

Healthcare Service Quality measuring techniques in the Universe: a Review

Nitesh H Chahande¹ & Dr. A.P.Kedar² & Dr. R.R.Lakhe³

¹Ph.D. Research Scholar & Asst. Prof. Department of Mechanical Engineering, Govindrao Wanjari College Of Engineering & Technology, Hudkeshwar Road, Nagpur, Maharashtra, India.

²Professor, Department of Mechanical Engineering, Dr. Babasaheb Ambedkar College of Engineering and Research, Nagpur, Maharashtra, India.

³Director, Shreyas Quality Management Systems, Nagpur, Maharashtra, India.

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ABSTRACT: India is one of the largest developing country in terms of population and area. To provide good healthcare service quality to large number of population is a major challenge. In India the healthcare services is provided by public, private and community hospitals. The major problem in front of healthcare service provider is to measure the service quality of healthcare services provided by them. At present few service qualities measuring instruments are developed but they are based on countries other than India. A lack of research exists in literature on healthcare service quality measurement in India. Hence there is a need of research to develop a measuring instrument to measure the service quality of Indian healthcare services. In this paper, we review related to research on measurement of healthcare service quality is carried out. The purpose of this review was to get insight about the healthcare service quality measurement and its limitation which will be useful for further research on developing the service quality measurement scale for Indian healthcare sector.

Key Words: Health care; service quality; services; Indian health care; Measurement; Challenges; service quality scale; patients.

I. Introduction

In the Health care industry, the quality of care is more than a concept. It has become essential to patient well-being and financial survival (Phill Buttell et al., 2007). Health care service quality is responsible not only for patient's physical health, but also to the financial health of a provider. Health care is diagnosis, treatment and prevention of diseases, illness, injury, and other physical and mental impairment in humans. Health care services are delivered patients by the practitioners, nurses, technician and many other care providers in hospitals and clinics. At present health care providers, managers and administrators recognised the importance of service quality for survival and success of the business. Patients and health care providers are two main stakeholder of health care services encounter process. The provider's perspective about health care service quality may be different than the patient's perspective. Patients are not able to judge technical quality (What is provided) of health care services but they can judge the quality on the basis of functional quality that is how the service is provided (Gronroos, 1984). Many researchers have developed a scale to measure the health care service quality for various types of hospital in different countries.

The present study undertakes a comprehensive review of the current state of knowledge regarding health care service quality and its measurement. To get insight about health care service quality, there is necessity to review the literature on health care service quality measurement scales developed by various researchers all over the world. It was done with a view to i) analysing the key methodological issues involved in the development of health care service quality measurement scale and ii) discussing the dimensional structure of the health care service quality. This paper provides useful insight and implications for the development and application of health care service quality.

II. HEALTHCARE SERVICE QUALITY

Health care is the diagnosis, treatment, and prevention of disease, illness, injury, and other physical and mental impairments in human. Health care services are delivered by practitioners, caretakers, nurses to patients in health care organization such as hospitals, clinics, nursing homes. Quality plays important role in attracting new customer as well as retaining old customer. To provide better quality services to patients one has to understand what health care service quality is? Number of professionals and researchers has tried to

define health care service quality. Avedis Donabedian (1980) defined health care quality as 'that kind of care which is expected to maximise an inclusive measure of patient welfare, after one has taken account of the balance of expected gains and losses that attend the process of care in all its parts'. Patient's welfare has given prime importance in delivering the health care services. He pointed out that whether the cost should be included in the definition or not, since quality is also depends on cost to be paid. Hence he defined that quality as the maximum output that is possible with available input. The American medical Association defined health care quality as such care which 'consistently contributes to the improvement or maintenance of quality and/ or duration of life' (Zaneta Piligrimiene and Ilona Buciuniene, 2011). The most widely used and cited definition of health care quality was proposed by the Institute of medicine (IOM) in 1990. According to IOM, health care quality is consist of the 'degree to which health services for individuals and populations increases the likelihood of desired health outcomes and are consistent with current professional knowledge' (P. Buttell et al., 2007).

P. Buttell et al. (2007) extended the IOM definition of health care quality as 'quality consist of the degree to which health services for individuals and populations increase the likelihood of desired health outcomes (quality principles), are consistent with current professional knowledge (professional practitioner skill), and meet the expectations of health care users (the marketplace).'

Department of health (UK) (1997) defines quality of health care as 'doing the right things (what), to the right people (to whom), at the right time (when), and doing things right first time.' This definition has given importance to the timing of services or care provided to the patient which is in need. If right care is not provided at right time, it may result in loss of life of patient. Council of Europe (1998) defines quality of health care as 'the degree to which the treatment dispensed increases the patient's chances of achieving the desired results and diminishes the chances of undesirable results, having regard to the current state of knowledge'. World Health Organisation (WHO) (2000) defines health care quality as 'the level of attainment of health systems intrinsic goals for health improvement and responsiveness to legitimate expectations of the population.'

III. LITERATURE REVIEW

A. Issue of adequacy of dimensions of health care service quality

Parasuraman et al. (1988) develops a service quality measurement scale SERVQUAL comprising of five dimensions- reliability, Responsiveness, Assurance, Empathy and tangibility. Customer evaluates the perceived service quality in terms of these five dimensions. These five dimensions are found consistently important for evaluation of various types of service setting by modifying the service quality attributes. According to Parasuraman et al. (1991)

'SERVQUAL is a generic instrument with good reliability and validity and broad applicability'. Many authors used modified SERVQUAL scale to find out service quality level of hospital. Reidenbach Eric et al. (1990) identifies seven health care service quality dimensions i) Patients confidence ii) Business competence iii) Treatment quality iv) Support services v) Physical appearance vi) Waiting time, vii) Empathy. Babacus and Mangold (1992) examined the usefulness of SERVQUAL scale for assessing the patients perceptions of service quality of hospital services. Two academicians and three management personal were involved in the process of building the service quality attributes of hospital services. After review 15 service quality items representing five SERVQUAL dimensions- reliability, responsiveness, assurance, empathy and assurance were finalized. They pointed out the SERVQUAL is designed to measure the functional quality only and suitable for other services also. Slim Haddad et al. (1998) conducted a research study in Guinea and suggest that, three dimensions- health care Personnel, health facility and health care delivery are important for measuring the health care service quality.

It is observed that SERVQUAL five dimensions are not sufficient to measure the health care service quality. Several authors have made attempt to measure the service quality of health care sector but nobody founds the same dimensions as reported in previous studies. Every country has different number and types of dimensions useful for assessing service quality of health care sector. It is not easy to find the dimensions of health care service quality due to its complexity. Patients are unaware about the technical quality of health care services. This review of past studies resulted that every country has different with other country in respect of culture, environment, awareness and many more factor which affect the perception of patient. The detailed about the studies used in this paper is represented in table I.

TABLE I
SUMMARY OF HEALTH CARE SERVICE QUALITY DIMENSIONS

S. N.	Author, Year, Country	Final dimensions
1	Reidenbach Eric et al., 1990, USA	Seven Dimensions- Patients confidence, Business competence, Treatment quality, Support services, Physical appearance, Waiting time, Empathy
2	Emin Babacus and Glynn Mangold , 1992, USA	Five Dimensions- Reliability, Responsiveness, Assurance, Empathy, Tangibles
3	James H. McAlexander et al., 1994, USA	Five Dimensions- Reliability, Responsiveness, Assurance, Empathy, Tangibility
4	Slim Hadded et al., 1998, Guinea	Three dimensions- Health care Personnel, Health facility, Health care delivery
5	Hanjoom Lee et al., 2000, USA	Seven Dimensions- Reliability, Professionalism/skill, Empathy, Assurance, Core medical services, Responsiveness, Tangible
6	Syed Saad Andaleeb, 2001, Bangladesh	Five dimensions- Responsiveness, Assurance, Communication, Discipline, Baksheesh.
7	Victor Sower et al., 2001, USA	Eight Dimensions- Respect and caring, Effectiveness & Continuity, Appropriateness, Information, Efficiency, Meals, First Impression, Staff Diversity
8	RMPM Baltussen et al., 2002, Burkina Faso	Four dimensions- Health personnel practices and conduct, Adequacy of recourses and services, health care delivery, Financial and physical accessibility of care
9	M. Sadiq Sohail, 2003, Malaysia	five dimensions- Reliability, Responsiveness, Assurance, Empathy, Tangibles
10	Dat Van Duong et al., 2004, Vietnam	Four dimensions- Health care delivery, Health facility, Interpersonal aspects of care, Access to services
11	Mohamed M. Mostafa, 2005, Egypt	Three dimensions- Human performance quality, Human reliability, Facility quality
12	Tracey Dagger et al., 2007, Australia	Four primary dimension- Interpersonal quality, Technical quality, Environment quality, Administrative quality, Nine sub dimensions- interaction, relationship, outcome, expertise, atmosphere, tangibles, timeliness, operation, and support,
13	Ching-I Teng et al., 2007, Taiwan	Six dimension- Need management, Assurance, Sanitation, Customization, Convenience and quite, Attention
14	Syed Saad Andaleeb, 2008, Bangladesh	Four Dimensions- Doctor component, Nurse component, Tangibles, Input adequacy

B. Methodological issues in assessing health care service quality

This paper make an attempt to review the research paper on the basis of country as represented in table-1. Only studies focusing on measuring the health care service quality are included and subjected to a comprehensive in depth content analysis of the key methodological aspects of measuring the health care service quality of several types of health care services in various countries. The methodological issues identified in this review can be summarized as : research approach, types of respondent, method of data collection, sample size types of health care sector, survey administration, number of service quality items, reliability of service quality scale developed.

C. Research approach

In research study generally two research approaches are used i.e. qualitative approach and quantitative approach. The studies used in this paper used variety of research approaches- quantitative approach

(Reidenbach Eric et al., 1990; James H. McAlexander et al., 1994; Mohamed M. Mostafa,1995; Figen Yasilada and Ebru Direktor, 2010; Rizwan Ahmad and Hina Samreen, 2011; Zaneta Piligrimiene et al.,2011; Upul Senarath,2011; Laith Alrubaiee and Feras Alkaaida,2011; Suleiman Abu-kharmeh,2012; Asghar Zarei et al.,2012; Watek Ramez, 2012; Tri Rakhmawati et al., 2013) and mixed (Emin Babacus and Glynn Mangold, 1995; Slim Hadded et al.,1998; Hanjoom Lee et al., 2000; Syed Saad Andaleeb, 2001& 2008; Victor Sower et al., 2001; RMPM Baltussen et al.,2002; M. Sadiq Sohail, 2003; Dat Van Duong et al., 2004; Tracey Dagger et al., 2007; Ching-I Teng et al.,2007) to find out the health care service quality dimensions using. At the early stage the researchers should employ qualitytative approach to understand the significant incident from the consumers perspective ,taking into account behavioural ,affective, and cognitive aspects(Chell, 1998). In all these studies it is observed that health care service quality has multidimensional nature and has identified number of service quality dimensions which are changes from one country to another country.

TABLE II.
TYPES OF RESEARCH APPROACH

S.N.	Author	Research Approach
1	Reidenbach Eric et al. (1990)	Quantitative
2	Emin Babacus and Glynn Mangold (1992)	qualitative and quantitative
3	James H. McAlexander et al.(1994)	Quantitative
4	Slim Hadded et al.(1994)	qualitative and quantitative
5	Hanjoom Lee et al. (2000)	qualitative and quantitative
6	Syed Saad Andaleeb (2001)	qualitative and quantitative
7	Victor Sower et al. (2001)	qualitative and quantitative
8	RMPM Baltussen et al.(2002)	qualitative and quantitative
9	M. Sadiq Sohail(2003)	qualitative and quantitative
10	Dat Van Duong et al.(2004)	qualitative and quantitative
11	Mohamed M. Mostafa(2005)	Quantitative
12	Tracey Dagger et al.(2007)	qualitative and quantitative
13	Ching-I Teng et al.(2007)	qualitative and quantitative
14	Syed Saad Andaleeb (2008)	qualitative and quantitative
15	Mejabi O.V. and Olujide J.O. (2008)	qualitative and quantitative
S.N.	Author	Research Approach
16	Figen Yasilada and Ebru Direktor (2010)	Quantitative
17	Rizwan Ahmad and Hina Samreen (2011)	Quantitative
18	Zaneta Piligrimiene et al. (2011)	Quantitative
19	Upul Senarath (2011)	Quantitative
20	Laith Alrubaiee and Feras Alkaaida (2011)	Quantitative

D. Types of Respondent

The stakeholder of health care system includes patients, patients relatives ,doctors and nurses, technicians and not technical staff , administrators and managers of health care systems. The studies reviewed in this paper, used variety of respondent for measuring the health care service quality. Many studies (Reidenbach Eric et al.,1990; Emin Babacus and Glynn Mangold,1992; Syed Saad Andaleeb,2001; Victor Sower et al.,2001, M. Sadiq Sohail, 2003; Mohamed M. Mostafa,2005; Figen Yasilada and Ebru Direktor,2010; Upul Senarath.,2011; Watek Ramez,2012) used only discharged patients perspective for finding the level of health care service quality in different health care setting. four research studied has not mention the period of discharged patients. Sadiq sohail(2003) and Figen Yasilada et al.(2010) employed the responses from discharged patients who have taken health care services within the period of six month from survey period. Watek Ramez(2012) and Andaleeb(2001) uses the response from patients who taken the health care services within one year period. Few studies used outpatients (Slim Hadded et al.,1998; Tracey Dagger et al.,2007; Rizwan Ahmad and Hina Samreen,2011), visitors (RMPM Baltussen et al.,2002) in their research work which have not avail all the services available in hospital. it is very difficult for them to analyse the service quality in one visit in hospital. Some studies used physicians ,health care professional ,managers and administrators (i.e. Hanjoom Lee et al.,2000; Zaneta Piligrimiene et al.2011) in their studies. All these are service providers whose perspective about service quality is different than service users ,hence there is possibility of bias information which may affect the result of study. Only four studies have used inpatients

(Ching-I Teng et al.,2007; Laith Alrubaiee and Feras Alkaaida,2011; Suleiman Abu-kharmeh,2012; Asghar Zarei et al.,2012) in their research studies. Inpatient which are admitted in hospital used maximum services and have number of interaction with all the service provider during his stay in hospital. Hence inpatient is the right choice for measuring the level of service quality of health care services provided in hospital.

TABLE III
TYPES OF RESPONDENT

S.N.	Author	Types of respondent
1	Reidenbach Eric et al	Discharged patients
2	Emin Babacus and Glynn Mangold ,	Discharged patients
3	James H. McAlexander et al.,	Patient
4	Slim Hadded et al.,	Outpatients
5	Hanjoom Lee et al.,	Physician
6	Syed Saad Andaleeb,	Person / Family member used Health services in past 12 month.
7	Victor Sower et al.,	Recently discharged Patient
8	RMPM Baltussen et al.,	Visitors
S.N.	Author	Types of respondent
9	M. Sadiq Sohail,	Patients discharged within last six months
10	Dat Van Duong et al.,	Pregnant women, women who had given birth within the previous 3 months in commune health centers and at home.
11	Mohamed M. Mostafa,	discharged patients
12	Tracey Dagger et al.,	Outpatients
13	Ching-I Teng et al.,	In- Patients
14	Syed Saad Andaleeb	Parents
15	Mejabi O.V. and Olujide J.O.,	Patients and caretaker
16	Figen Yasilada and Ebru Direktor ,	health service users who used service within six months
17	Rizwan Ahmad and Hina Samreen,	Out-Patients
18	Zaneta Piligrimiene et al.,	Healthcare Professionals and Healthcare Administrator / managers
19	Upul Senarath,	Discharged patients
20	Laith Alrubaiee and Feras Alkaaida,	In-patient
21	Suleiman Abu-kharmeh,	admitted patients (In-patients)
22	Asghar Zarei et al.,	In- Patients
23	Wathek Ramez,	health service users who used service within one year
24	Tri Rakhmawati et al,	PHC service users (Patients)

E. Sample size

Several studies used limited sample size for measuring the health care service quality. Upul Senarath(2011) use a sample of only 120 respondents which included only discharged patients. In Malesia the study carried out by M. Sadiq Sohail(2003) uses a sample of 150 discharged patients within last six months from survey. Syed Saad Andaleeb(2001) in Bangladesh uses a sample of 207 discharged patients and family member who used health services in past 12 month. These sample size is relatively very small for assessing the health care service quality and finding the service quality dimensions, hence future studies should used larger sample which should include the responses from inpatients and recently discharged patients for obtaining the better result and increasing the scale reliability.

TABLE IV
SAMPLE SIZE FOR MEASURING HEALTHCARE SERVICE QUALITY

S.N.	Author	Sample size
1	Reidenbach Eric et al	300
2	Emin Babacus and Glynn Mangold ,	443
3	James H. McAlexander et al.,	346
4	Slim Hadded et al.,	285
5	Hanjoom Lee et al.,	348
S.N.	Author	Sample size
6	Syed Saad Andaleeb,	207
7	M. Sadiq Sohail,	150
8	Dat Van Duong et al.,	396

9	Mohamed M. Mostafa,	332
10	Tracey Dagger et al.,	340
11	Ching-I Teng et al.,	253
12	Syed Saad Andaleeb	308
13	Rizwan Ahmad and Hina Samreen,	252
14	Zaneta Piligrimiene et al.,	393
15	Upul Senarath,	120
16	Laith Alrubaiee and Feras Alkaaida,	290
17	Suleiman Abu-kharmeh,	556
18	Wathek Ramez,	235

F. Type of health care service industry considered

Health care services are provided by many types of hospitals and clinics such as primary health care centres (PHC), government hospital, private hospitals, medical college and hospital, speciality hospitals. For developing the appropriate health care service quality scale, respondent from all types of health care industries should be used. Three authors (Reidenbach Eric et al.,1990; Figen Yasilada and Ebru Direktor,2010; Wathek Ramez,2012) have not clearly mentioned the number of hospitals and types of hospital used in their study. Some studies collect the data from only one hospital. Emin Babacus (1990) and Ching-I Teng et al.(2007)collect the data from one hospital but did not report about the type of services provided in the hospital. Upul Senarath(2012) collect the data from one government hospital of Srilanka. James H. McAlexander et al.(1994) collect the data from two dental clinics. Two authors (RMPM Baltussen et al.,2002; Tri Rakhmawati et al.,2013) conducted study in government hospitals which provides only primary health care services. In case of primary health care service centre patients need not to stay more than twenty four hours. Hence many services are not possible to judge in one day. Some studies (Sadiq Sohail,2003;Tracy Dagger et al.,2007;Asghar Zarei et al.,2012) focuses only on private hospitals. Private hospitals are purely profit making hospitals which provides services against the payments. Hence scale developed on the basis of data from only private hospital will not suitable for other types of hospitals. Several research studies (Mustafa,2005;Andaleeb,2008;Yasilada and Direktor,2010;Rizwan and Samreen,2011;Laith and Feras,2011) collected the data from both public as well as private hospital. But these studies does not used data from community/ trust hospitals. Few studies focus on specific hospitals such as teaching hospitals(Mejabi and Olujide,2008) and non-profit hospitals(Victor Sower et al.,2001) for developing health care service quality scale development.

TABLE V
TYPES OF HEALTHCARE SERVICE INDUSTRY

S.N.	Author	Types of healthcare service Industry
1	James H. McAlexander et al.,	Clinic
2	Slim Hadded et al.,	One Urban hospital, One Urban Health center, Two rural health center
3	Hanjoom Lee et al.,	Randomly selected
4	Victor Sower et al.,	Non Profit Hospital
5	RMPM Baltussen et al.,	Government Primary healthcare Centres
6	M. Sadiq Sohail,	Private hospitals
7	Dat Van Duong et al.,	Commune health centre
8	Mohamed M. Mostafa,	Private hospital, Government hospital
9	Tracey Dagger et al.,	Metropolitan Private Hospitals
10	Syed Saad Andaleeb,	Private hospitals, Public hospitals , clinics
11	Mejabi O.V. and Olujide J.O.,	Teaching Hospitals
12	Figen Yasilada and Ebru Direktor ,	Public sector, Private sector,

13	Rizwan Ahmad and Hina Samreen,	Public sector, Private sector, Semi-public sector
14	Upul Senarath,	Government Hospital
15	Laith Alrubaiee and Feras Alkaaida,	Private hospital, Government hospital
16	Asghar Zarei et al.,	Private hospitals
17	Tri Rakhmawati et al,	Primary healthcare center

G. Method of data collection

There are number of methods of data collection such as online (through email survey, website survey), offline (postal mail, telephonic survey) and Interview (personal interview, focus group interview, questionnaire based interview). In developed countries data can be collect through online method but it is quite difficult in developing country. Many researchers collect data through face interview (Rizwan, 2011; Zaneta et al.,2011), exit interview (Hadded et al.,1998;Baltussen et al.,2002) with patients, relatives and parents on the basis of survey questionnaire to developed health care service quality scale. Few authors collect data through interview at home and offices after discharge from hospital within one year period (Andaleeb,2001; Duong et al.,2004;Yasilada,2010;Ramez,2012). Reidenbach et al.(1990) used telephonic survey to collect the data for research. Number of authors used postal mail (Babacus,1992; James et al.1994; Hanjoom Lee,2000; Sohail, 2003; Dagger et al.2007) to collect data for research. In both the cases telephonic interview and postal mail ,it is possibility of getting improper perception about services. Postal method is time consuming. The response rate in both postal mail and email survey is very low as compared to face interview based on survey questionnaire. Authors should mention about method of data collection for research and reason for selecting particular data collecting method for research. Victor Sower et al.(2001) not mention about the method of data collection in his research for developing service quality scale.

H. Number of service quality items

Service quality dimension is represented by number of service quality items. Parasuraman et al.(1991) defines five service quality dimension using 22 service quality items. Many researchers has pointed out that each service quality dimension is represented by more than one service quality items. Same dimensions may have different service quality items which are depends on the type of service sector. Several authors (Babacus,1992; James et al.,1994; Hadded et al.,1998; Andaleeb,2001;Baltussen et al.,2002; pointed out less than 40 service quality items to represent the health care service quality dimensions.

I. Reliability of service quality scale developed.

The reliability of scale means the internal homogeneity of a set of items and it is assessed by Cronbach's alpha coefficient. If the value of Cronbach's alpha is more than 0.7 then it is assumed good reliability. The coefficient value nearest to 1 , indicates that more reliability(Nunally,1978). Mangold and Babacus (1992) developed 15 service quality item scale to measure the health care service quality with a overall reliability of 0.897 for expectation score and 0 .964 for perceptions scores. James H. McAlexander et al.(1994) uses two scale to measure the service quality of hospital and reported reliability of 0.8 for SERVQUAL scale and 0.9 for SERVPERF scale. Some authors (RMPM Baltussen et al.,2002; Dat Van Duong et al.,2004; Tracey Dagger et al.,2007) reported scale reliability less than 0.8 . Several authors (Slim Hadded et al.1994; Hanjoom Lee et al.,2000; M. Sadiq Sohail,2003; Syed Saad Andaleeb ,2001; Ching-I Teng et al.,2007; Mohamed M. Mostafa,2005) reported reliability of developed scale more than 0.9 which represent good the internal homogeneity of a set of health care service quality items which represent the number of service quality dimensions. Number of researchers make attempt to develop a service quality scale to measure the service quality of health care services in various countries but it is observed that all the developed scale varies with each other with respect to types of service quality dimensions, types and number of service quality items, and reliability of scale.

TABLE VI

SUMMARY OF RESEARCHES BASED ON DATA COLLECTION, FINAL NUMBER OF SERVICE QUALITY ITEMS, RELIABILITY OF SCALE.

SN	Author, Year, Country	Method Data collection	Final Number of items	Reliability
1	Reidenbach Eric et al., 1990,USA	Telephonic survey	41	Not reported
2	Emin Babacus and Glynn Mangold , 1992,USA	Postal Mail	15	Expectation =0.897 Perception= 0.964

3	James H. McAlexander et al., 1994, USA	Postal Mail	Expectation-15 Perception-15, Importance-15	SERVQUAL=0.82 , SERVPERF=0.91,
4	Slim Haddad et al., 1998, Guinea	Exit Interview(128) Household Interview(157)	20	0.88 for total score, ranges from 0.71 to 0.84 for subscales
5	Hanjoom Lee et al., 2000, USA	Postal Mail	43	Ranges from 0.8-0.90
6	Syed Saad Andaleeb, 2001, Bangladesh	Personal Interview in 17 residential areas	25	Ranges from 0.85 to 0.92
SN	Author, Year, Country	Method Data collection	Final Number of items	Reliability
7	Victor Sower et al., 2001, USA	Not clearly mentioned	75	Ranges from 0.87 to 0.98
8	RMPM Baltussen et al., 2002, Burkina Faso	Exit interview with visitors	20	0.86 for total score, Ranges from 0.55 to 0.79
9	M. Sadiq Sohail, 2003, Malaysia	Postal Mail	15	Ranges from 0.6321 to 0.8669
10	Dat Van Duong et al., 2004, Vietnam	Household interviews	20	0.77 for total score, ranges from 0.33 to 0.72 for subscales
11	Mohamed M. Mostafa, 2005, Egypt	Interview with discharged patient who admitted at least for three days	22	Overall = 0.944
12	Tracey Dagger et al., 2007, Australia	Postal Mail	45	Ranges from 0.82 to 0.96
13	Ching-I Teng et al., 2007, Taiwan	Interview on survey questionnaire of five point likert scale.	29	Ranges from 0.642 to 0.887
14	Syed Saad Andaleeb, 2008, Bangladesh	Interviews with Parents of children	20	Ranges from 0.63 to 0.93
15	Mejabi O.V. and Olujide J.O., 2008, Nigeria	Survey	39	Ranges from 0.74 to 0.94
16	Figen Yasilada and Ebru Direktor , 2010, Turkey	interview at home, offices ,Telephonic Interview	22	NOT REPORTED
17	Rizwan Ahmad and Hina Samreen, 2011, Pakistan	face Interview with outpatients	21 pairs of item	Ranges from 0.577 to 0.865
18	Zaneta Piligrimiene et al., 2011, Lithuania	face Interview	64	Ranges from 0.701 to 0.931 in professionals sample, and Ranges from 0.739 to 0.938 in managers sample.
19	Upul Senarath, 2011, Srilanka	Interview on survey questionnaire on five point likert scale on the day of discharge	36	Ranges from 0.37 to 0.94
20	Laith Alrubaiee and Feras Alkaaida, 2011, Jordan	Interview with patient in hospital	26	Overall = 0.92
21	Suleiman Abu-kharmeh, 2012, Jordan	Interviews	31	ranges from 0.83 to 0.92

22	Asghar Zarei et al., 2012,Iran	Interview on survey questionnaire on five point likert scale on the day of discharge	21	Ranges from 0.85 to 0.95 for perception dimensions, Ranges from 0.8 to 0.9 for expectation dimensions
23	Wathek Ramez, 2012, Bahrain	interview at home, offices ,hospitals	20	SERVQUAL=0.962, SERVPERF=0.973,

J. Dimensionality of health care service quality construct

It is observed from review of several researches on health care service quality measurement that i) till date there is no general agreement on the number and the types of dimensions of health care service quality ii) it is observed that some common dimensions are reported in most of the study.iii) all the studies reviewed are mainly concentrated on only functional quality. All the studies reviewed in this paper reported the number of dimensions ranges from three to fifteen in numbers and the range of service quality items ranges from 15 to 75 in numbers. The SERVQUAL five dimensions: reliability ,responsiveness, assurance, empathy and tangibles are appeared in most of the study. The scales dimensions and number of items are changes from one country to other country and depends on the type of health care service industry i.e. government, private and community hospital. Hence the number and type of service quality dimensions depends upon many factors such as country, type of health care services, types of patients (inpatients and outpatients). Hence there is a need to developed individual service quality scale for measuring the individual service quality of health care industry.

IV. CONCLUSION

An attempt is made in this paper to review various health care service quality measurement scales. All the studies are summarized in Table 1. This paper tried to cover maximum papers from various countries to cover the views of researchers from all part of the world. Research papers reviewed represent the Asian, American, European perspective about the health care service quality measurement. It is observed that till date there is no general agreement on the type and number of health care service quality dimensions. The health care service quality is a multidimensional construct. It is noted that nobody has use neural network to analysis the health care service quality measurement. On the basis of review it is observed that the health care service quality construct is depends on many factors such as type of health care services, country, types of respondents, types of medium is used for collecting the responses, environment etc. It is observed that the reliability of scale using perception minus expectation score is less than perception only score but most of the authors used perception –expectation score to measure the service quality. It is clear from review that till date there is none of the service quality scale developed which is suitable for all types of health care service setting and for all types of country. Most of the researches are done in developed environment hence there is a need to developed new service quality measurement for measuring the health care service quality of Indian health care sector because India has number of differences than European and American countries in respect of culture, environment, religious beliefs, education and economical level.

REFERENCES

1. Parasuraman et al.(1988), 'SERVQUAL: A Multiple- item scale for Measuring Consumer Perception of Service Quality' Journal of Retailing,Vol.64,No.1,pp.12-40.
2. Parasuraman et al. (1985), 'A Conceptual Model of Service Quality and its Implications for Future Research,' Journal of Marketing, pp.41-50.
3. Leonard Berry et al.(1985), 'Quality counts in Services, Too,' Business Horizons, May- June, , pp. 44-52.
4. Nitin Seth and S.G.Deshmukh (2005), 'Service Quality Models: A review' International Journal of Quality & Reliability Management, Vol.22, No.9, pp.913-949.
5. Riadh Ladhari (2010), 'Developing e-service quality scales: A literature review' Journal of Retailing and Consumer Services, Vol.17, pp. 464-477.
6. Gi-Du Kang and Jeffrey James (2004), 'Service quality dimensions: an examination of Gronroos's service quality model,' Managing Service Quality, Vol.14, No.4, pp. 266-277.
7. Zhilin Yang et al.(2005), 'Development and validation of an instrument to measure user perceived service quality of information presenting Web portals,' Information and Management, Vol.42,pp. 575-589.
8. Nitin Seth et al.(2006), 'A conceptual model for quality of service in the supply chain,' International Journal of Physical Distribution & Logistics Management,Vol.36,No. 7,pp. 547-575.
9. Joel E. Collier and Carol C. Bienstock (2006), 'Measuring Service Quality in Retailing,' Journal of Service Research, Vol.8, pp.260-275.

10. Tracey S.Dagger et al.(2007), 'A Hierarchical Model of Health Service Quality : Scale Development and Investigation of an Integrated Model,' *Journal of Service Research*,Vol.10,pp. 123-142.
11. Cronin and Taylor(1992), 'Measuring Service Quality : A Re-examination and Extension,' *Journal of Marketing*, Vol.56.
12. Parasuraman et al.(1988), 'SERVQUAL : A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality,' *Journal of Retailing*, Vol.64, No.1, pp.12-40.
13. Cronin and Taylor(1992), 'Measuring Service Quality : A Re-examination and Extension,' *Journal of Marketing*, Vol.56, pp.55-68.
14. Victor Sower et al. (2001), 'The Dimensions of Service Quality For Hospitals: Development and use of the KQCAH Scale,' *Health care Manage Review*,Vol.26,No.2,pp.47-59.
15. Reidenbach (1990), 'Exploring Perceptions of Hospital Operations by a Modified SERVQUAL Approach,' *Journal of Health Care Marketing*, Vol.10, No. 4, pp.47-55.
16. Emin Babakus and W Glynn Mangold (1992), 'Adapting the SERVQUAL Scale to Hospital Services: An Empirical Investigation,' *Health Services Research*, Vol.26,No.6,pp.
17. McAlexander, James H et al.(1994), 'Service quality measurement,' *Journal of Health Care Marketing*, Vol. 14,No. 3, pp.34-40.
18. Hanjoom Lee et al.(2000), 'Methods of Measuring health-Care service Quality,' *Journal of Business Research*, Vol.48, pp.233-246.
19. Andaleeb Syed (2001), 'Service quality perceptions and patient satisfaction: a study of hospitals in a developing country,' *Social science and Medicine*, Vol.52,pp. 1359-1370.
20. Victor Sower et al. (2001), 'The Dimensions of Service Quality For Hospitals: Development and use of the KQCAH Scale,' *Health care Manage Review*,Vol.26,No.2,pp.47-59.
21. Sohail, S. M. (2003). 'Service Quality In Hospitals: More Favourable Than You Might Think' *Managing Service Quality (Emerald-MCB)*.Vol. 13, No 3 pp 197-206.
22. Tracey S.Dagger et al.(2007), 'A Hierarchical Model of Health Service Quality : Scale Development and Investigation of an Integrated Model,' *Journal of Service Research*,Vol.10,pp. 123-142.
23. Andaleeb Syed (2008), 'Caring for children: a model of Health care service quality in Bangladesh,' *International Journal for Quality in Health Care*,Vol.20, No.5,pp.339-345.
24. Mejabi O.V. et al.(2008), 'Dimensions of Hospital Service Quality in Nigeria,' *European journal of Social Sciences*, Vol.5, No.4, pp.141-159.
25. Rizwan Ahmed and Hina Samreen(2011), 'Assessing the service quality of some selected hospitals in Karachi based on the SERVQUAL Model,' *Pakistan Business Review*,pp. 266-314.
26. Zaneta Piligrimiene and Buciunienc (2011), 'Exploring managerial and professional view to health care service sector,' *Ekonomica and Management*, Vol.16,pp.1304-1315.
27. Suleiman at al.,(2012),' Evaluating the Quality survey used in the Hashemate Kindome of Jourdan,' *International Journal of business and Management*, Vp;7,Mp.4,pp.195-204.
28. Mohamad Mostafa(2006), 'An empirical study of patients expectations and satisfaction in Egyptian hospitals,' *International Journal of Health Care Quality Assurance*,Vol.18,No.7,pp.516- 532.
29. Laith Alrubaiee and Feras Alkaaida(2011), 'The Mediating Effect of Patient Satisfaction in the Patients Perception of Health care Quality – Patient Trust Relationship,'Vol.3,No.1,pp.103-127.
30. Upul Senarath et al.(2011), 'Development of an Instrument to Measure Patient Perception of the Quality of Nursing Care and Related Hospital Services at the National Hospital of Sri Lanka,'Vol.5,No.2,pp71-80.
31. Slim Hadded et al.(1998), 'Measuring lay people's perceptions of the quality of primary health care services in developing countries. Validation of a 20-item scale,'Vol.10,No.2,pp.93-104.
32. Dat Van Duong et al(2004), 'Measuring client-perceived quality of maternity services in rural Vietnam,'Vol.16,No.6,pp.447-452.
33. RMPM Baltussen(2002), 'Perceived quality of care of primary health care services in Burkina Faso,' *Health Policy and Planning*,Vol.17,No.1,pp.42-48.
34. Asghar Zarei et al.(2012), 'Service quality of private hospitals: The Iranian Patients perspective,' *BMC Health Services Research*,pp.1-14.
35. Ching I Teng et al.(2007), 'Development of Service Quality scale for Surgical Hospitalization,' *Journal of Formosan Medical Association*,Vol.106,No.6,pp.475-484.
36. Figen Yesilada and Ebru Direktor(2010), 'Health care service quality: A comparison of public and private hospitals,'Vol.4,No.6,pp.962-971.
37. Wathek Ramez(2012), 'Patients Perception of Health Care Quality, Satisfaction, and Behavioral Intention: An Empirical Study in Bahrain,' *International Journal of Business and Social Issues*,Vol.3,No.18,pp.131-141.
38. Tri Rakhmawati et al.(2013), 'Developing a Service Quality Measurement Model of Public Health Center in Indonesia,' *Management Science and Engineering*,Vol.7,No.2,pp.1-15.
39. Senthil Kumar and Prabhakaran (2011), 'Service quality in Health care –Perspectives of stakeholders,' *The journal of Sri Krishna research and educational consortium*,Vol. 2, No.3,pp.23- 34.
40. Basu Rana and Biswas Dhruves (2012), 'A Conceptual framework to identify quality attributes in Health care organizations,' *International journal of contemporary business studies*, Vol.3,No.12,pp.45-52.

41. Pai Yogesh and Chari Satyanarayana(2012), 'Measuring hospital service quality: A conceptual framework,' International conference on Humanities,Economics and Geography(ICHEG),pp.192- 195.
42. Akhade, G. N., S. B. Jaju, and R. R. Lakhe (2013) 'A Review on Health care Service Quality Dimensions.' In Emerging Trends in Engineering and Technology (ICETET), 2013 6th International Conference on, pp. 126-127. IEEE.
43. Akhade, G. N., S. B. Jaju, and R. R. Lakhe (2016) 'Critical Review on Global practices in measuring Health care Service Quality.' International journal of Engineering and technical Research.