SERVICE QUALITY AND PATIENTS SATISFACTION: PRIMARY HEALTH CARE CENTERS IN RURAL KARNATAKA

Dr. Sathyanarayana[1], Prof. Veena Shenoy[2] and Prof. Sudhindra Gargesa[3]
Professor[1] and Director[3], MPBIM, Bangalore
Assistant Professor[2], ISBR B School, Bangalore

Abstract: Developing countries like India PHCs are important because 85% of all health care needs can be managed effectively at the primary care level, and that cost of care is substantially lower. Most of the people in India, especially the poor, face the problems of seeking effective health care at a cost they can afford and at a distance they can travel. Therefore, the current study entitled has been undertaken to understand the effects of individual dimensions of service quality in PHC in rural Karnataka state by developing SERVQUAL model. In order to realise the stated objectives the researchers have framed a structured questionnaire with two components such as perception and expectations. Later the researchers have validated the research instrumentby using reliability statistics.Cronbach's coefficient (α) was calculated to test the reliability and internal consistency of the responses. On performing detailed analysis, patterns from the data is further put for validation through testing of hypothesis, wherever the researchers deemed important and based on the conditions set for such test. In the next phase, service quality gaps were computed by subtracting perceptions (P) from customers' expectations (E). The study revealed the following major findings: the very important quality dimension was empathy followed by assurance, responsiveness, tangibility and reliability. It is suggested to the policy makers and NGOs should appoint the well-trained health care workers through proper financial motivation; the behaviour of para clinical team such as nurse, compounder etc. was very rude with the patients therefore, para clinical staff should be properly trained to handle patients with politeness, respect, consideration and friendliness. The PHCs should pay proper attention of any kind of complaint be it minor or major from the patients, and should be resolved immediately in order to improve the quality of services and to increase the patient satisfaction level

Keywords: SERVQUAL model, Tangibility, Empathy, Service, Primary Health Care Center, Responsiveness.

I. INTRODUCTION

Primary healthcare to all citizens is very crucial strategy that remains the backbone of healthcare service especially from the perspective rural health care. Consequently, long before the declaration of Alma Ata, India adopted a refined primary health care model based on the principle that inability to pay should not prevent people from accessing health service (Goel (2008)). Derived from the recommendations of the Health Survey and Development Committee Report of 1946, the Indian Government resolved to concentrate primary health care services on rural masses (ibid). With progress such as national planning program, launched in 1952 and the policy of one community health worker per 1,000 people in the 1970's, India had already committed to most of the Alma Ata principles when the global primary health care movement began (Litsios, (2004); CMC, (1979)). Primary health care concept was first started by the World Health Organization, with the objective to put an eye on the social causes of poor health, such as poverty and lack of accessibility (Mackey S, Hatcher D, Happell B, Cleary M (2013)). Primary Health Centers are the first tier of the Public Health System. PHCs are primary stop to treating minor cases, handling of regular delivery cases, various welfare scheme administration related to poor and underprivileged people (PHC - MIS GoK). PHC is the primary connection point between the medical officer and village community. Primary health centers were envisaged to provide an integrated remedial and obstructive health care to the rural people. Primary Health Centers are established and maintained by the state governments. At the national level, there is an increase in the number of 2,414 Primary Health Centers by 2017 as compared to that existed in 2005. Significant increase in number of PHCs in the states of Karnataka (678), Jammu & Kashmir (303), Rajasthan (366), Assam (404), and Chhattisgarh (268) and Bihar (251). Totally 25,650 PHCs were functioning in the country as on 31st March 2017 (Rural health care system in India, Rural health care system-the structure and current scenario).

Service is a kind of economic activity that is intangible, is not stored and does not result in ownership. A service is consumed at the point of sale. Services are one of the two key components of economics, the other being goods. From past years, the concern for quality of service reached a high level among various sectors.

Service quality is highly identified as a main factor while differentiating between services and building competitive advantage. However health care service has different position from others due to its highly involved risk and nature. Measuring service quality and customer satisfaction in a health care service is more important and at the same time more complex (Tanor and Antony, (2006)). Perception of patient towards service quality more influences while choosing the health care provider (Woodside et al., (1989)). Quality is an important element while choosing the hospitals (Lynch and Schuler, 1990). Hospital should strive for 'Zero defection' to achieve service excellence (Reichheld and Sasser, (1990)). Generally, patients rely on functional aspects like facilities, cleanliness, quality of food, expertise of the health care workers etc. while evaluating service quality (Bowers et al., (1994)).

However, delivering quality primary health care facilities to colossal population is always a daunting task and it is undoubtedly the case in poverty ridden rural India. The health problems related to ageing population are common due to increase in life expectancy thanks to better living standards.Apart from this, India has been witnessing rapid urbanization. Currently nearly twenty five percent of the urban population are slum dwellers deprived from primary health care access and hygienic conditions.

While the primary health care system in India is struggling to provide services to the rural needy population, there is an emerging need for addressing the above mentioned issues. This presents a huge challenges to the policy makers who frame policies to standardise the current primary healthcare system In India (Kumar R, Kaur M, Jha P, (2009)). Therefore, there is a grave need to understand the factors pertaining to service quality satisfaction of the end users that would result in implementation of specific health programs according the requirement of the rural masses, as perceived by patients and service providers (Iftikhar A, Sirajud D., (2013)). As documented by Rashmi VB (2010); Patro BK et al. (2008) & Patel N (85) that there is a poor level of patient satisfaction in rural and even in urban areas of India regarding primary healthcare services facilities rendered by the PHCs. Patients satisfaction is an important measure of the quality of healthcare and needs to be addressed in order to improve the utilization of primary healthcare services. Patients often complain of offensive and rude behavior of health care workers that discriminate against women and minorities from scheduled castes or tribes. Therefore, the current study has been undertaken to address the above said issues in PHCs in rural Karnataka.

II. LITERATURE REVIEW

In spite of the increasing importance of service quality, it remains a nonconcrete and vague construct that is very challenging to define in measurable term. (Carman, (1990); Parasuraman et al., (1985), (1988); Rathmell, (1966)). In the literature, there are many service quality models and instruments developed for measuring the quality of services rendered by the service providers. For example Barnes and Vidgen (2001) developed a model to analyze the online book trade a WebQual scale with five crucial dimensions such as assurance, reliability, tangibles, responsiveness, and empathy. Sasser et al. (1978) recommended three different characteristics such as levels of material, facilities, and personnel engaged in providing. Gronroos (1984) tried to classify the service quality into two vital components such as technical quality (what is provided) and functional quality (how the service is rendered), with corporate image quality which is mediating the impact of these two variables on overall perceived quality of the services rendered by the firm. One more scale to measure the service quality was proposed by Cronin and Taylor (1992; 1994) called SERVPERF model. This model was almost similar to SERVQUAL model, however, with a different criteria which measures service quality based on customer's overall feeling towards service rendered by the firm.

Lehtinen and Lehtinen (1982) proposed three vital components of service quality such as physical quality (tangible components), corporate image and reputation; and interactive quality, connecting interactions between service workers who engaged in delivery component and the end users. In 2002 Zeithaml et al. suggested a multiple item scale with service quality aspects covering four vital dimensions: privacy, efficiency, fulfilment and availability. One more scale the eTailQ was developed by Wolfinbarger and Gilly (2003) with four dimensions to measure the service quality. Yet one more scale was proposed by Bauer et al. (2006) called eTransQual. Which was a transaction process-based tool covering both emotional and intangible items.

The most commonly used analytical tool for measuring service quality is SERVQUAL. This model was first developed by Parasuraman et al. (1985, 1988) to measure quality in the service sector. This scale identifies the major segments of high quality services. In their SERVQUAL model Parasuraman et al. have identified ten important components of service quality. Later, the authors condensed these ten parameters into five essential service quality dimensions namely reliability, assurance, tangibles, empathy and responsiveness popularly known as RATER. SERVQUAL framework has not considered an important factor called the cultural factor. Later, many researchers have used SERVQUAL model to measure

the service quality of various service industries. For example airline sector (Ostrowski et al. (1993); David Mc. A Baker (2013)), Railways (Vanniarajan and Stephen (2008); Geetika, ShefaliNandan (2010); K. P. Balakrishnan (2012); Bikramjit Singh Hundal&Vikas Kumar (2015)), Public transportation (Eboli and Mazzulla (2007); Ridakhurshid et al. (2012); Railway booking services (Sathyanarayana et al.)); Hotel services (Sathyanarayana et al.), Airline service quality (Tamilla Curtis et al., (2012); Tiernan, Rhoades and Waguespack, (2008); Nadiri et al., (2008); Pham and Simpson, (2006); Bruning, Hu and Hao (2009)), tourism service sector (Godbey, (1997)), automobile service (Adele Bernd, (2009)), libraries (Cook et al., (2003)), insurance products (Sandhu and NeetuBala, (2011); Goswami, (2007)), health care sector (Bakar et al., (2008); Babakus and Boller, (1992); Babakus and Mangold, (1989)); Banking (Zhou et al., (2002); Bei and Chiao, (2006); Khodaparasti R.B. Gharebagh, (2015)), public service (PrabhaRamseook-Munhurrun et al., (2010)), perceptions of employees (PrabhaRamseook et al., (2010)); telecommunications services (Van Der Wal et al., (2000)), public utilities and services (Wisniewski, (2001); Brysland and Curry, (2001)); departmental stores (Finn and Lamb, 1991)), public-transport (Sánchez Pérez, 2007)), fast food (Jain and Gupta, (2004)), five star hotel services (Rodríguez, (2011); Godfrey, (2011); Sathyanarayana and Gargesa (2018)) and host of other services.

Consumer satisfaction is a fundamental determinant in maintaining long-term customer behaviour (Zeithaml et al., (1996); Brady and Robertson, (2001); Yi and La, (2004). Therefore, couple of research studies have been undertaken to measure the Customer satisfaction (Cronin & Taylor, (1992); McAlexander, Kaldenberg, & Koenig, (1994)), value and satisfaction (Cronin, Brady, &Hult, (2000)) and behavioral intention (Headley & Miller, (1993)), customer satisfaction and profits (Peyrot, et al., (1993)).

Many researchers have widely used SERVQUAL model to measure the service quality of health care services for example (Bowers, Swan, & Koehler, (1994); Lim & Tang, (2000); Chahal&Kumari, (2010); Alrubaiee, &Alkaa'ida, (2011); Pai and Chary, (2013); Nilanjana Ghosh et al., (2013); Natcha T, (2015); Untachai, 2013)). However, the number of dimensions used to measure the quality of services varies from researchers to researchers.

From the viewpoint of health care services the patient satisfaction is defined as whether a service rendered by the service provider meets patients' needs and expectations (Zeithaml&Bitner, (2000)). In healthcare setting, service satisfaction is defined as patient's perceived value and his continuous reaction to service rendered by the health care service providers (Kim, Cho, Ahn, Goh& Kim, (2008)).

In the words of Chang et al., (2013) patient's satisfaction refers the psychological state of patient involves their positive or negative feelings or attitudes towards their experience and some specific aspects in the service encounter. Similarly Pouragha and Zarei (2016) opined that service quality dimensions have significant impacts on outpatient satisfaction. Therefore, health service providers should take care of these service gaps seriously. This view was supported by Alghamdi (2014) in his empirical study. From the context of developing economy the quality of service plays a very vital role on patient satisfaction Andaleeb (2001). Similar findings were documented by Agarwal and Singh (2016) and Ramesh Neupane and ManjuDevkota (2017).

In another study by Slim Haddad et al. (1998) the determinants of service quality from the perspective of healthcare are personnel's technical competence of the health care workers, effectiveness of care, healthcare workers attitude towards the patients, availability of various primary medical care facilities, and accessibility of services. Syed Andaleeb (2008) in her empirical study concluded that to improve service quality of health care sector it is necessary to improve the behaviour of doctors, nurses and other supporting staff of the hospital. In another study by Baltussen et al. (2002) argued that the main concern for health policy action from the perspective of a developing country being, availability of drugs on time and financial accessibility to health services. In an empirical study by HavvaCaha(2007) concluded that the patient's satisfaction is the most important determinant for private health care providers in Turkey.

Handful of studies have been conducted to understand the patients perception towards hospital image for example, Ruyter&Wetzels, (2000), concluded that good image benefits service providers to enter into new markets. Alves&Raposo, (2010) argued that they can also attract efficient staff such as skilled doctors and health care workers. Therefore, Akýn&Demirel, (2011) recommended healthcare organizations should foucs on removal of such negative thoughts from the mindset of the end-users of the services. Further researchers like Kim, et al., 2008; Dominici&Guzzo, (2010) strongly suggested the service providers to focus on patient satisfaction and in turn to achieve the positive of word-of-mouth to attract new patients to the hospitals.

AnnamalaiSolayappan et al. (2011) is an empirical study tried to explore the perception and expectation of patients by SERVQUAL model of hospital services. They collected 300 responses by using purposive sample of in-patients. They found that a huge gap in the services offered by and the perception of the in-patients

in areas such as physical appearance, lack of interest in solving problems and personal care. In another empirical study by Mooney C et al (2000) found that for senior citizens or veteran patients distance between the PHCs and the village was an important for availability of PHCs services.

Pai and Chary (2013) reviewed the extent of scales used for the measure the quality of services rendered by the hospitals found that SERVQUAL/ modified SERVQUAL were the most widely used model with 49% to measure the quality of services. However, they pointed out that the number of dimensions taken for the purpose of the individual studies varies from researcher to researcher.

Apart from the SERVQUAL models to measure the service quality dimensions, in a study by Choi et al. (2005) have used a four factor model such as physician concern, staff concern, convenience of care process and tangibles to measure the quality of service rendered by the health care services from South Korean context.

In another study by RajanRushender et al. (2016), tried to investigate the effective utilization of health care services provided by PHCs in rural Tamil Nadu with a sample size of 3,220 and concluded that PHCs should be used only for preventive and primary health care services rather than for treatment of acute and chronic illness health care services.

Grossman M, (1975) in his empirical study found that the demographic variable education shared a significant positive relationship with the use of health services while using the services of PHCs and similar findings were documented by Buor D, (2003) in spite of the distance to the nearest PHCs and travel time to reach the PHC were a very important variables. However, Hong Ha NT, Berman P, Larsen U, (2002) contradicted this view in their empirical study in case of utilization of primary health care facilities in Vietnam.

There are several studies have been undertaken to describe the quality of service in literature by using SERVQUAL model with modification in healthcare sector especially from the perspective of private sector. However, only a handful of studies have been undertaken from the perspective of primary health care sector. In spite of government fund allocations and NGO partnership the Indian PHCs are suffering from lot of limitations such as lack of basic infrastructure, lack of skilled workforce, well trained health care workers etc. However, the PHCs are expected to serve the needy patients to ensure patients comfort and satisfaction when they are getting admitted, during the stay and discharge process. Therefore, the current study has been undertaken to address the gap between the perception and expectation of the quality of service rendered by the PHCs situated in Southern Rural Karnataka by using the SERVQUAL model. The structure of the current empirical study is as follows: Section two outlines a brief discussion of various empirical papers from the current topic undertaken for the purpose of the study.Section three covers the objectives of the study, research instrument and methodology employed to attain the stated objectives of the study. Section four deals with the analysis and interpretation of the data and in the last section discussion and conclusion have been made and the research results have been compared with the possible evidence.

III. RESEARCH DESIGN

OBJECTIVES OF THE STUDY

The following were the main objectives of the study, which the researchers wish to enquire and understand in the process of the current empirical study.

1. To study the service quality (Tangibility, Reliability, Responsiveness, Assurance and Empathy) dimensions that affects the respondents' perception towards services offered by the PHCs in rural Karnataka;
2. To investigate the relationship between the demographic factors and the chosen five dimensions for the purpose of the study;
3. To study the interrelationship among the various dimensions (Tangibility, Reliability, Responsiveness, Assurance and Empathy) of the service quality rendered by the Service providers (PHCs) in rural Karnataka;
4. To study the service gap on the basis of respondents' perceptions (P) from respondents' expectations (E);
5. To investigate the most dominant service quality dimension that influences customer's satisfaction in the Primary Health Care sector floated and funded by Karnataka State Government.

RESEARCH METHODOLOGY

SAMPLING

The sample size taken for the purpose of the study was 312 rural respondents. Sampling technique used is convenience sampling. The population covers Agriculture labour, small farmers, Small retailers, Home maker and Daily wage earners who were frequent users of PHC facilities available in the rural areas.

PRIMARY AND SECONDARY DATA

The current study was purely based on the primary data and the literature has given number of instruments to measure the service quality in various service sector. However, it is worth to note that there is no agreement on the right instrument to measure the service quality. Yet, majority of the studies till date have used SERVQUAL model to measure the service quality delivered by the service providers (Parasuraman et al., (1985); (1988)). Therefore, Primary data was collected by using a structured undisguised questionnaire by using SERVQUAL model with modifications to suit the unique need of the PHCs. The research instrument was pre-tested by conducting the pilot study and later on administered on the village patients. The survey was administered in the months of February - April 2019. For the purpose of the study Likert's scale has been incorporated to investigate the various determinants of service quality. The SERVQUAL Model has been used for analysing the key determinants of Service Quality. The key determinants used for the current study were (i) tangibility, (ii) Reliability (iii) Responsiveness (iv) Empathy and (v) Assurance.

The research instrument has two sections, namely an expectations section consisting of 31 statements about various chosen dimensions and a matching set of PHCs service quality specific statements to assess perceptions. According to SERVQUAL model gap in service quality can be computed by applying the following formula:

Service Quality Gap = Perceived Service (P) – Expected Service (E)

RELIABILITY STATISTICS

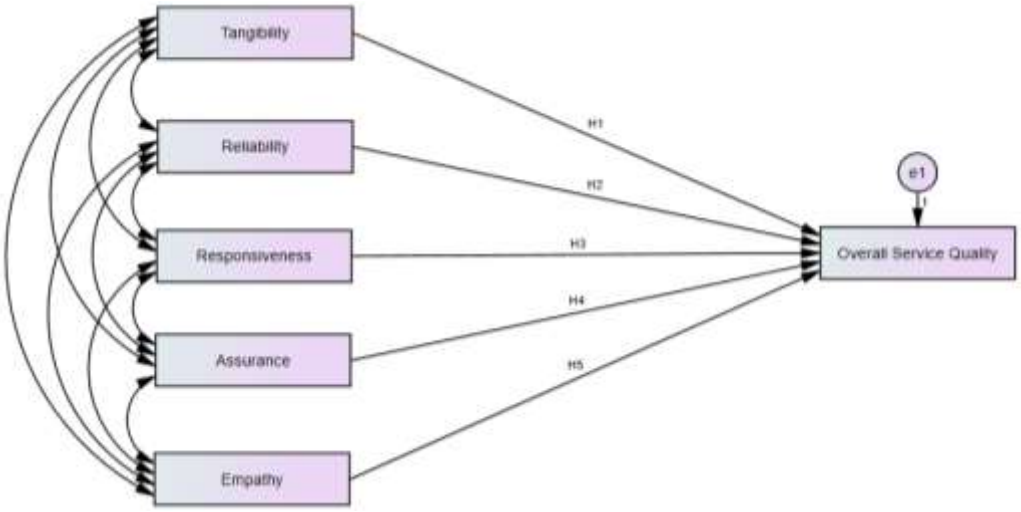
Here the researchers were interested in the degree to which measures are free from errors and therefore yield consistent results. This test has been applied to assess the internal consistency homogeneity among the items and for this purpose Cronbach's Alpha has been incorporated since it has the most utility for multi-item scales at the interval level of measurement. The following are the results and conclusion by applying the Cronbach's coefficient Alpha technique.

TABLE No-1: TABLE SHOWING MEAN AND STANDARD DEVIATION OF ITEMS

Factor	Items	Cronbach's Alpha (Expectations)	Cronbach's Alpha (Perceptions)
Tangibility	5	.798	.812
Reliability	6	.897	.789
Responsiveness	5	.945	.760
Empathy	6	.816	.914
Assurance	4	.893	.813
DV	5	.881	.811
Overall	31	.942	.921

Cronbach's Alpha based on standardized items were more than the threshold value of 0.7 Alpha coefficient of 0.7 and above implies that all the items in the scale are measuring the same thing (Saunders, Lewis and Thornhill, (2016)). It indicates that there is a high degree of internal consistency in the responses for the questionnaire.

PROPOSED MODEL



H1: there is no significance relationship between the tangibility and quality of service rendered to the patients at PHCs

H2: there is no significance relationship between the Reliability and quality of service rendered to the patients at PHCs

H3: there is no significance relationship between the Responsiveness and quality of service rendered to the patients at PHCs

H4: there is no significance relationship between the Assurance and quality of service rendered to the patients at PHCs

H5: there is no significance relationship between the Empathy and quality of service rendered to the patients at PHCs

SOURCES OF DATA AND PLAN OF ANALYSIS

The main aim of this exemplary study is to amount the foremost determining dimension or set of dimensions that was responsible for overall service quality satisfaction as perceived by the rural respondents. In mandate to gauge the indicated objectives, the researchers have established items for each variable which are as follows: for dimension one – tangibility five items followed by reliability – six items, responsiveness – five items, empathy – six items, assurance four items and for the dependent variable we developed five times. For the purpose of the study the researchers have collected responses from 476 respondents, however, only 312 responses were used for the final analysis. The collected data was collated by using SPSS and AMOS software. While analysing the collected data the researchers have followed the following steps: under step one the collected data's internal consistency has been tested by applying the reliability statistics. Later the data was tested for various assumptions such as normality, VIF etc. in the next phase the frequency and the cross tabulation was made and GAP model was developed. In the last phase EFA, CFA and Path analysis was run to arrive at the meaningful statistical inference. Finally the results were compared with the possible evidence.

IV. DATA ANALYSIS

TABLE No-2: TABLE SHOWING DEMOGRAPHIC FACTORS

Variable	Category	No of respondents	Percent
Gender	Male	178	57.1
	Female	134	42.9
Age	less than 30 Years	54	17.3
	31-40 Years	8	2.6
	41-50 Years	48	15.4
	50 Years and above	202	64.7
MHI	Less than Rs. 15000	58	18.6
	Rs.15000- Rs.20000	102	32.7
	Rs.21000- Rs.25000	84	26.9
	Rs. 25000 and above	68	21.8
Qualification	Less than matriculation	100	32.1
	Matriculation	104	33.3
	Intermediate	56	17.9
	College but not graduate	48	15.4
	Graduate	2	.6
	Others	2	.6
Family Size	4-5	106	34.0
	6-10	198	63.5
	11 and above	8	2.6
Occupation	Agriculture labour	32	10.3
	Small farmers	62	19.9
	Small retailers	68	21.8
	Home maker	44	14.1
	Daily wage earners	58	18.6
	Other	48	15.4

Analysis: it is evident from the above table No. 2 that majority of the respondents were male57.1 percent followed by 42.9 percent female. Majority of the respondents belonged to the age group above 50 years followed by 17.3 percent belonged to the age group below 30 years and 15.4 percent of the respondents belonged the age group 41-50 years. Major chunk of the respondents 32.7 percent belong to an income category of Rs.15000- Rs.20000 followed by 26.9 percent belonged to the income bracket of Rs.21000- Rs.25000, another 21.8 percent belonged to the income bracket of Rs. 25000 & above and 18.6 percent belonged to the income bracket of Less than Rs. 15000. 32.1 percent of the respondents had an education level of less than matriculation, followed by others 33.3 percent have studied matriculation. However, 17.9 percent of the respondents have completed their intermediate, 15.4 percent had gone to the college but not graduates and balance 0.6 percent of the respondents were graduates and others. 63.5 percent of the respondents had a family size 6-10, 34 percent of the respondents had a family size of less than 5 and balance 2.6 percent of the respondents had a family size of 11 and above.

PEARSON CHI-SQUARE

A Pearson Chi-square test of independence was conducted to explore the relationship between the demographic factors with other variables such as the purpose of visiting PHC and Difficulties faced by the patients. In order to realize the stated objectives the researchers have framed the following hypothesis:

H0: there is no significance difference between the demographic factor with the purpose of visiting PHC and Difficulties faced by the patients.

Since the tabulated value of $\chi 2$ (4, N= 312) = 28.45, p<.000 for the first demographic factor gender and with the purpose of visiting the PHC and the second variable difficulties faced by the patients $\chi 2$ (5, N= 312) = 21.95, p<.000. Second demographic factor age with the purpose of visiting the PHC $\chi 2$ (16, N= 312) = 146.31, p<.000 and the second variable difficulties faced by the patients $\chi 2$ (20, N= 312) = 48.78, p<.05. For the third demographic factor monthly household income with the purpose of visiting the PHC $\chi 2$ (16, N= 312) = 45.66, p<.000 and the second variable difficulties faced by the patients $\chi 2$ (20, N= 312) = 79.73, p<.000. For the fourth demographic factor qualification with the purpose of visiting the PHC $\chi 2$ (20, N= 312) = 79.73, p<.000. For the fifth demographic factor family size with the purpose of visiting the PHC $\chi 2$ (16, N= 312) = 50.41, p<.000 and for last demographic factor for the purpose of the study Occupation with the purpose of visiting the PHC $\chi 2$ (25, N= 312) = 105.10, p<.000 and the second variable difficulties faced by the patients $\chi 2$ (30, N= 312) = 88.12, p<.000. Since the p value is less than the set level i.e., 0.05, we can reject the null hypothesis. However, in case of qualification with the second variable difficulties faced by the patients $\chi 2$ (25, N= 312) = 22.99, p >.05. Therefore, we cannot reject the null hypothesis.

TWO WAY ANOVA TEST RESULTS

In order to investigate is there any significant effect of Gender on glass ceiling perception; Age on glass ceiling perception and the interaction of Gender and Age on the dependent variables, a two way Anova has been conducted and the following are the results:

TABLE NO-3: TEST BETWEEN-SUBJECTS EFFECTS

DEPENDENT VARIABLE - Tangibility						
Source	**Type III Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**	**Eta**
Corrected Model	1330.878[a]	6	221.813	6.399	.000	.112
Intercept	162486.694	1	162486.694	4687.415	.000	.939
Gender	229.799	1	229.799	6.629	.011	.121
Age	723.323	3	241.108	6.955	.000	.064
Gender*Age	539.839	2	269.920	7.787	.001	.099
DEPENDENT VARIABLE -Reliability						
Corrected Model	526.107[a]	6	87.684	2.450	.025	.046
Intercept	192768.926	1	192768.926	5385.229	.000	.946
Gender	4.770	1	4.770	.133	.715	.039
Age	450.108	3	150.036	4.191	.006	.094
Gender*Age	101.582	2	50.791	1.419	.244	.019
DEPENDENT VARIABLE - Responsiveness						
Corrected Model	1082.667[a]	6	180.444	6.568	.000	.114
Intercept	145921.318	1	145921.318	5311.726	.000	.946
Gender	54.911	1	54.911	1.999	.158	.007

Age	813.698	3	271.233	9.873	.000	.089
Gender*Age	281.725	2	140.863	5.128	.006	.083
DEPENDENT VARIABLE - Assurance						
Corrected Model	1697.410[a]	6	282.902	6.957	.000	.120
Intercept	247372.604	1	247372.604	6083.127	.000	.952
Gender	137.459	1	137.459	3.380	.067	.011
Age	952.901	3	317.634	7.811	.000	.071
Gender*Age	771.466	2	385.733	9.486	.000	.119
DEPENDENT VARIABLE - Empathy						
Corrected Model	227.674[a]	6	37.946	10.890	.000	.176
Intercept	33410.070	1	33410.070	9588.059	.000	.969
Gender	7.578	1	7.578	2.175	.141	.007
Age	187.314	3	62.438	17.918	.000	.150
Gender*Age	42.928	2	21.464	6.160	.002	.079

Tangibility: A two way Anova test has been conducted to find out any difference between Gender (Male and Female), Age (less than 30; 31-40; 41-50 and 50 and above), both gender and age (interaction effect) on the first dimension taken up for the purpose of the study. It is evident from the above table No. 3 that gender direct effect was significant F value of 6.629, p =.011 such that men were significantly differ while perceiving the tangibility aspect of service quality. The partial Eta squared is showing .121 that is 12.1% variation in tangibility aspect is being accounted by the Gender. However, for the second independent variable Age there was a direct effect with a F value was 6.955, p =.000 such that first age category were also significantly differ while perceiving the first dimension. The partial Eta squared was showing .064 that is 6.4% variation in tangibility aspect is being accounted by age component.

The interaction effect was also statistically significant on the first dimension. Reported F value was 7.787, p =.001. The partial Eta squared was showing .099 that is 9.9% variation in tangibility factor is being jointly accounted by Gender and Age. The Leven's test of homogeneity of variance was significant (p .564)

Reliability: It is evident from the above table that gender direct effect was not significant F value of .133, p =.715 such that men were not significantly differ while perceiving the reliability aspect of service quality. The partial Eta squared it is showing .039 that is 3.9% variation in Reliability aspect is being accounted by the Gender. However, for the second independent variable Age there was a direct effect with a F value was 4.191, p =.006 such that the age category were significantly differ while perceiving the second dimension. The partial Eta squared was showing .094 that is 9.4% variation in reliability aspect is being accounted by the age.

The interaction effect was not statistically significant on the second dimension. Reported F value was 1.419, p =.244. The partial Eta squared was showing .019 that is 1.9% variation in reliability factor is being jointly accounted by Gender and Age. The Leven's test of homogeneity of variance was significant (p .201)

Responsiveness: The gender direct effect was not significant F value of 1.999, p =.158 such that men were not significantly differ while perceiving the responsiveness aspect of service quality. The partial Eta squared it is showing .007 that is 0.07% variation in responsiveness aspect is being accounted by the Gender. However, for the second independent variable Age there was a direct effect with a F value was 9.873, p =.000 such that the age category were significantly differ while perceiving the third dimension. The partial Eta squared was showing .089 that is 8.9% variation in responsiveness aspect is being accounted by the age.

The interaction effect was statistically significant on the third dimension. Reported F value was 5.128, p =.006. The partial Eta squared was showing .083 that is 8.3% variation in responsiveness factor is being jointly accounted by Gender and Age. The Leven's test of homogeneity of variance was significant (p .209)

Assurance: The gender direct effect was not significant F value of 3.380, p =.067 such that men were not significantly differ while perceiving the assurance aspect of service quality. The partial Eta squared it is showing .011 that is 1.1% variation in assurance aspect is being accounted by the Gender. However, for the second independent variable Age there was a direct effect with a F value was 7.811, p =.000 such that the age category were significantly differ while perceiving the fourth dimension. The partial Eta squared was showing .071 that is 7.1% variation in responsiveness aspect is being accounted by the age.

The interaction effect was statistically significant on the fourth dimension. Reported F value was 9.486, p =.000. The partial Eta squared was showing .119 that is 11.9% variation in assurance factor is being jointly

accounted by Gender and Age. The Leven's test of homogeneity of variance was significant (p .095)

Empathy: The gender direct effect was not significant F value of 2.175, p =.141 such that men were not significantly differ while perceiving the empathy aspect of service quality. The partial Eta squared it is showing .007 that is 0.7% variation in empathy aspect is being accounted by the Gender. However, for the second independent variable Age there was a direct effect with a F value was 17.918, p =.000 such that the age category were significantly differ while perceiving the fifth dimension. The partial Eta squared was showing .150 that is 15% variation in empathy aspect is being accounted by the age.

The interaction effect was statistically significant on the fifth dimension. Reported F value was 6.160, p =.002. The partial Eta squared was showing .079 that is 7.9% variation in empathy factor is being jointly accounted by Gender and Age. The Leven's test of homogeneity of variance was significant (p .321).

TABLE No-4: GAP SCORE – SERVQUAL MODEL

In the next phase, to assess the service quality gaps (both perceptions and expectations from the respondents) of PHC, Gap analysis has been conducted. For this purpose gaps were calculated by using the SERVQUAL approach by subtracting respondents' perceptions (P) from respondents' expectations (E) as G = E - P. The results are presented in the following table:

TABLE NO-5: THE AVERAGE (MEAN) VALUES OF THE PERCEPTION AND EXPECTATION - SERVQUAL MODEL – GAP ANALYSIS

Dimension	Perception		Expectation		Gap Score	T Value	Sig
	Mean	Std. Dev	Mean	Std. Dev			
Tangibility	3.751	0.547	4.712	0.313	-0.961	2.961	.0012
Reliability	3.421	0.742	4.661	0.257	-1.240	4.567	.0000
Responsiveness	3.161	1.012	4.715	0.547	-1.554	8.561	.0000
Assurance	3.517	0.851	4.814	0.691	-1.297	5.014	.0000
Empathy	3.319	0.794	4.748	0.574	-1.429	9.145	.0000

For this purpose the researchers have established the following hypothesis.

H0: There is no gap between patient's expectations and perceptions on services delivered in PHC.

The negative gap scores in all chosen five dimensions such as Tangibility, Reliability, Responsiveness, Assurance and Empathy indicated that the perceptions of respondents (patients) regarding the services quality delivered by the PHC is less than expectations. As the tabulated t value is 2.961, 4.567, 8.561, 5.014 and 9.145 with a p value <0.05 which is less than the set level. Therefore, we can reject the null hypothesis. We can conclude that there was gap between the expected service qualities delivered at PHCs in rural Karnataka compared to their expected level of service quality.

TABLE NO-6: TABLE SHOWING INTER-CORRELATIONS

	IV1	IV2	IV3	IV4	IV5	DV
IV1	1	.722**	.759**	.689**	.643**	.757**
IV2		1	.696**	.613**	.572**	.698**
IV3			1	.782**	.708**	.824**
IV4				1	.743**	.834**
IV5					1	.782**
DV						1
** Correlation is significant at the 0.01 level (2-tailed).						

Analysis: It is evident from the above table No. 6 that the Pearson correlation coefficient between the chosen variables Tangibility (IV1), Reliability (IV2), Responsiveness (IV3), Empathy (IV4) and Assurance (IV5) with the Dependent Variable is significant at <0.000. Therefore we can conclude that there was a significant positive correlation among the variables chosen for the purpose of the study. Apart from that we ran VIF to investigate was there any multicollinearity among the variables chosen for the purpose of the study. The Collinearity Statistics revealed that there was no multicollinearity in the given data set as the tolerance ranged between .268(lowest reported for responsiveness) to .424 (highest reported for reliability) and VIF stood between 2.356 (for reliability) to the highest (for responsiveness) (threshold value for the same was 10 or 5) (Hair, et al. (1995)).

CONFIRMATORY FACTOR ANALYSIS

After running the EFA, the researchers have run CFA to confirm the results from the EFA. The main objective behind running CFA was that to explore that whether or not the reliability and validity of the responses

collected from the rural patients can meet the requirements of the measurement.

TABLE NO-7: TABLE SHOWING INTERNAL CONSISTENCY (RELIABILITY) AND VALIDITY OF THE MODEL

Constructs	Items	Cronbach's Alpha	Loading	AVE	CR		SQRT of AVE
	T1		0.920			0.92***	
	T2		0.910			0.91***	
	T3		0.876			0.876***	
	T4		0.854			0.854***	
Tangibility	T5	0.798	0.865	0.7839	0.995	0.865***	0.885
	R1		0.867			0.867***	
	R2		0.741			0.741***	
	R3		0.662			0.662***	
	R4		0.719			0.719***	
	R5		0.674			0.674***	
Reliability	R6	0.897	0.723	0.5388	0.921	0.723***	0.734
	RE1		0.835			0.835***	
	RE2		0.843			0.843***	
	RE3		0.855			0.855***	
	RE4		0.816			0.816***	
Responsiveness	RE5	0.945	0.758	0.6759	0.998	0.758***	0.822
	E1		0.930			0.93***	
	E2		0.859			0.859***	
	E3		0.850			0.85***	
	E4		0.817			0.817***	
	E5		0.863			0.863***	
Empathy	E6	0.816	0.776	0.7233	0.999	0.776***	0.850
	A1		0.741			0.741***	
	A2		0.761			0.761***	
	A3		0.718			0.718***	
Assurance	A4	0.893	0.701	0.5338	0.824	0.701***	0.731

Analysis: it is evident from the above table No. 7 that for the first dimension Tangibility the Cronbach's alpha was 0.798, AVE was 0.784 and CR was 0.995 and all the items were statically significant. For the second dimension Reliability the Cronbach's alpha was 0.897, AVE was 0.539 and CR was 0.921 and all the items were spastically significant. For the third dimension Responsiveness the Cronbach's alpha was 0.945, AVE was 0.676 and CR was 0.998 and all the items were spastically significant. For the next dimension Empathy the Cronbach's alpha was 0.816, AVE was 0.723 and CR was 0.999 and all the items were spastically significant and for the last dimension Assurance the Cronbach's alpha was 0.893, AVE was 0.534 and CR was 0.824 and all the items were spastically significant.

TABLE No-8: THE CFA FIT INDEX FINAL MODEL

CMIN	DF	P	CMIN/DF	GFI	NFI	RFI	TLI	CFI	RMSEA
2042.329	419	0.000	4.874	0.996	0.934	0.916	0.948	0.913	0.065

Various fit measures were used to measure the factor model of the various factors of the Service quality measurement. The results of CFA provided evidence for accepting this model. According to Table No 8. The standardized parameters estimate shows that all indicators were statistically significant (P<0.001) and loaded on the various factor chosen for the purpose of the research. CFA results also showed that the chi-square was significant (χ^2 = 4.874). The GFI was. 0.996, AGFI = 0.942, NFI = 0.934, RFI = 0.916, TLI = 0.948, CFI = 0.913 and RMSEA was 0.065.

RMR= 0.041, RMSEA = .065, and χ^2 /df = 4.874. These values suggest an adequate fit to the model, even though the chi-square significant. Chi-square may be significant because of large sample size (Anderson and Gerbing, 1988, Bagozzi and Yi, 1988). All the factors

loaded above the prescribed level and the values of Cronbach's alpha, Composite Reliability (CR) and Average Variance Extracted (AVE) are also within the recommended level which confirms the reliability and validity of this construct.

GRAPH SHOWING STANDARDISED REGRESSION PATH DIAGRAM

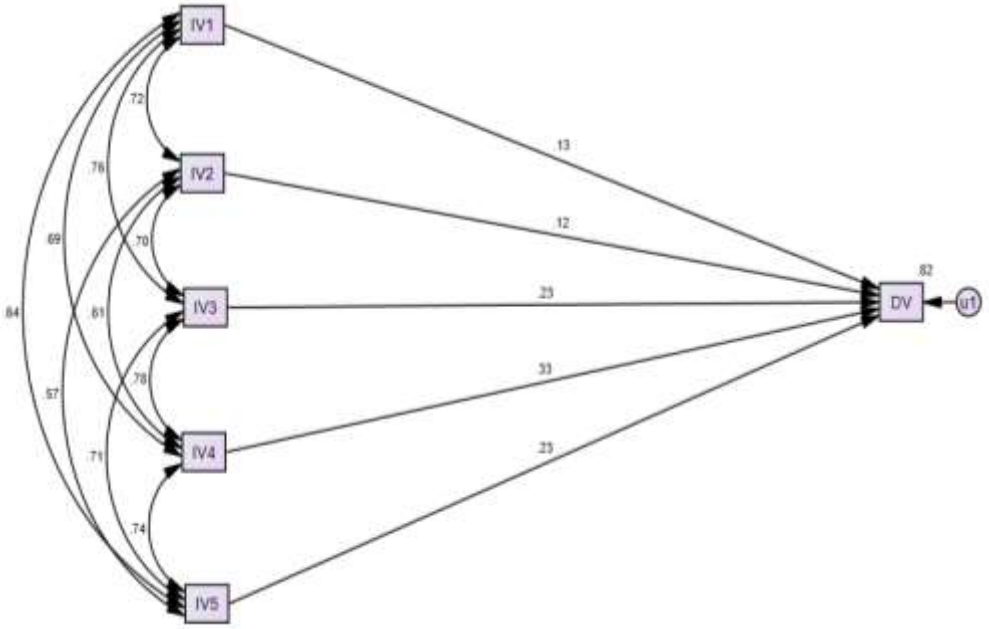


TABLE NO-9: TABLE SHOWING REGRESSION OUTPUT

	Unstandardized	Standardised	S.E.	C.R.	P	Label
DV <-- IV1	0.058	0.127	0.019	3.034	0.002	Supported
DV <--- IV2	0.053	0.115	0.017	3.098	0.002	Supported
DV <--- IV3	0.116	0.229	0.024	4.898	***	Supported
DV <--- IV4	0.135	0.325	0.018	7.45	***	Supported
DV <--- IV5	0.317	0.231	0.053	5.992	***	Supported

Analysis: the results indicates that the standardised coefficient for the first independent variable tangibility was β_1 = 0.127, p = 0.002 (<0.01), followed by reliability β_2=0.115, p = 0.002 (<0.01), responsiveness β_3=0.229, p = 0.000 (<0.000), empathy β_4=0.325, p = 0.000 (<0.000) and assurance β_5=0.231, p = 0.000 (<0.000) were the major determinants of service quality satisfaction. Therefore we can reject the null hypothesis.

Proposed model was Y (Service Satisfaction) = $a + b_1 X_1$ (Tangibility) + $b_2 X_2$ (Reliability) +$b_3 X_3$ (Responsiveness) + $b_4 X_4$ (Empathy) + $b_5 X_5$ (Assurance) + ϵ …… (1)and the final model wasY (Service Quality) = $\alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \varepsilon$

Y(Service Quality) = .638 + 0.127(tangibility) + 0.115(reliability) + 0.229(responsiveness) +0.325 (empathy) +0.231(assurance) +ε

TABLE No-10: TABLE SHOWING RELATIVE WEIGHTS

Dimensions	Relative weights
Tangibility	0.123661
Reliability	0.111977
Responsiveness	0.22298
Empathy	0.316456
Assurance	0.224927

It is evident from the above table No. 10 that the very important dimension from the perspective of the current empirical study was empathy with a relative weight of 31.64 percent followed by Assurance with a relative weight of 22.49 percent, Responsiveness with a relative weight of 22.30 percent, tangibility with the relative weight of 12.37 percent and reliability with a relative weight of 11.20 percent.

V. DISCUSSION AND CONCLUSION

The current study has been undertaken to understand the effects of individual dimensions of service quality in PHC in rural Karnataka state by developing SERVQUAL model. In order to realize the stated objectives, a structured SERVQUAL questionnaire was framed in two models i.e., perception and expectations. The research instrument was pre-tested and administered on 312 rural patients. The validity of the instrument was adjudged, using reliability statistics, Cronbach's alpha coefficient. The Cronbach's alpha values of the perception component was found to be between .760 to .921and for expectations component it was ranged between.798 to .897. It implies that there was a high degree of internal consistency in the responses to the questionnaire.The collected data has been collated by using SPSS and AMOS package. Later, service quality gaps were computed by subtracting perceptions (P) from customers' expectations (E). In the next phase, to understand the relationship between customer's satisfaction or dissatisfaction and the computed gap a multiple regression model has been run. The current study revealed that the majority of the respondents belong to age group 50 and above, major chunk of the respondents belong to income group between Rs.10001-Rs.15000. Majority of the respondents had an education level of less than matriculation and matriculation. Major portion of the respondents were wage earners, petty retailers. This indicated that the majority of the PHC users were less educated, low income strata and senior citizens. In the current study we found a significant relationship between the gender, age, monthly household income, qualification, family size and occupation of the respondents with the Purpose of visiting PHC and Difficulties faced by the patients. It is evident from the current study that there was a direct effect between the gender with the first dimension tangibility, age with tangibility and also the interaction effect was also statistically significant on the first dimensiontangibility. However, in case of second dimension reliability we found a significant direct effect with the age of the respondents. With the respect to third dimension responsiveness we found a direct effect between the age and interaction effect between both gender and age. With the respect to fourth dimension assurance we found a direct effect between the age and interaction effect between both gender and age. Similar phenomenon was notice in case of last dimension empathy.

In the current study we found a significant negative gap scores in all the chosen five dimensions such as Tangibility, Reliability, Responsiveness, Empathy and Assurance indicated that the perceptions of respondents (patients) regarding the services quality delivered by the PHC is less than expectations.

When the researchers ran the Pearson correlation coefficient, they observed a significant correlation coefficient among the various chosen dimensions.

Regression Results revealed that the independent variables Tangibility (X1), Reliability (X2), Responsiveness (X3), Empathy (X4) and Assurance (X5) have positive coefficients i.e. they shared direct relationship with the dependent variable (Overall satisfaction) and were also statistically significant relationship with the overall service quality. Besides, the results of the current empirical study pull several important research implications.

Empathy: The current study revealed that the fourth dimension empathy is the most prominent dimension among all the five dimensions chosen for the purpose of the study. The major concern for the policy makers in this area is "Staff at PHC would answers all possible queries relating to pre-admission and while receiving medical care assistance – in this item the study reported the least mean followed by "The behavior of para clinical team showing politeness, respect, consideration and friendliness while handling the patient". Another area of concern as per the current study was "Does staff show real concern and interest while handling the patients individually" recorded the highest volatility compared to other items under empathy (similar findings were documented by K. R. Pillai &AlpikaKumari (2016)).

Assurance: It is another important dimension stood second in the current study based on relative weightage. Under this dimension the most important item was "There is an absolute trust ensured while admission till discharge of patient at this PHC" recorded the least mean score, followed by item three "Health care workers in the PHC promise to do something by certain time, they have been doing it". In the current study we found a significant gap between the expected quality of service and perception of the quality of service rendered by the PHC's under this dimension.

Responsiveness: In the current study we found a significant gap between the expected quality of service and perception of the quality of service rendered by the PHCs under this dimension. The major concerns were "The PHC ensures that whatever has been promised has delivered without fail" reported the second lowest mean with the highest standard deviation followed by item three "If any patient encounters any medical emergency issues during the course of treatment, the health care workers show a sincere interest in addressing it". Yet another area of concern was "The process of treatment should be explained to the patient or patients' dependents clearly" reported the least mean.

Tangibility: Once again in the current study we found a significant gap in tangibility dimension. The main concerns in this area was item two "The PHC has all the basic amenities to handle emergency cases" recorded the least mean followed by "PHC has better equipment and technology to serve the need of local community" and finally the cleanliness aspect of PHC.

Reliability: As per the current study the prominent dimension was reliability. In this dimension the major concerns were item one "The PHC offers in time emergency medical care services even during non-duty hours" reported the least mean with second highest standard deviation followed by item three "The waiting time in front of PHC and the handling time for every patient is satisfactory", item five "The medical services provide in the PHC is good and reliable" recorded the highest standard deviation.

MANAGERIAL IMPLICATIONS

The findings of the study provide valuable comprehensions not only to academicians but also to healthcare workers in PHCs in Rural India and policy makers. (i) Health status is one of the most prominent social security and has direct link to the socio-economic development of any nation. Quality health care for citizens is one of the major issue for any nation. Therefore, the policy makers must ensure that the quality of health services can be improved by appointing well-trained health care workers through proper financial motivation as the current study rightly pointed out that the majority of the health care workers were contract based and underpaid. Adding to that health care workers at PHC would be trained to answers all possible queries relating to availability of services in PHCs; (ii) The behaviour of para clinical team such as nurse, compounder etc. was very rude with the patients therefore, para clinical staff should be properly trained to handle patients with politeness, respect, consideration and friendliness; (iii) In addition, the health care workers such as doctors, nurses etc. should stress on providing quality health services in time without any delay. They should be able to understand and empathetic towards the needs of patients and their care takers; (iv) Cleanliness and well maintenance of hospital is a very crucial issues in any PHCs, therefore, it is suggested to appoint housekeeping staff or outsource this task to an external agencies in order to maintaining the PHC environment clean and hygienic; (v) It is also suggested to provide adequate equipment and other facilities such as chairs to sit and beds to lie down before getting the medical attention from the health care workers to PHCs as there is a long waiting time for patients during peak hours; (vi) The PHCs should pay proper attention of any kind of complaint be it minor or major from the patients, and should be resolved immediately in order to improve the quality of services and to increase the patient satisfaction level and (vi) Yet another important observation documented in the current study was quality of health care workers and their skill set is highly questionable (consistent with the findings of Loni (2002). Therefore, these workers should be properly trained to improve their skill set and deliver the quality of services. The above findings are in line with the results obtained by various earlier researchers like Das R, Amie A, Nath P (2001); RajanRushender et al., (2016); Shariff A & Singh G. (2002).

LIMITATIONS OF THE STUDY AND DIRECTIONS FOR FUTURE RESEARCH

Firstly, this study was carried out mainly in rural PHCs of Southern Karnataka; therefore, the results obtained may not be pertinent to other PHCs across India. Of course, the study can be extended to other states of India. Secondly, Sample size of 312 was good but may not be sufficient to infer for a larger state like Karnataka. It is recommended to replicate the study with a larger number sample size may be taken up. While executing the survey, the researchers have come across problems pertaining to rating scale due to illiteracy. For the current study the scale used was SERVQUAL with little modification, therefore it is recommended to use other available scales such as KQCAH, SERVPERF to investigate the appropriate scale to measure the performance of the primary health care center funded by the government.

Secondly, several important variables have that may affect hospital image are not considered in this model, such as loyalty and service value. Therefore, future researchers may take into consideration using a more representative population of patients and examine the differences between inpatient and outpatient. Furthermore, researchers need to examine other variables that could further explain patient's image in the healthcare context.

REFERENCES

1. Adele, Bernd., (2009), "Investigating service quality dimensions in South African motor vehicle servicing". *African journal of marketing management*, 1(1). 1-9.
2. Agarwal A and Singh MR (2016). "Service Quality and Patient Satisfaction: An Exploratory Study of Pathology Laboratories in Jaipur". *Hospital Topics.* 94(2): 23-32.
3. Akın, E. &Demirel, Y. (2011). "An Empirical Study: Are Corporate Image Relation Satisfaction and Identification with Corporate Influential Factors on Effectiveness of Corporate Communication and Consumer Retention". *European Journal of Social Sciences*, 23(1), 128-153.

4. Akın, E. &Demirel, Y. (2011). "An Empirical Study: Are Corporate Image Relation Satisfaction and Identification with Corporate Influential Factors on Effectiveness of Corporate Communication and Consumer Retention". *European Journal of Social Sciences*, 23(1), 128-153.
5. Alghamdi FS (2014). "The impacts of service quality perceptions on patient satisfaction in Government Hospitals in Southern Saudi Arabia". *Saudi Medical Journal* 35 (10): 1271-1273
6. Alrubaiee, L. (2011). "The Mediating Effect of Patient Satisfaction in the Patients' Perceptions of Healthcare Quality – Patient Trust Relationship". *International Journal of Marketing Studies*, 3(1), 103-127.
7. Alves, H. &Raposo, M. (2010). "The Inûuence of University Image on Student Behavior". *International Journal of Educational Management*, 24(1), 73-85.
8. Andaleeb SS (2001). "Service quality perceptions and patient satisfaction: a study of hospitals in a developing country". *Social Science and Management* 52 (9): 1359-70.
9. AnnamalaiSolayappan, JothiJayakrishnan. SethuVelmani (2011). "Quality Measurement for Hospital Services". *3rd International Conference on Information and Financial Engineering IPEDR* vol.12 (2011) © (2011) IACSIT Press, Singapore, 246-250.
10. Bakar, C., Akgůn, S.H. and Al Assaf, A.F., (2008), The role of expectations in patient assessments of hospital care, An example from a university hospital network, Turkey, International journal of health care quality assurance, 21(4), 343-355.
11. Barnes, S. J., Vidgen, R., 2001. "An evaluation of cyber-bookshops: the WebQual method". *International Journal of Electronic Commerce* 6 (1), 11-30.
12. Bei, L.T. &Chiao, Y.C. (2006). "The determinants of customer loyalty: an analysis of intangible factors in three service industries". *International Journal of Commerce and Management*, 16, pp. 162-77.
13. Bikramjit Singh Hundal&Vikas Kumar (2015), "Assessing the Service Quality of Northern Railway by using SERVQUAL Model". *Pacific Business Review International Volume* 8, Issue 2, 82-88.
14. Bowers, M.R., Swan, J.E. and Koehler, W.F. (1994), "What attributes determine quality and satisfaction with health care services?",*Health Care Management Review*, Vol. 19 No. 4, p. 9.
15. Bruning, E.R., Hu, M.Y., and Hao, W.(2009). "Cross-national segmentation; An application to the NAFTA airline passenger market", *European Journal of Marketing*, Vol. 43 No. 11/12, pp. 1498-1522.
16. Brysland, A. & Curry, A. (2001). "Service Improvements in public services using SERVQUAL," *Managing Service Quality*, vol. 11(6), pp. 389-401
17. Buor D. (2003). "Analysing the primacy of distance in the utilization of health services in the Ahafo-Ano south district, Ghanam faculty of social sciences, Kwame Nkrumah university of science and technology, Kumasi, Ghana". *Int J Health Plann Mgmt*;18:293-311.
18. Carman, J.M. (1990), "Consumer perceptions of service quality: an assessment of the SERVQUAL dimensions", *Journal of Retailing*, Vol. 66 No. 1, pp. 33-55.
19. Chahal H, Kumari N (2010). "Development of multidimensional scale for health care service quality (HCSQ) in Indian context". *J Indian Bus Res Stat* 2: 4.
20. Chahal, H., &Kumari, N. (2010). "Development of multidimensional scale for healthcare service quality (HCSQ) in Indian context". *Journal of Indian Business Research*, 2(4), 230-255.
21. Chang CS, Chen SY and Lan, YT (2013). "Service quality, trust, and patient satisfaction in interpersonal – based medical service encounters". *BMC Health Service Research DOI*: 10.1186/1472-6963-13-22.
22. Choi, K.-S., Lee, H., Kim, C., & Lee, S. (2005). "The service quality dimensions and patient satisfaction relationships in South Korea: comparisons across gender, age and types of service". *Journal of Services Marketing*, 19(3), 140-149.
23. "Christian Medical Commission Activities Report: January 178 to June 1979'. Geneva": *Christian Medical Commission.*
24. clancy, K J and R S Shulman (1994). "Breaking the mold: the five myths that all marketers should shatter". *Sales and marketing management*, 146(1): 82-84
25. Cook C, Heath F, Thompson B, Webster D., (2003). "LIBQUAL+, Preliminary results from 2002". *Performance manage. Metrics*, 4(1), pp 38 - 47.

26. Cronin J.J. and Taylor, S.A., (1994). "SERVPERF versus SERVQUAL: Reconciling Performance-Based and Perceptions-Minus-Expectations Measurement of Service Quality". *Journal of Marketing*, 58(1): 125-131.
27. Cronin, J. J. Jr. and Taylor, S.A., (1992). "Measuring service quality: A re-examination and extension". *Journal of Marketing*, 56(1): 55-68.
28. Cronin, J. J., & Taylor, S. A. (1992). "Measuring Service Quality: A Reexamination and Extension". *Journal of Marketing*, 56, 55-68.
29. Cronin, J. J., Brady, M. K., &Hult, G. T. M. (2000). "Assessing the Effects of Quality, Value, and Customer Satisfaction on Consumer Behavioral Intentions in Service Environments". *Journal of Retailing*, 76(2), 193-218.
30. Curtis, T., Rhoades, D. L., & Waguespack, B. P. (2012). "Satisfaction with Airline Service Quality: Familiarity Breeds Contempt". *International Journal of Aviation Management*, 1(4).http://dx.doi.org/10.1504/IJAM.2012.050472
31. Das R, Amie A, Nath P. "Utilization and coverage of services by women of Jawan block in Alighar". *Indian Journal of Community Medicine*. 2001;26(2):94-100.
32. David Mc. A Baker (2013). "Service Quality and Customer Satisfaction in the Airline Industry: A Comparison between Legacy Airlines and Low-Cost Airlines". *American Journal of Tourism Research.* Vol. 2, No. 1, 2013, 67-77
33. Dominici, G., &Guzzo, R. (2010). "Customer Satisfaction in the Hotel Industry: A Case Study from Sicily". *International Journal of Marketing Studies (IJMS),* 2(2). http://dx.doi.org/10.5539/ijms.v2n2p3
34. Donabedian, A. (1980). "Exploration in Quality Assessment and Monitoring, in Arbor, Ann (Ed), The Definition of Quality and Approaches to its Assessment (Vol. 1)", *Health Administration Press, MI.*
35. Eboli, L., G. Mazzulla. (2007). "Service quality attributes affecting customer satisfaction for bus transit". *Journal of Public Transportation*, 10 (3): 21-34.
36. Finn, D.W. and Lamb, C.W. (1991). "An evaluation of the SERVQUAL scale in a retailing setting" in *Holman, R and Solomon, M R (eds.), Advances in Consumer Research, Provo, UT: Association for Consumer Research, pp. 480-93.*
37. Geetika.,ShefaliNandan (2010). "Determinants of Customer Satisfaction on Service Quality: A Study of Railway Platforms in India". *Journal of Public Transportation,* 13(1); 97-113.
38. Gill L, White L (2009). "A critical review of patient satisfaction, Leadership in Health". *Emerald insight* 22: 8-19.
39. Godfrey, J. L., (2011). "The Motivations of Backpackers in New Zealand - An industry report prepared for the Tourism Strategy Group of the New Zealand Ministry of Economic Development as part of the requirements of a 2010 Tourism Research Scholarship". *Dunedin: University of Otago.*
40. Goel S. From "Bhore committee to national rural health mission: A critical review". *Int J Health.* 2008;7:1.
41. Goswami, Paromita., (2007). "Customer satisfaction with service quality in the life insurance industry in India". *ICFAI journal of services marketing,* 5(1), pp 25-30.
42. Gronroos, C. (1984). "A service quality model and its implications". *European Journal of Marketing,*Vol 18, No 4, pp 36-44.
43. Grossman M. (1975). "The Correlation between health and schooling. In house production and consumption". *Terleckyi NE (ed.) Columbia press: New York;*146-211.
44. Hair, J. F. Jr., Anderson, R. E., Tatham, R. L. & Black, W. C. (1995). Multivariate Data Analysis (3rd ed). New York: Macmillan.
45. Hart, A., & Rosenberger, P. (2004). "The Effect of Corporate Image in the Formation of Customer Loyalty: An Australian Replication". *Australasian Marketing Journal* (AMJ), 12(3), 88-96. http://dx.doi.org/10.1016/s1441-3582(04)70109-3
46. HavvaÇaha (2007). "Service Quality in Private Hospitals in Turkey". *Journal of Economic and Social Research,* Vol. 9,No.1, pp.5569
47. Headley, D. E., & Miller, S. J. (1993). "Measuring Service Quality and its Relationship to Future Consumer Behavior". *Journal of Health Care Marketing,* 13(4), 32-41.
48. Headley, D. E., & Miller, S. J. (1993). "Measuring Service Quality and its Relationship to Future Consumer Behavior". *Journal of Health Care Marketing,* 13(4), 32-41.
49. Hong Ha NT, Berman P, Larsen U (2002). "House hold utilization and expenditure on private and public health services in Vietnam". *Health Policy and Planning*. 2002;17(1):61-70.
50. Iftikhar A, Sirajud D. "Patients' satisfaction from the Health care services". *Availablw from:*

http://www.gjms.com.pk/files/Review%20Vol-8-1.pdf. [Last accessed on 2013 Mar 03].

51. Jabnoun, Naceur and Chaker, Mohammed (2003). "Comparing the Quality of Private and Public Hospitals". *Managing Service Quality,* 13(4): 290-299.
52. Jun, M., Peterson, R. T. and Zsidisin, G. A. (1998). "The Identification and Measurement of Quality Dimensions in Health Care: Focus Group Interview Results". *Health Care Management Review,* 23(4): 81-96.
53. K. P. Balakrishnan (2012). "A Study on Service Quality Perception of Railway Passengers of Southern Railway". *International Journal of Management Research,* 2(2); 105-110.
54. K. R. Pillai &AlpikaKumari (2016). "Patients' perception on service quality of hospital". *International Journal of Management and Applied Science.* Volume-2, Issue-5, pp. 80-84.
55. Kessler DP, Mylod D (2011). "Does patient satisfaction affect patient loyalty?".*Int J Health Care QualAssur*24: 266-273.
56. Khattab MS, Abolfotouh MA, Al-Khaldi YM, Khan MY (1999). "Studying the referral system in one family practice center in Saudi Arabia". *Ann Saudi Med* 19: 167-170.
57. Khodaparasti R.B., Gharebagh M.K., (2015). "Application of SERVQUAL method for evaluate service quality of Saderat Bank in Urmia, Iran". *Polish journal of management studies,* 11(2), pp 37-49.
58. Kim, Y., Cho, C., Ahn, S., Goh, I., & Kim, H. (2008). "A study on medical services quality and its influence upon value of care and patient satisfaction – Focusing upon outpatients in a large-sized hospital". *Total Quality Management & Business Excellence,* 19(11), 1155-1171. http://dx.doi.org/10.1080/14783360802323594
59. Kumar R, Kaur M, Jha P. "Universalizing access to primary health care in India". *Indian J Public Health* 2009; 53:22-7.
60. LeBlanc, G. 1992. "Factors affecting customer evaluation of service quality in travel agencies: An investigation of customer perceptions". *Journal of Travel Research.* 30(4): 10-16.
61. Lehtinen, J.R and Lehtinen, U. (1982), "Service quality: a study of quality dimensions", *Unpublished working paper, Service Management Institute, Helsinki*
62. Lim, P. C., & Tang, N. K. H. (2000). "A study of patients' expectations and satisfaction in Singapore hospital". *International Journal of Health Care Quality Assurance,* 13(7), 290-299.
63. Lynch, J. and Schuler, D. (1990), "Consumer evaluation of the quality services from an economics of information perspective", *Journal of Health Care Marketing,* Vol. 10 No. 2, pp. 6-22.
64. Mackey S, Hatcher D, Happell B, Cleary M (2013). "Primary health care as a philosophical and practical framework for nursing education: rhetoric or reality?".*Contemp Nurse* 45: 79-84.
65. Mahler, H (1986). "Of Mud and Alligators". *Health Policy and Planning*1(4): 345-352.
66. "Management Information System for primary health centers". *Government of Karnataka*
67. McAlexander, J. H., Kaldenberg, D. O., & Koenig, H. F. (1994). "Service Quality Measurement". *Journal of Health Care Marketing,* 14(3), 34-40.
68. McDougall GH, Levesque TJ (1994). "A revised view of service quality dimensions: measurement in a high street retail bank".*Int J Bank Mark* Vol: 19.
69. Mefford, R. N. (1993). "Improving Service Quality: Learning from Manufacturing". *International Journal of Production Economics,* 30: 399-413.
70. Mooney C, Zwanziger J, Phibbs CS, Schmit S (2000). "Is travel distance a burrier to veterans". *Social Science and Medicine.*;16(1):23-44.
71. Moore, S. A. and Schlegelmilch, B. B. (1994). "Improving Service Quality in an Industrial Setting". *Industrial Marketing Management,* 23(1): 83-92.
72. Morris J. Brent et al. "Patient Satisfaction: An Emerging Health Policy Issue". *Journal of the American Academy of Orthopaedic Surgeons* (AAOS), Jun 2013, Vol. 7 Issue 6, p. 29
73. Nadiri, H., Hussain, K., Ekiz, E.H. and Erdogan, S. (2008). "An investigation on the factors influencing passengers' loyalty in the North Cyprus national airline". *TQM Journal,* Vol. 20 No. 3, pp. 265-280.
74. Naidu A (2009). "Factors affecting patient satisfaction and healthcare quality".*Int J Health Care QualAssur* 22: 366-381.
75. NatchaThawesaengskulthai, PatcharinWongrukmit and Jens JörnDahlgaard (2015). "Hospital service quality measurement models: patients from Asia, Europe, Australia and America". *Total quality management and business excellence (Online),* (26), 9-10, 1029-1041.

76. Nilanjana Ghosh, IndranilChakrabarti, ManasiChakraborty (2013). "Imbalances in health workforce in a primary health centre (P.H.C.) of Darjeeling district, West Bengal, India". *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS).* Volume 8, Issue 6, pp. 18-22

77. Ostrowski, P.L., O'Brien T.V., and Gordon, G.L. 1993. "Service quality and customer loyalty in the commercial airline industry". *Journal of Marketing*. 22(2):16-24.

78. Ostrowski, R.L., O'Brien, T.V., & Gordon, G.L. (1993). "Service quality and customer loyalty in the commercial airline industry", *Journal of Travel Research,* 32(2), 16-24.

79. Otto, J.E., and Ritchie, R.B. 1996. "The service experience in tourism". *Tourism Management*. 17(3): 165-174.

80. Pai, Y. P., & Chary, S. T. (2013). "Dimensions of hospital service quality: a critical review: perspective of patients from global studies". *International Journal of Health Care Quality Assurance,* 26(4), 308-340

81. Pai, Y. P., & Chary, S. T. (2013). "Dimensions of hospital service quality: a critical review: perspective of patients from global studies". *International Journal of Health Care Quality Assurance,* 26(4), 308-340.

82. Parasuraman, A., Zeithaml, V. and Berry, L. (1988), "SERVQUAL: a multiple item scale for measuring customer perceptions of service quality". *Journal of Retailing,* Vol. 64 No. 1, pp. 12-37.

83. Parsuraman, A., Zeithaml, V. A. and Berry, L. L. (1985). "A Conceptual Model of Service Quality and its Implications for Future Research". *Journal of Marketing,* 49(4): 41-50.

84. Parsuraman, A., Zeithaml, V. A. and Berry, L. L. (1991). "Refinement and Reassessment of the SERVQUAL Scale".*Journal of Retailing,* 67(winter): 420-450.

85. Patel N. "Evaluating the role of Primary Health Centers in India". *Available from: http://www.expresshealthcaremgmt.com/20050831/ruralhealthcare01. shtml. (retrieved on january 13th 2019).*

86. Patro BK, Kumar R, Goswami A, Nongkynrih B, Pandav CS. Study Group UG. "Community perception and client satisfaction about the primary health care services in an urban resettlement colony of New Delhi". *Indian J Community Med* 2008;33:250-4.

87. Peyrot, M., Philip D, C., &Schnapf, D. (1993). "Consumer Satisfaction and Perceived Quality of Outpatient Health Services". *Journal of HealthcareCare Marketing, Winter,* 24-33.

88. Pham, K.Q.V. and Simpson, M. (2006). "The impact of frequency of use on service quality expectations: An empirical study of Trans-Atlantic airline passengers". *Journal of American Academy of Business, Cambridge*, Vol. 10 No. 1, pp. 1-6.

89. Pouragha B and Zarei E (2016). "The Effect of Outpatient Service Quality on Patient Satisfaction in Teaching Hospitals in Iran".*Materia Socio Media* 28 (1): 21-25.

90. PrabhaRamseook, Perunjodi Naidoo and Soolakshna Desai Lukea., (2010). "Measuring service quality, perceptions of employees". *Global journal of business research,* 4(1), pp 47-58.

91. PrabhaRamseook- Munhurrun, Soolakshna D. Lukea-Bhiwajee, Perunjodi Naidoo., (2010). "Service quality in the public service". *International journal of management and marketing research,* 3(1), pp. 37-50.

92. "Primary health care: Current challenges and way forward". *Available from: http://www.whoindia.org/LinkFiles/Health_Systems_Development_ Primary_Health_Care_Current_health_challenges_.pdf. [retrived on 2019 January 16].*

93. RajanRushender, RamrajBalaji, Ganesh Parasuraman (2016). "A study on effective utilization of health care services provided by primary health centre and sub-centres in rural Tamilnadu, India". *International Journal of Community Medicine and Public Health;* Vol. 3(5). 1054-60

94. Ramesh Neupane and ManjuDevkota (2017). "Evaluation of the Impacts of Service Quality Dimensions on Patient/Customer Satisfaction: A Study of Private Hospitals in Nepal". *Int. Journal of Social Sciences and Management*. Vol. 4, Issue-3: 165-176

95. Rashmi VB. "Client satisfaction in rural India for Primary Health Care – A Tool for Quality Assessment". *Al Ameen J Med Sci*2010;3:109-14.

96. Rathmell, J.M. (1966). "What is meant by services?" *Journal of Marketing,* Vol. 30 (October), pp. 32-36.

97. Reichheld, F.F. and Sasser, W.E. Jr (1990). "Zero defections: quality comes to services". *Harvard Business Review,* September-October, pp. 105-11.

98. Ridakhurshid et al. (2012). "Service Quality and Customer Satisfaction in Public Transport Sector of Pakistan: An Empirical Study". *International Journal of Economics and Management Sciences,* 1(9); 24-30

99. Ringle, Christian M., Wende, Sven, & Becker, Jan-Michael. (2015). SmartPLS 3. Bönningstedt: SmartPLS. Retrieved from http://www.smartpls.com

100. Rodríguez, D. R., (2011). "Backpacking Tourism in Tampere". Tampereen: Tampere University *of Applied Sciences.*

101. Rural health care system in India, Rural health care system-the structure and current scenario

102. Ruyter, K., &Wetzels, M. (2000). "The role of corporate image and extension similarity in service brand extensions". *Journal of Economic Psychology,* 21(6), 639-659. http://dx.doi.org/10.1016/ s0167-4870(00)00024-6

103. Saeed AA, Mohamed BA (2002). "Patients' perspective on factors affecting utilization of primary health care centers in Riyadh, Saudi Arabia". *Saudi Med J* 23: 1237-1242.

104. Sánchez Pérez, M., R. Sanchez-Fernandez, G. M. Marin-Carrillo, and J. C. Gazquez-Abad. (2007). "Effects of service quality dimensions on behavioral purchase intentions: A study on public-sector transport". *Managing Service Quality* 17 (2): pp. 134–151.

105. Sandhu and NeetuBala., (2011). "Customers' perception towards service quality of Life Insurance Corporation of India, A factor analytic approach". *International journal of business and social science,* 2(18), pp 219-231.

106. Sasser, W.E., Olsen, R.P. and Wyckoff, D.D. (1978). "Management of service operations". *Allyn and Bacon, Boston, MA*

107. Sathyanarayana S, SumithraSreenath, SwathiShanbhag (2017). "The effects of individual dimensions of service quality in IRCTC by using Servqual model with special reference to South Western Railway". *ASIAN JOURNAL OF MANAGEMENT RESEARCH,* Volume 7 Issue 3, pp. 256-278

108. Shariff A, Singh G. "Determinants of maternal health care Utilization in India". *National council of applied economic research, working paper series.* 2002: 85.

109. Sureshchandar, G. S., Rajendran, Chandrasekharan and Kamalanabhan, T. J. (2001). "Industrial Engineering and Management Division". *Total Quality Management,* 12(1): 111-124.

110. Taner, T. and Antony, J. (2006). "Comparing public and private hospital care service quality in Turkey". *Leadership in Health Service,* Vol. 19 No. 2.

111. The SERVQUAL instrument has been used to measure service quality in various service industries which included health sector.

112. Tiernan, S., Rhoades, D.L. and Waguespack, B.P. (2008). "Airline service quality: Exploratory analysis of consumer perceptions and operational performance in the USA and EU". *Managing Service Quality,* Vol. 18 No. 3, pp. 212-224.

113. Untachai, S. (2013). "Modeling service quality in hospital as a second order factor, Thailand". *Procedia - Social and Behavioral Sciences,* 88, 118-133.

114. Van Der Wal, R.W.E., Pampallis, A. and Bond, C. (2002). "Service quality in a cellular telecommunications company: a South African experience". *Managing Service Quality,* Vol. 12 No. 5, pp. 323-35.

115. Vanniarajan, T., A. Stephen. (2008). "Railqual and passenger satisfaction: An empirical study in southern Railways". *Asia Pacific Business Review* 4(1); 64-75.

116. Wisniewski, Mik (2001). "Using SERVQUAL to assess customer satisfaction with public sector services". *Managing Service Quality,* vol. 11(6), pp. 380-388

117. Wolfinbarger, M., Gilly, M. (2003). "eTailQ: dimensionalizing, measuring, and predicting retail quality". *Journal of Retailing.* 79: 183-193.

118. Woodside, A.G., Frey, L.L. and Daly, R.T. (1989). "Linking service quality, customer satisfaction, and behavioral intention: from general to applied frameworks of the service encounter". *Journal of Health Care Marketing,* Vol. 9 No. 4, pp. 5-17.

119. Woolley, F., Kane, R., Hughes, C. and Wright, D. (1978). "The Effects of Doctor-Patient Communication of Satisfaction and Outcome of Care". *Social Science and Medicina,* 12: 123-128.

120. zeithaml, V A and M J bitner (2000). "Services marketing: integrating customer focus across the firm". *McGraw –Hill*

121. Zeithaml, V. A., (2002). "Service excellent in electronic channels". *Managing Service Quality* 12 (3): 135-138.

122. Zeithaml, V., &Bitner, M. (2000). "Services marketing". Boston: *Irwin/McGraw-Hill*

123. Zhou, L., Zhang, Ye, Xu, Jia., (2002). "A critical assessment of SERVQUAL‟s applicability in the banking context of China". *Asia Pacific advances in consumer research,* 5, pp 14-21.