TQM HEALTH PRACTICES AND CLIENT SATISFACTION IN A SELECTED HEALTH FACILITY IN GHANA

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ABSTRACT

Total Quality Management (TQM) for health care delivery provides a model to help hospitals organize, communicate, monitor, and continuously improve all aspects of health care delivery. The literature concerning service quality dimensions in the healthcare industry is replete with studies from the developed world. Researchers from developing countries are yet to fully demonstrate the impact of TQM health practices on client satisfaction. The current study aimed to establish the TQM health practices (adequacy of health facility and health care amenities, doctor-patient relationship, pharmacy staff service delivery, and nurses and midwives service delivery) that determine client satisfaction in a selected Health facility in the Ashanti Region of Ghana. The design of the study was a cross-sectional survey of 150 patients between the ages of 18 - 60+years who were sampled randomly. The sample consisted of 72 male (48%) and 78 female (52%) clients. We used Pearson product moment correlation coefficient and Multiple regression models for analysis. Results of the correlation analysis revealed that, condition of health facility, doctor-patient relationship, and nurses and midwives service delivery significantly relates to client satisfaction of health care delivery ($r = 0.261$, $0.348$ and $0.638$; $p = 0.001$, $0.000$ and $0.000$ respectively). The Standard multiple regression analysis also revealed that only nurse and midwives service delivery is a unique and statistically significant predictor of clients’ satisfaction. We recommend consistent review of health care practices that seek to promote the positive correlate in this study to enhance sustenance and growth in health care delivery in Ghana.

Keywords: Total Quality Management, Health Practices, Clients, Health Facility, Satisfaction, Ghana.

BACKGROUND

Good health, responsiveness to the expectations of its people, and financial contribution to the nation are the goals for health care systems of any country (WHO, 2000). An overview of the
health scenario all over the world indicates that despite having numerous excellent health care facilities, there exists a sufficiently large gap between the demand and quality of health care delivery. The past two decades in the health care delivery system in Ghana have seen health care professionals, technicians and clients/patients alike having a lot of issues to grumble over. Patients or clients health care has in times of health professionals’ agitations and industrial strike being kept in limbo. The level of trust and confidence in the health care delivery system has indeed become an issue to ponder over. However, not many studies have been conducted in this area of rear health crisis in the government or private hospitals in Ghana.

A comparative analysis of the mortality and morbidity patterns of pre-colonial, colonial and post-colonial periods presents a gloomy picture of the health status and systems of the nation (Senah, 2001). Generally, while Ghanaians now live longer (60-years) the causes of mortality and morbidity have not been significantly controlled given the huge capital outlay the country has made and continues to make on improving healthcare service delivery (GDHS, 2008; Senah, 2001). The analysis of health status indicators in Ghana points to a nation in crisis.

The statistics indicate that although about 69 percent of the population lives in rural communities, only 3 percent of rural households live in communities where there is a doctor; for 36 percent of rural households, a doctor is about 15 km away and for 18 percent a doctor is about 50km away. Forty-four (44) percent of doctors are located in the Greater Accra Region, which accommodates only 18 percent of the national population. The doctor-patient ratio is 1:11,929 while that of nurses is 1:971 (GHS, 2010). Maternal mortality rate is currently put at 350 deaths/100,000 live births (CIA World Fact book, 2012). Infant/child mortality rate is also put at 41 deaths/1000 live births (CIA World Fact book, 2013). For developing economies, like that of Ghana, the provision of health care is always problematic. Although there is a greater recognition that health care is a basic need of life that must be improved and sustained to all Ghanaians, the practical problems encountered in the implementation of this objective require moral aptitude and commitment in the political economy (see Senah, 2001). Where resources are limited, it is difficult deciding how best to use them for development; and that implies difficulty in sustainability also.

In Africa where economic dependency is the norm, policy makers are constantly faced with the task of making choices which are economically, socially and morally defensible although, but perhaps are politically expedient as well. This situation calls for a rational clarion call to adopt the principle of Total Quality Management practices to increase efficiency and maximize utilisation of the scare resource of the nation.

Juran (1995) defines TQM as the system of activities directed at achieving delighted customers, empowered employees, higher revenues, and reduced costs. It is a philosophy aimed at continuously improving the quality and process to achieve customer satisfaction of service (Stevenson, 2002). Simply put, it is the building of quality into products and process of making quality a concern and responsibility for everyone in an organization or institution (McAdam, 2000). Studies have suggested quite a large number of factors/elements/constructs/dimensions of TQM implementation. TQM and performance improvement have a positive relationship, particularly, the Malcolm Baldridge quality award criteria confirms such relationship between quality management practices and business results (Heidari, Gorji & Farooquie, 2011). A study by Salaheldin (2009) indicates that there are many empirical studies which examine TQM practices performance relationships in large firms but the health sector has received less attention by researchers. While the literature concerning service quality dimensions in the healthcare industry is replete with studies from the developed world, researchers from developing countries have been exploring the applicability of the related models and frameworks in their specific context (Heidari, Gorji & Farooquie, 2011). The wholesale adoption of developed world models is inadequate to transform and improve TQM practices in Ghana.
Ghana does not seem to have any established framework for measuring quality efforts and performance of its health care industry. Zakuan et al. (2010) suggest that despite the number of publications and quantity of research on TQM, there is actually little empirical work that has been carried out in developing countries, particularly in the ASEAN region and Sub-Sahara Africa. There are evidences of recent studies in developing countries such as India and Iran pertaining to total quality management and performance in health care (Duggirala, Rajendran & Anantharaman, 2008; Padma, Rajendran & Sai, 2009; Maleki & Izadi, 2008), however, none of them claims for having addressed the issue in totality. The current state of research in the area of health care quality along with the inadequacy and cost of health care services in Ghana justifies the conduct of this study.

Several non-Ghanaian studies have identified one or more practices that contribute to improvement in the quality of healthcare delivery (e.g. Maleki & Izadi, 2008; Duggirala, Rajendran & Anantharaman, 2008; Padma, Rajendran & Sai, 2009), however, there is no study to date that has examined the TQM for healthcare delivery in relation to TQM health practices such as: condition of health facility, doctor-patient relationship, pharmacy staff service delivery and nurses and midwives care as predictor variables in the Ghanaian context.

AIMS OF STUDY

The aim of this study was to identify a set of TQM health practices that predict clients’ satisfaction and that which are helpful in improving the overall quality of healthcare. The study also aimed to determine the relationship between: condition of health facility, doctor-patient relationship, pharmacy staff service delivery and nurses and midwives care as TQM health factors and client satisfaction as an outcome variable.

**Conceptual Model**

![Conceptual Model Image]

*Source: Authors own creation (2013)*

**Figure 1.0:** Conceptual model of TQM health practices that influence their implementation in healthcare delivery System in Ghana
Design and Methods

The design of the study was a cross-sectional survey which utilized a probability sample with a structured questionnaire for the collection of quantitative data involving multiple variables that were examined to detect patterns of relationship and associations. In using this design, we were able to collect data on more than one case at a single point in time.

Study Population and Sample

The population of the study consisted of patients who reported for medical care at a public health care facility in the Ashanti Region. One hundred and fifty (150) patients were, however randomly sampled for the study. The sample size (n=150) was informed by the formula given by Tabachnick and Fidell (2007) in calculating the adequate sample for multiple regression analysis. Taking into account the number of independent variables one wishes to use, the formula is given as: 

\[ N > 50 + 8m \] 

(where \( m \) = number of independent variables). Since this study made use of four independent variables the number of cases required was 82. The 150 patients sampled for the study was therefore adequate to perform the multiple regression analysis.

Variables and Measures

The dependent variable in this study was client satisfaction. The independent variables were: condition of health facility, doctor-to-patient relationship, pharmacy staff service delivery and nurses and midwives care.

Client Satisfaction

Client satisfaction was assessed by one item with a five point scale (1= Poor to 5= Excellent) regarding the overall assessment of medical care provided by the hospital. Patients assessed this item by circling the number that corresponded to the degree to which they agreed to the statement provided. On this scale higher scores indicated quality healthcare delivery.

Condition of Health Facility

Condition of health facility was assessed by nine (9) items using a rating scale of (1=Strongly disagree to 5=Strongly agree) regarding the overall assessment of condition of facilities in the hospital. Variables measured included: adequate ventilation at the reception rooms, clean hospital premise, clean wards, clean toilets, reliability of ambulatory service, silence in ward and presence of mosquitoes. Clients assessed these items by circling the number that corresponded to the degree to which they agreed to the nine (9) statements on health conditions posed to them. The sum of the nine (9) subscale items was taken as the measure of condition of health facility. The Cronbach alpha for this subscale was 0.78.

Doctor-patient relationship

Six questionnaire items measured doctor-patient relationship. This variable was assessed on a five point scale of 1=strongly disagree to 5=strongly. Items measured included: hours of waiting to see a doctor, adequacy of time spent to discuss medical issues, maintenance of respect during consultation and doctor’s explanation of client’s condition. Like condition of health facility, patients assessed these items by circling the number that corresponded to the degree to which they agreed to the statement provided. The sum of all subscale items was taken as the measure of doctor-patient relationship. On this scale higher scores indicated positive or good relationship between doctors and patients. Cronbach alpha for this subscale was 0.81.
Pharmacy Staff Service Delivery

Pharmacy service delivery as a determinant of health service quality was assessed by three items which included: friendliness of pharmacy staff, respectfulness of pharmacy staff and waiting for long hours to collect medication. The three items measured pharmacy staff service delivery on a 5-point scale (1=Strongly disagree to 5=Strongly agree) The sum of all subscale items was computed and the composite score used for analysis as pharmacy staff service delivery. A Cronbach alpha of 0.79 indicated that this subscale was also reliable.

Nurses and Midwives Care

Five items with a five point scale of 1=Strongly disagree to 5= Strongly agree was developed to measure nurses and midwives service delivery. Items measured included; provision of assistance to patients and pregnant women, respectfulness of nurses and midwives and proper care of pregnant women in the ward. The scales of these five measures were transformed into a single measurement sub-scale item, and the total sum used as a measure of nurses and midwives care. The Cronbach alpha for this subscale was 0.82.

DATA COLLECTION AND ANALYSIS

Data was collected over a two day period after pre-test and post-test of the research instrument had been carried out and the administrator of the facility had given his approval. Data was obtained through the use of a structured questionnaire appropriately and specifically designed for the study. Questionnaire items were placed under two main sections: background characteristics of respondents and TQM health practices. Before the commencement of the study, permission was sought from the Medical Director and Health Administrator of the hospital. Individual informed consent was obtained from all participants before administrating the survey instrument. In order to ensure anonymity of the study participants, they were instructed not to provide any form of personal identification. The data collected was entered, cleaned and analysed using the SPSS (v20) programme. Demographic characteristics of clients was analysed descriptively using frequency and percentages. Based on the appropriateness, the study used Pearson correlation to determine the possible relationship or association between measured TQM health practices and client satisfaction. TQM health practices that significantly had an effect on client satisfaction were identified by Standard Multiple Regression.

RESULTS

Demographic characteristics of the sample

The sample of the study was evenly distributed with respect to gender (48% male, 52% female). Age distribution of the sample revealed majority of the clients being between the ages of 18 and 37 years (n=89, 59%). A total of 89 of our respondents sampled had obtained Tertiary level of education with 10 of them not having attained any form of formal education. Data on the ethnic background of respondents revealed the Akan tribe being the predominant ethnic group in the sample. The marital status of respondents revealed majority of our respondents being married (n=60). Respondents who were divorced were the least represented (n=9). Table 1.0 gives a summary of the results on the demographic characteristics of the sample.
Table 1.0: Demographic characteristics of Patients

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>72</td>
<td>48.0</td>
</tr>
<tr>
<td>Female</td>
<td>78</td>
<td>52.0</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 – 27</td>
<td>49</td>
<td>32.7</td>
</tr>
<tr>
<td>28 – 37</td>
<td>40</td>
<td>26.7</td>
</tr>
<tr>
<td>38 – 47</td>
<td>35</td>
<td>23.3</td>
</tr>
<tr>
<td>48 – 57</td>
<td>18</td>
<td>12.0</td>
</tr>
<tr>
<td>58+</td>
<td>8</td>
<td>5.3</td>
</tr>
<tr>
<td>Level of Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>10</td>
<td>6.7</td>
</tr>
<tr>
<td>J.H.S</td>
<td>20</td>
<td>13.3</td>
</tr>
<tr>
<td>S.H.S</td>
<td>31</td>
<td>20.7</td>
</tr>
<tr>
<td>Polytechnic</td>
<td>43</td>
<td>28.7</td>
</tr>
<tr>
<td>University</td>
<td>46</td>
<td>37.0</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Akan</td>
<td>73</td>
<td>48.7</td>
</tr>
<tr>
<td>Ewe</td>
<td>22</td>
<td>14.7</td>
</tr>
<tr>
<td>Ga</td>
<td>27</td>
<td>18.0</td>
</tr>
<tr>
<td>Dagomba</td>
<td>23</td>
<td>15.3</td>
</tr>
<tr>
<td>Mamprusi</td>
<td>5</td>
<td>3.3</td>
</tr>
<tr>
<td>Marital Status</td>
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</tr>
<tr>
<td>Single</td>
<td>46</td>
<td>30.7</td>
</tr>
<tr>
<td>Married</td>
<td>60</td>
<td>40.0</td>
</tr>
<tr>
<td>Separated</td>
<td>24</td>
<td>16.0</td>
</tr>
<tr>
<td>Divorced</td>
<td>9</td>
<td>6.0</td>
</tr>
<tr>
<td>Widowed</td>
<td>11</td>
<td>7.3</td>
</tr>
</tbody>
</table>

Source: Field Survey, March, 2013

Bivariate correlations for TQM health factors and client satisfaction

Significant positive correlations were found between all measures of TQM health factors and client satisfaction ($r = .26$, $p = 0.001$ for condition of health facility; $r = .35$, $p = 0.000$ for doctor-patient relationship; $r = .28$, $p = 0.03$ for pharmacy staff service delivery and $r = .64$, $p = 0.000$ for nurses and midwives care).

Standard Multiple Regression Analyses for TQM health factors and Client Satisfaction

A standard multiple regression was performed between client satisfaction as dependent variable and condition of health facility, doctor-to-patient relationship, pharmacy staff service delivery and nurses and midwives service delivery as independent variables. We conducted the regression analysis to determine the best linear combination of condition of health facility, doctor-to-patient relationship, pharmacy staff service delivery and nurses and midwives service delivery for predicting client satisfaction.
Results of the Standard multiple regression analysis revealed that the combination of variables significantly predicted client satisfaction, $F(4, 149) = 25.27, p < 0.001$, with all four independent variables contributing to the prediction. The model as a whole explained about 41% ($R^2 = 0.411$) of the variation in client satisfaction. The beta weights, presented in Table 2.0 suggest that nurses and midwives care is a significant predictor of client satisfaction.

Table 2.0: Simultaneous Multiple Regression analysis summary for TQM health factors (independent variables) predicting Client Satisfaction (N=150)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>ß</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>-.691</td>
<td>.449</td>
<td>.126</td>
<td></td>
</tr>
<tr>
<td>Condition of health facility</td>
<td>-.005</td>
<td>.014</td>
<td>-.027</td>
<td>.716</td>
</tr>
<tr>
<td>Doctor-to-patient relationship</td>
<td>.019</td>
<td>.025</td>
<td>.055</td>
<td>.458</td>
</tr>
<tr>
<td>Pharmacy staff service delivery</td>
<td>-.005</td>
<td>.038</td>
<td>-.009</td>
<td>.898</td>
</tr>
<tr>
<td>Nurses and midwives care</td>
<td>.251</td>
<td>.032</td>
<td>.628</td>
<td>.000*</td>
</tr>
</tbody>
</table>

Note. $R^2 = .411$; $F(3, 149) = 25.27$, *$p < 0.05$

From Table 2.0, nurses and midwives service delivery recorded the largest beta (B) value (0.628) and also made a unique and statistically significant ($p < 0.001$) contribution to the prediction of client satisfaction followed by doctor-patient relationship (0.055), with the lowest value of beta recorded for pharmacy staff service delivery (-0.009). This means that nurses and midwives care makes the strongest unique contribution to explaining the dependent variable (client satisfaction) when the variance explained by all other variables in the model is controlled for. The lowest Beta (ß) value recorded for pharmacy staff service delivery indicates that it made less of a unique contribution.

DISCUSSION

Over all, the consistent patterns in the analyses of the results of the study tend to reflect the findings of total quality management (TQM) of healthcare service delivery from the extant literature. The results of the regression analysis revealed that of the four TQM health practices selected for the study, only nurses and midwives care proved to be a significant determinant or predictor of client satisfaction. Patients usually spend a lot of hospital time with nurses than they do with any other worker in a hospital. It is therefore not surprising that the untoward behaviour of some nurses to patients have come under so much criticism in recent times. The finding of nurses and midwives service delivery having a significant effect on client satisfaction and quality health delivery as a whole is supported by the studies of Boshoff and Gary (2004), Tucker and Adams (2001) and Duggirala et al., (2008b).

Existing literature (e.g. McFadden et al., 2006; Yang, 2003) have reported that hospital infrastructure significantly has an effect on healthcare delivery. Our study also sought to determine if condition of health facility significantly related to client satisfaction of health care delivery. The correlation results showed a positive and statistically significant association between condition of health facility and client satisfaction. The implication of this result is that when condition of health
facility is improved, quality of healthcare will invariably be improved which would make clients satisfied with the care they receive.

The positive and significant relationship between doctor-patient relationship and client satisfaction established by the correlation analysis corroborates the findings of authors such as Andaleeb (1998) and Gilbert et al., (1992) who also established that doctor’s care significantly associate with healthcare delivery. The association between doctor-patient relationship and client satisfaction of health care delivery implies that doctor-patient relationship significantly has satisfactory effect on client satisfaction.

Consistent with the studies of Tucker and Adams, 2001; Gilbert et al. (1992) which found services provided by nurses and midwives has a satisfactory effect on the healthcare delivery and wellbeing of clients, our study also found a positive and significant relationship between nurses and midwives service delivery and client satisfaction. The relationship between the two variables implies that the service provided by nurses and midwives has an effect on healthcare delivery which determines clients’ satisfaction.

CONCLUSION

Patients or client satisfaction is considered as a significant indicator of the quality of health care provided by public or private hospitals the world over. The growing prominence of total quality management (TQM) in health care was the basis of the present study to identify the set of TQM health practices that significantly have an effect on client satisfaction. More specifically, this study examined the relationship between conditions of health facility, doctor-patient relationship, pharmacy staff service delivery, and nurses and midwives care and client satisfaction. The study found a positive and statistically significant relationship between the selected TQM health factors and clients satisfaction of quality of health care delivered. Consistent with existing findings, TQM health practices put together has an influence on client satisfaction as indicated by the Multiple regression analysis which also revealed that only nurses and midwives service delivery is the best and most important predictor of client satisfaction of health care delivery.

Recommendation for Administrative Practice

For the successful implementation of TQM philosophy in the health care institution some of the managerial implications of our study are:

- Managers can use TQM philosophy as a strategic tool for achieving desirable outcome such as patient satisfaction and improved quality of care.
- Managers as well as quality policy makers in health care institutions should pay particular attention to the vital role nurses and midwives play in the overall operations of the health sector.

Finally, hospital administrators can understand the importance of satisfying all internal and external stakeholders upon the introduction of TQM strategy.

Recommendation for Future Research

The scope and suggested direction for further research work in this area are:

- A comparative study with other less developed countries may be carried out to observe the similarities and dissimilarities concerning TQM implementation in health care institutions. Further studies need to be undertaken concerning the detailed impact of identified health practices of this study on TQM implementation.
Empirical research should be conducted to evaluate the understanding of the TQM practices based on clients’ point of view.

LIMITATION OF THE STUDY

A major limitation of this study is its inability to generalize findings to the other healthcare institutions in Ghana. Data collected for the study was peculiar to the selected health facility which does not share the same health facilities with other hospitals in the country. The implication is that different responses would have being obtained if the study was conducted in hospitals in other regions of the country.

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