Client Satisfaction Survey of Healthcare Delivery in Rural Ghana Using Service Quality Measurement (SERVQUAL) Approach

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Abstract

Client satisfaction surveys have been emphasised over recent years to help identify barriers to quality service delivery. To identify what needs to be improved the clients' satisfaction with the service process as well as the outcomes need to be tapped and used as bases for improved quality in service delivery. The objective of the study was to assess client satisfaction with delivery of health care at the district level in a rural setting in Ghana. The study used questionnaire (modified SERVQUAL) that asked questions on expectations and perceptions relating to dimensions of quality connected to health care delivery - reliability, responsiveness, assurance, empathy and tangibles. It found that the gaps between scores for perceptions and expectations were widest in the subcomponents of tangibles (the appearance of physical facilities, equipment and personnel) compared to the other dimensions. The mean scores for perception for the district were 3.0 (out of a maximum score of 5) for tangibles, 3.4 for responsiveness, 3.7 for reliability, and 3.9 each for assurance and empathy, respectively. The use of the modified SERVQUAL instrument helped in identifying various components of dimensions of quality that were perceived to be unsatisfactory by clients could be specifically targeted initially for improvement, rather than trying to improve all areas simultaneously. This is critical in a resource-poor environment as it helps in prioritisation and efficient use of resources.

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Introduction

The Government of Ghana, supported by her development partners has tried to implement a policy of health for all, emphasizing the provision of quality primary health programmes at the district and sub-district levels. The Ministry of Health in Ghana has been concerned about quality of care for some time, but improvements in quality have been slow partly because quality improvement activities have received inadequate priority (Doyle and Haran, 2000). There have been and continue to be complaints about poor quality of care by health workers. The result is loss of customers, loss of lives, loss of revenue, loss of material resources, loss of time, loss of morale, loss of staff, loss of recognition, loss of trust, and/or loss of respect (Bannerman et al. 2002) and also individual and communities' apathy towards health services, all of which contribute to lack of effectiveness and efficiency. The Ministry of Health envisages improving the quality of care through paying more attention to the perspectives of clients, improving the competencies and skills of providers and improving the working environment by better management, provision of medical equipment and supplies and motivation of staff (Bannerman et al. 2002).

Client or patient satisfaction has been defined as the level of satisfaction that clients experience having used a service and, reflects the gap between the expected service and the experience of the service, from the client/patient's point of view (Smith and Engelbrecht, 2001). Patient satisfaction is generally considered as the extent to which the patient feels that his needs and expectations are met by the services provided (Al-Daghaither and Saeed, 2000). It also predicts both compliance (Kincey et al., 1975) and utilization (Roghmann et al., 1979), and may be related to improved health (Fitzpatrick 1991). It is said to be associated with continuity of care (Williams et al., 1998), communication skills of the doctor (Weiss and Ramsey, 1989) and the congruence between intervention desired and that received by the patient (Brody et al., 1989). Satisfaction surveys are important tools for collecting customers/clients' opinions and needs.

There are reports that factors that influence client satisfaction are those that influence what clients expect of a service in addition to those that influence the experience of the service (Smith and Engelbrecht, 2001).

Among the factors that influence what clients expect of a service are: past experience – the experience of a previous encounter with a hospital; external influences, especially media reports; personal needs – although clients may have common needs to satisfy, some clients have extra/special needs e.g. religious or dietary or emotional requirements; and word of mouth – experiences, especially negative ones are often shared among people and might influence the expectation of a client. The factors that influence how patients experience a service include tangibles, reliability, responsiveness, assurance, empathy, and access (Parasuraman et al., 1985). Research has shown that patient satisfaction survey is a valuable source of the patient's perspective and a valid method for identifying strategies for improvement within the process of care that is provided (Morgan, 1999).

To identify what needs are to be improved, the client/customer's satisfaction with the service process as well as the outcomes from that process need to be tapped. This can be determined by using an instrument (SERVQUAL) that measures the gap between what clients expect and their perceptions of the service after an encounter with the service (Chase et al., 2001). An indicator of where improvements should be made is the size of the gap.

The objective of this study was to assess client satisfaction with health care delivery at the district level in a rural setting in Ghana, using Komenda-Edina-Eguafo-Abrem District as a case study, using the SERVQUAL instrument so as to identify areas for improvement in the quality of health care.

Methodology

Study Area

The district was chosen on the basis of convenience and proximity to the researcher. The Komenda-Edina-Eguafo-Abrem (KEEA) District is in the Central Region of Ghana, covers 391 square kilometres, and is rural. It has 5 traditional councils, namely Edina, Komenda, Eguafo, Abrem and Agona with a total population of 117,670 as at 2002.

The district has 1 hospital, 4 health centres/post/clinics, 1 private medical practitioner, 2 private maternity homes and 1 community clinic. Health services are provided at 2 levels: levels A and B; level A services are provided by community health workers who are trained as health educators. According to the Ghana Health Services, community health officers are involved in community-based health planning and services in 3 zones in the KEEA District. The level B services are provided at health centres and posts, and include immunization, health education, counselling including family planning, disease control, antenatal and postnatal care services, and supervision of level A workers.

Sampling methods, data collection activities and tools

The study used purposive or convenience sampling in most cases. A total of 650 respondents (made up 599 patients and 51 health workers and distributed as follows: Komenda Health Centre 99; Elmina Health Centre 171; Agona Health Centre 110; Ankaful Hospital 110; Kissi Health Centre 160) were targeted for exit interviews in November-December 2003. Informed consent was sought before every interview. Before the questionnaire administration, 10 enumerators were trained at a workshop from 28th-30th October 2003 to understand the questionnaire, play the role of interviewer and interviewee, agree on a common translation of questions into the local language and pre-test the questionnaire on 10 patients. The original questionnaire (SERVQUAL) used to assess customer satisfaction in service-related institutions such as banks had 22 expectation and matching perception questions relating to 5 statistically derived dimensions of service quality: reliability ("the ability to perform services both dependably and accurately"; responsiveness ("willingness to help customers promptly"); assurance ("knowledge and courtesy of employees as well as their ability to convey trust"); empathy ("caring and individualized attention") and tangibles ("the appearance of physical facilities, equipment, and personnel, as well as other factors affecting the senses such as noise and temperature") (Parasuraman et al., 1985). Each item was scored on a 1-7 scale from strongly disagree (1) to strongly agree (7). The gap was measured by subtracting expectations from perceptions (by convention).

Gap Score = Perception Score-Expectation Score

According to Chase et al. (2001) perceived service quality is interpreted as follows:

1. When expectations are exceeded, there is a quality surprise (Expectation score< Perception score)
2. When expectations are met, there is satisfactory quality (Expectation score= Perception score)
3. When expectations are not met, there is unsatisfactory /unacceptable quality
   (Expectation score> Perception score)

Where the customer/client will naturally have high expectations of service quality in all areas (typically high, for example in health delivery), the approach is commonly modified by using only the perception scores to evaluate the service. This modification is referred to as "SERVPERF" and it is effective in measuring the performance of a service company, indicating where the company should improve (Chase et al., 2001).

The questionnaire used in this study had 18 questions (since 4 questions in the original instrument were considered irrelevant to health delivery). The scale adopted after pre-testing was from 1-5 as follows: 1=strongly disagree; 2=disagree; 3=somewhat agree; 4=agree; 5=strongly agree. The category of level of agreement that was of interest was "strongly agree" ("the top-box"). Dunn and Carmhiel (1996) observed the tendency of most answers in satisfaction surveys to be either satisfied or very satisfied and recommended that to increase sensitivity, interest should be in the proportion that was "very satisfied", referring to this as the "top-box" approach.

Data Analysis

Data entry and analyses were done using SPSS® software. Data analyses involved mainly frequencies, percentages and means. Each form was analysed for the gap score, average gap score, unweighted SERVQUAL for the respondent and average unweighted measure of service quality for

the district using Excel and SPSS®. The procedures for calculation (14) were as follows:

1. Calculate: Gap Score= Perception Score –Expectation Score
2. For each dimension, calculate average Gap scores as follows
    $$\text{Average gap score} = \frac{\sum (\text{gap scores for dimension})}{\text{Number of statements in dimension}}$$
3. Calculate unweighted measure of service quality as follows:

    $$\text{Unweighted SERVQUAL} = \frac{\sum (\text{average gap scores for dimension})}{\text{Number of dimension (in this case 5)}}$$

4. Calculate Average unweighted measure of service quality for a facility:

    $$\text{Average Unweighted Measure} = \frac{\sum (\text{unweighted SERVQUAL})}{\text{Number of clients interviewed}}$$

The means and standard deviations for the dimensions were calculated using SPSS and exported into Excel for plotting graphs showing Gap Analyses.

For "unweighted SERVPERF", the calculation was as follows:

1. Calculate sum of perception score to get total perception score for each dimension for each respondent.
2. Obtain average perception score for each dimension for each individual as follows
    $$\text{Average perception score} = \frac{\sum (\text{gap scores for each dimension})}{\text{Number of statements in dimension}}$$
3. Calculate Unweighted measure of service quality for each individual as follows:
    $$\text{Unweighted SERVPERF} = \frac{\sum (\text{average perception score })}{\text{Number of dimension (in this case 5)}}$$

4. Calculate Average unweighted measure of service quality for a facility:
    $$\text{Average Unweighted Measure} = \frac{\sum (\text{unweighted SERVPERF})}{\text{Number of clients interviewed}}$$

Results

Tables 1 and 2 present the proportions of respondents in the expectation and perception categories with regard to the various components of dimensions of quality for the whole district.

TABLE 1**: Proportions of respondents for Quality dimensions involving Tangibles, Reliability and Responsiveness (n=650) for all healthcare facilities in KEEA district, Ghana**

Dimension		Strongly agree	Agree	Some-what agree	Disagree	Strongly disagree	No response
Tangible 1	Expt %	**68.4**	28.7	2.5	0.2	-	0.2
	Perc %	**6.0**	5.2	14.0	26.8	47.5	0.5
Tangible 2	Expt %	**59.4**	36.0	3.8	0.6	-	0.6
	Perc %	**10.0**	22.8	27.8	31.4	7.5	0.5
Tangible 3	Expt %	**62.3**	36.2	1.4	-	-	0.2
	Perc %	**38.5**	38.5	16.5	4.6	1.5	0.5
Tangible 4	Expt %	**59.8**	34.8	4.3	0.6	0.3	0.2
	Perc %	**14.2**	25.4	17.7	22.5	19.4	0.9
Reliability 1	Expt %	**48.1**	42.1	7.7	0.8	1.1	0.2
	Perc %	**31.1**	40.6	17.5	6.3	3.4	1.1
Reliability 2	Expt %	**37.4**	40.3	11.8	3.2	6.9	0.3
	Perc %	**24.3**	37.8	19.7	9.1	6.5	2.6
Responsiveness 1	Expt %	**28.6**	38.8	11.2	9.1	12.0	0.3
	Perc %	**14.2**	32.8	22.6	18.8	10.9	0.8
Responsiveness 2	Expt %	**34.3**	34.6	16.5	8.8	5.7	0.2
	Perc %	**21.7**	35.5	20.5	16.9	4.6	0.8
Responsiveness 3	Expt %	**40.9**	43.5	10.2	4.0	1.1	0.3
	Perc %	**30.3**	40.6	18.3	7.8	1.8	1.1
Responsiveness 4	Expt %	**25.5**	34.8	13.2	13.7	12.0	0.8
	Perc %	**16.0**	30.5	21.2	18.2	11.5	2.6

Legend for Table 1
Expt = Expectation
Perc = Perception
Tangible 1: Availability of modern equipment
Tangible 2: Nice looking physical facilities
Tangible 3: Neat Appearance of employees
Tangible 4: Attractive and well-positioned posters/
notices/directions

Reliability 1: Staff show sincere interest in solving patient problems
Reliability 2: Patients can rely on staff.

Responsiveness 1: Patients told exactly when services will be performed
Responsiveness 2: Prompt service given to patients by staff
Responsiveness 3: Staff willing to help patients
Responsiveness 4: Staff are never too busy to respond to patients request

TABLE 2: **Proportions of respondents for Quality dimensions involving Assurance and Empathy (n=650) for all healthcare facilities in KEEA district, Ghana**

Dimension		Strongly agree	Agree	Some-what agree	Disa-gree	Strongly disagree	No re-sponse
Assurance 1	Expt %	**42.0**	43.7	10.8	1.7	1.4	0.5
	Perc %	**32.9**	36.5	22.6	5.5	1.5	0.9
Assurance 2	Expt %	**41.7**	42.9	9.8	2.6	2.3	0.6
	Perc %	**28.0**	42.8	20.5	5.5	2.3	0.9
Assurance 3	Expt %	**40.5**	37.4	14.0	5.5	20.	0.6
	Perc %	**32.9**	34.8	23.8	5.8	2.2	0.5
Assurance 4	Expt %	**49.4**	40.5	6.3	2.3	1.1	0.5
	Perc %	**33.8**	41.7	16.3	6.0	1.5	0.6
Empathy 1	Expt %	**41.5**	44.8	10.2	2.5	0.8	0.3
	Perc %	**32.5**	40.3	19.2	6.3	1.2	0.5
Empathy 2	Expt %	**39.2**	44.2	10.3	4.6	1.4	0.3
	Perc %	**30.0**	38.0	21.2	8.9	1.4	0.5
Empathy 3	Expt %	**40.2**	43.5	9.8	3.7	2.3	0.5
	Perc %	**33.4**	36.0	21.2	5.7	3.2	0.5
Empathy 4	Expt %	**40.9**	44.9	8.9	2.8	2.0	0.5
	Perc %	**32.9**	38.2	19.4	6.9	2.0	0.6

Legend for Table 2
Expt = Expectation
Perc = Perception

Assurance 1: Staff behaviour gives patients confidence
Assurance 2: Patients feel safe in facility
Assurance 3: Staff are consistently courteous to patients
Assurance 4: Staff have knowledge to answer patients' questions.

Empathy 1: Individual attention is given to patients by facility
Empathy 2: Staff give clients personal attention

Empathy 3: Facility has patients' best interests at heart
Empathy 4: Staff understand specific needs of the clients.

The presentation of the results also allows for comparison between the proportions for "Expectation" and "Perception" under each dimension. With some few exceptions, generally the proportions under "Expectation" for most dimensions were higher than the proportions under "Perception", indicating the existence of gaps. Table 3 presents the gap scores and the unweighted ServQual values for the dimensions for the 5 health facilities, the district as a whole and the clients (external and internal).

TABLE 3: **Gap Score and the unweighted ServQual values for facilities and clients in KEEA District, Ghana**

	Elmina	Agona	Kissi	Komenda	Ankaful	District	Patients	Health workers
Tangibles	-1.6	-1.2	-1.6	-2.2	-1.6	-1.6	-1.6	-1.6
Reliability	-0.7	-0.1	0.0	-0.6	-0.9	-0.4	-0.4	-0.4
Responsiveness	-0.8	0.4	0.0	-0.4	-0.7	-0.4	-0.4	-0.3
Assurance	-0.7	0.1	0.2	-0.4	-0.7	-0.3	-0.3	-0.3
Empathy	-0.6	0.1	0.3	-0.5	-0.7	-0.3	-0.3	-0.3
Av. Unwt. ServQual	-0.9	-0.1	-0.2	-0.8	-0.8	-0.6	-0.6	-0.6

Figures 1 to 4 provide graphic presentations of the gap analyses for some selected components of the various dimensions of quality according to where the respondent was interviewed (location of facility) and type of respondent (whether the respondent was a patient, medical professional or allied health worker).

TABLE 4: **"Unweighted ServPerf" scores for the various facilities and for patients and health workers in KEEA District, Ghana**

	Tangible	Reliability	Responsiveness	Assurance	Empathy	Mean score
Location						
Elmina	2.8	3.4	3.3	3.5	3.5	**3.3**
Agona	3.6	4.5	3.6	4.5	4.6	**4.2**
Kissi	2.8	4.0	3.5	4.3	4.3	**3.8**
Komenda	2.7	3.0	3.2	3.5	3.5	**3.2**
Ankaful	3.0	3.6	3.6	3.6	3.6	**3.5**
Mean Score	**3.0**	**3.7**	**3.4**	**3.9**	**3.9**	**-**
Respondent						
Patients	2.9	3.7	3.4	3.9	3.2	**3.6**
Healthworkers	3.1	4.0	3.9	4.2	4.2	**3.9**
Mean Score	**3.0**	**3.9**	**3.7**	**4.1**	**3.7**	**-**
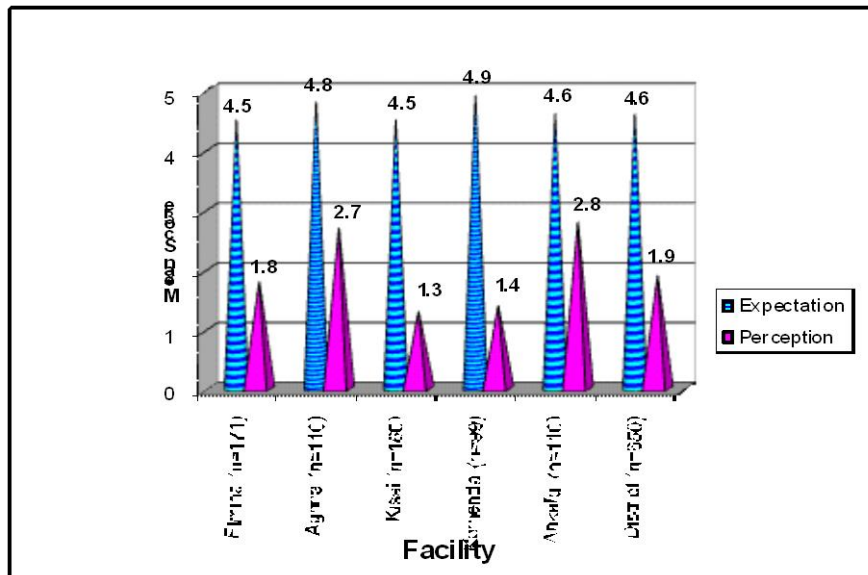
Figure 1: Graph of Gap analysis for Tangible 1 on the basis of facility where respondents were interviewed in KEEA District, Ghana.
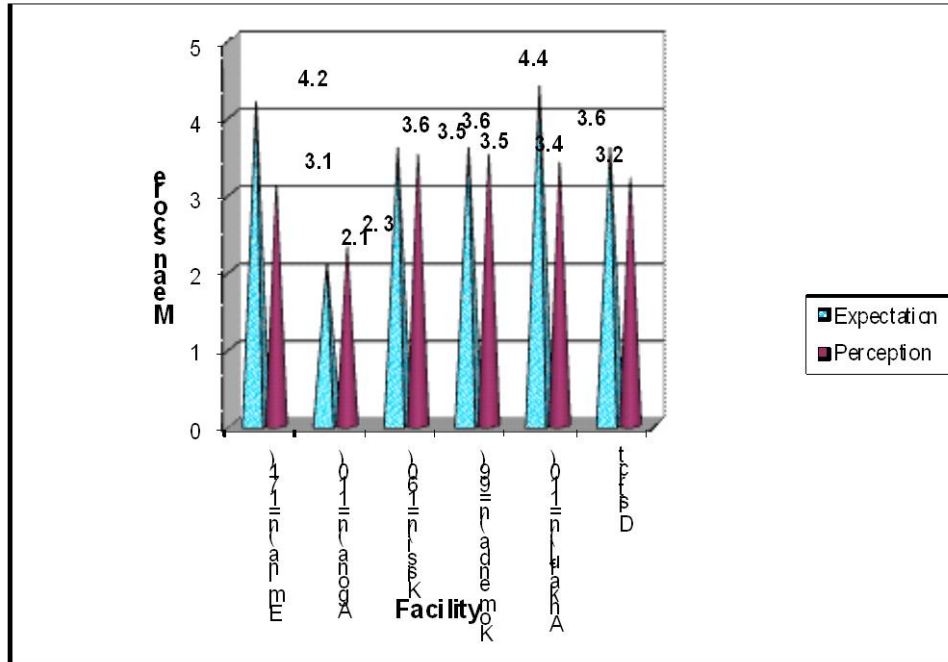
Figure 2: Graph of Gap analysis for Responsiveness 1 on the basis of facility where respondents were interviewed in KEEA District, Ghana.
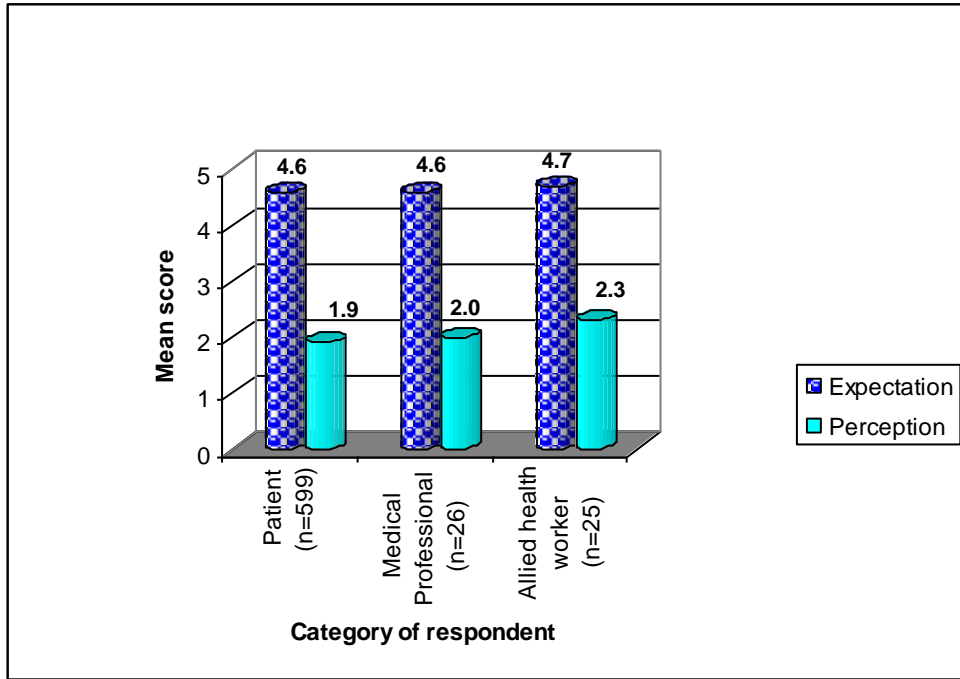
Figure 3: Graph of Gap analysis for Tangible 1 according to category of respondents in KEEA
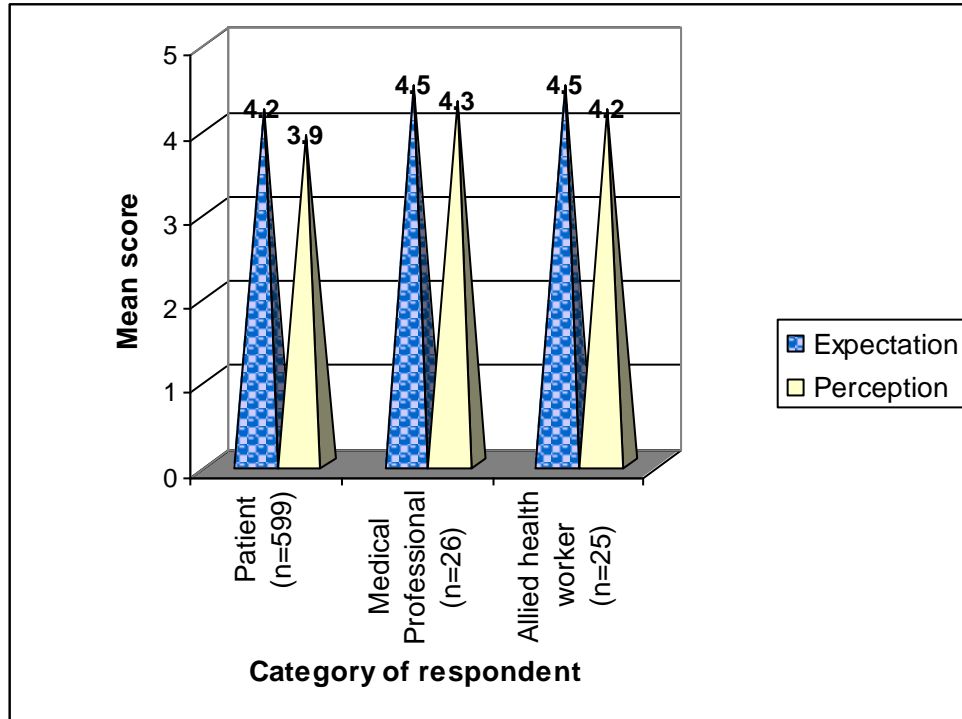District, Ghana.

Figure 4. Graph of Gap analysis for Assurance 1 according to category of respondent in KEEA

District, Ghana.

Figures 1 and 3 are graphs of gap analysis for tangible 1, as examples of where the gaps between expectation and perception scores for the facility (Figure 1) and for the type of respondents (Figure 2) were wide. Figures 2 and 4 are graphs of gap analyses for Responsiveness 1 and Assurance 1 as examples of where the gaps between expectation and perception scores for the facility (Figure 3) and for the type of respondents (Figure 4) were small. Generally, the widest gaps between the perceived and expected scores were seen in the various components for Tangibles as a quality dimension.

"ServPerf" is a modification of "ServQual" used when expectations are usually very high. Table 4 presents the scores and "unweighted ServPerf" for the 5 facilities and for patients and health workers. Here the highest possible score was 5 (equivalent to strongly agree). The score for the Tangibles was the lowest (average of 3 interpreted as "somewhat agree"), indicating that most of the respondents somewhat agreed that the appearance of physical facilities, equipment and personnel (Tangibles) was of acceptable quality in the various facilities. The scores for Assurance and Empathy were on average the highest (about 4). The mean score for the facilities ranged from 3.2 (Komenda) to 4.2 (Agona). The mean scores for the patients and health workers differed (3.6 vrs 3.9).

Discussion

Patient satisfaction has been defined as the patient's evaluation of the health care services delivered (Cleary and McNeil, 1988). Another definition is that it is a patient's evaluation of (aspects of) a health care service based on the fulfilment of his expectations (Verbeek et al., 2001). The outcome of a patient's evaluation of services is based on 3 factors: a positive or negative experience, the perceived function of the service and the culpability of the service for their experience, and explains why most patients in general rate health services as satisfying (Williams et al., 1998). In the view of such patients, there tends to be many mitigating circumstances that lead to a positive evaluation despite negative experiences. It has been observed that in cultures where open criticism is not acceptable, satisfaction ratings are even more positive (Bernhart et al., 1999).

There are reports that patient satisfaction is not just an indicator of health care but is a desired outcome of care, and therefore an essential part of its quality (Vuori, 1991). It is expected that client evaluation would lead to improved quality of care as patient satisfaction is assessed to find out which services need improvement according to the patient's preference (Verbeek et al., 2001). There is no "gold standard" measure for patient satisfaction (Fitzpatrick, 1991). The assessment of client satisfaction augments, rather than replaces other approaches to assess quality of care (Smith and Engelbrecht, 2001). There is the need to be cautious when comparing study results, because studies differ in the instruments used to measure satisfaction, the services that were evaluated, the type of participants in the study, and the time when participants were asked for their measure of satisfaction (Verbeek et al., 2001).

The expectations of clients, when known, could serve as the starting point for improvement. It is recommended that rather than focusing on the entire facility or hospital, efforts could be focused on specific changes in certain departments identified in satisfaction surveys, resulting in delivery of higher quality service and saving money (SPSS, 1996).

The dimensions and the questions that relate to the respective dimensions of quality of service used in this study cover all factors of health delivery that have been identified as being important to patients (Smith and Engelbrecht, 2001). Therefore, if a health facility performs well on all these, it is most certainly likely to satisfy its patients. The results of the study have important implications for making services better responsive to the expectations of clients and improving satisfaction. Customers become dissatisfied if gaps or discrepancies exist between their expectations on the one hand and service provider's perceptions of the quality of their service on the other, and an analysis of these gaps provide leads for quality improvement (Parasuraman et al., 1985).

The size of the gap in "ServQual" gives an indication of where improvements should be made. Tangibles tend to have the lowest gap score because physical features of a service are easier to control (Chase et al., 2001).

Our findings from the study were contrary as tangibles consistently had wider gaps than the other dimensions. The components of tangibles were made up of expectations of an ideal facility and perceptions of health facilities in the district with regard to availability of modern equipment, the neatness of physical facilities, the appearance of staff and the attractiveness of posters or notices. These, apparently, did not meet the satisfaction of the clients.

Apart from neat appearance of staff, the gaps between the perceptions and expectations in the others (for tangibles) were very wide, indicating that these needed to be addressed as a matter of urgency. If the gap is negative when the score for expectation is subtracted from that of perception, this is interpreted to mean unsatisfactory or unacceptable quality. Similarly, if the proportion in the perception category was lower than that in the expectation category for a dimension so that the difference was negative when the expectation was subtracted from the perception, this was indicative of unsatisfactory or unacceptable quality. Using the strongly agree category (top-box approach), the differences in proportions were negative for a number of the components of the dimensions used.

A number of the components of the dimensions that were found to have negative gaps (for the proportions in the strongly agree category) could be used as starting points in improving quality of health care delivery by putting in measures that will ensure that the proportions in the top-box for perceptions exceed those for expectations. For example, to improve responsiveness staff should be trained to tell patients when services would be performed, staff should be encouraged to offer prompt services, be willing to help always, and should be educated not to be too busy to respond to patient's request. These all relate to training in customer relations, which are not part of any curricula in the training of medical and allied health professionals and will therefore have to be introduced as part of in-service training, if quality of health care is to be improved in health facilities in the district.

The mean scores for tangibles on the basis of location and type of respondents were consistently lower than those for the other dimensions (Table 4), lending support to the perceived lower client

satisfaction with tangibles, that is the appearance of physical facilities, equipment and personnel, reported earlier.

The SERVPERF scores showed that generally patients scored the various dimensions lower than the health workers. In effect, the health workers tended to perceive quality to be higher compared to the patients' perceptions. This provides evidence that perceptions of quality may differ between patients and health workers and will need to be considered whenever policy action is to be taken.

In conclusion, the use of the ServQual instrument made it possible to delineate or isolate certain components of dimensions of quality that could be specifically targeted initially for improvement. In general, all the components for the dimension "Tangibles" showed wide gaps in scores or proportions, indicating that these need to be improved. For each facility, the specific areas with gaps could be identified and targeted for improvement rather than trying to improve all areas simultaneously. This is critical in a resource-poor environment as it helps in prioritisation and efficient use of resources.

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