Research Article

Assessing Servqual in Primary Health Care Centres (PHC): With Special Reference to the City of Coimbatore

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ABSTRACT

The aim of this paper is to present a framework that can be used to identify the expectations of the general public with regard to Primary Health Care (PHC) services, taking into consideration the SERVQUAL dimensions. In addition, this research paper suggests new directions for further developmental actions by the Government to improvise the service and to make the general public comfortable while availing the services and derive satisfaction. The frame work is developed based on past theories and various reviews on PHC and SERVQUAL. The data are gathered through a survey of a sample of 80 respondents, who avail the services of PHC in the city of Coimbatore, Tamil Nadu. The service expectations and related factors/dimensions have been studied here considering the SERVQUAL Dimension. To test reliability of the questionnaire Cronbach's Alpha test was conducted and the score was .77. The findings were largely consistent with three important factors. Apart from the main analysis, the overall analysis reveals that general public have been pushed to seek medical treatments in private concerns as they are good in Customer Relationship Management and possess hygienic ambiance which is never seen in a PHC. The Government has to take appropriate steps to improvise upon technology and provide high end medical equipments in order to compete with the private players. The general public must be encouraged to make use of the services of PHCs and the doctors must be motivated to have a friendly approach towards the patients and also maintain a conducive environment without any discrimination for the service seekers. SERVQUAL can be improved by giving considerable attention to the above factors. The results of this study in measuring the SERVQUAL in PHC is an original research work done by the researchers and the results of this study will contribute towards the development of PHCs if implemented.

Keywords: SERVQUAL, Primary Health Care, Patient satisfaction, CRM, Technology usage

INTRODUCTION

The potential of **SERVQUAL** is to determine the relative importance of five dimensions in influencing customers' overall service perceptions. **SERVQUAL** is also a concise multiple item scale with good reliability and validity that can be used in all fields which provide service to customers. With regard to the field of health care, quality of service is the prime base and an important issue because service with good quality forms an integral part both of the country's health system of which it is the nucleus and of the overall social and economic development of the community. Primary care is commonly considered to be a client's first point of entry into the health system if some sort of active assistance is sought. Drawn from the biomedical model, primary care is practised widely in nursing and allied health, but general practice is the heart of the primary care sector. The essence of health care to the local government is to make the management of PHC services more effective and closer to the grassroots. However, in view of the level of health awareness, one begins to question the extent to which health care has been taken to the doorstep of the rural people.

Research Justification

SERVQUAL is a very standardized and reliable instrument which identifies five dimensions of service quality. Service quality has become an important research topic in view of its significant relationship to factors such as cost, profitability, customer satisfaction, customer retention and service guarantee. With regard to PHC, though it is not a new study, this study would contribute for development of better PHC service concentrating on service quality. The main theme of this paper is to determine the level of service quality provided to patients who undergo medical treatment in PHC in the city of Coimbatore. This city is taken for the research as it is now a smart city with mixed standards of living and considered as a medical tourism hub of India. This research would help the Coimbatorians to be bestowed with better Primary Health Care services.

Research Objective

The aim of this paper is to examine and measure **SERVQUAL** of the Public Primary Health Care centres in the city of Coimbatore and to offer suggestions based on the research study results.

Research Methodology

RESEARCH METHODOLOGY	
Research Type	Descriptive research
Sample Size	80
Target Respondents	Patients of PHC from 28 PHCs
Area of Research	Coimbatore City, Tamil Nadu, India
Type of Sampling	Simple Random Sampling
Tools Used in this research	Factor Analysis, SEM, Fuzzy Cognitive Maps
Objectives of the Research	Identify loop holes in order to improve SERVQUAL in PHCs
Limitations of the study	Restricted to Government PHC and to the city of Coimbatore
Research Gap	Research can make a comparative statement between public and private players and concentrate in the area of Technological up gradation in PHC

Primary Health Care in Coimbatore - PHCs (Coimbatore South and Coimbatore North)

Coimbatore has a large number of hospitals devoted to providing free medical aid. The government run hospitals and Primary Health Centres offer free medical and surgical aid to the poor. Social organizations often partner with the government run hospitals to bring in latest technology and equipment in order to provide quality care.

Table 1: PHCs in the city of Coimbatore, Tamil Nadu, India

BLOCKS	PHCs in COIMBATORE AREA
Karamadai	Karamadai
	Sirumugai
	C. Kallipatty
	Irumborai
	Seeliyur
S.s.kulam	S.s.kulam
	Vellakinar
Perur	S.k.muthur
	Podanur

Madukkarai	Arisipalayam
	T.m. Palayam
	Madukkarai
	Myleripalayam
Kinathukadavu	Nallattipalayam
	Sokkanur
	Kinathukadavu
Pollachi north	Negamam
	Ramapatnam
	Z. Puravipalayam
Pollachi south	Kolarpatty
	Kanjampatty
	Z.uthukuli
Anamalai	Periapodu
	Sethumadai
	Anamalai
	Aliarnagar
	Topslip
	Pethanaickanur
	Kaliyapuram
Valparai	Valparai
	Sholaiarnagar
	Mudisnagar
Thondamuthur	Pooluvapatty
	Kaliveerampalayam
	Karadimadai
Periyanaickenpalayam	Mathampalayam
	Thudiyalur
	Dhaliyur
	Veerapandi

Review of Literature

To date, several authors have carried out literature reviews in the context of primary health care. For instance, Amado & Dyson (2008) applied a conceptual framework for formative evaluation to review the methods and measures that have been used to compare primary health care providers. Kringos (2010a, 2010b) classified performance indicators in primary care into categories at the level of structure, process and outcome. Hollingsworth (1999) and Hollingsworth (2003, 2008) presented a review of non-parametric and parametric applications in health care, including primary care, focusing solely on efficiency measurement.

The research literature on service quality has thrown numerous models by different researchers across the world. Lehtimere and Jukka (1985) present a holistic view to measure, monitor and operational customer perceptions of service quality in health care organisations. John (1989) identified the dimensions of health care service quality: these are the caring dimension, the access dimension and the physical environment. Babakus and Glynn (1992) evaluated SERVQUAL for its potential usefulness in a hospital service environment. Sharma and Chahal (1999) identified the need of evaluating the service quality of health care service. Bowers (1994) studied the five common Factor Analysis.

attributes of quality from SERVQUAL model. Caring and communication were found to be significant. Three of the generic SERVQUAL dimensions were found to be related significantly to patient satisfaction: empathy, responsiveness and reliability. The SERVQUAL model has been characterized by its creators as a simple and comprehensive multi-dimensional measuring scale that has good reliability and validity in its results. The authors argue that it can be applied to a large and diverse number of services and commercial enterprises. At the same time this model has been criticized by some academics and practitioners (Cronin and Taylor, 1992; Babakus and Boller, 1992; Brown, 1993; Rust and Oliver, 1994; Dabholkar, Thorpe and Rentz, 1996). In particular, when the SERVQUAL model is used in various business sectors such as hospitals, fast-food companies and cleaners, its results showed that there may be a span of one to eight dimensions of service, depending on the type of business or industry considered.

This indicates that the **SERVQUAL** model may not always be applicable to companies of different sectors in the same manner. Nevertheless, one could argue that as expectations and perceptions of customers are very important to assess the quality of services, the **SERVQUAL** model can be used to measure how customers perceive the quality of those services.

Table 2: Researches on Service Quality

S No	Researchers	YEAR	Research variables & area of research
1	**Dr. Ranajit Chakraborty and Anirban Majumdar**	2011	Consumer satisfaction in health care sector
2	**Chingang Nde Daniel, Lukong Paul Berinyuy and Sofia**	2010	SERVQUAL, Service quality, customer satisfaction, grocery stores
3	**Dr. Arash Shahin**	2009	Service, Quality, Gaps, SERVQUAL, Customer, Expectations, Perceptions

Table 3: Factor Analysis

Proximity of health care services q1	1.000	.652
Expenditure incurred during the reference period q2	1.000	.697
Services provided by health care professionals q3	1.000	.912
Ensure a clean and healthy environment q4	1.000	.921
Global technology and advanced Medicare facility q5	1.000	.776
Numbers of visits to the health care canter being encouraged q6	1.000	.627
Disseminating knowledge about the disease to the patient and the family q7	1.000	.884
Following standard and strict norms q8	1.000	.873
Effective qualified doctors and nurse q9	1.000	.690
Delivery care (the place where the women gave birth) being organised q10	1.000	.675
Zero-tolerance policy towards use of old medicine q11	1.000	.642
Baby care infrastructure q12	1.000	.578
Postnatal care (baby postnatal care within two months after delivery) q13	1.000	.685
Expanding coverage and addressing the problems in PHC q14	1.000	.768
Human resource pitfalls to be understood by the government q15	1.000	.548

Say no to unwanted medical treatment q16	1.000	.459
Maintenance of proper track records q17	1.000	.920
Never allow researchers to use PHC as lab q18	1.000	.799
Increases patient satisfaction and Loyalty by providing what they need q19	1.000	.817
Provide with copies of patient authorization records q20	1.000	.844
Wide range of medicines on time q21	1.000	.592
Strengthening health care q22	1.000	.920
Infrastructure; and improved household practices q23	1.000	.810
Community involvement to keep going good q24	1.000	.777
Algorithms and operational guidelines to be given importance q25	1.000	.843
Bring out health schemes for poor q26	1.000	.593
Extraction Method: Principal Component Analysis.		

Table 4: Hypotheses

H_o1	Following basic rules and regulations has no effect on PHC success
H_o2	Giving importance to patient and providing qualified doctors has no effect on PHC success
H_o3	Providing value added services has no effect on PHC success
H_o4	Relationship management and initial health schemes has no effect on PHC success
H_o5	Care to begin at the time of delivery has no effect on PHC success
H_o6	Adoption of new technology has no effect on PHC success
H_o7	Keeping the patients informed has no effect on PHC success
H_o8	Cutting down unwanted cost and providing a wide range of medicines has no effect on PHC success

Table 5: Showing boot strap analysis

Variables	Entire sample Estimate (beta)	Sample mean	Standard Error	t- Value	p	Result R Sq= 0.765
Component 1 - PHC success	0.901	0.909	0.025	4.084	0.000	**Significant**
Component 2 - PHC success	0.873	0.874	0.564	7.343	0.000	**Significant**
Component 3 - PHC success	0.456	0.876	0.456	3.279	0.000	**Significant**
Component 4 - PHC success	0.121	-0.234	1.234	0.000	0.234	**Insignificant**
Component 5 - PHC success	4.234	-4.34	3.234	2.070	0.000	**Significant**
Component 6 - PHC success	4.323	2.345	0.334	1.016	0.022	**Insignificant**
Component 7 - PHC success	0.112	-0.345	3.454	0.575	0.343	**Insignificant**
Component 8 - PHC success	3.493	2.354	5.434	1.041	0.322	**Insignificant**

The first and the foremost initial process in factor analysis is to determine the linear components within the data set i.e., the Eigen values by calculating the Eigen values for R-matrix. SPSS extracts factors which have values more than 1 which is acceptable. Finally the rotated component analysis is used to show the factor loadings for each scale construct. The factor matrix contains the coefficients which express the standardized variables in terms of the factors. These coefficients and the factor loadings represent the correlations between the factors and the variables. In this case, the factors have been rotated so that each factor has significant loadings (more than 0.40) ideally with not more than one variable. The method for rotation used here is the Varimax procedure. This is an orthogonal method of rotation that minimizes the number of variables with high loadings on a factor, thereby enhancing the interpretability of the factors. On the basis of table, five components were identified for the 26 variables. Based on the item loadings, these factors were respectively labelled. Based on the highest factor loadings the following names have been given:

1. The factor "**Following basic rules and regulations**" explains the 1st component combining statements q8, q4, q3, q12, q11

2. The factor "**Giving importance to patient and providing qualified doctors**" explains the 2nd component combining statements q25, q20, q18, q15

3. The factor "**Providing value added service**" explains the 3rd component combining statements q17, q22, q14

4. The factor "**Relationship management and initial health schemes**" explains the 4th component combining statements q19, q24, q26, q23

5. The factor "**Care to begin at the time of delivery**" explains the 5th component combining statements q10, q6, q2

6. The factor "**Adoption of new technology**" explains the 6th component combining statements q1, q5

7. The factor "**Keeping the patients informed**" explains the 7th component combining components q7, q9

8. The factor "**Cut down unwanted cost and provide a wide range of medicines**" explains the 8th components q21, q13, q16

Hypothesis Development

Based on the various theories and the initial analysis the researchers have framed hypothesis considering the various ideas. Based on the conceptual frame work and dimension reduction method a SEM model has been used to test the hypothesis.

Testing Hypothesis using Boot Strap Analysis

The researchers in their paper have clearly stated the application of a parametric bootstrap procedure, as described by **van de Schoot, Hoijtink, and Deković (2010).** It was applied to demonstrate that a direct test of an informative hypothesis offers more informative results compared to testing traditional null hypotheses against catch-all rivals.

Path Analysis-Boot Strap Summary & SEM
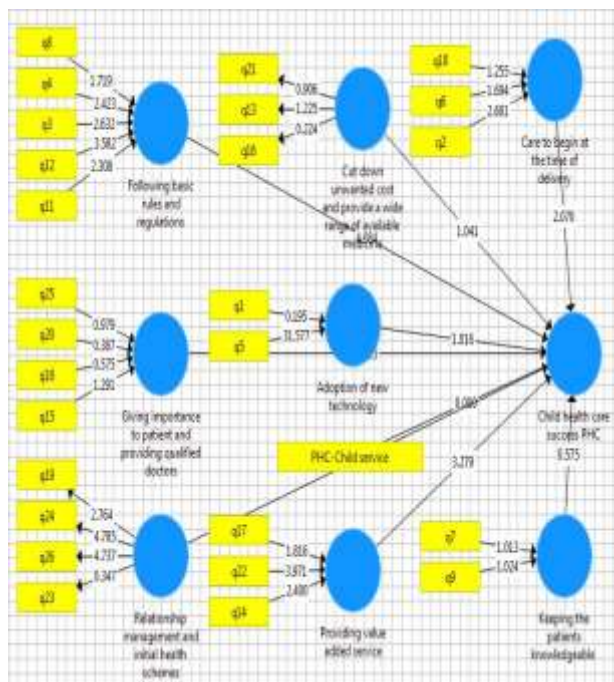
Inference for the Boot Strap Summary and Path Diagram

These hypotheses were tested using PLS PM procedure in visual PLS software and boot strap analysis and the path analysis. Here, with regard to En route, the path of the data path for the value of T, T value of **1.96** and above indicates that the path-independent variables to the dependent variable reached a significant level and its route to the solid line indicates; T value less than significant standard that route at dotted line. The variance is **76.5% (R square = 0.765)** for this model.

Table 6: AVE, Cronbach's Alpha and Composite reliability for the Structural Equation Model

Latent variable	AVE	Cronbach's alpha	Composite reliability
Component 1	0.651	0.635	0.783
Component 2	0.651	0.758	0.835
Component 3	0.785	0.870	0.939
Component 4	0.674	0.678	0.648
Component 5	0.546	0.653	0.898
Component 6	0.777	0.786	0.785
Component 7	0.579	0.767	0.789
Component 8	0.676	0.677	0.788

With regard to Reliability analysis and validity analysis, **Cronbach's α internal consistency reliability** can be adopted as the most widely used reliability indicator, where both the constructs are close to .7, which is acceptable. The **composite reliability** is higher than 0.7; (c) **Average Variance Extracted (AVE)** is higher than 0.5. Thus the overall fit of the model is accepted.

Table 7: Acceptance/Rejection of Hypotheses

S. No.	Hypothesis	Accepted	Rejected
H$_o$1	Following basic rules and regulations		**Rejected**
H$_o$2	Giving importance to patient and providing qualified doctors		**Rejected**
H$_o$3	Providing value added service		**Rejected**
H$_o$4	Relationship management and initial health schemes	**Accepted**	
H$_o$5	Care to begin at the time of delivery		**Rejected**
H$_o$6	Adoption of new technology	**Accepted**	
H$_o$7	Keeping the patients informed	**Accepted**	
H$_o$8	Cut down unwanted cost and provide a wide range of medicine	**Accepted**	

CONCLUSION

This paper examined the importance of understanding and valuing the **SERVQUAL** of Primary Health Care centres in the city of Coimbatore. The paper is relevant to general public, Government and Doctors who provide this service. The paper has analysed the view point of the general public with regard to SERVQUAL in PHC in the city of Coimbatore and determined the role of the Government in improving the SERVQUAL in PHCs. The analysis clearly reveals that a lot of changes have to be implemented by the Government to make PHC into a successful service providing option. The SERVQUAL can be improved by following the basic rules and regulations strictly and providing proper treatments to the patients. These were the most important factors which the general public look for. It is important to have qualified doctors who are kind hearted to treat the lower class people without any discrimination. In the name of medicines unwanted cost has to be cut down so that people of very low economic background are able to undergo medical treatment without any financial hazards. Relationship management and initial health schemes have to be improved a lot which may attract the community towards PHC services. Consequently, even the general public have to come to a mind set of "Demand more, you will be provided More". Thus, until and unless the general public is not going to avail these services the Government will not take necessary steps to increase service quality in PHCs. Certain key factors are obviously taken into account for the success of any health care centre, but on the other hand the major influencing factors are satisfaction, patient friendliness and scope for future visit. However, even now there is no major development in improving the service quality in PHCs. There are a lot of common loopholes which have not been removed. Well experienced doctors with a mentality to serve the public without any hesitation is very vital. The role of Government in improving the service quality in PHCs and public demand are significant which may have positive impact in determining the success of service quality in PHCs. Thus far, however it is limited in scope as these problems are in existence for a longer time span and are still being in the research platform by various researchers. To date, the nature and importance of PHCs and the quality of service being provided in them have been the major contributors for the ultimate success or failure. Enhanced standard of living and growth of private clinics and hospitals with their mobile services have negatively impacted the growth of PHCs negatively. Enabling the improvement of service quality in PHCs by the Government at par with the private players will be the correct and only way to keep the general public seek the services of PHCs and derive high satisfaction. It is a known fact that those communities which depend on PHCs do not expect amazing facilities, but a decent medical care with a friendly atmosphere.

Government interference has to be encouraged to cast in potential decisions in different lights which may be vital to make the public truly believe and accept the PHCs for their high service quality.

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