

The impact of total quality management (TQM) on the hospital's performance and the customer satisfaction

Alia A. M. M. Elomery, Mohamed E. M. Gar-Elnabi

College of Graduate Studies, Total Quality & Excellence Center, Sudan University of Science and Technology

Corresponding Author: Alia Elomery

Abstract: Targeting the patient's needs and preferences has become an important contributor for improving care delivery, enhancing patient satisfaction, and achieving better clinical outcomes. This study aimed to impact of total quality management (TQM) on the hospital's performance and the customer satisfaction. Proper implementation of TQM can be a very effective alternative or solution in improving the health care service quality, growing employees' performance and customers' or patients' satisfaction at Royal Care International Hospital (RCIH) and Omdurman Maternity Hospital (OMH) in Khartoum state –Sudan.

The present study identified thirteen important factors in implementation of TQM practices, which include continuous improvement, training and education, reward and recognition, effective communication, customer satisfaction and team work. And for examining the attributes that determine quality and customer satisfaction with healthcare delivery in the two hospitals, the researcher used the five SERVQUAL dimensions: tangibility, reliability, responsiveness, assurance and empathy. The RCIH and OMH were concerned with the tangibility dimension, as well as concerned with the Reliability dimension, but we find out the OMH they are not concerned with Reliability dimension. The customers in RCIH were interested with the Tangibility dimension, but we find out in OMH they weren't care about Tangibility dimension. Also the RCIH & OMH weren't concerned with the Assurance dimension because in RCIH weren't care about the Empathy dimension, but we find out the OMH they were care about Empathy dimension. We found that the majority of RCIH & OMH customer they weren't satisfied about the service provided from these hospitals.

Conclusion: Efforts should be focused on establishing a foundation that can inspect and accredit quality in the health care system in Sudan.

Key words: Total Quality Management, Patient Satisfaction, Hospital's Performance, Quality Management Principles

Date of Submission: 20-05-2020

Date of Acceptance: 05-06-2020

I. Introduction:

The health care and medical services are growing immensely due to a high influx of the private sector, changing disease patterns, medical tourism, and demographic variations. Development of new and advanced techniques, increased awareness on patient's safety, intensity of competition in health care market, and new generation of purchasers and providers have forced the health care institutions to improve the efficiency and introduce a consumer culture in their institutions for effective cost and quality of care [1-3]. Quality of care is the vital issue for every health care institution and there is an immediate need for health care reforms in order to address and resolve the problems associated with quality of care, as well as patient preferences, safety, and choice [4]. Another critical issue is the consistently increasing operating costs of health care institutions. Rising health care expenditures have created serious financial burdens for the ex-chequer (government department in charge of national revenue or national treasury) in many countries like Canada, the United States, the United Kingdom, and Taiwan [5], and are facing a serious fall in business and a debt crisis. In such a situation, health care institutions need to re-examine their ways of doing business in order to decrease their operating costs while increasing quality and value in their delivery process. The issue of the service quality has been given considerable importance in the 1980's and 1990's and has become the challenge that will face nations in the twenty-first century. The dimensions of quality are technical competence, accessibility, effectiveness, good relations, efficiency, continuity, safety and amenities, realization and development with a focus on Inspection to Quality Control, then to Quality Assurance, and finally to TQM.

Total Quality Management (TQM) is one of the most prominent developments in management for the past two decades. TQM started in Japan in the early 1980s and spread to the Western countries and Australia. In the 1990s, TQM topics became very important, and many companies were looking to apply TQM and use it to develop and improve their businesses [6]. Total Quality Management is defined as "a management philosophy

concerned with people and work processes that focuses on customer satisfaction and improves organizational performance” [7].

Quality Management Concepts in Healthcare

Nowadays, the majority of authors agree that the development and implementation of the quality management system in the healthcare organizations represents a revolutionary change

for organizations. Quality management affect the structure, core, internal and external, ownership and customer (patient/client) relationships, the quality system and almost all the other systems and segments of the organization. With that in mind, it is quite reasonable that, in the last couple of decades, great progress has been made in organizing business, which has led to the situation where organizations are increasingly oriented to processes, rather than to the organizational structure [8].

For the last couple of decades, the most remarkable educators, researchers and practitioners have been examining the role that quality plays in healthcare organizations. Various researchers have sought to invent, improve and implement different quality management practices that would help finding an optimal way to take care of each individual patient. However, despite its continuing popularity, the literature on quality suggests that quality of healthcare services has not been fully determined. In the face of uncertainties, there still remains one fundamental approach to be revealed which would take away all the current medical errors and reasons for failure.

The majority of authors agree that the healthcare sector is profoundly different from other sectors and the variety of authors address diverse reasons to underpin those claims. However, Filipovic et al. [9] discussed the most important ones:

- First, healthcare services are specific because of the physical and mental involvement of patients in the process of services providing. In other words, the provision of healthcare services is based on continuous interaction between healthcare professionals (doctors or medical technicians) and customer (patient/client).
- The customers may have a little knowledge of the professional aspects of the services. The relationship between patients and medical staff is the basis for creating input elements in the process. Whether the patients will cooperate and, consequently, whether they will be satisfied with the provided service, depends mainly on healthcare staff. Without effective patient/client inputs (their needs, requirements and expectations, communication of its health status, potential adverse effects and disorders), effective treatment is not possible.
- Payment and service provision are two completely separate activities in healthcare. Paying for healthcare services is usually done by a third party. Therefore, the healthcare service provider should satisfy not only the requirements of the customer (patient/client), but also the person who pays for that healthcare service (for example, healthcare insurance).
- Healthcare services are characterized by the complexity of connections and interactions between patients, clients, doctors and other healthcare workers, suppliers of medical and non-medical equipment, materials and resources, healthcare insurance, legislative and other regulatory bodies.

Healthcare industry, which includes public and private hospitals, basic healthcare units or centers, maternity and child healthcare units, and dispensaries is a major source for healthcare provider that serves the society in delivering services for healthiness and contribute in the national development. Quality management has become an important issue with increasing attention in hospitals due to hospital management initiatives, influence of clients or patients, insurance companies, public pressure, stakeholders or management and government [10]. One of the important quality management programme is Total Quality Management (TQM), which is a designed and established organizational effort to manage quality based on participation at every level, aiming to improve customer satisfaction and performance of staff [11-13]. For any successful total quality management implementation, elements such as leadership, trust, ethics, communication, integrity, training and education, teamwork, recognition, customer focus, information analysis, employee empowerment, human resource development and management policies and strategy are required [14-17]. In healthcare systems, TQM is a designed and efficient process that creates participation of entire organization in planning and implementation of continuous improvement in quality [11]. Several attempts to implement TQM across various sectors, including health care services, have been made but the success record of TQM has been dismal, which could be attributed to faulty implementation process, such as functional hierarchical, bureaucratic and authoritarian organizational structure, lack of consensus, unchallengeable leadership style, internal requirement domination and manpower shortfall [18-20].

The SERVQUAL instrument developed by Parasuraman et al (1991) has proved popular, being used in many studies of service quality. The SERVQUAL Instrument measures the five dimensions of Service Quality. These five dimensions are: tangibility, reliability, responsiveness, assurance and empathy.

Tangibility It is the appearance of the physical facilities, equipment, personnel and communication materials.

Reliability It is the ability to perform the promised service dependably and accurately. Reliability means that

the hospital delivers on its promises-promises about delivery, service provision, problem resolutions and pricing.

Responsiveness It is the willingness to help customers and provide prompt service. This dimension emphasizes attentiveness and promptness in dealing with customer's requests, questions, complaints and problems.

Assurance It means to inspire trust and confidence. Assurance is defined as employees' knowledge of courtesy and the ability of the firm and its employees to inspire trust and confidence. **Empathy** It means to provide caring individualized attention the firm provide its customers [21].

II. Research Methodology:

Study design: descriptive and analytical approach, which depends on the state of facilities services Sudanese regime applicable to the study of total quality management in addition to the statistical analysis of the questionnaire.

Study area: The study will be in Khartoum state.

Royal Care International Hospital – (RCIH): Is private hospital, it is a multi-disciplinary hospital focusing on advanced health care services, in addition to the Center for Continuing Education and Research according to the latest advanced scientific methods, to present a very carefully care for patients built on the fundamentals of quality, cooperation, empathy, development and ethics.

Omdurman Maternity Hospital – (OMH): It a specialized hospital for the purpose of raising maternal and newborn care, as natural development for the midwifery school. The Omdurman maternity hospital is the largest hospital for gynecology and obstetrics at the level of Sudan.

sample size:

Sample size of the patients:

The total number of Patients in Royal Care International Hospital (n) =140

$$n_0 = \frac{(z)^2(p)(1-p)}{(d)^2}$$

$$z = 1.96 \quad p = 0.5 \quad d = 0.05$$

By the above equation $n_0 = 384$

$$n_{strata} = \frac{n}{N} * n_0 = 140/483 * 384 = 111$$

That means we will select about **111patients** from Royal Care International Hospital to participate in my study.

The total number of Patients in Omdurman Maternity Hospital (n) =343

$$n_{strata} = \frac{n}{N} * n_0 = 343/483 * 384 = 272$$

That means we will select about **272patients** from Omdurman Maternity Hospital to participate in my study.

Significance of the research: To know the effect of the application of Total Quality Management in the **Royal Care International Hospital** (private sector) and **Omdurman Maternity Hospital** (Government sector) to improve the performance and the reflection as good service to increase the customer satisfaction.

III. Results:

A total of 383 questionnaires were delivered to two hospitals, they distributed as 120 customers (31.33), 128 as free business (33.42) and 135 house wife (35.25) in both hospitals. According to gender distributed 217 females (56.66) and 166 males (43.34). Approximately 66% of the participants had an age less than 30 years old, about 27% less than 40 years old while about 7 % bigger than 40 years old.

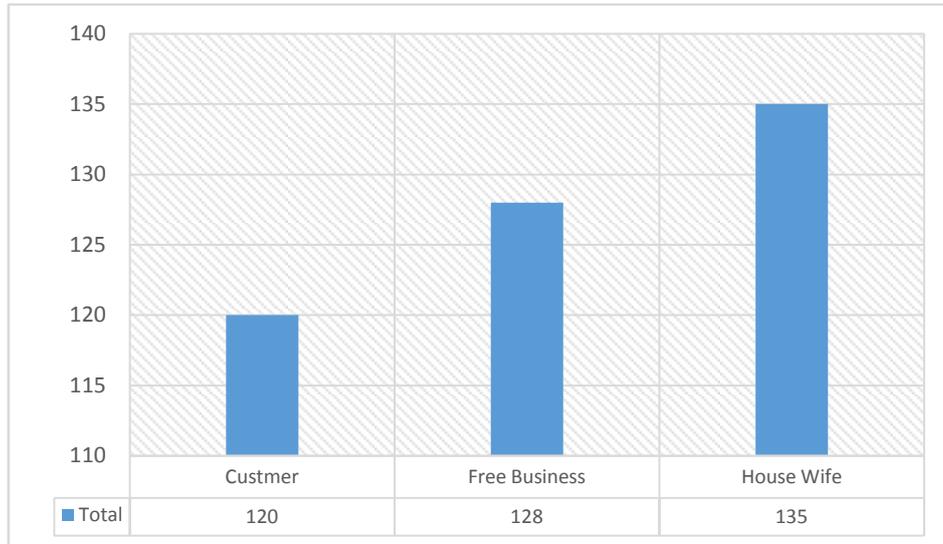


Figure 1. show Frequency distribution of job title for all customer in both hospitals RCIH & OMH

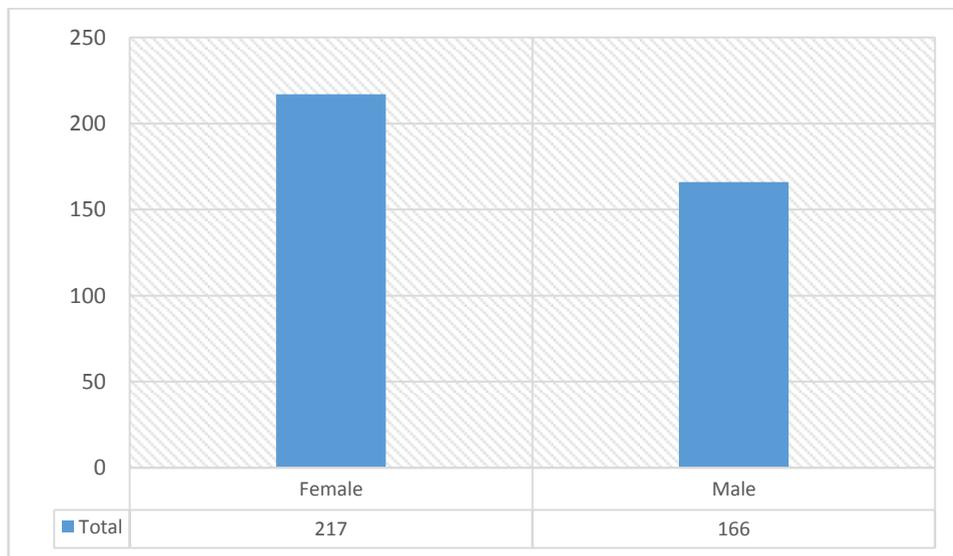


Figure 2. show frequency distribution of all employee according to their gender

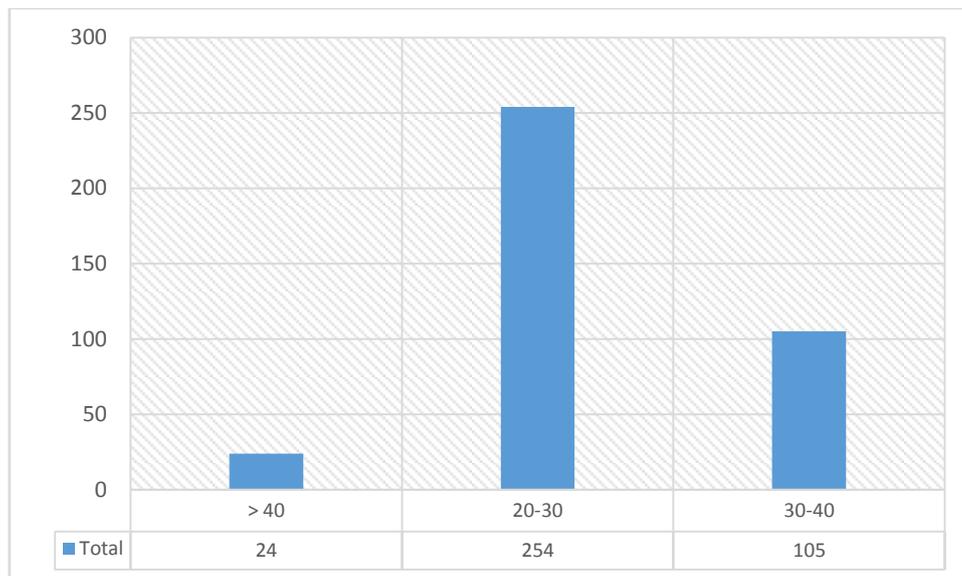


Figure 3 . Show frequency distribution of age groups

Table 1. show answer of all questionnaire questions in RCIH and OMH

Questions	Agree strongly		Agree		Neutral		Disagree		Disagree strongly	
	RCIH	OMH	RCIH	OMH	RCIH	OMH	RCIH	OMH	RCIH	OMH
Diagnostic equipment and medical equipment are available and keep pace with development	3	8	59	131	20	51	28	79	1	3
The staff uniforms have a decent and dedicated for each section	-	5	5	180	79	13	26	71	1	3
Employees usually provide service on time	4	8	51	120	3	7	48	122	5	15
Existence of guidelines and signs for patients and accompanying persons to enable easy access to the required location on the hospital	2	4	47	97	2	8	47	129	13	34
Employees provide services correctly from the first time	-	-	42	96	13	32	55	141	1	3
I feel confident and comfortable with the medical staff	-	-	37	83	8	22	65	164	1	3
The level of cleanliness is generally acceptable	9	20	43	108	12	31	42	104	5	9
The hospital has the appropriate staff to provide the service around the clock	-	-	42	103	8	24	55	132	6	13
The hospital admission procedures are quick and easy and affordable	11	24	43	113	5	16	47	110	5	9
Availability of public facilities/utility and easy access to them	11	4	48	84	5	7	42	173	5	4
The staff works as a team to provide the care needed by the patient	2	4	39	84	2	12	66	169	2	3
The staff are well qualified & trained	2	8	39	72	2	42	67	142	1	8
The medical services provided are comprehensive and complete	4	8	35	90	11	17	57	149	4	8
The presence of employees in their workplaces and easy access to them	4	4	36	68	6	87	61	109	4	4
Ease of making suggestions and complaints and providing appropriate methods	2	-	30	73	31	79	46	108	2	12
An effective mechanism and quick to deal with complaints and suggestions	-	21	33	125	26	16	47	106	5	4
Good reception, courteous handling and good appearance by staff	8	10	51	105	5	4	54	149	2	4
The staff are ready to listen attentively and help patients and give them enough time to inquire and clarification	3	14	43	83	2	32	61	128	2	15
The rooms are comfortable and convenient and clean	5	14	31	80	15	33	54	124	6	21
The food provided is of high quality	5	10	28	120	15	16	53	109	10	17
Provides adequate laboratory and clinical examinations and prompt diagnosis	3	-	47	52	7	9	46	198	8	13
Obtaining sufficient information by calling the inquiries number	-	-	22	32	5	20	78	212	6	8
Patients problems are dealt with seriously	-	-	15	15	9	15	83	233	4	9
Rapid response from medical staff upon call	-	-	6	29	7	27	93	211	5	5
The presence of services to support people with special needs	-	4	14	62	13	69	81	133	3	4
There are convenient and proper waiting areas	2	8	27	66	27	10	53	180	2	8
The medical staff give sufficient information about the health status and treatment plan for the patient	3	4	24	35	6	39	74	174	4	20
Patient privacy and confidentiality is respected in this hospital	2	14	16	64	16	39	68	140	9	20
The health services provided are better than other treatment facilities	4	18	29	65	13	38	56	132	9	19
In general, I am satisfied with this hospital services	4	10	28	90	17	44	53	113	9	15

IV. Discussions:

There are different categories for the questions for customer, the first question in the customer questionnaire is Diagnostic equipment and medical equipment are available and keep pace with development: the majority of answer in RCIH was agree with percent 53.15%, also the OMH customers agree with percent 48.2%. The second question is the staff uniforms have a decent and dedicated for each section: the answer in RCIH neutral with percent 71.1%, while the OMH customers disagree with percent 66.2%.

Employees usually provide service on time: the majority in RCIH was agree with percent 45.9%, while the OMH customers most of them disagree with percent 44.8%.from the above that the RCIH were concerned with the Reliability dimension, but we find out the OMH they are not concerned with Reliability dimension.

Existence of guidelines and signs for patients and accompanying persons to enable easy access to the required location on the hospital: the majority answer in RCIH was agree with percent 43.3%, also the OMH customers agree with percent 87.4%.

The fifth question in the customer questionnaire was Employees provide services correctly from the first time: the answer in RCIH was disagree with percent 49.5%, also the OMH customers disagree with percent 51.8%. I feel confident and comfortable with the medical staff: the answer in RCIH was disagree with percent 58.6%, while the OMH customers most of them also they were disagreeing with percent 60.3%. From the above that the RCIH & OMH weren't concerned with the Assurance dimension.

The seven question in the customer questionnaire is The level of cleanliness is generally acceptable: the majority of answer in RCIH was agree with percent 38.7%, also the OMH customers agree with percent 39.7%. due to that the (RCIH) and (OMH) were care about the tangibility dimension. The hospital has the appropriate

staff to provide the service around the clock: the answer in RCIH was disagree with percent 49.5%, while the OMH customers disagree with percent 48.5%. We found from the above that the RCIH & OMH weren't concerned with the Responsiveness dimension.

The hospital admission procedures are quick and easy and affordable: the majority of answer in RCIH was disagree with percent 42.3%, while the OMH customers agree with percent 41.5%. here concerned with the Reliability dimension, but we find out the OMH they were concerned with Reliability dimension. The tenth question is (Availability of public facilities/utility and easy access to them) the majority answer in RCIH was agree with percent 43.2%, while the OMH customers disagree with percent 63.6%. From the above that the RCIH were interested with the Tangibility dimension, but we find out the OMH they weren't care about Tangibility dimension.

The staff works as a team to provide the care needed by the patient: the at RCIH was disagree with percent 59.5%, also the OMH customers answer is disagree with percent 62.1%. Because RCIH & OMH weren't concerned with the Assurance dimension. The twelfth question is The staff are well qualified & trained: the answer in RCIH was disagree with percent 60.3%, also the OMH customers choose disagree with percent 52.2%. The thirteenth question is the medical services provided are comprehensive and complete: the majority of answers in RCIH disagree with percent 51.3%, while the OMH customers disagree with percent 54.8%. From the above that the RCIH & OMH weren't concerned with the Assurance dimension.

The presence of employees in their workplaces and easy access to them: the answer in RCIH was disagree with percent 54.9%, same as the OMH customers disagree with percent 40%. The question is Ease of making suggestions and complaints and providing appropriate methods: the majority of answer in RCIH was disagree with percent 41.4%, the OMH customers disagree with percent 39.7%. From the above that the RCIH & OMH weren't interested in the Assurance Dimension. The sixteenth question is an effective mechanism and quick to deal with complaints and suggestions: the answer in RCIH was disagree with percent 42.3%, while the OMH customers agree with percent 45.9%. because in RCIH weren't care about the Empathy dimension, but we find out the OMH they were care about Empathy dimension.

Good reception, courteous handling and good appearance by staff: the answer in RCIH was disagree with percent 48.6%, also the OMH customers disagree with percent 54.7%. The staff are ready to listen attentively and help patients and give them enough time to inquire and clarification: the majority of answer in RCIH was disagree with percent 54.9%, also the OMH customers disagree with percent 47%.

The nineteenth question is the rooms are comfortable and convenient and clean: the answer in RCIH is disagree with percent 48.6%, and in OMH customers disagree with percent 45.6%.

The twentieth question is The food provided is of high quality: the majority in RCIH answer disagree with percent 47.7%, while the OMH customers agree with percent 44%. From the above that the RCIH weren't interested with the Reliability dimension, but we find out the OMH they were care about Reliability dimension.

Provides adequate laboratory and clinical examinations and prompt diagnosis: the majority answer in RCIH was agree with percent 42.3%, while the OMH customers disagree with percent 72.7%. Question twenty-two is Obtaining sufficient information by calling the inquiries number: the answer in RCIH was disagree with percent 70.3%, also the OMH customers disagree with percent 77.9%.

Patients problems are dealt with seriously: the of this question in RCIH was disagree with percent 74.8%, also the OMH customers disagree with percent 85.7%. Rapid response from medical staff upon call: the majority answer in RCIH was disagree with percent 83.8%, also the OMH customers disagree with percent 77.5%. Question twenty-five is The presence of services to support people with special needs: the answer in RCIH is disagree with percent 73%, also the OMH customers disagree with percent 48.9%. There are convenient and proper waiting areas: the majority of answer in RCIH was disagree with percent 47.7%, also the OMH customers disagree with percent 66.1%.

Question twenty-seven in the customer questionnaire is The medical staff give sufficient information about the health status and treatment plan for the patient: the majority were their answer in RCIH was disagree with percent 66.7%, also the OMH customers disagree with percent 63.9%. Question twenty-seven is The medical staff give sufficient information about the health status and treatment plan for the patient: the answer in RCIH was disagree with percent 66.7%, also the OMH customers disagree with percent 63.9%. Patient privacy and confidentiality is respected in this hospital: the majority of answer in RCIH was disagree with percent 61.3%, also the OMH customers disagree with percent 51.4%. The health services provided are better than other treatment facilities: the majority of answer in RCIH was disagree with percent 50.5%, also the OMH customers disagree with percent 48.5%. Question thirteen is in general, I am satisfied with this hospital services: the answer in RCIH was disagree with percent 47.7%, same as the OMH customers also disagree with percent 41.5%. We found from the above that the majority of RCIH & OMH customer they weren't satisfied about the service provided from these hospitals.

V. Conclusion

In keeping with the research objectives, our study identified several attributes that can help hospital managers choose appropriate practices for delivering patient-centered services.

TQM is an operational system for incorporating organization's quality development, maintenance and improvement efforts of different aspects to enable products and/or services at most reasonable level and achieve full satisfaction. It has gained increasing attractiveness as an approach to lead transformational change in an organization's managerial philosophy and operational efficiency. Proper implementation of TQM can be a very effective alternative or solution in improving the health care service quality, growing employees' performance and customers' or patients' satisfaction in Khartoum state –Sudan. The present study identified thirteen important factors in implementation of TQM practices, which include continuous improvement, training and education, reward and recognition, communication, customer satisfaction, teamwork, the RCIH and OMH were concerned with the tangibility dimension, as well as concerned with the Reliability dimension, but we find out the OMH they are not concerned with Reliability dimension. The RCIH were interested with the Tangibility dimension, but we find out the OMH they weren't care about Tangibility dimension. Also the RCIH & OMH weren't concerned with the Assurance dimension. Because in RCIH weren't care about the Empathy dimension, but we find out the OMH they were care about Empathy dimension. We found that the majority of RCIH & OMH customer they weren't satisfied about the service provided from these hospitals.

References:

- [1]. Mosadegh Rad, A. M. (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.
- [2]. Lee, S. C. K., Kang, H. Y., Cho, W., &Chae, Y. M. (2002). Assessing the factors influencing continuous quality improvement implementation: Experience in Korean hospitals. *International Journal for Quality in Health Care*, 14, 383–391.
- [3]. Short, P. J., & Rahim, M. A. (1995). Total quality management in hospitals. *Total Quality Management*, 6, 255–263.
- [4]. Koeck, C. M. (1997). Doing better: A global medical interest. In V. A. Kazandjian (Ed.), *The effectiveness of CQI in health care; stories from a global perspective* (pp. 17–23). Milwaukee, WI: ASQC Quality Press.
- [5]. Yang, C.-C. (2003). The establishment of a TQM system for the health care industry. *The TQM Magazine*, 15(2), 93–98.
- [6]. Pourrajab M, Basri R, Daud SM, Asimiran S, Mousavy S. The relationship between level of total quality management (TQM) and the level of culture of teaching and learning (COTL) in school. *Int J Res Manag Technol* 2012; 2(3): 319.
- [7]. Sadikoglu E, Olcay H. The effects of total quality management practices on performance and the reasons of and the barriers to TQM practices in Turkey. *AdvDecisSci* 2014; 2014: 17.
- [8]. Radovic, M., &Tomašević, I., &Stojanovic, D., &Simeunovic, B. (2012). *Inženjeringprocesa*. Beograd: Fakultetorganizacionihnauka.
- [9]. Filipovic, J., &Jovanovic, B., &Bjelovic, M. (2017). *Menadžmentkvaliteta u zdravstvu*. Fakultetorganizacionihnauka. Beograd.
- [10]. Gupta KS, Rokade V (2016) Importance of Quality in Health Care Sector: A Review. *Journal of Health Management* 18(1): 84-94.
- [11]. Sadikoglu E, Olcay H (2014) The effects of total quality management practices on performance and the reasons of and the barriers to TQM practices in Turkey. *Advances in Decision Sciences* pp: 17.
- [12]. Dale BG, Wu PY, Zairi M, Williams ART, van der Wiele T (2001) Total quality management and quality: An exploratory study of contribution. *Total Quality Management* 12(4): 439-449.
- [13]. Chang C, Chiu C, Chen C (2010) The effect of TQM practices on employee satisfaction and loyalty in government. *The TQM Magazine* 21(12): 1299-1314.
- [14]. Talib F, Rahman Z, Azam M (2010) Total Quality Management Implementation in the Healthcare Industry: A Proposed Framework. *Proceedings of Second International Conference on Production and Industrial Engineering (CPIE-2010)* organized by Department of Industrial and Production Engineering 1361-1368.
- [15]. Chin K, Saudah S (2011) The impact of human capital and total quality management on corporate performance. *J Contemp Res Bus* 3: 1091-1100.
- [16]. Arumugam VC, Mojtahedzadeh R, Malarvizhi CA (2011) Critical success factors of Total Quality Management and their impact on performance of Iranian automotive industry: A theoretical approach. *European Journal of Economics, Finance and Administrative Sciences* 33: 25-41.
- [17]. Abbas NA (2013) Applying a SERVQUAL model to measure the impact of service quality on customer loyalty among local Saudi banks in Riyadh. *American Journal of Industrial and Business Management* 3:700-707
- [18]. Emad AA (2015) Implementation of total quality management in hospitals. *Journal of Taibah University Medical Sciences* 10(4): 461-466.
- [19]. Balasubramanian M (2016) Total Quality Management [TQM] in the Healthcare Industry—Challenges, Barriers and Implementation Developing a Framework for TQM Implementation in a Healthcare Setup. *Science Journal of Public Health* 4(4): 271-278.
- [20]. Talib F, Qureshi MN, Rahman Z (2012) Total Quality Management in service sector: a literature review. *International Journal of Business Innovation and Research*. 6(3): 259-299.
- [21]. UK. (November 2018). *The Five Dimensions of Service Quality Measured*