p value < 0.01 and * p value < 0.05

Hypothesis 2 – The null hypothesis that there is no regional variation of perception of quality <u>can thus not be accepted</u> and the alternative hypothesis that there is a regional variation in perception of quality <u>is accepted</u>.

7. Discussion of Results

Not all dimensions are of equal importance to patients in determining perceived quality of care. There is clearly a hierarchical dimension when patients are choosing a hospital or recommending a hospital to others. In order of descending importance these are Interpersonal, Environment of care and hospitality, Administrative processes and Access. Patient satisfaction was seen to be an independent determinant of future behavioral intention through which the other dimensions ("responsiveness", "assurance" and "tangibles") influenced future behavioral intention and not directly (Jandavath & Byram, 2016). In a well-designed study in Japan, staff behavior and technical were found to be significant whereas physical appearance was not. It is possible that the physical environment requires to meet a minimum threshold beyond which, it does not add further value. In the hospitals studied this minimum standard may have been met in all hospitals and

thus stopped being a discriminatory factor when choosing a hospital (Eleuch, 2011).

This is in keeping with various other scholars. Grönroos, (1984) surmised that of all aspectes of functional quality, the customer-provider interaction is the most critical. Le and Fitzgerald (2014) working in two hospital in the public sector in Vietnam found that assurance and empathy to be the most important determinant of patients choice of a hospital. Assurance and empathy are constituents of Interpersonal dimension.

Within interpersonal attributes, the variables in order of importance are Doctors' who listen, Doctors' who are courteous, Doctors' who spend enough time with patient, Nurses who are courteous, Nurses who are efficient, Doctors' and Nurses that are professional and Clinical outcomes. The researchers found that doctors attention to patient and doctor's courtesy to be most important than the same attributes as they appertain to nurses. Of the open ended questionnaire answers related to Interpersonal dimension 21.7% were related to doctors and 42.1% were related to nurses. Of those related to doctors 76.9% were positive and complimentary. Of the commentary on nurses, positive and complimentary ones made up 40.6%. Most patient respondent were oblivious about clinical outcome in the open ended responses. In the current study the doctors' interaction with the patient was ranked higher than nursing.

The attributes of environment of care, in order of importance to patients was quiet and pleasant stay, clean and adequate linen, clean room or ward, adequate physical facility, clean and functioning washrooms, smartly and clean non-clinical staff, privacy during care, food and catering, security and room temperature. Environment of care had the highest number of commentaries (38.4% of all commentaries) and with the widest spread in the open ended section of the questionnaire. Of these the 16.3% were about facility and maintenance, 13.2% related to meals, 11.6% were related to linen and 8.2% were related to security. However, the highest (18.8%) were complimentary. Patient infer quality of care from the physical environment. A well maintained and pleasant physical environment infers attention to detail and better technical quality. It is therefore not surprising that environment of care was only second to interpersonal dimension among the quality dimensions. Laverty, Dixon, and Millett, (2013) found that among the most important factors influencing choice of hospitals by patient were cleanliness and standard of facility together with quality of care and reputation (Laverty, et al., 2013).

On the other extreme, Ghosh, (2015) found that, in a community based study cleanliness not to be important while making their choice of hospitals. In the study by Laverty, Dixon, and Millett, (2013) they found out that what influences patients' perception of quality differs by level of education of the patient, gender and race but not age. This study did not find any difference in future behavioral intention by age or gender but did not look at level of education.

In keeping with other studies that showed that physical environment infers quality to the patients. However the effects of the physical environment plateau off beyond a certain level

(Andrade, et al., 2016). It is important therefore that the environmental of care is not the sole focus of the organization and it is not necessary to go to extremes to have a lavish environment of care. Secondly, the deficient environment can be compensated for by excellent technical quality (Rajasulochana, et al., 2016). That study that was based in maternity hospital setting in India. However, in that part of India, doctors are quite rare that the patient were willing to tolerate many inconveniences to have an opportunity of being reviewed by the doctors. As the current study was undertaken in the private sector, availability of doctors is not as severe a problem as that of rural India.

Whereas in the current study, food quality was important, it ranked among the lowest. This is in contrast to the study of Schoenfelder, Klewer, and Kugler (2011) where in a geographically well sampled study with an older patient population (average age was 70 years), quality of food and accommodation contributed significantly to patient satisfaction. This elderly patients tend to have special diet requirement and limited mobility. This may have contributed to an over-emphasis of food and accommodation (architectural design and layout) in the environment of care dimension.

Administrative processes are third most important dimension of quality in this study. The attributes related to this, in order of importance to patients are discharge process, billing process and admission process. Of the open ended questionnaire answers related to administrative processes 65% were related to the speed of these three processes. This is in keeping with various studies. Waiting time was a major source of

dissatisfaction among patients attending a maternity hospital in Nairobi, Kenya (Nyongesa, et al., 2014). The nature of the conditions that was the subject of the study, pregnancy, will not afford patients the tolerance of waiting. This may not be so, especially in hospital with chronic illnesses. In a study in Germany both admission and discharge process were important. Discharge process and instructions were even more important (Schoenfelder, et al., 2011).

Access as a dimension constituted financial access as well as to hospital and within hospital physical access. Access dimension contribution to future behavioral intention of the patient though statistically significant was appreciably lower to the first three dimensions (Interpersonal, Environment of care and Administrative process). Even though the statistical data ranked physical access to hospital, signage within hospital and affordability of services in that order, the open ended questionnaire answers related to the access dimension constituted 71.4% related to financial access (of these, 76.7% complained about expensive services), 13.1% were related to in-hospital signage and only 4.8% related to hospital access. Compliments were 8.3% of Access related commentary. Ghosh (2015), showed that transport convenience to be an important determinant of patient's choice of hospital. In another study in England, distance was found to be a determinant of patient's choice of hospital. This effect was more in the elderly, rural and those from poorer neighborhoods (Beckert, et al., 2012). When price to patient is not a factor, patients value both quality and distance in choosing hospitals. However there is a tradeoff of quality over distance. This is influenced by hospital location and demographics

of patients. Larger hospitals attract patients' more than smaller hospitals (Tay, 2003).

Clinical outcome and medical equipment constituted a statistically significant but very low contributor to patients future behavioral intention.. The open ended questionnaire answers related to this constituted compliments at 71.4%, 14.9% were related to equipment and 12.8% were related to clinical outcomes. In Taiwan medical outcome was a major determinant of satisfaction (Hu, et al., 2010) whereas a study in Germany among older patients, outcome of treatment was one of the most important determinants of patients' satisfaction. (Schoenfelder, et al., 2011)..This is important as even in rural areas with low literacy levels, the clinical outcome is still important. Post-operative realization of pre-operative clinical expectation was a significant predictor of patient satisfaction. However, patients' expectation of functional outcome was less realistic predictor of post-operative outcome. Doctors' pre-operative prediction of eventual functional outcome was more accurate than that of patients thus making a case for enhanced communication preoperatively between the patients and the doctors (Palazzo, et al., 2014).

Interestingly on the other side of the spectrum, in a study done in Kenya and Namibia, patient perception of quality was not associated with the clinical indicators of quality. The commonest attribute that was associated with quality was waiting time, availability of medication and cleanliness of facility.

Because of the hierarchy of the dimensions (inter-dimensional) and within each dimension (intra-dimensional), the variables can be ordered and therefore interventions can be prioritized.

The coefficient of determination (R^2) of the relationship of the various quality dimensions with intention to refer others and intention to be readmitted in the same hospital should the need arise explain 11% to 13% of future behavioral intention of the patients. Le and Fitzgerald, (2014) found the R^2 in their study to be 37.7%. However, their dependent variable was Healthcare quality which is antecedent to future behavioral intentions. Healthcare quality is only one of the contributors of future behavioral intentions. This may explain the lower value found in this study. Health care services are among the most complex in the service industry. Further technical staff to patient ratio as well as competency of the staff may impact the perception of quality (Adomah-Afari & Pomevor, 2016). Other factor with a myriad of interactions may affect service quality perception in a complex manner (Pitta & Laric, 2004).

Indeed, from the current study, the explanatory variables appear to exert a lesser effect (with also a lower coefficient of determination) on intention to be re-admitted compared with intention to refer others. This implies there are even more considerations with intention to be re-admitted than intention to refer others that have not been included in this study and thus probably even more complex.

Healthcare is very complex with multi-factor and multi-actor interaction. Perception of quality is influenced by matters even before the patient makes the decision to come to the hospital. This pre-decision factors were not part of the current study. They include ideological orientation,

patients' attitude and pre-encounter factors such as level of trust established between patient and doctor. Interestingly these factors are not influenced by prior visits or by age of patient (Osei-Frimpong, 2016).

Other non-quality, non-satisfaction factor may influence patients' future behavioral intention. These include diagnosis and patients' knowledge (Naidu, 2009). In addition to service delivery, corporate image plays an important role in shaping customers expectation (Grönroos, 1984).

7.1 Regional variation of perception of quality

The current study shows significant regional variation in the perception of quality that are not due to changes in demographics of patients or doctors. The variation in perception of quality affects all dimensions except interpersonal dimension which appear to be standard across all regions. In spite of the regional differences in perception of quality dimensions, this did not impact the future behavioral intention. Implying that whatever, the perception of quality by patients, it still influenced patients future return intention or intentions to tell others about the hospital.

The regional variation may be due to differences in the utilization of resources by the physicians (Lagoe, 1986), insurance coverage (Blumberg, 1982) or availability of alternative post hospital care (Knickman & Foltz, 1984). Sometimes the changes in regional quality is attributable to whether the hospital is run as for-profit or as a not-for-profit basis (Farsi, 2004). Variation in treatment style for disease where there is not yet a medical consensus contributed to differences in regional outcomes of diseases

(Anderson & Pulcins, 1992). In study in Pakistan found various sub-culture in the country that impacted healthcare quality from the view point of the hospital leadership, hospital staff and patients (Rabbani, et al., 2009). Culture influences the perspective with which the patients interpret experiences (Ueltschy & Krampf, 2001). Sub-culture interpretative framework may additionally be influenced by socio-economic status and related to this education level, domicile location within a geographical distance and acculturation. Culture is influenced by the distance from the institution that the patient comes from. There is significant cultural diversity within Kenya (Ketter & Arfsten , 2015). In the current study, the sub-cultures may be significant in explaining the regional differences.

CONCLUSIONS

Perception of quality by the patient is affected by four dimensions that are hierarchical – Interpersonal attributes, Environment of care and hospitality, Administrative and Access in descending order. The intra-dimensional attributes can also be ordered. This enables prioritization of actions.

There is regional variation of perception of quality. Therefore regional factors such as market structure and competition, affordability of population and within-country cultural variances must be taken in to consideration.

RECOMMENDATIONS

To the administrators, they must also include direct patient input (Voice of the Customer) when developing their strategy. The focus on equipping the hospital with latest

machines in order to attract the doctors who in turn it is hoped that they will bring in the patients' needs to be tempered by the finding of these study. Majority of patients are self-referred rather than referred by doctors.

As the hospital leadership is involved in the development of strategy it is important to understand that there are significant regional variations. This will be more applicable to multi-regional hospitals with a unitary command and control structure.

Many patients appear satisfied with what has been identified as priority areas. Whereas this must be maintained, the hospital leadership must now focus on the other areas as these have now become a source of discontent. These include especially administrative dimension related processes. Customization is not a common term used in the healthcare industry. The hospital leadership should consider customization of healthcare quality (functional quality).

STUDY LIMITATION

The study could have been improved by increasing the control factors such as socio-economic status, education level and marital status. Other factors of patient satisfaction such as technical staff to patient ratio that may impact perception of quality is worth exploring in future research. This could be a controlling variable.

SUGGESTIONS FOR FURTHER RESEARCH

It is important to consider major influencers of patients when undertaking research on patients' perception. Most studies have directly looked at patients only. The significant influence of Doctors and Medical Insurance Providers role is crucial to study. This is an area open to further studies considering that the patient perception of quality does not influence these two key players. It would be useful to explore the determinants of Quality Perception among doctors and Medical Insurance Providers.

The ultimate reason patients go to the hospital is to seek healthcare. The outcome measurements of healthcare are part of technical quality. The process of delivery of this healthcare and its outcome measures are part of functional quality. In order to drive quality, functional quality must be linked to technical outcomes. Important research would be to link functional and technical outcomes. This would a worthwhile area of further research.

8. References

Adomah-Afari, A. & Pomevor, K. E., 2016. Health providers' perception of quality of care for neonates in health facilities in a municipality in southern Ghana. *International Journal of Health Care Quality Assurance,* 29(8).

Aldaqal, S. M. et al., 2012. Determinants of Patient Satisfaction in the Surgical ward at a University Hospital in Saudi Arabia. *Life Science Journal,* 9(1), pp. 277-280.

Anderson, G. M. & Pulcins, I. R., 1992. High Variation Medical Conditions as an Explanation of Regional and Temporal Differences in Hospital Utilization. *Medical Care,* pp. 461-465.

Andrade, C. C., Lima, M. L., Devlin, A. S. & Hernández, B., 2016. Is It the Place or the People? Disentangling the Effects of Hospitals' Physical and Social Environments on Well-Being. *Environment and Behavior,* p. 299–323.

Babakus, E. & Mangold, W. G., 1992. Adapting the SERVQUAL Scale to Hospital Services: An Empirical Investigation. *Health Services Research,* pp. 768-786.

Beckert, W., Christensen, M. & Collyer, K., 2012. Choice Of NHS-Funded Hospital Services In England. *The Economic Journal,* p. 400–417.

Blumberg, M. S., 1982. Regional Differences in Hospital Use Standardized by Reported Morbidity. *Medical Care,* pp. 931-944.

Borghans, I., Kleefstra, S. M., Kool, R. B. & Westert, G. P., 2012. Is the length of stay in hospital correlated with patient satisfaction?. *International Journal for Quality in Health Care,* 24(5), p. 443–451.

Chaudhury, H., Mahmood, A. & Valente, M., 2005. Advantages and Disadvantages of Single - Versus Multiple-Occupancy Rooms in Acute Care Environments. *Environment and Behavior,* 37(6), pp. 760-786.

Donabedian, A., 1983. Quality, Cost, and Clinical Decisions. *Annals of the American Academy of Political and Social Science,* pp. 196-204.

Eleuch, A. e. K., 2011. Healthcare service quality perception in Japan. *International Journal of Health Care Quality Assurance,* 24(6), pp. 417 - 429.

Farsi, M., 2004. Changes in Hospital Quality after Conversion in Ownership Status. *International Journal of Health Care Finance and Economics,* pp. 211-230.

Festinger, L., 1957. *A theory of cognitive dissonance.* Stanford, California: Stanford University Press.

Grönroos, C., 1984. A Service Quality Model and its Marketing Implications. *European Journal of Marketing,* pp. 36-44.

Harris, P. B., McBride, G., Ross, C. & Curtis, L., 2002. A Place to Heal: Environmental Sources of Satisfaction Among Hospital Patients. *Journal of Applied Social Psychology,* pp. 1276-1299.

Hu, H.-Y., Chiu, S.-I., Cheng, C. C. & Hsieh, Y.-F., 2010. A study on investigating patient satisfaction of medical centers using Taiwan customer satisfaction index in Taiwan. *African Journal of Business Management,* pp. 3207-3216.

Jandavath, R. K. N. & Byram, A., 2016. Healthcare service quality effect on patient satisfaction and behavioural intentions in corporate hospitals in India. *International Journal of Pharmaceutical and Healthcare Marketing,* 10(1), pp. 48 - 74.

Kazemi, N., Ehsani, P., Abdi, F. & Bighami, M. K., 2013. Measuring hospital service quality and its influence on patient satisfaction: An empirical study using structural equation modeling. *Management Science Letters,* p. 2125–2136.

Kenya Medical Practitioners And Dentists Board, 2015. *Licenced Health Facilities.* [Online] Available at: http://medicalboard.co.ke/online-services/licensed-health-facilities/

Kessler, D. P. & Mylod, D., 2011. Does patient satisfaction affect patient loyalty?. *International Journal of Health Care Quality Assurance,* 24(4), pp. 266 - 273.

Ketelaar, N. A. B. M. et al., 2014. Comparative performance information plays no role in the referral behaviour of GPs. *BMC Family Practice,* p. 15:146.

Ketter, C. K. & Arfsten, M. C., 2015. Cultural Value Dimensions and Ethnicity within Kenya. *International Business Research,* 8(12), pp. 69-79.

Kim, Y.-K.et al., 2008. A study on medical services quality and its influence upon value of care and patient satisfaction – Focusing upon outpatients in a large-sized hospital. *Total Quality Management,* p. 1155–1171.

Knickman, J. R. & Foltz, A.-M., 1984. Regional Differences in Hospital Utilization: How Much Can Be Traced to Population Differences?. *Medical Care,* pp. 971-986.

Lagoe, R. J., 1986. A Community-Based Analysis of Regional Differences in Hospital Stays by Diagnosis Related Group. *Inquiry,* pp. 183-190.

Laverty, A. A., Dixon, A. & Millett, C., 2013. Do patients' information requirements for choice in health care vary with their socio-demographic characteristics?. *Health Expectations,* pp. 1-12.

Lee, P.-M., Khong, P. & Ghista, D. N., 2006. Impact of deficient healthcare service quality. *The TQM Magazine,* pp. 563 - 571.

Mosadeghrad, A. M., 2012. A Conceptual Framework for Quality of Care. *Materia Socio Medica,* p. 251–261.

Muga, R., Kizito, P., Mbayah, M. & Gakuruh, T., 2015. *Overview of the Health System in Kenya.* [Online]
Available
at: http://dhsprogram.com/pubs/pdf/spa8/02chapter2.pdf

Murti, A., Deshpande, A. & Srivastava, N., 2013. Patient Satisfaction and Consumer Behavioural Intentions: An Outcome of Service Quality in Health Care Services. *Journal of Health Management,* p. 549–577.

Naidu, A., 2009. Factors affecting patient satisfaction and healthcare quality. *International Journal of Health Care Quality Assurance,* Volume 4, pp. 366 - 381.

Nyongesa, M. W., Onyango, R. & Kakai, R., 2014. Determinants of clients' satisfaction with healthcare services at Pumwani Maternity Hospital in Nairobi - Kenya. *International Journal of Social and Behavioural Sciences,* pp. 11-17.

Oliver, R. L., 1977. Effect of Expectation and Disconfirmation on Postexposure Product Evaluations: An Alternative Interpretation. *Journal of Applied Psychology,* 62(4), pp. 480-486.

Oliver, R. L., 1980. A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions. *Journal of Marketing Research,* 17(4), pp. 460-469.

Osei-Frimpong, K., 2016. Examining the effects of patient characteristics and prior value needs on the patient-doctor encounter process in healthcare service delivery. *International Journal of Pharmaceutical and Healthcare Marketing,* 10(2), pp. 192 - 213.

Padma, P., Rajendran, C. & Lokachari, P. S., 2009. A conceptual framework of service quality in healthcare: Perspectives of Indian patients and their attendants. *Benchmarking: An International Journal,* pp. 157 - 191.

Palazzo, C. et al., 2014. Determinants of satisfaction 1 year after total hip arthroplasty: the role of expectations fulfilment. *BMC Musculoskeletal Disorders,* 15(3).

Parasuraman, A., Zeithaml, V. A. & Berry, L. L., 1985. A Conceptual Model of Service Quality and Its Implications for Future Research. *Journal of Marketing,* pp. 41-50.

Pitta, D. A. & Laric, M. V., 2004. Value chains in health care. *Journal of Consumer Marketing,* 21(7), pp. 451- 464.

Rabbani, F. et al., 2009. Culture and quality care perceptions in a Pakistani hospital. *International Journal of Health Care Quality Assurance,* 22(5), pp. 498 - 513.

Rajasulochana, S., Nyarko, E., Dash, U. & Muraleedharan, V. R., 2016. Expectant Mother's Preferences for Services in Public Hospitals of Tamil Nadu, India. *Journal of Health Management,* p. 305–317.

Schoenfelder, T., Klewer, J. & Kugler, J., 2011. Determinants of patient satisfaction: a study among 39 hospitals in an in-patient setting in Germany. *International Journal for Quality in Health Care,* p. 503–509.

Swan, J. E., Richardson, L. D. & Hutton, J. D., 2003. Do Appealing Hospital Rooms Increase Patient Evaluations Of Physicians, Nurses, And Hospital Services?. *Health Care Management Review,* 28(3), pp. 254-264.

Tan, K. C. & Shen, X. X., 2000. Integrating Kano's model in the planning matrix of quality function deployment. *Total Quality Management,,* pp. 1141-1151.

Tateke, T., Woldie, M. & Ololo, S., 2012. Determinants of patient satisfaction with outpatient health services at public and private hospitals in Addis Ababa, Ethiopia. *African Journal of Primary Health Care & Family Medicine,* pp. Article #384, 11 pages. http://dx.doi.org/10.4102/phcfm.v4i1.384.

Tay, A., 2003. Assessing competition in hospital care markets: the importance of accounting for quality differentiation. *RAND Journal of Economics,* p. 786–814.

Tokunaga, J. & Imanaka, Y., 2002. Influence of length of stay on patient satisfaction with hospital care in Japan. *International Journal for Quality in Health Care,* 14(6), pp. 493-502.

Ueltschy, L. C. & Krampf, R. F., 2001. Cultural Sensitivity to Satisfaction and Service Quality Measures. *Journal of Marketing Theory and Practice,* pp. 14-31.

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