



Research Paper

Determinants of Service Quality in Primary Healthcare Facilities in Mpulungu District, Northern Province Zambia

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ABSTRACT

Objectives This study aimed at identifying factors that affect Service quality in primary healthcare facilities in Mpulungu District, Northern Province

Methodology: A cross sectional study design was used; both primary and secondary sources of data were used. The selected sample size for the study was 100 and a non probability sampling frame was used to select study participants. Data analysis was done using descriptive statistics, factor analysis and correlation analysis.

Results and analysis: The results of the analysis indicated that the Cronbach's alpha for the 24 perception statements was 0.635 which was in an acceptable range. From a sample of 100 respondents 37% were males and 63% were females and the most prevalent in the sample. Most of the respondents were in the range 30-40 years representing 45% of the total sample, 39% of the total sample had reached secondary level of education and these were the most prevalent, followed by those who had reached primary level at 33%.

On factor analysis, upon running factor analysis, Eigen values greater than 1 and salient loadings greater than 0.5, a total number of 8 dimensions which constituted service quality emerged. Total cumulative variance of 68.8% of the variance is accounted for by the first 8 factors. From this analysis it was indicated that in contrast to Parasuraman (1995) who postulated that service quality is determined by the five dimensions in the SERVQUAL model, service quality in Mpulungu District is determined by eight new factors (dimensions), namely, Tangibles, Empathy, responsiveness, Timeliness, procedure handling, Attentiveness, Waiting time and Privacy. Majority of the respondents were satisfied with the services rendered to them in the primary health care facilities with 63% being satisfied a 27% being dissatisfied.

To determine the factors that positively and significantly correlated with satisfaction, Pearson correlation analysis was performed. The results indicated that four statements attributed to nurses responding immediately when patients needed attention, Health care workers showing willingness to solve the patient's problems, reduced waiting time for daily services and provision of privacy during treatment.

KEY WORDS: Service quality, SERVQUAL model, Perceptions, Expectations, Primary Health care, Satisfaction.

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I. BACKGROUND OF THE STUDY

Quality in healthcare settings is a matter of great concern considering the sensitivity of healthcare environments. Mpulungu District is a district located in the Northern Zambia. The district has 12 health facilities and amongst them is a District Hospital. Managers in these facilities are tasked to ensure that there is quality provision of health services in the community they are serving. This study therefore looked at what factors defined service quality in Mpulungu District.

PROBLEM STATEMENT

According to Parasuraman et al. (1985) the word service quality is a measure of the degree of discrepancy between consumer's perceptions and expectations and dissatisfaction occurs when expectations of the consumers are greater than actual performance of service delivering organizations and perceived service quality is less than the satisfactory level, Gronroos (1984) also shows that service quality in healthcare can be broken down into two quality dimensions namely technical quality and functional quality. Technical quality is defined primarily on the basis of the technical accuracy of the medical diagnoses and procedures or the conformance to professional specifications where as functional quality refers to the manner in which the health care service is delivered to the patients.

In Iran, a study by Asghar Zarei et al. (2012) was conducted in which the SERVQUAL model was applied based on the five service quality dimensions, the findings of the study showed that patients in private hospitals of Iran defined service quality in three dimensions, Tangibles, reliability/responsiveness and empathy and other studies by Parasuraman defined service quality in five different dimensions. It is against this background that we decided to carry out a research to determine factors that defined service quality in Mpulungu District.

Main objective

The study aimed at determining service quality dimensions in primary healthcare facilities in Mpulungu District in Zambia using the SERVQUAL approach.

II. LITERATURE REVIEW

This section of this article gives an account of studies that have been published on service quality focusing on perceptions, expectations and satisfaction. This chapter begins with an overview of the service quality, and then looks at service quality and satisfaction, perceptions and expectations. The SERVQUAL questionnaire was reviewed and a conceptual framework was borrowed from previous scholars and used in this study.

Service quality

According to Parasuraman et al. (1985) the word service quality is a measure of the degree of discrepancy between consumer's perceptions and expectations and dissatisfaction occurs when expectations of the consumers are greater than actual performance of service delivering organizations and perceived service quality is less than the satisfactory level, (G.N.Akhade et al 2016) . Another researcher, Gronroos (1984) defined service quality as a function of expectations, outcome and image. According to Reinartz, (2004), quality is a relative concept, in a service industry, like healthcare, experience of the patient plays a crucial role in rating and assessment of quality of services primary healthcare facilities. Research by (Dean and Lang, 2008), Gronroos (1984) also shows that service quality in healthcare can be broken down into two quality dimensions namely technical quality and functional quality. Technical quality is defined primarily on the basis of the technical accuracy of the medical diagnoses and procedures or the conformance to professional specifications where as functional quality refers to the manner in which the health care service is delivered to the patients (Kenneth N. Wanjau et al 2012).

Dimensions of Service quality

According to Bowers et al, (1994) the elements that determine patients' service quality perception are indirect criteria such as doctor-patient relationship and/or hospital setting, which remain more outside the scope of the technical dimension.

Literature reviewed in Kayral (2014) availed to the researcher that there was a study by Carman (2000) who examined the importance of the features patients use in evaluating quality in hospital services; to him service quality is an attitude and it comprises of two features, functional and technical.

Another study that focussed on measuring the difference between certain gaps in service quality was conducted by (Lin et al 2004). The study aimed at helping service providers in healthcare institutions to understand and improve service quality.

In Iran, a study by Asghar Zarei et al. (2012) was conducted in which the SERVQUAL model was applied based on the five service quality dimensions, the findings of the study showed that patients in private hospitals of Iran defined service quality in three dimensions: Tangibles, reliability/responsiveness and empathy and the women's expectations score was much higher as compared to the men's. Research has also indicated that the quality of services in health care facilities can be improved by focusing on modernization of equipment, timeliness of care delivery, accuracy of performance and enhancing the interpersonal relationships, communication skills of physicians, nurses and other personnel of the hospital, (G.N.Akhade et al 2016)

Another study quoted by Kayral (2014), in an attempt to identify the determinants of service quality in primary health care facilities in Afghanistan, Peter M. Hansen et al.(2008) composed a scale of quality of care using four measures namely i)patients histories, ii)Physical examinations iii) communication and iv) time spent with patients. The results of the study indicated that there was no difference in quality between the services provided by males and that of females; however quality was higher when both the provider and the patients were female, remoteness, facility type, provision of timely salary payments and in service training was found not to be associated with quality. The findings of the study held that lack of female provider resulted in adverse effect on quality of care in female patients.

Another study similar to this research topic was conducted by Mohamed Mustafa (2005) in Egypt; he attempted to investigate how patients perceived service quality in Egypt's public and private hospitals. In this study a SERVQUAL model was used and a sample of 332 patients was taken as a study sample. The results of the study indicated that private hospitals were preferred for Public Hospitals. The result does not support the five-component original SERVQUAL statements. The result focused on a three factor solution for the SERVQUAL instrument. It was observed that the private hospitals were preferred to public hospital. Another study reviewed by Kayral (2014) done by Cornelia and Simona (2009) aimed at investigating the differences in patients perceptions of healthcare service quality on a sample of ten Romanian health facilities, three variables were considered and these were, perceived competence of physicians, the perceived competences of nurses, and the empathy of the hospital personnel. A sample of 50 patients were selected from 10 clinics and used in the study, the results indicated that perceptions of the quality of their services was divided between perceived competence of the medical doctors ,perceived competence of the nursing staff , and overall empathy of the medical staff of the considered health facility.

A Similar study on perceptions of service quality was carried out by Baltussen et al. (2002). Their objective was to measure the perceived quality of health care services in Burkina Faso. The study was carried out in order to identify the strengths and weaknesses of the quality of government primary health care services, as perceived by users. The results indicated that the study participants were relatively positive on items related to health personnel practices and conduct and to health care delivery but less on other items related to adequacy of resources and services and to financial and physical accessibility, (G.N.Akhade et al 2016). It was therefore concluded that governments should priorities in its policies, drug availability and financial accessibility to health services.

III. RESEARCH METHODOLOGY

This section gives details on the study area, sampling techniques, data collection methods and data analysis techniques that were used in the study.

Study area

The study was conducted in Mpulungu District which has a current population of 132,615. The site accommodates 12 health centres namely, kasakalawe, kaizya, isoko, vyamba, chitimbwa, Chinakila, kopeka, iyendwe, chibote, kalongola Mpulungu urban and Mpulungu District Hospital.

Research design

In terms of contact with the study population, in this research the researcher used a cross sectional study design as it sites a better design in trying to find out the prevalence of a situation, problem or a phenomenon by taking a cross- section of the population.

Sampling design and sample size

In order to identify the research participants in this research, the researcher came up with a sampling design. A sampling design is simply a way research participants will be selected. In this research the researcher used convenient sampling methods. The age limit for the respondents was 15+ years. The sample size was identified to be 100 respondents. Sample size was calculated at 95% confidence level, margin of error 5% and distribution of 50%.

Data collection methods.

SERVQUAL questionnaire

According to Parasuraman et al. (1985) service quality is a function of the differences between expectation and performance along the quality dimensions. In an attempt to measure service quality, Parasuraman et al (1985) proposed a service quality measurement scale called the SERVQUAL. The model was used to measure the customer's perception of service quality. Ten dimensions of service quality were proposed in 1985 and these included responsiveness, reliability, assurance, tangibles, communication, competence, credibility, courtesy and security. The SERVQUAL model was revised by replacing should word by would and was further reduced to five dimensions by 1994 and thereby reducing the total number of questions to 21. The SERVQUAL scale contains total 44 service attributes out of which 22 are designed to measure the expectation

of the customer and 22 items are designed to measure the perceptions of customers. Using the SERVQUAL model, service quality can be measured by subtracting the expected score from perceived score.

The SERVQUAL questionnaire according to Parasuraman et al (1985) measures service quality in terms of underlying elements/ dimensions. The five dimensions of service quality include Tangibles, reliability, responsiveness, assurance and empathy. Parasuraman et al (1991) defines these five dimensions in the following terms, Tangibles refer to the appearance of the physical amenities such as available equipment, staff and cleanliness, whereas reliability refers to the ability to perform promised services accurately and dependably. Responsiveness is the willingness of staff to help patients and provide prompt service. Parasuraman defined assurance as the ability to convey trust and confidence through courteous and knowledgeable behaviour, the elements in this dimension include competence, respect, communication and good interpersonal relationships, Empathy is defined as the provision of care and the ability to show compassion, being approachable and sensitive are key elements in this dimension.

The SERVQUAL model has been used in a number of studies, in a study conducted by Sohail S.M. (2003) who attempted to measure the service quality of private hospitals in Malaysia using modified version of SERVQUAL scale it was found that people's expectation of health and medical services were also likely to change with time. The study was also based on the five service quality dimension, Tangibles, Reliability, Empathy, Reliability and Access.

The data that was required within the scope of this research was obtained through questionnaires administered to patients visiting the outpatient departments and those admitted in the inpatient wards. The principle strength of this suggested method of Data collection is that the results would better represent the population that was been investigated than does information from key informants or focus groups (Berkes et al, 2001). However, it is difficult to get in-depth qualitative information that can be obtained e.g. through key informant interviews.

In this study the researcher used the SERVQUAL model to investigate perceptions and identify the gaps between expected and perceived service quality. The study used a questionnaire which had 48 SERVQUAL statements, of which 24 were statements on perceptions and 24 were statements on expectations. Four questions were on demographics and two on satisfaction. (See appendix 1). The aim of the study was to get as much detail as possible about the subject matter from individual clients. Respondents who were able to read were given the questionnaire to fill out themselves and those who were unable to read were assisted by the enumerators to understand the questions interpreted in the local language (Lungu and Mambwe). A five point Likert scale of 1-5 responses, ranging from strongly disagree to strongly agree was used. The 24 statements were reversed with "should"

SERVQUAL Statements

CODE	Tangibles
T1	Facility has up to date and well maintained equipment.
T2	Cleanliness and hygiene at the facility are of high standards.
T3	Patient rooms are comfortable.
T4	Nurses are well groomed.
T5	Clinicians are well groomed
	Reliability
RL1	The facility provides treatment, diagnostic tests and other services within an acceptable time period
RL2	When i have a problem, healthcare workers show willingness to solve it
RL3	Facility staff explain health conditions, diagnosis in an understandable way
RL4	Facility staff explain exactly every procedure they do to patients
RL5	Nurses monitor patients' health status on daily basis in the wards.
RL6	Clinicians monitor patient's status regularly on a daily basis in the wards.
	Responsiveness
RS1	Clinicians respond immediately when you try to get their attention
RS3	Clinicians respond immediately when you try to get their attention
RS4	Staff at the facility are helpful
RS5	Waiting time for admissions is longer than a week

RS6	Waiting time for daily services is longer than 45 minutes
	Assurance.
A1	Nurses are competent
A2	Clinicians are competent
A3	i feel confident receiving medical treatment
A4	Facility provides privacy during treatment
	Empathy
E1	Nurses at the facility are caring
E2	Staff listen to me attentively
E3	Nurses spend enough time checking and advising me
E4	Operating time of the facility is convenient

Note: E = empathy; A = assurance; RS = responsiveness; RL = reliability; T = tangibles.

IV. DATA ANALYSIS

Upon completion of data collection, questionnaires were thoroughly checked to ensure that there was completeness, after which they were coded and entered into spss under the data view. The data set was checked for inconsistencies and outliers and before analysis the data set was sent to the supervisor for checking. Reliability and factor analysis was done to obtain the reliability of the data collected and factorability of the dimensions in the data set. Descriptive statistical analysis was done on demographic data. The Pearson correlation coefficient was used to calculate the linear correlation between variables. Gap scores were obtained by subtracting expected mean scores from perceived mean scores. Values <0.05 were considered to be statistically significant, unless otherwise stated.

Reliability Analysis

To measure the internal consistency of the questionnaire and determine the trustworthiness of the data that was collected in this research, a reliability test in SPSS was conducted. According to Hair et al (2006) reliability refers to the extent to which a set of variables is consistent in what it is intended to measure. Internal consistent in this case means “if the questionnaire was to be administered at a different point in time, the responses should be similar to previous responses. The Cronbach’s alpha was used to measure the internal consistency of both the perceived and expected scales.

The results of the analysis indicated that that the Cronbach’s alpha for the 24 perceived statement was 0.635 which was in an acceptable range, whilst that for the expected items was 0.538 which was relatively weak. Therefore the scale for expected items was very unreliable. The recommended Cronbach’s alpha values should be values above 0.7.

Factor analysis

To predict if the data in the scale was likely to factor well, based on correlation and partial correlation the researcher decided to obtain Kaiser – Meyer- Olkin (KMO). This test measures the proportion of variance among variables that might have common variance. The lower the proportion, the more the data is for factor analysis. For all the variables being measured in this research there is a KMO statistic and their sum is the KMO overall statistic. KMO varies from 0 to 1.0 and KMO overall should be greater than 0.5 and is inadequate if less than 0.50. KMO tells us whether or not enough items are predicted by each factor. Therefore factor analysis was based on the 24 statements on perceptions.

V. RESULTS AND DISCUSSIONS

The majority of the respondents in the sample were females at 63% whilst males were at 37%. In terms of educational attainment 39% of the respondents had reached secondary level of education whilst only 2% were illiterate. The most prevalent age range was that between 30-40 years at 45% and only 7% were above 61 years of age

Factor analysis on Perception Scores

In this section an analysis to identify new service quality dimensions was carried out.

of the report, the researcher carried out factor analysis to identify new service quality dimensions which constituted service quality in the population under study. Expectations may not contribute to the relationship between service quality and other key measures (Andeelib 2001). A study quoted in Andeelib done by Cronin and Taylor (1992) indicated similar results and suggested that service quality can be predicted adequately by using perceptions alone. It is this reason that the researcher opted to carry out factor analysis only on perceived items.

Upon running factor analysis, Eigen values greater than 1 and salient loadings greater than 0.5 a total number of 8 dimensions which constituted service quality emerged. The loading structure was quite similar to that in the SERVQUAL dimensions proposed by Parasuraman et al (1985).

The Total Variance Explained table below shows how the variance was divided among the 24 possible factors. Note that the first 8 factors have Eigen values (a measure of explained variance) greater than 1.0 which is a common criterion for a factor to be useful. When the Eigen value is less than 1.0 the factor explains less information than a single item would have explained. As seen in the table, the first factor accounts for 18.244% of the variance were as the second, third, fourth, fifth, sixth, seventh and eighth factors account for 11%, 8.526%, 7.95%, 7.11%, 6.02%, 5.2% and 65%. Total cumulative variance of 68.8% of the variance is accounted for by the first 8 factors.

The eight new dimensions were then optimised using VARIMAX. This meant that the final factors would be at right angles with each other and easier to interpret. Orthogonal rotation makes it easier to explain or predicted different items by different underlying factors and each factor explains more than one item. Factors loadings for the rotated factors with loadings less than 0.5 were omitted. Table 4.8. Shows the rotated factor matrix output note that the analysis had sorted out the 24 statements on perception into eight overlapping groups of items. The items were sorted so that the items that had the highest loading from factor 1 are listed first and are sorted from the one with the highest loading and the same procedure is applied to the other remaining groups. From the matrix we were able to see that that the first dimension had five items, the second dimension had 3 items, the third item had 2 items, the fourth dimension had 2 items, the fifth dimension had 3 items, the sixth dimension had 2 items, the seventh dimension had 2 items and the last dimension had 2 items.

The first factor relates to competence of staff and cleanliness of the facility, it is composed of three statements from SERVQUAL's Tangibles dimension and two from the Reliability dimension. Factor two relates to caring staff and had two statements from the Empathy dimension and two statements from Reliability; Responsiveness was retained as the third new dimension. Factor four relates to timeliness of services and had two statements from reliability dimension in the SERVQUAL questionnaire. Factor five relates to staff explaining procedures to patients and has two statements from responsiveness and one from the reliability dimension. Factor six relates to being attentive. This new dimension has two factors from empathy dimension. Factor seven relates to waiting time and had two factors from the Assurance dimension. Factor 8 relates to privacy, it has two statements, one from empathy and one from the tangible dimension.

From this analysis it has been indicated that in contrast to Parasuraman (1995) who postulated that service quality is determined by the five dimensions in the SERVQUAL model, service quality in Mpulungu District is determined by eight new factors (dimensions), namely, Tangibles, Empathy, Responsiveness, Timeliness, procedure handling, Attentiveness, Waiting time and Privacy.

VI. CONCLUSION AND RECOMMENDATIONS

Data analysis was done using spss, values < 0.05 were considered to be statistically significant. Reliability and factor analysis were done to measure internal inconsistencies in the data set.

The results of the analysis indicated that that the Cronbach's alpha for the 24 perceived statement was 0.635 which was in an acceptable range, whilst that for the expected items was 0.538 which was relatively weak. The KMO statistics for the perception ratings was 0.621, (Bartlett's Test of Sphericity = 890.964. $p < 0.05$), which was a good value.

The following were the results of the analysis. From the 100 respondents sampled 37% males and 63% females being the most prevalent in the sample. The most prevalent age range in our sample was the range between 30-40 years representing 45% of the total sample, 39% of the total sample had reached secondary level of education and these were the most prevalent, followed by those who had reached primary level at 33%.

On factor analysis, upon running factor analysis, Eigen values greater than 1 and salient loadings greater than 0.5 a total number of 8 dimensions which constituted service quality emerged. Total cumulative variance of 68.8% of the variance is accounted for by the first 8 factors. From this analysis it was indicated that in contrast to Parasuraman (1995) who postulated that service quality is determined by the five dimensions in the SERVQUAL model, service quality in Mpulungu district is determined by eight new factors (dimensions),

namely, Tangibles, Empathy, Responsiveness, Timeliness, procedure handling, Attentiveness, Waiting time and Privacy.

Majority of the respondents were satisfied with the services rendered to them in the primary health care facilities with 63% being satisfied a 27% being dissatisfied.

To determine the factors that positively and significantly correlated with satisfaction, Pearson correlation analysis was performed. The results indicated that four statements attributed to nurses responding immediately when patients tended to get their attention, Health care workers showing willingness to solve the patient's problems, Reduced waiting time for daily services and provision of privacy during treatment were positively and significantly correlated with satisfaction at 5% and 1% significance levels.

5.4. Conclusion.

The literature review of this study introduced various important elements within the field of perceived service quality in health care. The findings from the empirical part of this study have helped to highlight the important aspects of service quality that is considered as important by patients. This study has concluded that, as much as patients are satisfied with the services been provided, gaps still exists. Hopefully the findings of the study will serve as a motivation and a guideline for management at facility, district, provincial and national level to look further into studies of perceptions of service quality.

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