Chapter 3

Review of Relevant Literature

[The existing work on healthcare quality is compactly reviewed as the assessment of the “state of the art”. A distinction is made between the early work (e.g. by Parasuraman and his associates) and the later developments. The chapter helps to identify the relevant past work providing the apt background for enumeration. Distinction is made between theoretical work and results from country specific studies some of which are fused together, depending on the issues and generally in a chronological order. A new potential dimension for future work is mentioned.]

3.1.1 Basic SERVQUAL (RATER) Model

Parasuraman et al (1988) developed SERVQUAL, a service quality framework, which is a standardized and reliable tool to measure end users’ perceptions of service quality. Here the focus was to identify the gap between the perception ($P$) and expectation ($E$) of consumer satisfaction based on five major attributes i.e. reliability, assurance, tangibles, empathy and responsiveness [RATER] in the light of service quality.

As a sequel to the pioneering work of Parasuraman (1988) on service quality model, several studies followed in this area, pointing to the vast research gaps that were thrown up. First, the work was by Parasuraman himself and his colleagues/students (1988, 1990, and 1991). Almost simultaneously several other researchers joined the investigations [e.g. O’Conner et al (2001), Pravakaran et al (2003), Rohini et al (2006), Chunlaka (2010)]. These works concerned modifications and extensions of the Parasuraman model and its inadequacy for specific service quality areas—one such area being healthcare systems. A survey of some of these works concerning healthcare, initially in a descriptive form and then in summarize table form will be presented. The works in question examine adequacy or otherwise of ‘RATER’ model of Parasuraman for evaluating healthcare quality. They suggest addition of new factors,

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replacement of original factors partially and de-emphasize a few of them. Some of these studies are country specific (e.g. Bangladesh, Malaysia), which may have validity for the local domain only. Their wider applicability needs to be investigated. To cite a specific point, the role of voluntarily paid tips (Baksheesh) to the hospital staff in countries like Bangladesh or India to induce better quality hospital care and sometimes the dominance of this factor, is not likely to be relevant in other countries.

3.1.2 Significance of the Model

As per Pravakaran et al (2003), customers’ dissatisfaction happens mainly due to the three reasons. Service providers:

1) Are not aware of service dimensions that are important to end-users,
2) Do not understand the way in which end-users prioritize the service dimensions based on their values and
3) Are ignorant of service attributes that make up the service dimensions.

Babakus et al (1992) recognized RATER as a reliable and valid model in the healthcare setup. O’Conner et al (2001) reported that the instrument is ideal to analyze the perceptual gap to understand patient expectation in healthcare sector. Pakdil et al (2005) opined it to be a handy model to compute the differences between patients’ actual experience and their preferences. As per Rohini et al (2006), the instrument is ‘parsimonious’ and indicates standardized procedure to analyze and interpret results in hospitals situated in Bengaluru. Mangkolrat (2008), in his thesis, lists the seven benefits of this instrument as below in the context of measuring patient satisfaction:

1) Useful tool to extract the customer views regarding service encounters, which include customer expectation, satisfaction and their relative importance,
2) Capable enough to highlight to the management about customer as well as management perceptions,
3) Strategies can be formulated as per the indicated gaps to achieve the desired expectations,
4) Useful to identify the strengths and weaknesses in specific areas,
5) Able to prioritize areas of strengths and weaknesses that are identified,
6) Facilitates bench-marking for organizations which can be analyzed in the context of healthcare and
7) If applied regularly, it can trace the pattern of customer $P$ and $E$ was for interior designers’ expectations and perceptions and relative importance.

Qin & Prybutok (2009) suggest that all the five dimensions of the model are reliable and significant in hospital care studies. Chunlaka (2010) uses it to understand the customers’ value, their needs and expectations and how an organization must identify them in a healthcare setup. Ramez (2012) evaluates, employing SERVQUAL scale, the level of service quality in healthcare in Bahrain. The relation between patients’ satisfaction and service quality dimensions has been assessed.

3.1.3 Criticism of the Model

Many researchers have dwelt upon the limitations of RATER model, in spite of its popularity. Brown et al (1993) indicate that in the case of measuring reliability by scores of differences in customer’s $P$ and $E$, the model is not strong enough. Reliability of scores of differences may be impacted due to the positive correlation between component scores. This low reliability may be a limitation for the construct validity of components. Chatterjee & Chatterjee (2005) suggest that in this model ordinal scale is the foundation for collecting data responses and their statistical analysis using continuous responses is not fully appropriate. Further problems in reliability and validity (discrimination, convergence and predictive) will arise due to these differential scores.

Some theorists have questioned this model on its multidimensional structure. Haywood-Farmer and Stuart (1988) reveal that the tool is not fit for evaluating professional service quality as it does not include the dimensions of service customization, care service and knowhow of the service professionals. Due to the uniqueness of services provided by the hospital or healthcare services, Vandamme et al (1993) indicate that the model cannot be generalized to this area. Sohail (2003) researched on service quality measurement in hospitals located in Malaysia and could not confirm any of the five generic dimensions of

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this instrument. Paul III (2003) concluded that measuring the customer's $P$ and $E$ factors simultaneously is confusing as the $E$ scores rest on the patient's recall and are influenced by performance level that they perceive. Ramsaran-Fowder (2005), interested in studying the patient satisfaction, made necessary changes in this tool and found out that all the dimensions could not be reproduced completely in this context. From the researches of Mostafa (2005), who used Factor Analysis to see how these generic dimensions impacted patients’ perceived service quality, revealed that only a three-factor solution was adequate for the purpose and not all the five dimensions were significant. Similar results followed from studies conducted by Gonzalez-Valentín et al (2005) using Factor Analysis at the regional University Hospitals of Southern Spain using this instrument. Yesilada et al (2010) used this model to understand the patient satisfaction in the context of both public/private hospitals located in Cyprus. Tests, which used the Factor Analysis to investigate the dimensions, did not lead to the originally suggested dimensions. The problems with the SERVQUAL tool usage can be segregated into four important groups:

1) *Using difference of the gap scores:* For computing the psychological construct, subtraction of one measure from the other is not a good choice.

2) *Reliability and validity issues with gap scores:* As the component scores are highly correlated, using the standard reliability measuring tool, Cronbach’s alpha is not suitable.

*Validity concerns:* Predictive and convergent validities are low for the measures.

3) The term “expectations” is not defined clearly: Several definitions of the term “expectations” result in individuals interpreting it on their own and cause measurement validity issues.

4) *Dimension instability:* Factor structure of the service quality developed on the theoretical model along with the use of gap scores is questionable.
3.1.4 Criticality of the Model

Sohail (2003) concludes that out of the available tools to measure patient satisfaction, SERVQUAL stands out as a reliable and proven model, as established in several studies. These have either used the existing five dimensions or deleted/appended some others. Initially (1985), SERVQUAL had ten dimensions: access, communication, competence, courtesy, credibility, reliability, responsiveness, security, tangibles and understanding/knowing the customer. In 1988, the same were refined to five dimensions (RATER). Subsequently, some researchers made variations to accommodate country specific cultural practices. For example, in the case of Bangladesh, ‘baksheesh’ (tips) to service providers was considered as a required dimension.

Two technical points are in order here:

1) Ordinal scale is the basis for measuring the customer’s P and E in RATER model, though the usage of statistical tools on ordinal data is not completely reliable.
2) Measurement of P and E simultaneously is not a good technique, as it leads to erroneous data.

3.1.5 Modifications of the Model

SERVQUAL model has been modified by several researchers by adding more dimensions and untapped constructs that are reliable and valid.

Reidenback et al (1990) have identified seven dimensions in their modified version of the instrument. They used this refined model in three different hospital settings:

a) To understand the relation among inpatient perceptions, outpatient and facilities in the emergency ward,
b) To measure the overall perceptions of service quality satisfaction with the treatment received and
c) To know their willingness to recommend the hospital facility to others.
The authors discovered patient confidence as one of the important dimensions that affects the satisfaction level in each case investigated before. This is true in both inpatient and outpatient scenarios.

SERVPERF model was suggested by Cronin et al (1994) by modifying the SERVQUAL model. It is a one-dimensional model that concentrates on five gaps based on only perceptions and not the expectations. The gaps are listed below:

1&2) Management perceptions of end-user’s expectations and the actual expectations (or requirement specifications),
3&4) Company promised specification and actual service provided (or external communication) and
5) End-user’s expectations and actual experience.

The research by Bowers et al (1994), has added two more dimensions viz - patient outcomes and caring to the five existing generic dimensions. The findings pointed to the fact that caring, communication, empathy, reliability and responsiveness are integrated with total satisfaction of the customer (patient). However, Gabott et al (1995) reason that caring may not qualify as an independent dimension as it is within the scope of existing dimensions.

Johnstone (1995) further extended the existing five dimensions to eighteen quality dimensions viz. access, aesthetics, attentiveness, availability, care, cleanliness, comfort, commitment, competence, communication, courtesy, flexibility, friendliness, functionality, integrity, reliability, responsiveness and security.

Lim et al (2000) consolidated the model by including affordability dimension. They suggest that special importance needs to be given to affordability of patients to check their satisfaction level.

Andaleeb (2001) has replaced three dimensions namely - empathy, reliability and tangibles by communication, discipline and baksheesh (tips). This study infers that discipline is of prime importance for patient satisfaction, while paying of tips has minimal influence in this context. This author has studied their connections to customer

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satisfaction using evaluations of patient responses on dimensions of expected service quality. This covers assurance, *baksheesh*, communication, discipline and responsiveness. By using Factor Analysis and multiple regressions, he could establish that there are significant associations between the five quality dimensions and patient satisfaction.

Ramsuran and Fowder (2005) added two more new dimensions viz. core professionalism (skill/competence) and medical outcomes to the basic framework. They fine-tuned the existing five dimensions and finally found out that they could not be replicated completely to the healthcare sector.

**3.1.6 Applications of the Model**

Anderson (1995) applied this model for evaluating the quality of healthcare services in a Public University Health Clinic and found out that the clinic was lacking in the assurance factor.

Youseff (1996) used this tool in National Health Service Hospitals in UK and reported that reliability was the crucial dimension that influenced patients’ overall perceived quality. This was followed by empathy, and then closely by responsiveness and assurance while tangibility had the least impact.

Lam (1997) analyzed the reliability, validity, and predictive power of the tool and checked its applicability to the health sector in Hong Kong. The study revealed that the model was a reliable one for healthcare service quality. However, a Factor Analysis for five dimensions showed that the scale should be treated as one-dimensional based on the single dominating factor which represents the user’s expectations and perceptions.

Sewell (1997) in his research at the National Health Service Hospitals revealed that the critical quality dimension was reliability, closely followed by assurance. Responsiveness and empathy fared almost at the same level. Tangibles ended up at the fifth position.

Angelopoulou *et al* (1998) found that patients who underwent treatment at the public hospitals were happy with the proficiency of the physicians and support staff. In the case of private hospitals, patients were pleased with the short waiting time, prompt

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admission procedures and the physical facilities provided. Their study focused on service quality provided at the public and private hospitals. Dean (1999) adopted the model in two different healthcare units in Australia to check its transfer-ability/validity. The output of the study revealed that quality factors vary based on the type of health service given to the patients. Lim et al (2000) conducted a survey to check satisfaction of 252 patients in hospitals of Singapore by using a modified version of the tool. They found that the hospitals needed to improve in all seven dimensions namely RATER plus accessibility and affordability. Wong (2002) indicated that the three dimensions namely responsiveness, assurance and empathy had higher weightage when compared to the other two dimensions while measuring patient satisfaction. Jaboun et al (2003) did a comparative study in U.A.E on public and private hospitals and noted significant differences between the two. Interestingly, public hospitals fared better than their private counterparts. Kilbourne et al (2004) established that the model is capable of capturing even slight variations in the quality indicators in a multidimensional setup, as well as in overall service quality. Boshaff et al (2004) did a study in South Africa on patients of private health organizations and noted that the service quality dimensions of nursing staff (empathy, assurance and tangibles) have positive effect on the loyalty of customers. Wisniewski et al (2005) carried out a study using this model at the colposcopy clinic of Scotland and examined the five generic dimensions by employing tests like mean score and t- Test. The result revealed reliability as the top priority dimension as it had highest mean weight as well as largest negative gap.

Karassavidou et al (2007) used it to measure a service quality in the context of three dimensions, viz.

a) Human aspects,

b) Physical environment and infrastructure of the facility, and

c) Access.

They modified the model and included demographic features of patients (like education, age, gender and income). They measured the gaps that existed between

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patients’ expectation and perception with respect to the three aspects. The critical factor identified was human aspect, which concerns relation shared between the patient and the doctor/s supporting staff. This occupies a pivotal position in the healthcare system.

Mangkolrat (2008), in her contemporary study on patient satisfaction measurement, developed a conceptual framework to measure the service quality gap that existed between patients’ expectation and their perception.

Akter et al (2008), in their contribution on service quality perception and satisfaction, used the model with three new dimensions viz. communication (used to contact the patient party), discipline (monitoring of nonperformance of expected duties and noncompliance to written rules), tips (Baksheesh -extra reward from a customer) replacing with three known dimensions (reliability, tangibles and empathy) to determine the gap which exists between patients’ expectation and perception of healthcare service quality. From the analysis, they derived four conditions to improve service quality in any healthcare organization in Bangladesh. The four situations may be represented as a matrix with four quadrants as shown below.

Source: Author

Figure 3.1: Matrix Representation of Importance versus Performance

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The horizontal axis of the matrix denotes *performance* while the vertical axis represents *importance*. The top left quadrant with high attribute importance and low performance indicates the area of highest leverage of service quality improvement by insisting on discipline and responsiveness. The top right quadrant represents an area of high performance which requires proper maintenance in order to provide better service. The lower right and left quadrants are less significant, but need monitoring of maintenance performance to provide better communication and assurance to the patients, thereby reducing the undesirable transactions like *Baksheesh* between service provider and patients.

Qin *et al* (2009) indicate that the perceived quality is closely associated with patient satisfaction and they compare *perceived* quality with the *expected* quality. They evaluate the satisfaction level of a patient in the context of waiting time in a facility. The hypothesis that the service quality is directly and positively influenced by patient’s satisfaction is floated. It is noticed that good service quality results in greater patient satisfaction.


### 3.2 Other Models in Healthcare

A catalog of few models for healthcare quality measurement as developed in large-scale field studies are documented here.

The statewide project (“*Results of Hospital Patient Care Survey*”) by Massachusetts Health Quality Partnership (MHQP, 1988) led to two-fold benefits:

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a) Helping the hospitals to improve their internal quality and
b) Compiling patient care experience and publishing it to general public to increase accountability.

Identified dimensions include: *Respect for patient preferences, coordination of care, information and education, physical comfort and pain relief, emotional support and alleviation of fears and anxieties, involvement of family and friends, continuity and transition out of the hospital.*

The Joint Commission on Accreditation of Healthcare Organizations (JCAHO, 1990) is a non-profit, independently operating organization which evaluates and recognizes more than 15,000 healthcare programs and organizations in the U.S. It combined the dimensions of Coddington & Moore (1987) with those of SERVQUAL and suggested a framework with nine dimensions: *Efficacy, Appropriateness, Efficiency, Respect & Caring, Safety, Continuity, Effectiveness, Timeliness and Availability.*

Babakus *et al* (1992) pointed out that SERVQUAL scale is designed to evaluate only the *functional quality.* In the healthcare sector, functional quality depends on technical aspects which represent accurate diagnosis and procedure of treatment.

Bowers (1994) included patient outcomes (relief from pain, saving of life, anger/disappointment with life after medical intervention) along with caring (personal, human touch) as the dimensions.

Mittal *et al* (1996) reported that *doctor’s competence, caring, communication, respect, understanding the history of the patient,* and subsequent *follow up treatment* play a vital role in achieving greater patient satisfaction. However, *waiting time* and *clinic environment* received lower weightage.

A survey by Young *et al* (1996) covered 2000 persons who included discharged patients, nursing support and administration. The identified dimensions were - *pain control, patient participation in care, patient teaching* and *physical care.* The study focused on the importance of patient care. However, a divergence of scores by nursing

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and administrative staff was noted. The study captured how lack of understanding of patients’ values and expectations affect the delivered service quality.

Rees (1998) argues that patient satisfaction and clinical quality of care are often correlated with the facilities at the hospital. According to him, these amenities do not suggest the quality of treatment received before and after discharge of patients. The critical dimensions identified were: coordination of care (scheduling procedures/tests), emotional support, alleviation of fear/anxiety, information/education provided, opportunity for involvement of family/friends, physical comfort (waiting time), preferences/needs, provision for continuity, transition to the home environment and respect for patient’s values. This agrees with the findings of MHQP (1988).

Chakrapani’s (1998) study in Bangladesh and Pakistan scanned the critical factors from patients’ view point. The work was, therefore, patient-centered. Accordingly, it marked the key quality factors from patients’ angle. These factors included assurance, communication, discipline, responsiveness and baksheesh (tips).

A new dimension, viz. collaboration was added by Jun et al (1998), which includes teamwork by all the stakeholders: physicians, healthcare support team, patient’s family and members of the community and the value of prayer. The communication aspect (which fills in the gaps to avoid disjointed services) was emphasized.

Seihoff (1998) examined the role of understanding (caring behaviors) and continuity of care by non-trained personnel in promoting patient satisfaction.

A review by the British Medical System on service providers, patients and administrative staff, found that quality priorities for the elderly were important. They believed in adding life to years (improving quality of life) rather than adding years to life (lowering mortality rate). The patients believed in reducing burden of care on the family unlike the view point of doctors.

Ford et al (2000) advocate adding of service specific dimensions, to address the patient’s definition of healthcare. Different environmental variations make the hospitals

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to respond to customers’ *needs, wants* and *expectations*. They must have these at the center of the focus.

Chahal (2000) developed a three-component model, suggesting that patient loyalty towards a hospital can be measured using the dimensions: *repeated use of providers for the same or other treatments* and *referring them to other patients*. This, in turn, depends on total service quality. He further examines the service quality using the latent constructs: *doctor and nursing staff performances* and *operational quality*.

Coddington *et al* (2001) have listed five dimensions from consumer’s perspective: *Availability, Equipment, Specialization, Technology* and *Warmth/Caring*, highlighting the importance of technology. They established that better technology usage results in higher quality related performance leading to increased hospital revenue.

Brady *et al* (2001) have developed a hierarchical model by considering three primary dimensions: *qualities of interaction, physical environment* and *outcome*. Each of these dimensions had three sub-dimensions:

a) *Attitude, behavior and expertise* of employees,

b) *Ambient conditions and design of the facility and social factors*

c) *Waiting time, tangibles and valence* (customer’s feeling of *well-being* during the experience).

Aragon *et al* (2003) examined the working of emergency unit of hospitals using primary service provider theory to investigate patient satisfaction through three latent variables: *physician service, waiting time* and *nursing care*. They used structural equation modeling to find out the relation between patient satisfaction and service quality measured using above stated components. They checked, by measuring in two different ways, that there is a positive link among *service quality, patient satisfaction* and *patient’s faith*.

According to Shi *et al* (2005), from patients’ satisfaction point of view, quality consists of two components: quality as an indicator of *Patient satisfaction* based on individual’s knowledge about medical service component like comfort, dignity, privacy,
security, care, freedom and personalized attention and b) Overall satisfaction of patients in life and self-evaluation of health after treatment.

These components of quality represent a desirable process during and after a medical treatment. These factors can enhance the sense of fulfillment and worth in the patient.

Service quality is one of the major antecedents of overall satisfaction of patients. This has technical and functional aspects as considered by all the researchers. Kang & James (2004) opine that it is difficult for an individual to appreciate the technical aspects of medical treatment and the hospital services, so that functional aspects may be given greater weight, which can be defined as the way of delivering healthcare.

3.3 Application Work

A focus group interview was conducted by a reputed agency during the years 2004-05 to know how patients perceive the quality of healthcare. The consensus was that patients usually prefer four aspects: doctor’s communication skill, responsiveness of hospital personnel, comfort/cleanliness of the hospital and communication by the nursing staff. Usually, patients judge the quality of health service based on respect and compassion received rather than technical competence of doctors and the staff.

A study by Safavi (2006) reveals that satisfaction with hospital experience is driven by dignity/respect, speed/efficiency, comfort, information/communication and emotional support.

Scotti et al (2007) investigated a chain of activities for a High-Performance Work System (HPWS) in healthcare, establishing its link to patient orientation. The impact of HPWS on perceived quality is highlighted. It constitutes a group of deciding factors, which envelops alignment, communications, empowerment, goal, involvement, teamwork, training, trust and performance based incentives. Ultimately, the consumer orientation of employees enhances the perception level of patients.

Cheng et al (2007) applied Kano’s model to measure satisfaction of patients in Taiwan. They considered three antecedents of satisfaction viz.: one dimensional factors, compulsory features and attractive attributes:1) The first one comprises the variables:

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comfort, convenience, capacity, modernized system of treatment, medical ethics and commitment to the patient.

2) Compulsory features consist of: Professional technology, quality of drug, quality of doctors, expense rationality etc.

3) The final group explains: Community relations and contribution to the public activities. These investigators assessed the net satisfaction of customers (patients) based on the gap between expectations regarding the above implied constructs and realized medical care. Two other factors viz. patients’ loyalty status and their complaints. These have, respectively, positive and negative association with overall satisfaction.

Marrakchi et al (2008) have developed the Tunisian Measurement using seven latent variables viz.: reception, nursing care, information, hygiene, comfort, food and invoice service. They have identified some indicators for these latent variables using a survey of patients, who were asked to rate the quality of service on a five-point scale (due to Likert) ranging from ‘very dissatisfied’ to ‘very satisfied’. A Factor Analysis of the survey data revealed independence of all the variables except for hygiene and comfort (perceived as one factor by the patients). The reduced sets of six factors were positively correlated with patient satisfaction. The internationally validated tool by Assessment of Healthcare Providers and Systems (AHPS) focuses on the actual experience of patients during care process rather than patients’ perception.

Hu et al (2010) applied Taiwan Customer Satisfaction Index (TCSI) to measure patient satisfaction in Taiwan, which is a modification of American Customer Satisfaction Index (ACSI, 2010) regularly used in the U.S. TCSI is an econometric model that considers five latent constructs viz.: loyalty, perceived quality/value, customer expectation, image, and overall satisfaction. A path analysis of latent constructs was done to understand the effect of one variable on the others which revealed that image has a significant positive effect on customer expectation, whereas the same does not have similar positive effect on customer satisfaction and loyalty. Customer expectation has a positive effect on perceived quality but not on perceived value and customer satisfaction.

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Perceived quality has a positive effect on perceived value while customer satisfaction has a positive effect on customer loyalty.

The study by Padma et al (2010) covers perceptions of patients and attendants with eight dimensions: administrative procedures, infrastructure, personnel quality, process of clinical care, safety factors, brand image of the hospital, social responsibility and trustworthiness of the institution. Further, the relation between service quality and customer satisfaction in government and private hospitals in India was investigated through a regression analysis of the perceptions of patients and their attendants. Personnel quality was identified as the crucial factor.

3.4.1 TQM in Healthcare

Identifying some of the component variables contributing to total quality in health sector as reported in the series of research papers on the topic, beginning with the roots in Juran’s (1989) paper and subsequent publications.

3.4.2 Leadership/Top Management Commitment

As emphasized by Quality Guru Juran (1989), senior management must involve the entire firm towards quality improvement for TQM. The same concept can be extended to healthcare sector. Senior hospital management must promote the TQM cause, as well as get involved in the quality process, keeping in mind the needs of doctors, nurses and the other staff. These groups have a pivotal role in providing quality care to the patients. A corollary requirement is ensuring necessary finance and other resources.

TQM framework in healthcare has been well recognized [e.g. Williams (1994); Kaltounakis (1995); Radnay (1997); Schalk & Dijk (2005)]. They highlight the inclusion of two variables: the quality vision and senior management's commitment as part of organizational culture.

Management is a facilitator for TQM in the hospital, creating systems to satisfy patients’ expectations. Useful discussions on these aspects are available in literature [e.g. Juran (1988); Dale & Plunkett (1990); Ahire et al (1996); Walsh et al (2002); Huq (2005); Rad (2006);]. Also of importance are training activities for the staff leading to improved
patient satisfaction and benchmarking. Hospital management has compelling need to adopt innovative management practices such as TQM [Taylor & Wright (2003); Huq (2005)].

A review by Martin & Ruiz (1995) of 262 hospitals in fifteen European countries revealed that top management support is inevitable for an integrated quality networking. A German study by Schubert (1999) completely agrees with this finding.

3.4.3 Continuous Improvement

Schubert (1999) suggests a combination of radical changes in selected problem areas and continual broad based incremental improvements. In a framework bereft of perfection, like TQM, small incremental improvements are natural steps towards the goal [Feigenbaum (1991); Radnay (1997)]. Thus, continuous improvement coupled with redefining of goals is a logical path for improved TQM. This necessitates periodical measurement of quality levels. On the action side, this calls for suitable training programs for the staff, centered on updating of their skills and awareness of new technological developments.

Stahr (2004) in his UK based study notes that developing a culture of excellence helps to stimulate the staff to establish their own improvement projects and share the same with other insiders. To optimize the benefit of quality management, a continuous quest for excellence is a must. He places the quality concept at the center of focus. This agrees with the findings of Ruiz & Simon (2004, Study of Spanish hospitals) and Manaf (2005, Malaysian public healthcare). Employer Participation for Quality Culture has been stressed earlier by Kaltsounakis (1995) and Radnay (1997), who point out the need for suitable staff training in this scenario. This helps in acceptance of TQM culture by the hospital personnel.

Communication

Kivimaki et al (1997) highlight the significance of open communications among all employees of the hospital. This basically refers to complete coordination from top to bottom and conversely in the hospital hierarchy regarding quality efforts. Several authors
have examined this aspect closely, touching upon need for a systematic program [Weeks & Helms (1998)], two-way communication among the staff and celebration of success [Lipshutz et al (2008), study conducted at University of California, San Francisco Medical Center].

3.4.4 Harmonization and Sharing of Data & Information

The involvement of staff and physicians in decision making has been emphasized by Huq (1996) for effective problem-solving. This gives direct responsibility for the concerned persons (physicians, nurses and the other staff). In a few related studies, Ruiz & Simon (2004, Spanish hospitals) note the importance of professionals' willingness to share quality data, while Lagrosen (2000) points to the need for sufficient information together with management’s commitment and evaluation of operations. Chen et al (2004) identified credibility and reliability of data as crucial factors coupled with consistent measurement. Proudlove & Boaden (2005) highlight tracking of the patients records for integration of the information systems. Yu & Houston (2007) conclude that computerized healthcare processes (e.g. electronic medical records) add to quality and promote patient safety. Translating data into actionable knowledge that is understood by all stakeholders has been noted to be a key factor by Lurie et al (2008, Study in the USA). Use of tools such as Pareto chart (cause and effect diagram) has been recommended to be helpful in this context.

Customer Focus

In the healthcare scenario, the customer, being a patient, needs careful focus. By nature, he/she is often passive and is “at the mercy of” the hospital staff in view of lack of knowledge of the problem and health related constraints. This makes ensuring of quality quite challenging and often a one-sided responsibility in view of the dominating role of hospital staff. Radnay (1997) reported that the temptation for doctors is to believe that they know what’s best for the patient. However, Canadian Council for Health Facilities Accreditation (CCHFA) places the patient at the center of the schemes.
Further, in terms of TQM implementation, the customer is top priority, the belief in such a tenet is a basic indicator of the existence of a quality improvement effort. Emphasis on meeting or exceeding customers’ expectations has been discussed by Kanji (1998). TQM facilitates success through patient satisfaction in view of an integrated approach (Arasli & Ahmadeva, 2004). A close relation with patients is needed to completely understand their problems (Das et al, 2008).

**Quality Vision**

Hospital's quality vision must allow all organizational members at all levels. In fact, Kaltsonakis (1995) ranked the creation of a quality vision as the key element in TQM implementation, leading to significant quality improvement. However, it is the leader’s responsibility to create and monitor this vision and to work towards its realization.

**System Perspective**

Deming (1986) proposed a system view where the employees are considered as an inseparable part of a bigger system. They do not work in an isolated manner. There is an implied finer point. Only the medical staff makes the treatment decisions and is in direct touch with the patients. The administrative staff functions only in the back-office. This is a unique characteristic of the healthcare system which is to be kept in mind while discussing TQM and its efficiency.

**3.4.5 Organizational Culture**

As inter-disciplinary teamwork is inevitable in a TQM setup, every member must realize the need for working together as a stepping stone for quality care of the patients. This is unlike the traditional role of a single physician providing the mainstay for healthcare service. The functional nature of hospitals can fundamentally affect the organizational culture of the institution (Atchison, 1992). A negative effect is noted when people have to spend sufficient time guarding and defending themselves. On the other hand, in a positive cultural setup, employees take pride in their work and every member is committed to continuous improvement through direct involvement. The members freely

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help mutually towards goal achievement and enjoy being part of the team. Everybody feels appreciated and suggestions are followed by suitable action.

Short & Rahim (1995) have identified hurdles to practice of TQM in medical institutions. In particular, they list the water-tight structure, which is complex together with existing bureaucratic approach. Along with it is its related culture and leadership style. A study of hospitals in Taiwan by Huamg (2002) reveals that organizational identity and citizenship behavior promotes TQM. Schalk & Dijk (2005) state that hospitals should integrate their different processes at all levels with quality and human resource management. This paves way for meeting customer quality expectations and possibly exceeding the same. Eventually this leads to organizational excellence. Raju et al (2008) have identified transparency as a key pillar for quality and patient safety culture in hospitals, in spite of some technical and human challenges.

3.4.6 Management by Facts

The Management Information System (MIS) unit of the hospital can provide the statistics regarding the areas calling for improvement when it works in a cross-sectional scenario. For instance, medication errors, patient progress charts and accident details can be communicated. The quality section can devise ways for the doctors to reduce such errors. Of course, fact based patient care is not uncommon. If facts and figures are correctly used to identify the need of the patients and assess their progress, the physician would positively contribute towards continuous quality improvement (CQI) (Radnay, 1997).

In brief, TQM indicators in hospitals differ from manufacturing and the points of contrast include the following: (with reference to the CQI goals and efforts)

1) Risk management program (e.g. decreased number of patient accidents),
2) Physical markers (e.g. signs indicating wet floors and high-risk patients),
3) Paper trail stating the policy of the hospital (e.g. pamphlets and mission documents),
4) Proof of strong patient orientation (e.g. posters, banners and study results),

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5) Latest accreditation level from recognized bodies,
6) Integration of new accreditation standards rooted in CQI,
7) Predominance of CQI culture,
8) Status assessed by consultants and standard sources,
9) Time-bound achievement of goals,
10) Top management commitment, and
11) Proof of adequate resource allocation.

3.4.7 Teamwork


3.4.8 Physician and Employee Involvement

A couple of regional studies have identified a few key components implementing quality initiatives and performance measurement. Some salient findings are highlighted here: 1) In a Swedish study, Lagrosen (2000) stressed the importance of employee empowerment and involvement. In a similar study in Sweden, Kollberg et al (2005) identify top management commitment, change management; training of employees and their involvement in this context, 2) Employee empowerment to focus on patients and involvement in TQM culture has been emphasized by Kivimaki et al (1997) and Ennis & Harrington (1999), 3) A study conducted in a Malaysian public healthcare setup by Manaf (2005) reveals the importance of teamwork, employee training and involvement.
4) The importance of involving hospital staff at various levels has been examined by Ovretveit (2001), 5) TQM can be viewed as an augmentation of medical profession’s current practice of a scientific approach to the physician. In fact, Huq (1996) points out that bifurcating common and special cause for errors by a doctor can lead to improved patient care. The stress should be on the system and not on a post-facto review of individual cases. Shifting the attention to systemic causes of variation from individual cases can make the physicians more comfortable and at ease for delivering service. It is further asserted that: "Barriers to physician involvement in TQM may be the single most important obstacle to success in implementing TQM in hospitals". Attention to communication gaps, tight schedules for doctors and the physician orientation of most of the hospitals are called for. This lessens the obligation of the doctors towards quality. 6) Giraud (2001) goes one step further by labeling the doctors as the most common missing link in healthcare quality programs in view of differing definitions of this concept according to them and the administration. Medical progress through clinical research is likely to be the quality yard stick for the doctors and 7) John (1997) singles out physician’s successful involvement as a challenging factor in a TQM exercise in hospitals. Accordingly, a quality strategy must be designed accommodating different methods for physician participation, taking into consideration critical professional sensitivities. They should have retraining, incentives and motivation.

Cost and Time Factors

Gough & Reynolds (2000), consider cost as a critical factor in healthcare, as a fall out from their studies of laboratories and hospitals in UK. Naylor (1999) concurred with this view point in an earlier study. Pomey et al (2004), consider the efforts for accreditation to be rather time consuming as well as cost intensive, which can be justified only through a substantial return on investment. They provide examples self-assessment exercises in this context.
Resources

A comparative study of six UK hospitals by Hore (1994), points to resource and time constraints, pressure of work due to under-staffing to be hindering quality initiatives. Individuals are often asked to perform multiple jobs, *quality co-ordination* being an added responsibility. A study in Cyprus by Arasli & Ahmadeva (2004) reveals the importance of the following two factors: 1) Need for qualified and competent managers for a successful quality program and 2) Well designed and networked Information System for recording health details.

Staff Awareness

Lack of awareness among administrative staff about patient safety issues was marked as a serious barrier in US healthcare environment [Hendrich *et al* (2007)]. This came in the way of achieving *zero tolerance* for errors. The ratings by administration and clinical staff regarding safety showed vast differences. Two earlier studies by Chua & Goh (2002) and Pomey *et al* (2004) concur with this view.

3.5 Some Obstacles to TQM in Healthcare

Shortell *et al* (1995) document a few obstacles for TQM in healthcare organizations as follows: 1) Inward looking attitude with focus on care givers instead of on patients who are considered external, 2) Resistance to employee empowerment due to the hierarchical setup displaying bureaucratic culture, 3) Lack of senior management commitment to TQM, 4) The command and control type of leadership instead of proper empowerment and viewing manager as a developer and 5) The tendency of middle managers to consider TQM as a threat to job security.

The concerned literature mentions a few other obstacles too:

a) A mistaken notion among physicians that TQM is NOT applicable to health sector. They feel that TQM is mainly for cost control and it does not fall in their locus,

b) Inability to recognize the presence of the patient having a dual role-as a product and as participant,
c) The healthcare providers fail to recognize the role of patient’s due to the following notions: healthcare is beyond the grasp of patients; wide variation of patient opinions without a proper platform for them; patient involvement may have adverse impact on service flow and
d) Rigid hierarchical structure not allowing peer workers to make even constructive suggestions.

3.6 Trends in Hospital Management
In a couple of papers Huq (1996, 2005) has documented the trend for quick reference. The gist of his work in this context is as follows: 1) Quality improvement is a means to meet the expectations of patients. 2) Many hospitals are turning to TQM for cost reductions and service quality improvement. 3) Determination of factors associated with patient satisfaction is a significant issue for healthcare providers.4) TQM uses quality as the fundamental measurement metric, continuous improvement as the philosophy and employee involvement as the approach.

The rise of TQM in healthcare has been traced by a few authors [E.g. Westphal et al (1997), Garvin (1988), Yang (2003), Cho et al (2004)]. It is expressed that TQM provides a partial solution to service quality problems. However, a few researchers have opined that TQM is too ambitious in a hospital setup, so much so that, it is yet to be introduced in some countries or limited just to creation of quality circles without much overall impact (Ovretveit, 2001). Several studies have reported that there is a growing consensus about patient fulfillment as an important measure of healthcare quality. A few other assessments by researchers regarding TQM and its role are summarized below:
1) TQM provides a model for success through customer satisfaction (Vouzas & Psychogios, 2007),
2) Bureaucratic culture and the passive behavior are the major hindrances calling for an in-built culture of continuous progress in TQM implementation (Walsh et al 2002). It is pointed out that healthcare industry is tied up with the cultural background and

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functioning style of physicians as well as the top management. Also, it is pertinent to observe that public health sector has limited flexibility in funds assignment and human resource management. TQM is not much constrained by industry specific considerations. They conclude that customer focus, error prevention, management by fact and continuous quality improvement are TQM-fostered universal aspects, 3) Service in healthcare organizations is intangible as well as delicate, which varies as per individual preferences. This service cannot be produced before the need arises and, in most cases, it must be provided almost instantaneously upon request, 4) In the case of healthcare, distinctive competence may include quality care at reasonable cost, service features that are unique or focus on the provider-customer relation. Forces that compel them to incorporate these features are competition, customer satisfaction, perceived value, market share and profitability. It makes sense to anticipate that hospitals provide good quality care for only partial reimbursement and 5) Hospitals have increasingly felt the need for controlling rising costs and satisfy rising patient expectations about quality (Panko, 1996). Quality and cost considerations are generally diametrically opposite. Hospital administrators must learn to reduce operating costs without sacrificing on quality. This implies upgrading of multifaceted internal operations and services. The professionals at the heart of service delivery lean on other health professions as far as quality care is concerned. This puts the internal delivery chain on par with the external process.

3.7 Periodical Evaluation

Laffel & Blumenthal (1989) have shortlisted the following factors for long-run quality improvement: 1) An active backing from clinical staff and management, which is visible, 2) A focus on process as goal of improvement and reduction of variation and 3) Updated strategies for personnel management.

An expectation framework for a quality model was examined by Conway & Willcocks (1997). They provide some evidence for the relation among perceived service quality and patient expectations, patient experience, meeting of expectations and the level of patient satisfaction.

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Nwabueze & Kaniji (1997) note that due to barriers for TQM in hospitals, many of them have limited it to only partial implementation which yields partial benefit only. Yang (2003) has opined on similar lines.

A study in Greece by Theodorakioglou (2000) showed a sharp rise in service cost and parallel demand for a better healthcare system in the country. The specific findings are as follows: 1) Implementation of quality management system is not common, 2) There is a lack of effective information system, 3) Higher-level managers and physicians are not well versed with quality norms and 4) Shortage in hospital staff due to which operational problems prevail.

Horng & Huarng (2001) surveyed seventy-six hospitals in Taiwan to test a multilevel model. TQM adoption was the dependent variable and the independent variables were: scope of the network cooperation, nature of the network relationship, identity of organization, strategy adoption and organizational behavior. The results show significant and positive impact of the regressors on the dependent variable.

Starting with the premise of doctor-manager disagreements on quality issues, Plochg et al (2005) have examined the theoretical reasons for the shortcomings in clinical practices. They suggest a two-fold agenda for a constructive dialogue. Doctors and managers must develop a common plan of the division and coordination of healthcare. They should discuss the values, standards and goals of patient care.

Nursing Care

Carey & Teeter (1995) applied TQM in a hospital for error reduction in nursing care and noted that it is probably the best integrated approach for quality delivery to the patients.

The issue of nurse recruitment, retention, healthcare quality and patient satisfaction has been studied by Newman, et al (2000). They consider a chain made up of National Health System (NHS), conditions and environment, service capability, nurse retention and quality of patient care. It synthesizes the prime constituents of patient care and concludes that nurse retention and turnover are closely related so that they cannot be

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analyzed in isolation. A combination of several factors contributes to nurse turnover and service quality.

A useful model in schematic form has been provided by Adeoti (2005) as in the figure below:

![TQM Determinants Schema](source: Adeoti J.O (2005))

<table>
<thead>
<tr>
<th>Organizational Factors</th>
<th>Facility Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophy</td>
<td>Locations</td>
</tr>
<tr>
<td>Technology</td>
<td>Maintenance</td>
</tr>
<tr>
<td>Training</td>
<td>Capacity relative to Demand</td>
</tr>
<tr>
<td>Staff Resources</td>
<td>Funding a Pricing Policy</td>
</tr>
<tr>
<td>Motivation &amp; Morale</td>
<td>Laboratory</td>
</tr>
<tr>
<td>Choice of Inputs</td>
<td>Radiology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inter-Personal Factors</th>
<th>Economic Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervision</td>
<td>Availability of Funds</td>
</tr>
<tr>
<td>Assurance</td>
<td>Cost of Services</td>
</tr>
<tr>
<td>Empathy</td>
<td>Disposable Income</td>
</tr>
<tr>
<td>Awareness of Users</td>
<td>Nature of Service</td>
</tr>
<tr>
<td>Feedback to Health Workers</td>
<td>Visa-vis Volume</td>
</tr>
<tr>
<td></td>
<td>Nation’s Economy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental Factors</th>
<th>Economic Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competition</td>
<td>Availability of Funds</td>
</tr>
<tr>
<td>Prescribed Standard</td>
<td>Cost of Services</td>
</tr>
<tr>
<td>Government Policy</td>
<td>Disposable Income</td>
</tr>
<tr>
<td>Cultural Expectations</td>
<td>Nature of Service</td>
</tr>
<tr>
<td>Interest Groups</td>
<td>Visa-vis Volume</td>
</tr>
<tr>
<td>Language &amp; Communication</td>
<td>Nation’s Economy</td>
</tr>
</tbody>
</table>

Source: Adeoti J.O (2005)

Figure 3.2: TQM determinants schema

3.8 Some Later Works

Kelley & Hurst (2006) have developed healthcare Quality Indicator to provide a conceptual framework as suitable for the twenty-three OECD (Organization for

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Economic Cooperation and Development) countries, which includes Australia, Canada, Germany, UK and USA. The group has expanded to thirty countries as of now. The framework considers two questions in detail: (a) What concepts, or dimensions, of quality of healthcare should be measured and (b) How, in principle, they should be measured.

For question (a), it is concluded that the basis for technical quality indicators should depend on the theoretical framework already developed in many of member countries. It implies that the framework has to be multidimensional and based on working experience of the member countries. Thus, a juxtaposed evaluation of health system performance as well as health service quality can be carried out.

For question (b), it is suggested that the indicator set should contain both process and outcome measures. Moreover, the indicator set considers three chief criteria:

i) The role of factor being measured,

ii) The theoretical strength of the measure and

iii) The cost feasibility of collecting relevant data.

This work underscores and reviews different indicators, the scope of the measure set, basis for indicator choice and related considerations like geographical coverage, total number of indicators to be included and their combinations over a period of time as well as aggregated indices.

Nooi et al (2009) conducted an empirical analysis on patient satisfaction as an indicator of service quality in Malaysian public hospitals. Two service quality dimensions emerged: clinical and physical dimension of service. Patients were more satisfied with clinical dimension as compared to physical dimension. There was positive correlation between patient satisfaction and waiting time. Patients were satisfied with the services of doctors/nurses, while for physical dimension, they were satisfied with the cleanliness of the hospitals.

Vincent and Norman (2010) have considered a theoretical framework. This articulates the relevant variables which motivate innovation in healthcare. Based on

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chosen definition of innovation and its dimensions, the paper paves the way for researchers to answer several questions concerning innovation. Clear cut explanation of healthcare innovation makes it easy for policymakers and practitioners to consider adopt and recruit services such that it unambiguously recognizes, encourages and assigns priority to really novel innovations. This paper raises ten questions that are pertinent to the field of healthcare innovation. It is assessed that the answers to these issues will pave way for further advances in healthcare research together with novel approaches and innovation. The questions include impact on stakeholders; implications for diagnosis/treatment, prevention, patient education, research/outreach, role of information technology and maintainability/sustainability/usability issues.

Ali (2014) has carried out a study in the middle-east country of Iran to list out the factors that really matter in healthcare. In-depth individual interviews and focus group discussions were employed as the exploratory methodology. The author concludes that quality in healthcare is the net result of close understanding between the customer (patient) and healthcare giver in a mutually cooperative environment. Additionally, the following aspects matter: personal factors of the patient and the provider, factors concerning the healthcare institution/system and the general environment that affects service quality. Improvements can be achieved through supportive farsighted leadership, correct planning, education/training, allocation of resources and their management, employees/processes and collaboration/cooperation among the service givers.

Peprah (2014) has discussed Determinants of Patients’ Satisfaction using the data from a hospital in Ghana and noted that patients’ satisfaction depends on attitudes of nurses, timely care, usage of modern equipment and ready information about the health status.

Srinivas (2016) dwells upon a few contemporary issues in Indian health sector and categorizes them as anomalies, policies, actions and other aspects. There is also an examination of the effectiveness of PPP models in the Indian context.

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Srinivas and Raju (2016) enumerate some recent developments which have a bearing on quality improvement in healthcare. They discuss the role of a few classical quality elevating tools like yoga, meditation, prayer and auto-healing.

The connections among perceived quality, patient satisfaction and behavior pattern in private health sector have been studied by Aliman and Mohamad (2016) with reference to Malaysia. Both service quality dimensions and patients’ satisfaction were positively related to behavioral intentions.

Linimol and Nair (2016) have studied service quality and patient satisfaction in healthcare in Saudi Arabia employing SERVQUAL model. The findings help to dissect how patients weigh service quality in healthcare services and identify the dimensions they are pleased with.

Pramanik (2016) surveys perception of patients on healthcare services in India. Distinct differences are noted, in rural and urban setup, owing to lack of awareness and limitation of medical infrastructure.

Yogesh and Chary (2016) put forward a conceptual framework for measuring patient perceived Hospital Service Quality (HSQ) and add a relation dimension.

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Swain and Kar (2017) propose a holistic framework for conceptualizing hospital service quality by identifying fifteen dimensions, which are split into three broad categories: ‘infrastructural’, ‘procedural’ and ‘interaction’ dimensions.

A few Asian country specific empirical studies have emerged recently. Ahmed *et al* (2017) have studied service quality, patient satisfaction and loyalty in healthcare sector in the neighboring country of Bangladesh. They establish that single patients perceive tangibles, reliability, empathy and loyalty more than married persons.

Izadi *et al* (2017) have evaluated health service quality based on importance performance analysis. They focused on in-patients at Kerman Medical Sciences University, Iran and measured service quality delivered in surgical and medical sections. It shows a large enough gap between service importance and performance.

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Lee and Kim (2017) have carried out a comparative study of patient treatment types (in South Korea) using Anova and t-Tests, they establish that significant differences among measurement items exits, which depend on the type of patient treatment.

Rula (2017) has examined impact of service quality on patient satisfaction. The Al-Bashir Hospital in Jordan was chosen as a case. The study demonstrates the impact of perceived quality on total patient satisfaction. The top three factors were reliability, empathy and assurance.

Empirical evidence from Pakistan is provided by Shafiq et al (2017) regarding assessment of hospital service quality. The results showed that all five dimensions of SERQUAL are valid. They were ranked in the order reliability, tangibility, responsiveness, empathy and assurance.

Quality of healthcare services and its relation to patient safety culture and nurse-physician professional communication has been examined by Ghahramanian (2017) in public hospital of Iran. He recommends that the process of dealing with medical error should be non-punitive. Also recommended are new outlook on safety culture, reporting of errors and communication among healthcare workers.

A few additional references are summarized in a compact table form in Annexure IV.

3.9 A New dimension for Work

Bhat et al (2015 a,b) have discussed development of terminologies in any knowledge sector using a root and rule based approach. This is suitable for computerization and ready access. The work is motivated by the need for flexible, intuitive, reusable, and normalized terminology for the semantic web. The first paper presents a general approach for generating sets of such terminologies from natural language documents. The terms that this approach generates are root and rule-based terms, generated by a series of rules designed to be flexible, to evolve, and, perhaps most important, to protect against ambiguity and reduce semantically similar but syntactically distinct phrases to a normal form. This approach combines several linguistic and
computational methods that can be automated with the help of training sets to quickly and consistently extract normalized terms. It discusses how this can be extended as natural language technologies improve and how the strategy applies to common use-cases such as search, document entry and archiving, and citation.

Bhat et al (2015 b) argue that intuition, flexibility and dynamic terminology have a key role in developing particular knowledge representation models in the field of material science, which is application oriented. In this article, they propose a rule-based approach with initial examples from a growing corpus of materials/terms in the National Institute of Standards and Technology (NIST) Materials Data Repository. The method aims to establish a common, consistent, and evolving set of guidelines for creating/ extending terminology when required to describe the materials data. The rules are intended to be simple and generalization for users to understand and extend as well as for groups to apply to their own repositories. The resulting terms allow easy machine processing and clear decision making.

The work appears to be influential and has wide ramifications for how knowledge is stored and communicated. The approach in the papers is applicable to any branch of knowledge and to the health sector as well.

3.10 In Short

This chapter has visited the recent research publications in the area, some of which are theoretical, some are country specific and the others are a mix of the two. The launching platform is the seminal work on RATER model by Parasuraman and his associates. A super-structure is built on this, suggesting modifications and extensions of the original RATER model. A TQM approach is an important generalization in the context, calling for an integrated effort involving modern and up to date service quality concepts. The scenario in the health sector is reasonably well covered in the chapter, both geographically and on a time scale.