

Research Article

The Application of Total Quality Management and Knowledge Management in Health System

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Abstract: Today, quality and knowledge are turned into determining factors of success and competitiveness of organizations and total quality management and knowledge management are discussed as one of the last organizational issues in management science. In this study after a short overview of theoretical literature of total quality management and knowledge management and the importance of implementing these modern systems in health system, the importance and method of their application in health system will be investigated.

Keywords: Health system, hospitals, knowledge management, total quality management

INTRODUCTION

Besides, providing the necessary resources for community health promotion, management approaches also play a critical role in health system's improvement in the world (Blendon *et al.*, 1990). Based on modern views of experts, total quality management and knowledge management are of major organizational subjects that attempt to control intangible and spiritual capacities, experiences and skills of staff. The health system is an open system whose philosophy, structure, process and outcomes are affected by social, economic and political issues of the society. Above system affects the life and health system performance directly and indirectly (social, economic and political issues of the society), so it has a dynamic relationship with external affairs. These factors can influence on the organization's philosophy, capacity (human and financial resources), process (development of technology in interventions) and consequences, they have not been identified in detail and researchers attempt to recognize them.

The biggest challenge in health management system is movement from the traditional management to modern management practices. In recent years, regarding the development of information technology, internal changes in health systems has occurred in a way that organizations have moved from patient-based to health-based situation and these changes create the concept of knowledge management in health system.

The aim of all studies in health sector is to increase human health and equity in health. Knowledge

management helps to improve the quality of health services. Besides, the use of information technology leads to public health knowledge increase. Rapid increase of health and treatment sector costs, especially relevant costs to diagnosis and treatment throughout the world, caused experts including economists, managers and also physicians and nurses try to find modern methods to limit the costs. Sakharkar (1998) writes: Various components are effective in reducing costs and to be continuous and perseverant, cost decreasing programs must establish a detailed and exact balance between quality and service cost. Some special costs of hospitals are arranged and controlled by physicians and nurses better than the managers; in this regard, patient's stay duration and the quality of care and services could be mentioned. In general, failure to pay enough attention to the quality of healthcare and service organizations might be very expensive, but supplement and consideration of the quality may have some costs in turn. In health agencies, health and treatment experts are the most important capital for production; when they make a suitable management on this part of their sources, the result of quality increase resulting from offered services and the agency's movement toward competitiveness, would be more.

Over viewing the problems of health agencies, it is seen that the concept of total quality management and knowledge management is not properly executed there. Although, many experts emphasize the importance of these systems, several organizations including health agencies are unaware of applying such systems.

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KNOWLEDGE MANAGEMENT

Knowledge and KM are important to any modern organization. Knowledge is a fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information. KM provides a new way for the organization to achieve explicit and tacit knowledge sharing. KM impacts firm performance through its efficiency in developing the intellectual assets that are a source of competitive advantage (Gharakhani and Mousakhani, 2012). Knowledge Management (KM) is a kind of strategy that delivers the right knowledge to the right persons at the right time. It can also help members share information and turn this sharing into actions that improve organizational effectiveness. It can then bring the collective intelligence influence ability into full play using knowledge sharing and further increase the response and innovation abilities of an organization. Voelpel *et al.* (2005) underlined the importance of knowledge for organizations by pointing out that the sum of knowledge acquired externally and internally constitutes a sustainable resource for maintaining competitive advantage. Nilakanta *et al.* (2006) also emphasized that organizational knowledge plays an important role not only in overall performance, but also in the competitiveness of an organization.

TOTAL QUALITY MANAGEMENT

TQM is a holistic approach that seeks to integrate all organizational functions to focus on meeting customer needs and organizational objectives through the improvement of quality, productivity and competitiveness (Pfau, 1989). TQM is universally accepted as one of the most understood change management programmes and is one of the strategies for confronting the global competitive challenge facing both manufacturing and service industries (Wali *et al.*, 2003). TQM represents a new management paradigm. Its implementation requires a radical and fundamental change in every aspect of business. The primary focus of Total Quality Management (TQM) is customer satisfaction. Continuous improvement and worker empowerment are primary vehicles for achieving customer satisfaction. Effective TQM hinges also on management performance in planning, organizing, influencing and controlling activities in all functional areas (such as marketing, purchasing, design and engineering, production, distribution, finance and accounting, human resources, etc.).

The main framework of TQM: The main framework of TQM is presented by Deming, these principles were referred to as "Deming's 14 points for management". A condensed version is presented below:

- Create constancy of purpose toward improvement of product and service, with the aim to become competitive and to stay in business and to provide jobs.

- **Adopt the new philosophy:** We are in a new economic age. Western management must awaken to the challenge, must learn their responsibilities and take on leadership for change.
- Cease dependence on inspection to achieve quality. Eliminate the need for inspection on a mass basis by building quality into the product in the first place.
- End the practice of awarding business on the basis of price tag. Instead, minimize total cost. Move toward a single supplier for any one item, on a long-term relationship of loyalty and trust.
- Improve constantly and forever the system of production and service, to improve quality and productivity and thus constantly decrease costs.
- Institute training on the job.
- **Institute leadership:** The aim of supervision should be to help people and machines and gadgets to do a better job. Supervision of management is in need of overhaul, as well as supervision of production workers.
- Drive out fear, so that everyone may work effectively for the company.
- Break down barriers between departments. People in research, design, sales and production must work as a team, to foresee problems of production and in use that may be encountered with the product or service.
- Eliminate slogans, exhortations and targets for the work force asking for zero defects and new levels of productivity. Such exhortations only create adversarial relationships, as the bulk of the causes of low quality and low productivity belong to the system and thus lie beyond the power of the work force.
- (a) Eliminate work standards (quotas) on the factory floor. Substitute leadership. (b) Eliminate management by objective. Eliminate management by numbers, numerical goals. Substitute leadership.
- (a) Remove barriers that rob the hourly worker of his right to pride of workmanship. The responsibility of supervisors must be changed from sheer numbers to quality. (b) Remove barriers that rob people in management and in engineering of their right to pride of workmanship. This means, *inter alia*, abolishment of the annual or merit rating and of management by objective.
- Institute a vigorous program of education and self-improvement.
- Put everybody in the company to work to accomplish the transformation. The transformation is everybody's job (Petersen, 1999).

NECESSITY TO ESTABLISH A TOTAL QUALITY MANAGEMENT IN HEALTH SYSTEM

Available evidence suggests that segmental training of managers does not make them ready to deal

with the challenges and changes of health system. Although quality has a long history in health care, nowadays increasing health costs, especially costs of treatment, have forced politicians and practitioners to find novel ways to improve the quality of health system and make it more efficient. EMRO (2000) Emphasis on the quality of today's global economy, is the key to access competent activities and operations. Quality increase leads to increase of productivity and its relative benefits. In modern competitive atmosphere, quality is a key essence for those hospitals who utilize patient-oriented/client-oriented approaches. Because hospitals have discovered that poor quality offering would be also very expensive.

In modern countries because of better level of patients/clients training and costs increase, the concept of quality and it's reference turns to have a new meaning for those who offered them (Lewis *et al.*, 1995). Growth of human knowledge and technology in recent decades, not only bring proportional prosperity in different aspects but also pave the way to optimal utilization of facilities. In fact, in different and various social activities it teaches humans to optimally use and consider the quality. About TQM importance for health organizations it is suggested that: among all the innovations with which these organizations have affected the world, none of them might be such efficient in created evolution (Wager and Rondeau, 1998).

TQM has several benefits for healthcare organizations; it may lead to more commitment and more effective implementation of the evolution, it considerably reduces costs and increases market share and it also brings about reduction of personnel's displacement and offering better services to the patients (Bennington and Cummane, 1998). Due to changes in economic, social and cultural domains it is inevitable for health care planners and administrators to use total quality management (Smith and Swinehart, 2001). Today, changing and capacity building seems to be a necessary factor in health systems and to access quality management it needs continuous learning in different organizational levels. Many governments and health practitioners have been involved in consideration of quality and costs of health care.

Rapid increase of health and treatment sector costs, especially relevant costs to the diagnosis and treatment throughout the world, caused experts including economists, managers and also physicians and nurses try to find modern methods to limit them. An organization's success depends on its staff and they must be aware of the quality of caring in their own organization (Zairi, 1999). Health staff provides service and are a part of the health system (Nies and Ewen, 2001). Significant improvement has occurred in health status and usage of required resources of the whole world. In addition to improvement of health services it includes the staff; they proved to have a large effect on

mortality rates and other health indicators. Since medical science is progressing, the staff needs to have updated knowledge. Therefore, health personnel need regular training programs to update their skills and knowledge (Lundy and Janes, 2001). The quality of health care includes those levels of offered services to people and societies which increase the probability of desirable results and are in accordance with modern professional knowledge.

DEPLOYMENT OF KNOWLEDGE MANAGEMENT IN HEALTH SYSTEM

The essence of knowledge management refers to the importance of knowledge role in realizing health system's objectives. Almost all health, treatment, education, research, supervisory, productive and management activities of health system extremely depend on complex and expertise skills. For example, based on global statistics usually in 1/3 of cases a physician's time is devoted to analyze the information and to create knowledge and during a professional career of a physician the volume of medical knowledge will be time 4 (Motevallian *et al.*, 2010). On the other hand, specific considerations of health system has caused knowledge management to be formed based on specialized literature in health sector in a way that relevant books to this domain are highly available nowadays.

For the following reasons, the country's health system needs to establish a total knowledge management system:

- Multiplicity of specialist manpower, one of the fields of tacit knowledge growth in organizations is the activities of a large number of experts. With such a default it was predicted that a large volume of tacit knowledge might exist in the country's health system whether in specialized or management domains.
- Variety of services, undoubtedly none of the ministries of the country offers service to such an extent which is provided by the Ministry of Health and Medical Treatment. It covers a range of services including higher education and issues such as health services, hygiene and supervisory services.
- Diversity of expertise, a wide range of medical, paramedical, administrative and specialties activated in the Ministry of Health and Medical Education provides such a mental basis. Holistic view to this field is very serious.
- Multiplicity and diversity of projects, during previous years, different projects have been fulfilled in health system domain in which lack of

different dimensions of knowledge proves need to knowledge management system (Motevallian *et al.*, 2010).

Knowledge management faces 3 important challenges in health system:

- **Low quality data:** When good quality data is available, decision and policy making to improve health programs fulfillment and research quality will be better done.
- **Unavailability of data to generate knowledge:** Most of the data is not appropriately available to be stored in database; availability of suitable formed data will be helpful for making a proper standard.
- **Improper distribution of knowledge:** Enough information and knowledge are not accessible for the users such as: patients, experts of health sector, students and researchers, the distribution of knowledge and information through media like the Internet and can supply their needs.

Objectives of knowledge management in health sector:

- Developing and applying human knowledge in the field of health management
- Arranging, collecting and classifying documents, studies and relevant documents to health and their publishing
- Using knowledge management tools for health management to response the community's needs
- Performing basic research and clinical epidemiology to improve health services
- Training research manpower in the field of health management
- Encouraging and appointing researchers
- Making high-quality medical education and health sector available
- Attempting to attend and cooperate with relevant research and administrative centers to effectively develop researches in health sector
- Cooperating Scientifically with research and educational centers of other countries and international organizations

To strengthen knowledge management in health sector the problems must be specified with a comprehensive look and needed solutions identified at different levels. Considering information technology is one of the required infrastructures to target such essential actions. Here our mission is to effectively develop health management to collect, distribute and utilize the knowledge in development of health, research and training levels.

The 6 features are considered in maintenance and improvement of the community's quality health programs quality:

- The program, to be comprehensive and relevant to the health needs of all individuals or society
- Organization's competence, professional management and financial resources of the systems to be defined
- Statement of the employees' competence and commitment to make an encouraging environment for them
- Availability to people, despite financial, cultural and geographical constraints
- Plan, regarding the limited resources to be complete and stable
- The priorities of clients and their satisfaction to be considered

CONCLUSION

Although managing experiences are among required features for gaining management positions in the health sector, it is obvious that specializing knowledge domains a manager needs to be familiar with a series of theories, point of views and different approaches which have been offered in the fields of management and expertise. In addition, working with humans is hardest and most complex job due to their dynamism and complexity. Doing such a difficult task will not be possible with respect to knowledge and intellectual capital organization. Accordingly, in this study after a short overview on theoretical literature of total quality and knowledge management and defining the significance of implementing such modern systems, the importance and applying method of them will be discussed. Health system needs knowledge managers and efficient and innovative leaders. Those, who are process-oriented and future-oriented, Process-oriented managers are the one who well recognize methods of collecting required financial, human and knowledge resources for effective innovation in effective programs. Instead of system's entrances it focuses on the process and examine the future perspectives and propose the ways to make changes. Contribution to the continuous improvement of quality in health sector, grounds to fulfill implementation of TQM before it's execution, management participation, to develop awareness and clear understanding of total quality management and to make staff deeply believe in it, development of knowledge, attitudes and their skills and to improve and reform hospital's organizational infrastructures. Using quality tools, health system managers must identify a set of reasons and while not trying to hide the problems they must try to solve defects and always use error test in solving problems and defects. To decrease duplications they have to use quality improvement cycle. The researchers can investigate other new management theories like organizational culture and organizational learning in various manufacturing and service organizations in future.

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