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ABSTRACT

This study aims to discuss the evolution, principles, and stages of total quality management (TQM) in public health care organizations. It also makes a comparison that how case organizations think about quality and TQM along with its applicability within public sector. The study can be categorized as qualitative research. The data is collected from semi structural interviews of the informants and the concerning documents, which consist of strategy, policy papers and audit reports of the case organizations. Altogether there are two case organizations. Furthermore, data is analyzed with the help of content analysis. Most vital issues in TQM practices are its comprehensiveness, and its application in such a way which is appropriate for the organization, with a logical way of operation and the participation of management and personnel. Training, guidance, teamwork, involvement and learning are imperative for achieving a continuous improvement culture and are vital elements when adopting TQM. Managers should learn from the experience of TQM implementers by studying expected challenges and pitfalls. They should also pay more attention to the crucial role of all stakeholders in the TQM implementation. The study could be quite valuable from a strategic perspective in providing guidelines to build up a proper plan for TQM practices more promptly. The paper also manages to shed light on TQM practices of public service organizations by comparing their current approaches to quality.

KEYWORDS

Case Study, Healthcare, Public Sector, Quality Management Systems, Service Organization, Total Quality Management (TQM)

INTRODUCTION

In the past TQM used to be implemented in the manufacturing sector, but now it has also been widely applied in service organizations and the public sector (Fryer et al., 2007) e.g. health care. All kinds of organizations in the private as well as the public sector are looking to be customer-oriented organizations to carry on their operations in a globally competitive environment. Therefore to compete as customer-oriented organizations it is necessary to offer quality products and services

to their customers. Subsequently, TQM is such a philosophy that provides the tools and the direction to improve the quality of their products and services.

However, TQM implementation in manufacturing firms is not considered a novel and multifaceted strategy, but TQM implementation and practice particularly in public service organizations like healthcare is really quite a recent and composite undertaking. The introduction of the TQM term in health care is well established, but there is still lack of such a supporting framework that can make it easier for newcomers to follow the boulevard.

Therefore, the objective of this research is to study which kinds of TQM practices there are in public sector services, whether they are applying a fully-fledged TQM approach or only some parts of the TQM are being employed? More specifically, this research proceeds to examine the implementation of TQM in the public service organizations in the attempts to:

- Present an overview of TQM initiatives in service organizations
- Identify the level of understanding and knowledge about TQM in health care

To accomplish the objective mentioned above and to achieve sub goals of the study, the paper will analyze the distinctiveness of the TQM practices in each target organization. First, it will carry on by providing an up to date literature review of the associated terms individually with more emphasis on quality, TQM and its applicability in service organizations. Second, it will elaborate on the methodological approach which has been employed during this study and a description of all target organizations. Third, it will illustrate the results along with discussion and managerial implications. Finally, it draws some conclusions based on the present results and discussions in light of previous literature. It also includes an appendix that portraits an overview of TQM practices and approaches of all case organizations.

LITERATURE REVIEW

Service Quality

Quality is concerned with fulfilling the needs, wants and expectations of the valued customers. One of the key and stable definitions may be that, 'quality is suitability for purpose'. Quality is also defined as 'satisfying customer's requirements' or 'fitness for purpose' (Ghobadian et al., 1994). However, it is complex to define service quality rather than the quality of goods. Service quality can be defines as an attitude of the consumer relating to the results from comparisons between expectations of service with his perceptions of actual performance (Grönroos, 2007). The quality of services executed can only be appraised during or after consumption (Audhesh et al., 2004). The more composite and personal the service, the more detective effort customers will perform (Berry et al., 2006). The primary source of value creation for a service quality is performance by the service provider. It is often the small things that influence a customer's overall perception of service quality, be it the tangibility associated with the service or the behavior or technical performance by the service provider (Kumar et al., 2010).

Service Quality Dimensions

The most commonly stated set of service quality was offered by Zeithaml et al. (1990), who using factor analysis, condensed the dimensions of service quality into five categories:

1. Tangibles (facilities, equipment and appearance of staff);

2. Reliability (ability to perform the promised service dependably and accurately);
3. Responsiveness (willingness to help customers and provide prompt service);
4. Assurance (knowledge and courtesy of staff and their ability to convey trust and confidence);
5. Empathy (caring, individualized attention the organization provides to its customers).

Total Quality Management

According to British Standard BS 7850, TQM is defined as management philosophy and company practices that endeavor to strap up the human and material resources of an organization in the most efficient way to accomplish the organizational objectives. In general, the overall scope of quality, total quality and TQM can be classified as follows (Kanji, 1991):

- **Quality:** Is to satisfy customer's requirement persistently;
- **Total Quality:** Is to achieve quality at low cost;
- **Total Quality Management:** Is to obtain total quality by involving everyone's daily commitment.

According to Vouzas and Psychogios (2007) there are two substantial aspects of TQM that can be identified; the 'hard' side and the 'soft' side. The hard (or technical) side refers to management tools and practices, while the soft (or philosophical) is associated with management concepts and principles. The hard aspects of TQM consist of clear and well documented methods while the soft aspects compose its whole theory, combining its background and philosophical elements. It is argued that TQM has to evolve. Four stages can be identified in the evolution of TQM:

- Inspection-based System;
- System of Quality Control;
- Quality Assurance;
- Total Quality Management.

Quality Management initiated with a simple Inspection-based system, where a product was compared with a product standard by a team of inspectors. First revolutionary charge – System of Quality Control came along with World War II. At that time quality was achieved through control systems, product testing and documentation control. In the Quality Assurance stage, there was a change from product quality to systems quality. Typical of this stage were quality manuals, quality planning and advanced document control. Quality assurance is prevention-based. The fourth stage of development was TQM. A clear and unambiguous vision, few interdepartmental barriers, staff training, excellent customer relations, emphasis on continuous improvement, and quality of the company as a whole are typical in a TQM environment.

Over time the definitions of quality management have been widened to incorporate the wellbeing of society, the environment and future generations. A large part of the development of quality concept and quality management has taken place without much consideration of what quality management really is or should be. It has been claimed, that quality management should focus on customers and their satisfaction and not concentrate on stakeholders and interest parties who are affected by the products and processes (Klefsjö et al., 2008), but on the other hand TQM is in many researches said to be implemented with the help of quality awards, which are considered as excellence models (Bou-Lusar et al., 2008; Vernero et al., 2007).

TQM can be described as the development of an organizational culture, which is defined by, and supports, the constants attainment of customer satisfaction through an integrated system of techniques and tools. TQM is a way of managing to improve the effectiveness, efficiency, flexibility, and competitiveness of a business as a whole. There are eight most common principles in the TQM:

leadership and management, strategic planning, focus on customer, focus on employees, focus on suppliers, focus on material resources, process management and performance results (Rad, 2005).

Total Quality Management in Healthcare

In exceedingly competitive healthcare environments, hospitals similar to all other public or private organizations and institutions, are confronted with the stipulation of measuring both their financial (costs, revenues, profitability) and non-financial performance (quality of their services), in order to improve their functions and increase their competitiveness (Chaniotakis and Lymperopoulos, 2009). Performance measurement is not an easy task in health services, where a wide range of stakeholders are involved. Lim and Tang (2000) argue that customer based determinants and perceptions of service quality play an important role in hospitals. Hence, Wisniewski and Wisniewski (2005) revealed that service quality from the patients' perspective should be consistently monitored and assessed. Silvestro (2005) proposes the development of a tool for measuring the gap between patients' priorities and their perceptions and the match between the patient and management perspective.

Ovretveit (2001) has found seven components in integrated quality development in hospitals, which is an application of total quality management in a hospital. The components are based on longitudinal empirical research in European hospitals. The components are as follows:

1. Four coordinated organization-wide programs to develop professionals' competencies, managers' competencies, organization and processes, and a new role for patients;
2. Three-dimensional definition of quality (patient, professional and management quality);
3. Patient pathway and process development;
4. Quality data gathering;
5. Team quality projects;
6. Patient focused system development; and
7. Creating 'soulful spirals' and preventing 'soulless spirals'.

These seven components aim to combine effective established professional quality assurance methods with newer quality improvement methods, simultaneously by improving patient, professional and management quality, and describing and developing the system of care experienced by the patient in a soulful way.

Conceptualization of Critical Dimensions of TQM in Hospitals

An instrument that identifies the operating elements of TQM in hospitals from the viewpoint of the health-care service providers has been developed and validated in the study by Duggirala et al., (2008). It has also identified critical factors of provider-perceived TQM in hospitals:

1. Top management commitment and leadership;
2. Human resource management in the hospital:
   a. Selection;
   b. Training;
   c. Employee involvement;
3. Process management:
   a. Ease of access to the hospital, and ease of admission processes and procedures;
   b. Administrative services;
   c. Processes: administrative and clinical;
   d. Exit;
   e. Clinical outcomes of medical care;
4. Hospital facilities and infrastructure;

5. Patient focus;
6. Employee focus;
7. Measurement of hospital performance;
8. Hospital information system;
9. Errors, safety and risk management;
10. Service culture;
11. Continuous improvement;
12. Benchmarking;
13. Union influence;
14. Governance and social responsibility.

According to Bassand et al., (2007) TQM in healthcare is a relative concept that requires comparison either with the performances of others or with the standards. The measurement of quality needs to be relevant for both service providers and patients, and also the process of care should be measured. There should be regional and/or national programs to measure performance indicators systematically and provide feedback to individual hospitals.

METHODOLOGY

This study is qualitative because of its subject, quality management that is a vague subject, with many dimensions (Garvin, 1988) and a hospital is also complex organization with multiple goals (Kast & Rosenzweig, 1970). A qualitative approach allows a researcher to deal with complexity, context and fuzzy phenomena. For example, holistic case studies are applicable in these kinds of situations (Gummesson 2006, 167). Qualitative methods are also very suitable for studies concerning organizational change, because they allow the detailed analysis of the change and by using the qualitative methods we can assess how (what processes are involved) and why (in terms of circumstances and stakeholders) the change has occurred (Cassell & Symon, 1994- 5). However this research process consists of the following steps applied from the study of Lukka (2003):

1. Find a practically relevant problem which also has potential for theoretical contribution;
2. Examine the potential long-term research co-operation with the target organization(s);
3. Obtain deep understanding of the topic area both practically and theoretically;
4. Innovate a solution idea and develop a problem solving construction, which also has potential for theoretical contribution;
5. Implement a solution and test how it works;
6. Ponder the scope of applicability of the solution;
7. Identify and analyze the theoretical construction.

The study material consists of semi structural interviews of the informants, audit reports, strategies and other documents available. The material is analyzed with the help of content analysis. Some previous studies, which have used the same approach, are for example Kunkel & Westerling (2006). Interview made from the following informants:

*   Central Hospital of the Vaasa Hospital District (CHV); general manager, manager doctor, quality manager, manager of the heart unit, politician;
*   Central Hospital of the Keski-Pohjanmaa Hospital District (CHK); general manager, manager doctor, quality manager, manager of the heart unit and worker (group interview), politician.

The content analysis can be defined as any methodological measurement applied to text (or other symbolic materials) for social science purposes (Duriau et al., 2007). Content analyzes are most successful when they focus on facts that are constituted in language, in the uses of particular texts which the content analysts are analyzing. Such linguistically constituted facts can be divided into four classes: attributions, social relationships, public behaviors and institutional realities. Attributions are concepts, attitudes, beliefs, intentions, emotions, mental states and cognitive processes which ultimately manifest themselves in the verbal attributes of behavior. They are not observable as such. Institutional realities, like the government, are constructions that rely heavily on language. See the exact description of the content analysis of the study in appendix.

Target Organizations

Altogether there are two target organizations. These are regional hospitals and in both hospitals managers of the units are chosen for examples of sub-units of hospitals because of their supposed quality management experiences. Below is a short overview of each exploring their strengths, weaknesses, possibilities and threats regarding TQM practices.

Table 1. Strengths, weaknesses, possibilities and threats concerning TQM

Strengths	Weaknesses
● Enough know-how ● A tradition of systematic working ● Easy to learn new theories and models ● Well educated personnel ● Ethical background ● Language of the SHQS is suitable for the health care industry ● Much experience of development work ● Commitment towards TQM (nursing staff) ● Sufficient human resources ● Planning of strategies, security policy and risk management (*) ● Customer focus(*) ● Meeting practices (*) ● Human resources management practices, like well-being of the personnel, recruitment ● Benchmarking (*)	● Insufficient know-how concerning quality work ● Every patient and diagnosis is considered as unique cases ● Multidimensionality of health care, lack of standardized products, rapidly increasing amount of knowledge ● A big organization ● Everything must be communicated in Swedish and in Finnish communication ● Lack of commitment of physicians and other personnel ● Quality systems in primary health care ● Modeling and measurement of processes in hospital and unit levels (*) ● Goals and measures of operation and levels (*) ● Part of planning practices (*)
Possibilities ● Changes in the operation environment force to improve the organization ● Changes in the structure of municipalities and services can help hospitals to improve their operations ● All the social- and health care units use the same kind of (quality) system and thus it is possible to create a unitary system ● To find the process owner for the social and health care services across the organization boundaries ● Top management of the central hospital is committed to quality work ● Functionality of communication among the special fields	**Threats** ● Border lines between professions ● The aim has been to offer almost everything to essentially everybody for free. This leads to a continuous gap between the needs and possibilities of the whole public administration and falls heavily on health care. ● Operation environment is changing and resources are needed to follow-up the changes. Maintenance of a quality system requires work on an almost daily basis. ● Lack of resources ● Cooperation between hospital districts and outpatient care: there is no motivation to improve quality in every place. ● More and more specialized health care leads to a situation in which the patient's viewpoint disappears and totality becomes vague

(*) = audit report (SHQuality 2010)

Table 2. Strengths, weaknesses, possibilities and threats concerning TQM

Strengths	Weaknesses
• Electronic appointment in the laboratory • Citizen's acceptance • Networking with educational institutions • Long traditions of SHQS since the year 1996 • Qualified and committed internal audit group • Positive attitude of the personnel towards development (**) • Small organization (flexibility) • Big volumes and clear procedures of operations • Commitment of the personnel (*) • Customer focus (*) • Cost awareness (*) • Regional cooperation (*) • Commitment to values (*) • good job satisfaction survey (*)	• Funding system and attitudes concerning it • Appointment problems • Lack of commitment • Quality management is not applied on daily basis • No full-time development and quality manager • Small size of the organization • It is difficult to change (bureaucracy, trade-unions, etc.) • Complicated organization • Lack of physicians • No consideration about the totality of the social- and health care services • Lack of quality policy (*) • Information systems and knowledge management (*) • risk management (*) • process measurement (*)
Possibilities • Integrated clinical pathways can become more flexible and efficient while the organization is growing • Quality management may encompass the whole social and health care services	**Threats** • Belief in extremely big organizations • Recruitment of competent personnel fails • Municipalities don't understand SHQS • Cure is improved on an economic basis instead of the need of patients • Quality management is applied only partially and the totality is forgotten

(*) = audit report (SHQuality, 2010), (**) = both audit report (SHQuality, 2010) and interviews

Central Hospital of the Vaasa Hospital District, (CHV)

The Central Hospital of the Vaasa has an administrative role in the Vaasa Hospital District, which consists of three hospitals. The District is owned by 23 municipalities and it is a bilingual organization (both Swedish and Finnish speaking personnel, customers, and owners). The number of the personnel in the year 2010 was 1997, which consisted of nursing staff (1060), physicians (183), research staff (240), and maintenance staff (109). Services are offered for 166,000 inhabitants in the area of the municipalities (SHQuality, 2010). This Hospital District is one of the 20 Finnish hospital districts. See Tables 1 and 2 for strengths and weaknesses charts concerning TQM.

According to the quality policy and strategy, good quality in CHV is defined as service processes which are from the customer's or patient's point of view, high level, available, efficient and economic, and during which the well-being of the personnel and expectations of the stakeholders are taken into consideration (Vaasa Hospital District, 2007). In the strategy there is a decision to establish a quality system for the hospital (Vaasa Hospital District, 2003). In the heart unit of the CHV (8.10.2004) there is a quality manual which is made according to ISO 9001:2000 quality management standard. However, the hospital is still using the SHQS quality system (SHQuality, 2010).

Central Hospital of the Keski-Pohjanmaa Hospital District (CHK)

The Keski-Pohjanmaa Central Hosital has an administrative role in the Keski-Pohjanmaa Hospital District. The District is owned by 13 municipalities and it is a bilingual organization (both Swedish and Finnish speaking personnel, customers, and owners) (Keski-Pohjanmaa hospital District 19.11.2010). The number of the personnel in the year 2010 was 1143 and in the year 2011 it was 1164 (Keski-Pohjanmaa hospital District 2010).

In the strategic plan of the hospital, high service quality was mentioned as one of the key values of the hospital. The service quality is based on hearing the needs of the customer and patient, high-

quality services, effectiveness, and taking care of knowledge, readiness of operation and facilities of operation (Keski-Pohjanmaa Hospital District, 19.11.2010).

FINDINGS

The development of a quality system is the most adopted initiative in all the case organizations. The least adopted TQM initiative is the application of statistical process control. This can be explained by the respondents' lack of knowledge about the exact control methods used by the Quality Improvement departments or, because some hospitals lack the financial resources and expertise to implement these statistical process control methods.

According to the interviews the most important issues in TQM practices is comprehensiveness, a systematic way of operation, the participation of management and personnel, high quality cure processes, reporting and reacting, the implementation of high-level goals (ethics and values), focus on development as well as measurement and goal levels. TQM is seen as quite applicable or very applicable to (a) hospitals and libraries but there are several issues, which foster the implementation of TQM. Language used in the implementation should be familiar and suitable to the target organizations, and unfamiliar language should not be used by force. SHQS is an example of translating the language of TQM into a language familiar to the healthcare industry. This requires it to be accommodated to healthcare.

In all the case organizations, they claimed that there is no TQM but simultaneously ISO quality standard is implemented there. TQM is usually seen as a method for practicing quality. However, TQM is not applied in every single part of the organization. In every organization they applied TQM in a way that is typical to the industry: in hospitals they used SHQS. In the heart unit of the Vaasa Central Hospital, they also applied ISO quality management standard. Furthermore, the heart units were evaluated by medical experts.

It is visible that everybody is talking about quality assurance instead of quality management or TQM. The most important issue in TQM is the totality, participation, continuous improvement and organizational learning process. In the interviews most problems were seen in the measurement processes of the TQM in such organizations.

DISCUSSION AND IMPLICATIONS

TQM is considered to be a generic management model that is applicable to every organization, but on the other hand it is also suggested that the operation environment of an organization should be taken into consideration while implementing quality management. It is crucial to persuade quality as early as possible, preferably at the initial stage of organizational operations. Organizational structure modification supports the success of TQM which must always be considered. Leadership and top management support are keys to TQM implementation and practice. Upper management must always conduct continuous improvement activities with the consensus of all employees. They should also make use of selective application of TQM tools and techniques by appraising their suitability with the organization. There must also be sufficient financial resources available for TQM initiatives (Tuomi, et al., 2013). Healthcare organizations must integrate quality indicators into their operational strategy with the aim of increasing customer satisfaction and safeguard competitive advantage (Ahmed, 2014).

Training, tutoring, teamwork and staff involvement are important for achieving a continuous improvement culture and are vital elements when adopting TQM. This claim is supported by Fung's (1998) study which showed that the learning team approach assists in accomplishing an educational organization and attains TQM. It is noted from the findings that most of the staff members from case organizations are not familiar with the approach of TQM, so providing appropriate training for employees and support from top management are considered vital success factors by most researchers

(Ennis & Harrington, 1999). This result is consistent with the results of Rad (2005) concerning the key success factors for TQM implementation.

Successful TQM implementation requires top management commitment, employee involvement and empowerment, customer focus and continuous improvement, training for TQM throughout the organization and increased communication (Tuomi, et al., 2013). Furthermore, there is a need for patience and tolerance as it is a time-consuming process and it is not easy to change an organization. An increased focus on the area of organizational change related to TQM is also needed. To conclude, the successful TQM implementation requires a thorough understanding of critical success factors, barriers to achieving these factors, and managerial tools and techniques to overcome these barriers along with continuous organizational learning. The barriers of the implementation of the TQM are resistance to change and people's attitudes, problems in finding funding and time for training, while maintaining current services in the library. It is also difficult to make a change in organizational structures, yet TQM requires institutions to restructure themselves (Moghaddam & Mogalleghi 2006) and be ready to learn each and every thing that occurs over the passage of time.

Finally, the results of research argue that TQM initiative implementation may seem to be an easy task, but this is a very illusory deliberation. The dilemma is not only how to implement the agenda, but how to make it work effectively and efficiently. Managers as well as quality policy makers should pay more attention to the vital role of all stakeholders in the TQM implementation and success stages. A non-implementer of the TQM philosophy should learn about the expected challenges and pitfalls from the experiences of TQM implementers.

REFERENCES

Ahmed, S. (2014). Simulation Method to Improve Hospital Service Quality. *International Journal of Information Systems in the Service Sector*, *6*(3), 96–117. doi:10.4018/ijisss.2014070106

Audhesh, K. P., Spears, N., Hasty, R., & Gopala, G. (2004). Search quality in the financial services industry: A contingency perspective. *Journal of Services Marketing*, *18*(5), 324–338. doi:10.1108/08876040410548267

Bassand, J.-P., Priori, S., & Tendera, M. (2007). Evidence-based vs. 'impressionist' medicine: How best to implement guidelines. *European Heart Journal*, *26*(12), 1155–1158. doi:10.1093/eurheartj/ehi262 PMID:15870117

Berry, L. L., Wall, A. E., & Carbone, P. L. (2006). Service clues and customer assessment of the service experience: Lessons from marketing. *The Academy of Management Perspectives*, *20*(2), 43–57. doi:10.5465/AMP.2006.20591004

Bou-Lusar, J. C., Escrig-Tena, A. B., Roca-Puig, V., & Beltrán-Martin, I. (2008). An empirical assessment of the EFQM Excellence Model: Evaluation as a TQM framework relative to the MBNQA Model. *Journal of Operations Management*, *27*(1), 1–22. doi:10.1016/j.jom.2008.04.001

Cassell, C., & Symon, G. (1994). Qualitative research in work context. In Qualitative Methods in Organizational Research. A Practical Guide, Cassell, C. & Symon, G (ed.), 1–13. London: SAGE Publications. New Delhi: Thousand Oaks.

Chaniotakis, I. E., & Lymperopoulos, C. (2009). Service quality effect on satisfaction and word of mouth in the health care industry. *Managing Service Quality*, *19*(2), 229–242. doi:10.1108/09604520910943206

Duggirala, M., Rajendran, C. & Anantharaman, R.N. (2008). Provider-perceived dimensions of total quality management in healthcare, *Benchmarking: an international journal*, 15(6), 693-722.

Duriau, V. I., Reger, R. K., & Pfarrer, M. D. (2007). A content analysis of the literature in organization studies: Research themes, data sources, and methodological refinements. *Organizational Research Methods*, *10*(1), 5–34. doi:10.1177/1094428106289252

Ennis, K., & Harington, D. (1999). Factors to consider in the implementation of quality within Irish healthcare. *Managing Service Quality*, *9*(5), 320–326. doi:10.1108/09604529910282508

Fryer, M., Antony, J., & Douglas, A. (2007). Critical success factors of continuous improvement in the public sector. A literature review and some key findings. *The TQM Magazine*, *19*(5), 497–517. doi:10.1108/09544780710817900

Fung, M. (1998). A learning team approach for service organizations to achieve TQM and beat the competition. *Managing Service Quality*, *8*(5), 367–374. doi:10.1108/09604529810235826

Garvin, D. A. (1988). *Managing Quality. NewYork*. Free Press.

Ghobadian, A., Speller, S., & Jones, M. (1994). Service quality: Concepts and models. *International Journal of Quality & Reliability Management*, *11*(9), 43–66. doi:10.1108/02656719410074297

Grol, R., Baker, B., & Moss, F. (2002). Quality improvement research: Understanding the science of change in health care. *Quality & Safety in Health Care*, *11*(2), 110–111. doi:10.1136/qhc.11.2.110 PMID:12448794

Gronroos, C. (2007). *Service management and marketing: customer management in service competition. Chisester*. Wiley.

Gummesson, E. (2006). Qualitative research in management: Addressing complexity, context and persona. *Management Decision*, *44*(2), 167–176. doi:10.1108/00251740610650175

Heart unit of the Vaasa central hospital (8.10.2004). *Quality manual*. (in Finnish)

Juntunen, A., Ovaska, T., Saarti, J., & Salmi, L. (2005). Managing library processes: Collecting data and providing tailored services to end-users. *Library Management*, *26*(8/9), 487–493. doi:10.1108/01435120510631774

Kanji, G. K. (1991). Education, training, research and consultancy – the way towards for total quality management. *Total Quality Management & Business Excellence*, *2*(3), 207–212. doi:10.1080/09544129100000025

Kast & Rosenzweig. (1970). *Organization and Management. A Systems Approach. McGraw-Hill Series in Management*. New York: McGraw-Hill.

Keski-Pohjanmaa hospital District (2007). *Financial statement*. (in Finnish).

Keski-Pohjanmaa Hospital District (19.11.2007). *Budget and economic plan*. (in Finnish and Swedish).

Kunkel, S. T., & Westerling, R. (2006). Different types and aspects of quality systems and their implications. A thematic comparison of seven quality systems at a university hospital. *Health Policy (Amsterdam)*, *76*(2), 125–133. doi:10.1016/j.healthpol.2005.05.004 PMID:15982780

Lim, P. C., & Tang, N. K. H. (2000). A study of patients' expectations and satisfaction in Singapore hospitals. *International Journal of Health Care Quality Assurance*, *1*(7), 290–299. PMID:11484647

Lukka, K. (2003). The constructive research approach. In Case Study Research in Logistics, L Ojala and O-P Hilmola (eds.), pp. 83–101. Turku: Publications of the Turku School of Economics and Business Administration. Series B 1/2003.

Moghaddam, G. G., & Mogalleghi, M. (2008). Total quality management in library and information sectors. *The Electronic Library*, *26*(6), 912–922. doi:10.1108/02640470810921664

Rad, A. (2005). A survey of total quality management in Iran: Barriers to successful implementation in health care organizations. *Leadership in Health Services*, *18*(3), 12–34. doi:10.1108/13660750510611189

SHQuality. (2006). *Audit report of the Keski-Pohjanmaa Hospital District*. Kokkola. (in Finnish)

SHQuality (2007). Audit report of the Vaasa Hospital District. 17 September. Vaasa (in Finnish).

Silvestro, R. (2005). Applying gap analysis in the health service to inform the service improvement agenda. *International Journal of Quality & Reliability Management*, *12*(3), 215–233. doi:10.1108/02656710510582462

Strategy of the Vaasa Hospital District 2003–2010. (2003). Vaasa: Vaasa Hospital District. (in Finnish)

Tuomi, V., Ajmal, M.M. & Helo, P.T. (2013). 'Implementing TQM initiatives in public service organizations: case of academic libraries', *International journal of productivity and quality management*, 11(4), 393–411.

Vaasa Hospital District. (2007). *Quality Policy and Quality Strategies of the Vaasa Hospital District*. Vaasa: Vaasa Hospital District. (in Finnish)

Vernero, S., Nabitz, U., Bragonzi, G., Rebelli, A., & Molinari, R. (2007). A two-level EFQM self-assessment in an Italian hospital. *International Journal of Health Care Quality Assurance*, *20*(3), 215–223. doi:10.1108/09526860710743354 PMID:17585618

Vouzas, F., & Psychogios, A. G. (2007). Assessing managers' awareness of TQM. *The TQM Magazine*, *19*(1), 62–75. doi:10.1108/09544780710720844

Wisniewski, M., & Wisniewski, H. (2005). Measuring service quality in a hospital colposcopy clinic. *International Journal of Health Care Quality Assurance*, *18*(3), 217–228. doi:10.1108/09526860510594776 PMID:15974517

Zeithaml, V. A., Parasuraman, A., & Berry, L. L. (1990). *Delivering quality service: balancing customer perceptions and expectations. New Your*. The Free Press.