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Original Article

Predictors of Patient Satisfaction With Quality of Healthcare in University Hospitals in Ghana

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Abstract

Background: For over 2 decades, Ghana's Ministry of Health (MOH) has been resolved to continuously improve the quality of healthcare in a cost-effective manner. Strategies have been adopted to enhance client satisfaction with healthcare services and delivery.

Objective: The current study examined patient satisfaction with the quality of healthcare in Ghana by comparing healthcare services at the University of Ghana Hospital (UGH) and the University of Cape Coast Hospital (UCH).

Methods: This cross-sectional study was conducted in 2014-2015 with primary data collected from patients at UGH and UCH. Structured questionnaires were administered based on the stratified and convenience sampling methods to select patients receiving healthcare at the outpatients departments of the 2 hospitals. Descriptive statistics and linear regression analysis were used to analyze the data with the help of SPSS version 20.

Results: The findings indicated that empathy ($\beta = .14$, $P = .003$), communication ($\beta = .26$, $P = .00$), culture ($\beta = .17$, $P = .008$), tangibles ($\beta = .12$, $P = .040$), and priority ($\beta = .18$, $P = .002$) are significant predictors of patient satisfaction.

Conclusion: Management at the 2 studied hospitals should streamline their quality healthcare policies based on the dimensions of effective communication, empathy, culture, tangibles, and priority to enhance patient satisfaction.

Keywords: Healthcare, Hospitals, Patients, Satisfaction

1. Background

In recent years, findings of studies in developed countries on the quality of healthcare delivery have increasingly influenced developing nations in assessing the quality of their healthcare systems. Outcomes from these findings have received special prominence as a measure of quality healthcare.[1] Assessing outcomes has merit both as an indicator for the effectiveness of different health interventions and as part of a monitoring system directed at improving the quality of care and detecting its deterioration.[2,3] Quality assessment studies over three decades usually measure one of three types of outcomes: costs, medical outcomes, or patient satisfaction.[4,5] Patient satisfaction has gained greater importance specifically in developing countries. It is both a service quality indicator and a quality component. Strong healthcare systems enable healthcare providers to deliver better quality and value to patients.[6,7]

Over the years, Ghana's Ministry of Health (MOH) has been concerned about quality of care, which has a strong resultant effect on client satisfaction. However, the pace of improvements in quality of care has been slow, partially because quality improvement activities have received

inadequate priority. In lieu of this, there have been efforts to research quality of healthcare services, of which patient satisfaction is an indicator, and the institutionalization of quality assurance in Ghanaian healthcare facilities.[8,9]

In Ghana, many of the studies on healthcare quality have focused on quality award dimensions.[10-13] Studies conducted in public hospitals over the years have provided substantive evidence that the quality of healthcare services is inadequate both by objective measures in the opinions of patients and by healthcare providers.[14,15] Moreover, research on quality healthcare has generally reported poor service delivery through long waiting times, frequent shortages of drugs, and the poor attitudes of healthcare providers as factors militating against patient satisfaction with healthcare in Ghana.[9,13]

In view of this, the continuous monitoring and evaluation of policyholders' views on the quality of healthcare is necessary for quality improvement purposes; it will provide some kind of feedback for healthcare professionals and policymakers. An extensive empirical search revealed that a single study has been conducted on patient satisfaction with quality healthcare using a comparative approach with focus on institutional facilities (university hospitals) in

Ghana.[16]

A modified SERVQUAL model was used to aid the understanding of the context in which this study was carried out. The study concentrated on patient perception only; thus, the expectations were removed from the modified model suited for the study. This is congruent with the fact that perceptions are usually a good measure of patient satisfaction with the quality of healthcare delivery.[17-19] After defining the concept of service quality, the researchers needed a model for measuring the quality level of services. The model was expected to determine the attributes that require improvement in order to enhance quality, identify the degree or amount of improvement required, and assess the impact on service quality.[20] This model can be used on a regular basis to track patients' perceptions of healthcare quality at a hospital compared with its competitors. Once the data has been analyzed, it can be visually presented so that it becomes easy to identify the hospital's strengths and weaknesses relative to its competition. Moreover, it provides the opportunity for a hospital to assess its service performance on the basis of each individual dimension as well as the overall dimensions of service quality (Figure 1).

2. Objective

The novelty of this study is the assessment of patient satisfaction with the university's healthcare services (university hospital) which is emergent in healthcare provision in Ghana. This comparative study examined patient satisfaction with the quality of healthcare at the University of Ghana Hospital (UGH) and University of Cape Coast Hospital (UCH) in Ghana. The study further tested the following hypothesis in the model: Communication, empathy, and priority are significant predictors of patient satisfaction. Tangibles and culture are relevant predictors of patient satisfaction in university hospitals in Ghana.

3. Methods

A quantitative approach with a cross-sectional study design was adopted for the current study. A 2-stage sampling procedure based on stratified and convenient sampling techniques was employed. Using the stratified sampling procedure for the first phase was helpful because of the stratification of the already existing units in the various facilities. Stratified sampling procedures ensured a uniform representativeness of all units in the two hospitals. Dellande et al[22] revealed that stratified sampling helps researchers strategically avoid biases in the selection of study units. The 2 facilities have 8 clusters: patients at the records section, pharmacy, maternal and child health, X-ray, physiotherapy, laboratory, and ENT and consultancy services. From each cluster, patients were conveniently selected based on the existing survey approach (where patients, after assessing the service, could best explain and analyze the quality of the service delivered). The study selected 218 patients (100 at UGH; 108 at UCH) based on the Fisher exact test calculator for determining sample size. All patients attending outpatient services in the various clusters of the UGH and UCH were sampled for the study. Inclusion criteria included a maintained willingness to participate in the study given the non-severity of the patient's illness. This process was adopted to ensure representativeness of the sample population. Patients in a severe medical condition seeking services at the Out-Patients' Department (OPD) section as well as admitted patients were excluded from the study. The study adopted structured questionnaires to assist the researcher in accessing vital information about what patients defined as quality in healthcare in order to critically discuss the patients' perspectives on quality healthcare. The questionnaires were based on the SERVQUAL scale modified to suit the study. These dimensions were decomposed into (a) tangibility, (b) reliability, (c) responsiveness, (d) assurance, (e) empathy, (f) accessibility and affordability, (g) priority, (h) culture, and (i) communication. A 5-point Likert scale with scores of Strongly Disagree = 1.0–1.49, Disagree = 1.50–2.49, Neutral = 2.50–3.49, Agree = 3.50–4.49, Strongly Agree = 4.50–5.0 was used in this survey. This format has been recommended for healthcare surveys.[23-25] Data was collected by researchers with the assistance of 2 trained research assistants who administered the questionnaires. These assistants had a good understanding of the language spoken (TWI) and could well articulate the language for effective communication with patients. Questionnaire administration took a minimum of 15 minutes with each patient. Completed questionnaires were collected for data inputting and coding. Data generated from the structured questionnaires was analyzed with SPSS (version 20). Descriptive statistics such as frequency tables were used to present the demographic information of patients. The
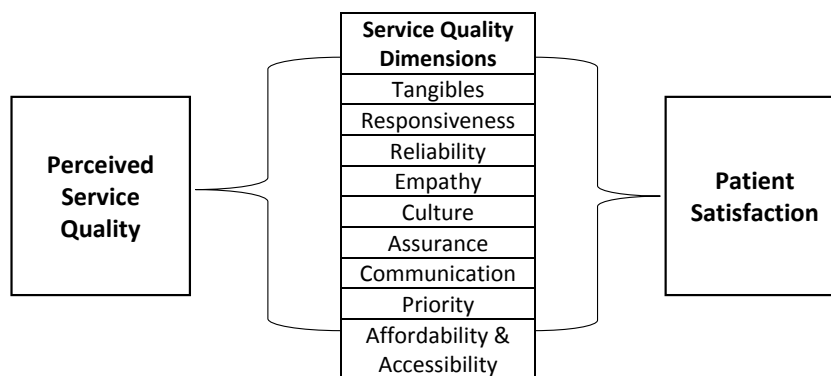

Figure 1. Conceptual Framework for Measuring the Quality of Healthcare Adapted From the SERVQUAL Model.[21]

t test was used to compare means of various predictors of patient satisfaction. Principal component analysis (PCA) was used to reduce the dataset for factor analysis using the varimax rotation method. This enabled the study to have full control of the key dimensions that relate to service quality in a regression model and to know the effects of the various independent variables (dimensions) on patient satisfaction (the dependent variable).

To ensure ethical standards, informed consent was sought from patients to voluntarily take part in the study. Patients were assured of anonymity, privacy and confidentiality. Furthermore, ethical approval and clearance was obtained for this study from the management and ethical review boards of the university hospitals.

4. Results

The results indicated a sample size of 218 patients was suitable for this study. Females constituted a larger proportion of the sample size (53.2%; n = 116) than males (46.8%; n = 102). The results indicated that 42.7% of respondents (n = 93) were middle/senior high school graduates, 28.9% (n = 63) were in tertiary institutions, and 15.1% (n = 33) were in junior high school. The results further revealed that 6.9% (n = 15) and 6.0% (n = 13) of the total sample size had primary and non-formal educations, respectively. The demographic results indicated that 20.6% (n = 45) of respondents were students while 17% (n = 37) and 15.1% (n = 33) were businessmen and unemployed, respectively. Farmers constituted 14.2% (n = 31) of respondents, and 14.7% (n = 32) were government employees. A total of 82.5% (n = 80) of respondents were aged between 18-50 years, 10.6% (n = 23) were within the ages of 51-61 years, and 6.9% (n = 15) were 62 years of age or older. A greater percentage of respondents (74.3%; n = 164) had utilized the hospital 2-4 times, 18.8% (n = 41) had visited 5-7 times, and 6.9% (n = 15) had utilized the facilities more than 8 times (Table 1).

4.1. Dimensions of Service Quality and Patient Satisfaction

To extract relevant dimensions as good predictors of overall service quality, an exploratory factor analysis was performed. The principal component analysis with varimax rotation was employed to ensure the factorability of the data. Factor analysis (FA) was consequently performed on 32 variables and the output is presented in Table 2. As a prelude to employing FA in this study, sampling adequacy and factorability of data were examined to ensure that all assumptions were met. The Bartlett test of sphericity and Kaiser-Meyer-Olkin (KMO) measures of sampling adequacy were examined. According to Tabachnick and Fidell,[26] the Bartlett test of sphericity should be significant at ($P < .05$) for the FA to be considered appropriate, while the KMO index ranges from 0-1, with 0.6 recommended as the minimum value for a good FA. For this study, the Bartlett test of sphericity was found to be very significant ($P = .00$), and the KMO index of 0.919 confirmed the suitability of the data for FA. The criteria for selecting relevant factors for the regression analysis was based on an eigenvalue greater than 1.00 and items with factor

Table 1. Socio-Demographic Characteristics of Patients (N = 218)

Demographic Variable	Categories	Number	Percent
Hospitals	UCH	110	49.5
	UGH	108	50.5
Gender	Male	102	46.8
	Female	116	53.2
Educational level	None	13	6.0
	Primary	15	6.9
	Junior high/JSS	33	15.1
	Senior high/middle school	93	42.7
	Tertiary	63	28.9
	Other	1	0.5
Employment Status	Unemployed	33	15.1
	Trader/businessman	37	17.0
	Farmer	31	14.2
	Government employee	32	14.7
	Private sector employee	25	11.5
	Student	45	20.6
	Other specify	15	6.9
Age	18-28 years	83	38.1
	29-39 years	57	26.1
	40-50 years	40	18.3
	51-61 years	23	10.6
	62 years and above	15	6.9
Number of visits	2-4 times	162	74.3
	5-7 times	41	18.8
	8 times and more	15	6.9

Source: Field data (2014).[11]

loadings greater than 0.50.[26] This criterion was included in the analysis. Cronbach alpha was used to examine the reliability of the employed scale and the extent to which the variables contributed to explaining a factor. The results are presented in Table 2.

Empathy was the first factor (Factor I) of healthcare service quality measured and comprised issues such as weakness in staff welcoming of patients, staff has patients' interests at heart, staff are responsive, staff understand patients' specific needs, and staff are caring toward patients. This factor accounted for the highest variation with an eigenvalue of 10.6, which is equivalent to 38.2% of the total variance. Factor II concerned issues of communication of staff to patients with factor loadings including doctors' willingness to answer patients' questions, patients are given adequate information about their treatments and conditions, and patients receive adequate information about tests they must undergo. This factor accounted for an eigenvalue of 1.87, which amounts to 6.68% of the total variance. The third factor (Factor III) was culture, a key dimension to patient satisfaction with healthcare service quality at the university hospitals. Items examined under this factor were staff uses language that patients understand, staff do not discriminate based on religion, and the location is accessible to patients of different ethnic and cultural backgrounds. This factor accounted for an eigenvalue of 1.60, which represents 5.74% of the total variance. Factor IV, the dimension of tangibles, determined patient satisfaction with quality healthcare in the university hospitals. Factors that loaded on this

Table 2. Dimension of Service Quality on Patient Satisfaction

Factor	Statements	Loadings	Eigen values	% of variance explained	Cronbach alpha
I	Empathy				
	Staff welcome patients' weaknesses	0.78			
	Staff have patients' interests at heart	0.72	10.6	38.2	.84
	Staff respond immediately when called by patients	0.70			
	Staff understand patients' specific needs at the hospital	0.66			
	Staff at hospital are caring	0.63			
II	Communication				
	Doctors are willing to answer questions related to illness	0.79			
	Patients are given adequate information about their treatment	0.77	1.87	6.68	.85
	Patients are given adequate information about their health condition	0.72			
	Patients receive adequate explanations of tests undertaken	0.68			
III	Culture				
	Staff use language patients understand	0.75			
	Staff do not discriminate based on religion	0.74	1.60	5.74	.75
	Staff do not discriminate based on ethnic background	0.66			
	Location of the hospital is accessible	0.55			
IV	Tangibles				
	Hospital has modern facilities	0.80			
	Hospital has modern-looking equipment	0.70	1.45	5.17	.70
V	Priority				
	University workers and students do not join queues to seek healthcare services	0.84			
	University workers and students are given special care	0.68	1.25	4.48	.71
	Total Variance Explained			**60.3**	

dimension included hospital had up-to-date facilities as well as modern equipment. This factor explained 1.45 of the variance, which represents 5.17% of the total variance. The last factor (Factor V) measured issues related to priority. The individual loadings here included university workers and students do not join queues to seek healthcare services, and university workers and students are given special care at the hospital. This factor accounted for 1.25 of the eigenvalue, which is equivalent to 4.48% of the total variance.

4.2. Effects of Service Quality Dimension Predictors on Patent Satisfaction

A multiple linear regression model was used to determine the predictive effect of the 5 dimensions of service quality (independent variables) from the factor analysis on patient satisfaction (dependent variable) using $P < .05$ as a statistical criterion. Multiple linear regression has the ability to explore the relationship between one continuous dependent variable and a number of independent variables or predictors (usually continuous).[22,23] The model exhibited an adjusted R-square value of 0.56. Thus, this model is fitted in explaining 56% of variations of the dimensions of service quality on patient satisfaction. Consequently, all 5 variables were good predictors of patient satisfaction with service quality in the university hospitals, and their t-values indicated that these dimensions are strong predictors of patient satisfaction. Results shown in Table 3 indicate that empathy ($\beta = .09$) is statistically a significant predictor of patient satisfaction at both university hospitals since its P value (.003) does not exceed a significant P value of (.05). Furthermore, communication, culture, tangibles, and

priority are significantly good service quality predictors of patient satisfaction with services at the 2 studied hospitals.

As seen in the table, the order of significance for the effects of predictors of service quality on patient satisfaction is communication ($\beta = .26$, $P = .00$), followed by priority ($\beta = .18$, $P = .002$), culture ($\beta = .17$, $P = .008$), empathy ($\beta = .14$, $P = 003$), and tangibles ($\beta = .12$, $P = .040$).

4.3. Comparison of Patient Perceptions of Service Quality

An independent t test was used to compare patient perceptions of satisfaction with dimensions in the quality of service at the UGH and UCH. Results (shown in Table 4) indicated that there were significant differences between the mean perception of patients of UGH and UCH on empathy, tangibles, and priority at $P = .005$; however, the mean perception of patients on communication and culture were not significantly different at $P = .005$.

5. Discussion

As a backdrop to every empirical study, socio-demographic information is key in determining the context of the study units. Evidence from this paper suggests that most patients utilizing healthcare services at UGH and UCH are female compared to their male counterparts. This phenomenon has been explained by some scholars who have indicated that women are more concerned with issues of health than males.[18,20] Furthermore, it is an established fact that educational level influences rate of use of healthcare services. This is also evident in the current findings; the higher the level of education of an individual was, the more such person was concerned about his/her health. This influenced the higher rate of use of a service by patients

Table 3. Multiple Linear Regression on Dimensions of Service Quality for Patient Satisfaction

Predictors	Patient Satisfaction				
	B	SE	B	t Value	P
Empathy	0.18	0.09	0.14	2.01	.003*
Communication	0.31	0.07	0.26	4.14	.000*
Culture	0.26	0.09	0.17	2.66	.008*
Tangibles	0.15	0.07	0.12	2.06	.040*
Priority	0.17	0.05	0.18	3.12	.002*
Constant	0.31	0.41		0.77	.437

R^2 = 0.58; Adjusted R^2 = 0.56; F-value = 26.17; P = .00, P ≤.05

*Significance level.

Table 4. Independent T Test Results Comparing Patient Perceptions of Service Quality Dimensions That Clearly Predict Patient Satisfaction With Service at UGH and UCH

Predictors/ Dimension	UGH Mean ± SD	UCH Mean ± SD	P Value
Empathy	3.41 ± 0.83	4.52 ± 0.73	.004*
Communication	3.83 ± 0.89	3.84 ± 0.83	.958
Culture	4.11 ± 0.70	3.41 ± 0.86	.580
Tangibles	3.39 ± 0.83	4.56 ± 0.81	.050*
Priority	3.04 ± 1.06	4.51 ± 0.97	.000*

*Significance level.

with higher and tertiary educational attainment. Moreover, the location of these hospitals on university campuses influenced healthcare use by patients with higher levels of education. The majority of patients who access healthcare services at university hospitals are young adult students within the age range of 18-28 years who are normally characterized with medical risks based on risky behaviors associated with their youthful age.[20,21,23]

Patient satisfaction is fundamental to healthcare delivery, since healthcare services aim to serve the expectations of patients who utilize them. This study observed that empathy on the part of medical staff is a significant predictor of patient satisfaction. This has been discussed extensively in the healthcare literature.[15,16,23] Patients believe in emotional attachments, and being able to share their pain makes them satisfied with the medical process. Patients are comfortable when medical staff show emotional concern toward their needs. In addition, it is arguably noted that provider-patient communication is essentially important in providing quality healthcare services at the UGH and UCH. The seemingly high level of education among patients who access healthcare at university hospitals suggests that the majority of patients are literate and will be expecting staff to explain medical prognoses to them during consultations. The building environment has been identified as instrumental to patient satisfaction with the quality of healthcare in university hospitals. The current study revealed that patients are more comfortable in a serene environment, and this speeds up recuperation. Existing empirical evidence indicates that a less noisy environment and modern recreational facilities help patients recover in a timely manner.[12,25]

The significant contribution of culture to patient's satisfaction at university hospitals is very interesting. It reflects the idea that patients' satisfaction with healthcare delivery is influenced by language, religion, and ethnic background. Studies have confirmed that patients share the view that healthcare service that is culturally sensitive to their healthcare needs ensures satisfaction and promotes quality healthcare delivery.[10,12] Moreover, prioritizing healthcare based on patients' needs is relevant to ensuring healthcare delivery. Previous studies on patient satisfaction have revealed that priority care is fundamental to the assessment of service quality at hospitals.[10,23] University hospitals need to embrace this action as a policy design, thereby providing the mechanism to prioritize healthcare services for university staff and students.

Findings of the comparison of the UGH and UCH suggest differences in dimensions such as empathy, tangibles, and priority. The former (empathy) is seen to be a strong determinant of patient satisfaction at UCH. This is attributed to the fact that staff members at UCH are empathetic towards patients, given that the hospital serves the university community and the settler communities around the university campus. This predictor is strictly ensured to strengthen the healthcare-seeking behavior of neighboring towns, given their backgrounds in agrarian and fishing activities.

Furthermore, patients revealed that the physical infrastructure and medical equipment at UCH do not meet modern standards. They share the view that using non-modern equipment hinders the efficient delivery of healthcare. Tangibility (physical infrastructure and surrounding) has been extensively discussed in the empirical literature as a key predictor of patient satisfaction and quality healthcare delivery.[23,25] It is rated as an instrumental predictor of patients' welfare and ensures wellbeing in assessing healthcare services. However, at UGH, priority remains a strong determinant of healthcare service. Patients at UGH highlighted that special attention is given to university staff and students during healthcare delivery. Thus, giving special services to both senior and junior members of the university in all forms of medical services ensures the maximum satisfaction of patients. It has been evidenced that priority care in the healthcare process greatly influences patient satisfaction.

The limitation of this study is its focus on changes in patients' satisfaction over time; therefore, using a cross-sectional study design may not be appropriate for tracking the best predictors for long-term policy implications. Furthermore, patient satisfaction with university hospitals can be influenced by the inclusion of variables other than those presented in this paper.

6. Conclusion

University healthcare service management and policymakers should streamline their plans of action and policies to ensure the staff welcomes the weaknesses of patients and has their interests at heart. Institutional efforts should be tailored to strengthening provider-patient communication, given the high literacy level of patients who utilize their healthcare services. Respect for ethnic differences should be upheld to ensure satisfaction

among patients of UGH and UCH. Improvements to the physical infrastructure and medical equipment are relevant in ensuring quality healthcare delivery and patient satisfaction, particularly at UCH. Finally, the special services granted to university staff and students should be improved to achieve high levels of patient satisfaction.

Authors' Contributions

All authors contributed significantly towards the successful completion of this publication.

Conflict of Interest Disclosures

None declared.

Ethical Approval

The authors sought and obtained ethical approval to conduct this study from the management of the 2 university hospitals and from the Ethics Committee at the University of Ghana.

Acknowledgments

References

1. World Health Organization. Patient safety research: a guide for developing training programmes. Geneva: WHO; 2012.
2. Epstein A. Sounding board: the outcomes movement, will it get us where we want to go? N Engl J Med. 1990;323(4):266–269. doi:10.1056/NEJM199007263230410.
3. Blumenfeld SN. Quality assurance in transition. Papua N Guinea Med J. 1993;36(2):81-89.
4. Turkson PK. Perceived quality of healthcare delivery in a rural district of Ghana. Ghana Med J. 2009;43(2):65-70.
5. Aldana JM, Piechulek H, Al-Sabir A. Client satisfaction and quality of health care in rural Bangladesh. Bull World Health Organ. 2001;79(6):512-517.
6. Vemula R, Assaf RR, Al-Assaf AF. Making patient safety and quality improvement act of 2005 work. J Healthc Qual. 2007;12(4):12-25. doi:10.1111/j.1945-1474.2007.tb00199.x.
7. Camgöz-Akdag H, Zineldin M. Quality of health care and patient satisfaction: an exploratory investigation of the 5Qs model at Turkey. Clinical Governance: An International Journal. 2010;15(2):92-101. doi:10.1108/14777271011035031
8. Sarpong N, Loag W, Fobil J, et al. National health insurance coverage and socio-economic status in a rural district of Ghana. Trop Med Int Health. 2010;15(2):191-197. doi:10.1111/j.1365-3156.2009.02439.x.
9. Turkson AH. Utilization of teaching space in Cape Coast Poly-technic. http://ir.ucc.edu.gh/handle/123456789/311?mode=full.
10. Ghana. Statistical Service, Noguchi Memorial Institute for Medical Research, ORC Macro. MEASURE/DHS+ (Programme). Ghana demographic and health survey, 2003. Ghana Statistical Service; 2004.
11. Aduo-Adjei KO. Patients Satisfaction with Quality Healthcare in Ghana: A Comparative Study between University of Ghana and University of Cape Coast Hospitals [dissertation]. Ghana: University of Ghana; 2015.
12. Witter S, Adjei S, Armar-Klemesu M, Graham W. Providing free maternal health care: ten lessons from an evaluation of the national delivery exemption policy in Ghana. Glob Health Action. 2009;2. doi:10.3402/gha.v2i0.1881.
13. Ayimbillah Atinga R, Abekah-Nkrumah G, Ameyaw Domfeh K. Managing healthcare quality in Ghana: a necessity of patient satisfaction. Int J Health Care Qual Assur. 2011;24(7):548-563. doi:10.1108/09526861111160580.
14. Agyepong IA, Adjei S. Public social policy development and implementation: a case study of the Ghana National Health Insurance scheme. Health Policy Plann. 2008;23(2):150-160.
15. Ministry of Health. Quality Healthcare Delivery Assessment Report. Accra: Ministry of Health; 2007.
16. Essiam JO. Service quality and patients satisfaction with healthcare delivery: empirical evidence from patients of the out patient department of a public university hospital in Ghana. Eur J Bus Manag. 2013;5(28):52-59.
17. Pakdil F, Harwood TN. Patient satisfaction in a preoperative assessment clinic: an analysis using SERVQUAL dimensions. Total Quality Management & Business Excellence. 2005;16(1):15-30.
18. Naidu A. Factors affecting patient satisfaction and healthcare quality. Int J Health Care Qual Assur. 2009;22(4):366-381.
19. Drain M. Quality improvement in primary care and the importance of patient perceptions. J Ambul Care Manage. 2001;24(2):30-46.
20. World Health Organization. Global status report on alcohol and health. Geneva: WHO; 2014.
21. Berry LL, Parasuraman A, Zeithaml VA. The service-quality puzzle. Bus Horiz. 1988;31(5):35-43.
22. Dellande S, Gilly MC, Graham JL. Gaining compliance and losing weight: The role of the service provider in health care services. J Mark. 2004;68(3):78-91.
23. Elbeck M. An approach to client satisfaction measurement as an attribute of health service quality. Health Care Manage Rev. 1987;12(3):47-52.
24. Steiber SR. Preventing pitfalls in patient surveys. Health Care Strateg Manage. 1989;7(5):13-16.
25. Scales J, Terry Jr R, Torres RM. Are teachers ready to integrate science concepts into secondary agriculture programs? J Agric Educ. 2009;50(2):102-113.
26. Tabachnick BG, Fidell LS, Osterlind SJ. Using Multivariate Statistics. Needham, MA: Allyn and Bacon; 2001.