TQM Framework for Healthcare Sectors: Barriers to Implementation

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ABSTRACT

Purpose: A qualitative research was carried out with an aim of understanding and addressing the challenges of integrating TQM in the healthcare industry. It examines the existing inadequacies in the service quality, and barriers in implementation of TQM practices,

Methodology/Approach: A conceptual model is developed to explore the issues arising TQM implementation. There are three major components of TQM: such as barriers to implementation, Critical Success Factors and Benefits of TQM. Interviews with health workers and patients were conducted based on pre-structured questionnaires. Seven hypotheses were developed to investigate how TQM can be achieved irrespective of surmounting barriers.

Findings: Findings suggest TQM can be implemented in the right environment with committed leadership and supportive infrastructure, which would drive SQ, improved customers, and employees' satisfaction and loyalty, increase profitability and shareholder values. TQM can deliver high quality medical care for overall performance of the healthcare industry.

Research Limitation/Implication: Interviews were conducted with semi-structured research questionnaires. There may be some inevitable biases present in questionnaires and evaluation of review.

Originality/Value of paper: The study benefits from insights from medical personnel and patients' perspective, in exploring the SQ attributes, i.e., quality circle, continuous improvement, employee empowerment and customer focused approach.

Category: Research paper

Keywords: total service quality; healthcare; organizational excellence; perceived satisfaction; operational efficiency

1 INTRODUCTION

Total Quality Management (TQM) had its origin from the manufacturing sectors to measure the overall performance of a plant or industry. The most important function of TQM is to promote business performance through accomplishment of quality products, service delivery, and improved performance of operation and maintenance. According to Zgodavova and Colesca (2007), quality management systems guarantee the maximum customer satisfaction by constant improvement in processes at minimal spending. The improved service quality (SQ) unquestionably enhances business, and therefore, it is highly adored.

Any product or service without an acceptable SQ will not flourish and is bound to fail; therefore, lack of SQ can be disastrous. Which can be gauged by comparing customers' expectations of quality and what they receive, the difference being called a service gap. The service gap naturally inhibits or discourages customers from being satisfied and loyal (Izogo and Ogba, 2015). Providing poor quality of product or service proved to be costlier than producing high-quality products or services, because poor quality will eventually lead to rework and unsatisfied customers. Therefore, SQ and TQM become an important aspect of any industry or business irrespective of nature or type of business.

The effective implementation of TQM procedures had enhanced functioning of any company (Hassan et al., 2012). It should be developed as part and parcel of organizational culture to embrace TQM with an aim of moving out product, or delivery of service with excellence, at first time and all the time. TQM is an advancement or a progression of appropriate attribute measures within the total range of value addition that enriches accomplishment. It helps in producing improved quality of goods in meeting and exceeding customers' expectations (Yusof and Aspinwall, 2001). Therefore, the organizations that successfully implemented TQM had improved operational efficiency, throughput, sales, revenue, and effectiveness.

The success of TQM mainly depends on committed leadership, strong organizational culture, active participation, and workforce cohesiveness. As per (Dahlgaard, Pettersen and Park, 2011), tangible factors such as leadership, partnership, managing people and service delivery system are crucial for TQM success. This undoubtedly will lead to producing goods and delivery of services at optimal cost. Initially TQM was very much confined to the production line, however, with passage of time it was felt that the service industry too should comply with TQM; therefore, it got similar status in the service industry as well. According to Prajogoa and Hong (2008), TQM is a philosophy that can even promote the right environment other than production or manufacturing. The leadership or top management commitment and orientation towards nurturing quality within and outside of organization are crucial.

1.1 Research Objectives

The aim of this study is to examine the contribution of technology, acquaintance of TQM axioms, practices, and its impact on the bottom-line, particularly aftereffects of pandemic. The debacle has clearly exposed how many gaping loopholes and shocking lacunae exist in the present healthcare set up of many countries. It has forced the healthcare system to seriously relook into the architecture of the whole country and draw up suitable policy and strategy to safeguard society from current and future disasters. According to Kajihara et al. (2016), healthcare services should be able to withstand even during disaster. While doing so it is prudent to integrate the health policy with proper TQM policy, to arrive at a comprehensive system which is efficient and effective. Hence the following research objectives are set for this study:

- To find the contribution of technology in achieving excellence in healthcare services.
- To find to what extent TQM is implemented in the healthcare system.
- To examine the significant correlation between TQM methods and profitability.

1.2 Research Questions

The purpose of the research is to ascertain the present position of TQM and its gaps in the healthcare sector, challenges, barriers, and implementation. The aim is to enhance perception of service providers based on patients' inputs on healthcare competence and quality care endowment. The research attempted to address the following research questions (RQs), which are raised based on literature review and critical success factor (CSF) such as technology, quality compliance, team structure, customer focused approach, employees training and development and to investigate them with an aim of proposing remedial action for accomplishing TQM practices in healthcare sector:

RQ1: Would technology support in implementing TQM?

RQ2: To what extent TQM is understood and implemented?

RQ3: What are the CSFs for healthcare providers from patients' perspectives?

RQ4: What are the critical links between TQM practice, quality care and profitability?

The CSF underlined its effort on attaining SQ, for eventually advancing overall customer fulfilment for improved revenue, and profitability. An extensive evaluation and interpretation of these factors likely to attain success. As a result, the present study is expected to provide guidance to greater extend and suggest in advancing strategies for an efficient and effective TQM implementation in the healthcare sector.

In this connection a TQM framework that is tightly woven with the right healthcare policy framework, will be a formidable shield to protect and save society and make a healthy and happy nation. This study attempted to provide a framework that will be valuable for healthcare providers, hospital administrators, and those concerned with health matters. The following paragraphs discuss literature review, methodologies, analysis, and conclusions.

2 LITERATURE REVIEW

TQM is not a quick-fix solution; therefore, firms must encounter multiple hurdles and challenges in its adaptation and realization. Most of the time TQM benefits could not be derived, due to lack of support from leadership. However, it has received great attention from industries, research and development and academia. In the context of the healthcare industry, TQM can be understood as focused efforts in formulating and transforming for better patient care, system performance, and professional development. According to Ali and Alolayyan (2013), there is an interdependence between TQM practice and hospital achievements. It involves an explicit change in method, support in clinical or administrative systems for eventual improvement of the healthcare system. The following paragraphs discuss SQ improvement, taxonomy in healthcare and how TQM can be practiced.

2.1 Service Quality

It is imperative to examine and comprehend the notion of quality, before discussing the TQM concept. A few questions naturally arise such as, “Are we doing the right thing?” and “Are we doing things right?” These are the twin classic key questions asked in application of quality procedures in any domain of activity. The concept of SERVQUAL, as articulated by Parasuraman, Zeithaml and Berry (1985), helps us to come to terms with the slippery nature of quality. It is a multi-dimensional research instrument of SQ that elegantly and brilliantly captures consumer’s expectations and perceptions of a service. it asserts that a customer’s evaluation of SQ decides the gaps between their anticipations, assessments, and its genuine accomplishment. Parasuraman, Zeithaml and Berry (1985) have further recognized and published the application of SERVQUAL through their research such as Parasuraman, Zeithaml and Berry (1985), Parasuraman and Grewal (2000), and Parasuraman (2010). Originally it was identified with ten components, which later reduced to five Viz Reliability, Assurance, Tangibles, Empathy and Responsiveness (RATER). Among the well-known definitions of quality by various researchers, a few are mentioned below:

- Quality is comparable to end user’s contentment (Kaoru Ishikawa, 1985)
- Quality shall be able to determine by the client (Edwards Deming, 1986)
- Quality is fitness for use (Joseph Juran, 1989)

- All types of behaviour that deemed to put best practices would influence TQM (Hackman and Wageman, 1995)
- Quality is meeting customer requirements (Oakland, 2003)

Although satisfying end users' anticipations and requirements, which is a "common denominator" in all these explanations. Each quality professional describes the quality differently based on their individual insight and experience. According to Parasuraman, Zeithaml and Berry (1985), SQ is essentially a type of mindset, which is formed based on customers' perception and observance, in relation to the expectations. Improved SQ will enhance production and temporarily increase operating cost. Therefore, a manager must decide how much to devote on quality to obtain, the best outcome in terms of return on investment or in other words return on quality. According to Rust, Zahorik and Keiningham (1995), the return of quality methodology empowers executives to ascertain, where to spend, how much, in regard to expected monetary benefits such as profits, and return on investments.

Therefore, service excellence or lack of it can be gauged through evaluating customer's expectation with respect to provider's performance, and the difference representing the perceived service gap. Accordingly, service providers shall benchmark and evaluate the gap between what customers expect, what is delivered and how to close these gaps between perceptions and actual practices. According to Deros, Yusof and Salleh (2006), significant differences between customers' perception of service and actual practices in fact constitute a CSF, such as technology, team structures, customer focus approach, top management commitments towards quality compliance, employees training and quality planning. These can work as a benchmark in calibrating processes and operations. Having seen the importance and necessity of SQ, it is now worth discussing TQM and its ramifications. The following section delves into various aspects of TQM.

2.2 Total Quality Management

The fundamental concepts of TQM were presented in early 1990s by Kaoru Ishikawa (1985), Edwards Deming (1986), Joseph Juran (1989), Hackman and Wageman, (1995) and Oakland (2003). TQM has been defined by different authors in different instances, e.g., "a search for excellence", "perfection, first time and every time", "zero defects", "delighting the customers" and so on. The eventual rationale was for attainment of customer satisfaction, employee satisfaction, and improved products and service through continuous improvement (CI), innovation, reduction of waste, higher productivity, increased sales, revenue, and profitability. According to Hassan et al. (2012), effective implementation and adoption of TQM methods will result in enhancing administrative functioning.

TQM receiving statistical process control is deeply ingrained and embedded. It was coined by "Walter Shewhart" in the early 1920s in the United States of America. The methodology was centered on categorizing specific variables and found inconsistency within manufacturing progression that was not in line with the measurement. It resulted in a logical process centered with the philosophy of PDCA (Plan Do Check and Act) for quality enhancement in the manufacturing sectors (Evans and Lindsay, 2001). TQM grew with passage of time and different researchers based on their findings identified various best practices. According to Dale, Wiele and Iwaarden (2013), the evolutionary phases of TQM are Quality Enhancement, Quality Control (QC), Quality Assurance, and TQM (refer Figure 1).

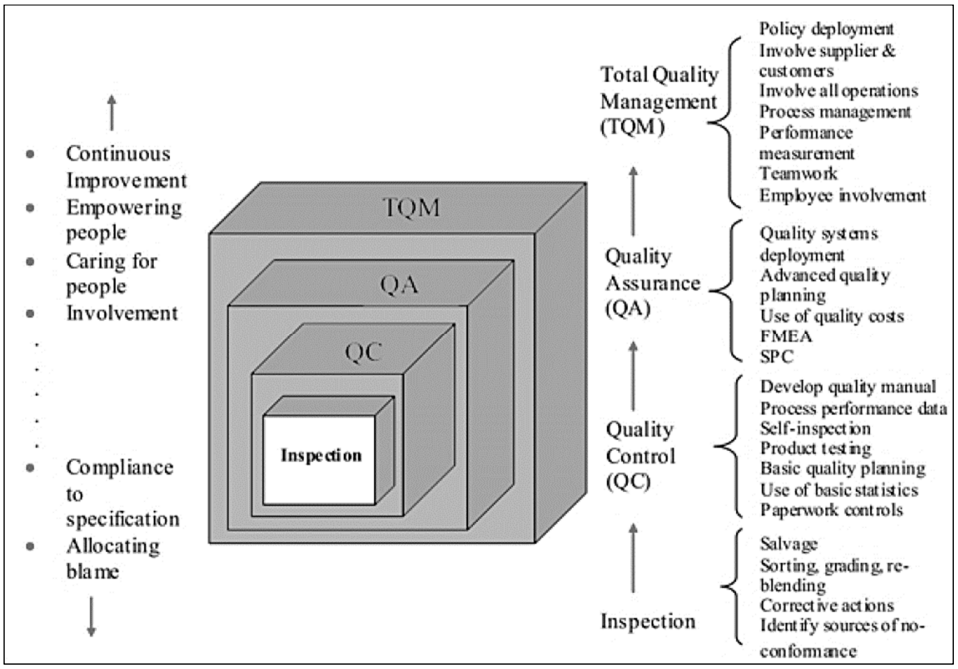


Figure 1 – The Four Stages of Evolution of TQM (Dale, Wiele and Iwaarden, 2013)

Quality improvement and continuous improvement remains a significant business strategy in business surroundings, irrespective of types of business, whether operation, production, healthcare service, hotel, consultancy, or financial services. The victorious organization will never be satisfied with status quo and strive for CI of SQ for attaining TQM and marching toward Six Sigma. According to Antony et al. (2018), SQ implementation in healthcare has abundant prospects for advancement. The successful companies would everlastingly find new ways of improving products and SQ for their definitive success.

Based on literature review (Rahman, 2019) has found seven best practices in TQM implementation, namely:

- Leadership commitment,
- Cooperation and Collaboration,
- Coaching,
- Procedures,
- Progressive growth,
- Skill enhancement, and
- Corporate philosophy.

Rahman also emphasized that these enactments were recognized based on its phenomena and suggested that these applications have great value in healthcare sectors. However, healthcare quality may be defined differently, with multiple healthcare providers, such as number of patients, healthcare stakeholders for ultimately attainment of SERVQUAL. According to Balasubramanian (2016), the SERVQUAL model and its application can support healthcare in accomplishing gratification for service providers, consumers and further it suggests that TQM can have excellent support to healthcare establishments.

2.3 TQM in Healthcare Industries

Healthcare services shall fulfil the likelihood of desired outcomes of organization and should achieve preferred results in line with their expectations and preferences. At the same time, it should follow standards and scientific evidence, clinical and ethical practices, respecting individual preferences, such as customer friendly environment, location, and even ambience could play a greater role in eventually gaining patients' satisfaction. As noted by Fatima, Malik and Shabbir (2018), healthcare SQ aspects like natural ecosystem, consumer-friendly approach, attitude, confidentiality, and security are optimistically associated with patient's loyalty.

The fundamental work of healthcare includes clinical and non-clinical services, procedures and activities carried out in addressing issues like "act virtuously" and "Implementing Things Right". "Doing Right Things" assesses efficacy of clinical service, whereas "Implementing Things Right" contemplates methodological healthcare service. Producing or capable of producing a result, would depend on how procedures and processes are put in place and how implemented in an organization, which certainly would depend on managers' guidance and support. According to Mosadeghrad (2013), TQM enactment and its influence heavily depend on the manager's capability to follow its concepts and principles. Efficiency can be achieved through proper planning and implementation, whereas effectiveness can be achieved by producing a desired result, desired output based on clinical knowledge and skills.

The efficiency can be increased by avoiding waste of materials, man hours, under-utilization of equipment, misuse of materials, energy, amenities, and even non-implementation of right thoughts can lead to inefficiency. According to Dénes et al. (2017), inefficiencies can lead to poor economies of scale and ultimately increased cost. The patients' care and ethical principles involved in those activities should be taken seriously for administrative effectiveness, well-being and company bottom line.

According to Ansari (2020), SQ enhances worker pride and their efforts and motivation develop customers' loyalty, contentment, which promote repeat purchase behaviour. The technical management or clinical performance will improve SQ, end users' satisfaction and loyalty. Contrarily, non-clinical management, such as interpersonal skills can promote patient care and co-production of services. Therefore, clinical, plus nonclinical processes would eventually lead to TQM. According to Ozdal and Oyebamiji (2018), the implementation of TQM methods stretches from top executives to shop floor employees.

3 RESEARCH METHODOLOGIES

Based on the RQs, research methodologies were developed. Accordingly, qualitative research was carried out to investigate the research questions and how to overcome the challenges of the TQM framework in the healthcare industry. It was found that major contributions are from quantitative research, followed by mixed and qualitative research. According to Cameron and Azorin (2011), quantitative techniques take up 76%, which is overwhelmingly the dominant method of choice; mixed methods correspond to 14% and qualitative research 10%. The choice of quantitative research was to explore and extract healthcare professional and public opinions, thoughts, and feelings on how TQM attributes significantly affect the healthcare sector.

Therefore, the present researcher planned to follow qualitative research technique by receiving direct feedback through discussions, from medical professionals such as doctors, paramedics, and other supporting staff such as clinical administrator, hospital administration, medical records administrator, medical secretary, dieticians as well as inpatients and outpatients. A common misguided belief is that sample size in qualitative study is not crucial. Determining adequate sample size is ultimately a matter of judgment, which depends upon individual skills in assessing the quality of data gathered against the sample size. However, researchers have proposed sample sizes depending upon type of research. The sample size shall depend on research objectives and should be sufficient for attainment of saturation. Therefore, beyond the saturation point adding more participants to the sample will not skew the result.

There are various types of qualitative studies such as Ethnography, Grounded theory, and Phenomenological studies. The TQM in the health sector is

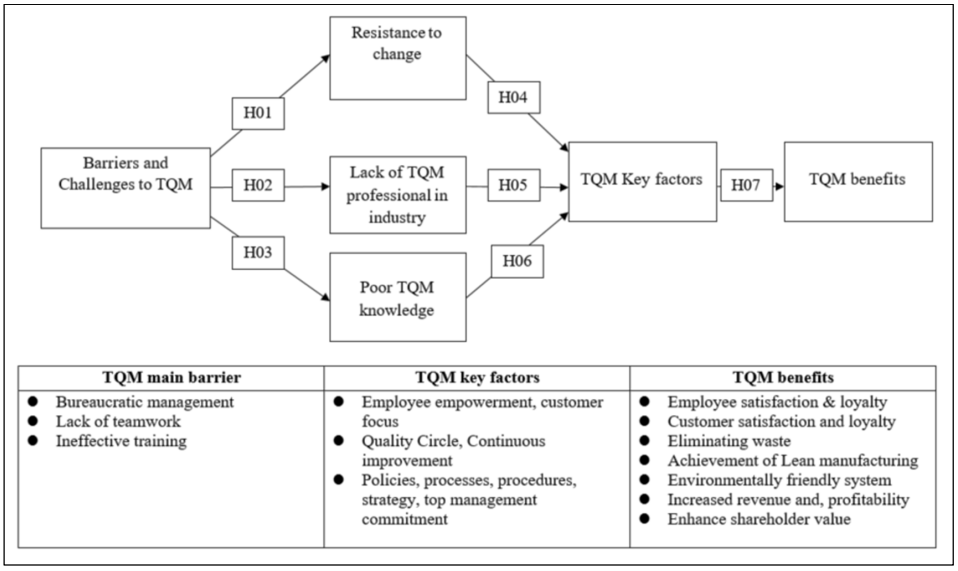
considered to belong to the type of Phenomenology studies, which deals with conscious experience, i.e., feeling from the subjective or first-person point of view. As Creswell (1998) proposes a sample size of 5 to 25 for Phenomenology studies, whereas Morse (1994) advised that at least six samples are essential for such studies. Therefore, based on sample significance, and available recommendations in literature, 5 samples each were collected for doctors, paramedics, supporting staff, inpatients, and outpatients. Sample for earlier research was limited to healthcare staff or in some cases patients' feedback was obtained. In this research an integrated chain of services employees was considered, to overcome limitations of earlier research. Data was collected through direct interviews from physicians, physiotherapists, nurses, technicians, supporting staff, and patients, which formed an integrated chain of service.

A prior email communication was set up for formal interview with professionals explaining the purpose of research and finalization of schedule. Most of the professionals proposed that their interview not be recorded; therefore, discussions are noted on paper. Couple of participants refused to participate either due to unawareness of the subject or unwillingness to participate. Structured and unstructured questions were addressed to the respondents on a case-to-case basis. According to Guetterman (2015), while contemplating sample size, scholars should go ahead of "how many?" to address the queries of "how?" and "why?". Accordingly, pre-drafted questions were addressed to the participants. Patient feedback was taken after seeking their permission, which was done randomly and instantly without any prior appointment.

Interview script was designed by brainstorming and developing open-ended, simple, easy to understand questions that allowed interviewees to do most of the talking. The questionnaire was shared in advance that permitted the narrator to think beforehand. In the beginning simple questions were addressed, whereas in the middle difficult and deeper questions were administered and in the final section, some clarification and word of thanks were exchanged. In most of the cases the interview lasted for 30-40 minutes. Manually coded qualitative data was categorized by figuring out the code frame, identifying which theme came up the most and by subdividing into a hierarchical coding frame for finding relationships embedded with the responding feeling on the subject.

4 SYSTEM MODEL

The research model is developed based on research purpose, research questions, accordingly, the system model was evolved. This system model abstractly captures the essence and spirit of a prototypical healthcare industry with many departmental elements, wherein SQ attributes act as nodes and arrows as "causal" conduits linking them. Particularly, these paths efficiently connect and unify with TQM characteristics and are validated by analysing a cluster of hypotheses. The following sections provide TQM conceptual framework, hypotheses testing, findings, and conclusion (Figure 2).



Notes: H01: Bureaucratic management leads to resistance to change.; H02: Absence of collaboration leads to dearth of TQM professionals in industry.; H03: Ineffective training leads to poor TQM knowledge.; H04: Overcoming resistance to change will improve employee empowerment, and customer focus.; H05: TQM professionals will support Quality Circle and Continuous Improvement.; H06: TQM knowledge will help in setting-up policies, processes, procedures, and strategy.; H07: Key TQM factors will drive TQM benefits.

Figure 2 – TQM Conceptual Framework

4.1 Hypotheses Testing

The conceptual model showing relevant attributes of the present research is shown in Figure 2. It embodies three major segments viz., Barriers, Drivers, CSFs, and Benefits. The model proclaims that there exists a set of barriers that hamper and impede attainment of TQM key factors, which are considered as CSFs. These CSFs later drive benefits and surmounting the barrier to achieve CSFs is a two-step and through three-branch process, as reflected in the model. Three traits connect these two ends/segments viz. proper mindset, professionalism, and awareness. These CSFs are in fact the "enablers" or drives to reap TQM benefits. A Cross-sectional research was accomplished in designing questionnaires and working of hypotheses through literature review (Alzoubi et al., 2019; Antony et al., 2018; Balasubramanian, 2016; Fatima, Malik and Shabbir, 2018; Mosadeghrad, 2013; Ozdal and Oyebamiji, 2018). Consequently, driven by existing conventional insight and engagement in service activities and academia, seven hypotheses (H_{01} to H_{07}) were developed and analysed in subsequent paragraphs.

H_{01}: Bureaucratic management leads to resistance to change.

The TQM program can only succeed, when encouraged by top-management with all-round support. It can be achieved through the right organizational structure and by embracing quality culture. According to Joiner (2007), realization of

TQM methods is accompanied with improved company bottom-line. Hence, organizations shall build a culture or environment of encouragement that would promote and support execution of TQM. There are obstacles in healthcare setup, such as lack of administrative commitment, inexperienced middle level management and resistance to change.

Other crucial obstacles of TQM are lack of employees' curiosity, poor skills, development, workers' devotion, interest, and participation. In addition, there is an overall work pressure of medical professionals hampering acclimatization to TQM culture. As per Sila and Ebrahimpour (2002), the obstacle of achieving TQM is HRM issues, and above all "iron curtain" existing between divisions or functions, high labour turnover and "uncooperative" culture. Sometimes it posing challenge for management to convince and communicate TQM benefits to employees, as a result employees tend to perceive that it is going to overburden or threaten their "identity". Incompetent employees also contribute to this situation, who perhaps feel risk of losing job, due to lack of education or training. Even labour unions can make or break the successful implementation of TQM. *Accordingly, it is hypothesized that bureaucratic management leads resistance to change.*

H_{02}: Absence of collaboration leads to dearth of TQM professionals in industry.

Teamwork can be a magic cure, if these precepts like "working together"; "leaving no-one behind" are ingrained in the system. When a team is cohesive and working for a common goal, employees will feel they are working for each other. On the contrary, poorly run teams can do more harm to groups than having no teams at all. A trusted team leader with leadership skills could build trust and develop mutual support among the members. It can turn out to be supportive and will be able to assist each other in accomplishing the organization's performance. Hence, top executive support will actively lead to better patients' care in the healthcare industry. According to Rahman (2019), TQM implementation can be identified through top-management commitment, leadership; teamwork; training; competency development; and organizational culture. Therefore, teamwork should be institutionalized in the healthcare system through development of the right culture, training and development, and continuous improvement.

The top management affiliation, employee efficiency and commitment in TQM curriculum would achieve success. According to Slimák and Zgodavova (2011), success is only a sustainable fortune for individuals and for organisations. Therefore, teamwork is a significant tool that has potential to create a high-performance, well-organized, and strong healthcare setup. TQM can focus on long, medium-term and short-term goals and can provide a cohesive vision for systemic change to all types of industries including healthcare. According to Al-Dhaafri, Zien and Al-Swidi (2013), the capacity to create a company's ethos that can promote the invention and accept the failure as the way of discovery. As part of senior management commitment, the TQM initiatives should be taken as

managerial solutions towards gaining competitive advantage. *Therefore, it is hypothesized that absence of collaboration leads to dearth of TQM professionals in industry*.

H_{03}: Ineffective training leads to poor TQM knowledge.

The type of training imparted to staff would depend upon individual skills, purpose, needs and hierarchical level. General leadership training can be given to managerial cadres, technical to specialist, TQM training to specialist as well as for leadership cadre. According to job requirements, specialized training such as use of eminence tools or techniques can be given to experts. According to Talib, Rahman and Qureshi (2010), CSFs for successful implementation of TQM in service industries is to achieve business success and perfection in quality service. Every organization needs to decide to whom to impart general or specific training based on expected benefits and CSFs.

Effective and systematic training is required for understanding and implementation of TQM. It can be done by identifying training requirements, planning, and implementation of suitable training programs. Proper training would assure that employees have enough support to develop their skills. It can be personalized in training objectives for gaining efficiency, and by evaluating the effectiveness of training programs. According to Ali et al. (2017), employee training and relationships can positively influence business. The evaluation and effectiveness of training should be carried out by respective line managers. *Accordingly, it is posited that ineffective training will lead to poor TQM knowledge.*

H_{04}: Overcoming resistance to change will improve employee empowerment, and customer focus.

It has been said that “change is always good”, one frequently hears that “nothing is certain except change” or “change is always resisted”. In most of the cases it is observed that employees become the prime opponent of change. Total management support is essential, and without their support, the TQM program would not take-off. The managers shall involve employees in implementation and accomplishment of TQM. According to Sadikoglu and Olcay (2014), firms should enhance employees’ engagement/dedication/understanding towards TQM to overcome its barriers. If a manager instead of being “change agent” takes up a postman role, TQM will suffer enormously. Therefore, the manager shall be responsible and should take a proactive role in TQM accomplishment.

Top management commitment toward employee empowerment is considered as one of the most significant values toward TQM, as it builds strong and everlasting alliance with end users. It will improve customer satisfaction, enhanced reliability, increased sales, improved revenues, and profitability. These can be accomplished only through satisfied and loyal employees, care, and empowerment. Therefore, employee empowerment should be most effective in connecting the silos and bridging the gaps to mitigate employees’ resistance to

change. Once employees are willing to accept change, they will be proactive, satisfied, and loyal, thus will concentrate on customers and become customer focused. *Accordingly, it is posited that overcoming resistance to change will improve employee empowerment and customer focus.*

H_{05}: TQM professional will support Quality circle and uninterrupted progress.

The accomplishment of TQM relies on a simple, yet straightforward organizational structure. However, typical healthcare organizations are systems that are composite by design and complex by operation with multiple levels of bureaucracy, and functional units, posing hurdles for smooth delivery of healthcare services. In the given composite structure, it is challenging to accomplish synchronization. In the complex environment, establishing Quality Circles (QC) is challenging, which is a pre-requisite for TQM for an organization and it will not flourish in a complex and complicated system and that too in the absence of poor leadership commitment and encouragement. According to Albliwi et al. (2014) identified several common reasons for the TQM catastrophe, such as lack of leadership commitment, participation, communication, training, and inadequate resources. The QC is required to be formed by a steering committee, which will require leadership involvement, nomination of QC volunteers and designation of senior staff as facilitators. At the same time, the QC recommendations shall be religiously implemented.

QC is likely to bring change through CI, thereby the organization continually undergoes change to improve overall SQ. Improved quality will fill service gaps to meet and exceed customers' expectations. Accordingly, customers' feedback shall be collected on regular intervals. QC teams typically shall work on a constant basis that will satisfy customers and end users. According to Kassinis and Soteriou (2003) customer loyalty led to increased revenues and reduced future transaction costs. Therefore, QC and CI shall fall within the purview and shall form as foundational "bricks" of TQM. *Accordingly, it is predicted that TQM professionals will improve Quality Circle and Continuous Improvement*.

H_{06}: TQM knowledge will help setting-up policies, processes, procedures, and strategy.

The TQM can be viewed as the convergence of three major streams of thinking about quality that evolved over the past few decades: inspection, quality circle, quality assurance, which led to various certifications such as ISO 9000, ISO 14000 etc. According to Carnerud and Bäckström (2019), quality has centered on SQ & end users' satisfaction; process design & control; ISO certification & standards. ISO was introduced in 1987 by the International Organization for Standardization and it proposed seven basic quality management tools viz. customer focused, leadership, people engagement, process-centric, continuous improvement, and evidence-based decision and rapport management. It mainly focused on leadership in organization and people management. According to Sampaio, Saraiva and Rodrigues (2011), the motivation to implement ISO 9000

is a CSF that speaks about the quality management and financial achievement of many companies.

Lean Management (LM) became an important process of TQM that pleaded for methodical techniques of eradicating waste and incompetency. According to Bhamu and Sangwan (2010), there are an abundance of LM classifications with conflicting objectives and scope. LM looks for things that add value, and those which do not shall be eliminated. It also beseeches for waste reduction in transportation, inventory, action, over- production, over processing, and defects. According to Choomlucksanaa, Ongsaranakorna and Suksabaia (2015), lean manufacturing processing reduced time, cost, and non-value-added activities. LM focuses more on identifying incompetency in the production process, rather than encouraging quality system.

According to Antony, Snee and Hoerl (2017), the integration of Lean and Six Sigma (LSS) is significant as the Lean target on enlightening the exchange of ideas and flow of materials, whereas Six Sigma mechanisms add value in transformations. Similarly, Six Sigma is a business approach for functioning and obtaining service eminence. Hence it is important that healthcare industries take enough trouble to understand the benefits and success of Six Sigma. According to Nakhaiand Neves (2009), the persistent drive of embracing Six Sigma has developed an impractical expectation than what Six Sigma is genuinely capable of accomplishing. It is likely that Six Sigma will enable future work to progress, develop and evolve, which will open new prospects in the field for a sustainable future.

According to Muñoz and Gutierrez (2017), the Six Sigma emphasizes on customer input, improvement in design and control practices, but also exploratory methods, such as invention, originality, or revolution. LM combined with Six Sigma is the futuristic strategy for the operation management and service industry. According to Muraliraj et al. (2018), there is a quandary in combining LSS for those who had preliminary experience with one or the other notion. However, the industry became acquainted with LSS during the initial stage of the new millennium. *Hence, it is predicted that TQM knowledge will set policies, processes, procedures, and strategy.*

H_{07}: TQM key factors will drive TQM benefits.

Healthcare system is gradually moving toward quality improvement; however, many eyebrows were raised whether TQM as a strategy will pay back. According to Kim, Kumar and Murphy (2010), it is important to adjudicate if TQM will thrive or flop, however, the motivation is that TQM has been constantly evolving. TQM will certainly succeed, without fail, when certain sets of practices are put into action. According to Kumar et al. (2018), many companies having the right strategy will be able to accomplish TQM effectively, whereas others will have difficulties. During these efforts while implementing, many companies have come to understand more about the dynamic and a somewhat near “protean” nature of TQM. However, as a concept and philosophy, TQM is universally

accepted to some extent but not widely discussed in the healthcare industry. According to Alzoubi et al. (2019), there is scarcity of TQM research in healthcare perspective.

It was observed that the significance of top management support, employee training and development are extremely important to bring about a transformational change in an organization. It can lead to improved organization overall operational efficiency. According to Taddese and Osada (2010), TQM affects techno-process innovation mediated primarily by human resource and working conditions. The overarching purpose of implementing TQM in the healthcare industry is to effect changes in management style and culture. Improved knowledge of TQM is likely to improve overall working traits in an organization such as job satisfaction, employee loyalty, employee retention and commitment and industry competitiveness. As Ansari, Farooquie and Gattoufi (2018) service organizations should pursue employee loyalty to build improved relationships with customers in delivering better SQ.

The TQM factors will drive employee loyalty. As employees are the extremely valuable resource of any organization for productivity and performance improvement. The successful company considers employees as "prime movers" in achieving results sooner than later. According to Psomas et al. (2014), quality is a considerable component, which promptly impacts employee benefits, customer satisfaction and business accomplishment. The performance improvement should be strongly managed by the company since it directly helps in profitability of the company. According to Yee, Yeung and Cheng (2011) there is persuasive argument among SQ, employee and customers' satisfaction/loyalty and firm profitability. *Accordingly, it is predicted that TQM key factors will drive TQM benefits.*

5 RESEARCH IMPLICATIONS

The research attempted to investigate the contribution of technology on TQM, understanding of TQM practices, its benefits to the patients, society and how it can influence company profitability. TQM can be used as a synergistic approach in implementing systems, overcoming clinical and administrative issues. It can enhance patient satisfaction, loyalty, through continuous improvement and by facilitating healthcare service at a reasonable and competitive cost. TQM has received great attention in all the fields including academia, managerial application, and operation management.

5.1 Implication in Service Industry

There is enough scope for TQM in service industry research. According to Ozdal and Oyebamiji (2018), the implementation of TQM methods stretches from executive management to employees' satisfaction. It can improve overall operational efficiency and improve employees and customers' satisfaction. TQM

needs right planning, financial support, however poor management can put TQM at risk. According to Sampaio, Saraiva and Domingues (2012), numerous necessities should be studied such as leadership dedication, availability of resources, communication, training and development within the company.

5.2 Managerial Applications

The TQM will be a great opportunity from a managerial point of view, in terms of minimized waste, improved product and SQ, improved revenue, and profit. It can be achieved by developing TQM culture, leadership support, employee empowerment, bridging the silos between employees and management that can overcome resistance to change. As per Rahman (2019), the best TQM implementation can be identified through leadership dedication, harmony; and employee coaching. TQM will be appreciated by employees once they are satisfied, and loyal.

5.3 Operation Management Application

The TQM can be vision for change for all types of industries, which can derive benefits to society in terms of increased customer satisfaction, higher productivity, waste reduction, reduced defects, lower cost, increased revenue, and profitability. It will reinforce competitive position due to higher productivity, improved operating cost, improved customer satisfaction, loyalty, and employee's engagement. According to Joiner (2007), realization of TQM methods is associated with enhanced organization performance. It will add value to all stakeholders in terms of improved payback. Industry must be cautious in implementing TQM by keeping labour unions engaged, since any disagreement can make or break the TQM.

6 FINDINGS

The present framework is especially useful, which in turn will drive to achiever TQM benefits. The chief barrier of implementing TQM in healthcare is the bureaucracy, since healthcare setups in many hospitals are departmentalized with numerous units, sub-units, and subsystems, with a web of cross-linking management controls. This entails the necessity of multiple layers of hierarchy with multiple "command and control" structure. Such a bureaucratic style of management is antithesis in adopting TQM.

According to Candido and Santos (2011), though there is no evidence of empirical validation, yet many companies may deter from adopting TQM for the sheer magnitude of this undertaking. The other major barriers of TQM implementation include lack of dedication of executive, or poor teamwork, unproductive training and advancement, absence of employee empowerment, paucity of processes, procedures and even the non-existence of QC and CI

philosophy. As Khan, Malik and Janjua (2008) affirm that TQM substantially defines employee accomplishment due to their contentment and dedication.

7 CONCLUSION

Conclusions suggest that TQM key factors will drive benefits such as, workers' commitment, and loyalty can enhance customers' engagement and patriotism; elimination of waste, by becoming environmentally-friendly; increase in revenue, profitability, and shareholder value. The conclusions also advise that technology supported healthcare TQM services will increase patient satisfaction, loyalty, positive word of mouth, company revenue and profitability. According to Ansari (2020), SQ enhances workers' pride, efforts, develops customers' loyalty, contentment, which promotes repeat purchase behaviour.

To reach that stage, one must bring in suitable change of mindset to accept change and ready to learn more, engage in developing structures, like QC & CI, and acquire professional knowledge, without which one cannot reap TQM benefits. Thus, the present research affirms that TQM enactment in healthcare will provide improved accomplishment when aptly executed in a right condition, with committed leadership, quality circle in place, supportive infrastructure, and with total quality improvement attitude.

From a practical standpoint, the present TQM framework suggests that healthcare providers can figure out realistic factors of TQM implementation through overcoming TQM barriers, putting special emphasis to drive its benefits. Armed with a clear-cut TQM framework, healthcare managers can devise better strategies to keep at bay some of the key challenges and overcome the stubborn barriers to reach a favourable, conducive state, from where one can proceed to get at the "prized" benefits.

A perceived limitation of this study is perhaps due to poor understanding of TQM. However, detailed interviews were conducted with a limited set of respondents that may not represent the view of the complete population. Thus, future research using Structural Equation Modelling with an empirical validation is called for, which can also investigate Lean Manufacturing and Six Sigma combined as LSS to find out how far the healthcare industry can benefit from them.

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CONFLICTS OF INTEREST

The author declares no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.