

 <p>ISSN NO. 2320-5407</p>	<p>Journal Homepage: - <a href="http://www.journalijar.com">www.journalijar.com</a></p> <h2>INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)</h2> <p>Article DOI: 10.21474/IJAR01/8735 DOI URL: <a href="http://dx.doi.org/10.21474/IJAR01/8735">http://dx.doi.org/10.21474/IJAR01/8735</a></p>	 <p>INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR) ISSN 2320-5407 Journal Homepage: <a href="http://www.journalijar.com">http://www.journalijar.com</a> Journal DOI: 10.21474/IJAR01</p>
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### RESEARCH ARTICLE

#### A CONCEPTUAL FRAMEWORK FOR IMPLEMENTING TQM IN THE PRIMARY HEALTHCARE CENTERS AND EXAMINING ITS IMPACT ON PATIENT SATISFACTION.

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#### Manuscript Info

##### Manuscript History

Received: 18 January 2019

Final Accepted: 20 February 2019

Published: March 2019

##### Key words:-

Total quality management, Managers, Patient satisfaction, Primary Healthcare Services.

#### Abstract

**Purpose**– the purpose of this paper is to assess the level of implementing total quality management (TQM) in the accredited primary healthcare centers in Dubai and investigate the relationship between TQM practices and patient satisfaction as perceived by senior employees' perspectives.

**Design/methodology/approach**– The data were collected from senior employees across different healthcare centers in Dubai using a self-administered questionnaire which was distributed to 169 senior employees. Of the 169 drop off survey questionnaires, 92 usable questionnaires were returned, yielding a response rate of 65.1 per cent. A convenience sampling technique was used to obtain data from the twelve-targeted healthcare centers. The data was analyzed using factor analysis, Pearson's product moment correlation and multiple regression analyses.

**Findings**– The findings revealed that the level of TQM implementation in the primary healthcare centers in Dubai was very high. In addition, results revealed that leadership, human resource focus, information and analysis, strategic planning, and customer focus were found to have significant and positive effects on patient satisfaction.

**Research limitations/implications**– The limitations identified for this paper are (First) this study was limited only to the healthcare service context; (Second) this study was conducted at a single point in time as a cross-sectional study; (Third) only one business performance key was identified in this study which is patient satisfaction. Finally, this study used only survey questionnaire as a main data collection tool.

**Practical implications**– This paper can increase the awareness of the significance of TQM strategy, which could help healthcare managers to have a better understanding of the benefits of implementing TQM and therefore enable patient satisfaction within their organizations.

**Originality/value**– This paper contributes to the current TQM literature by bridging the gap and highlighting the significance of TQM

implementation in contributing to patient satisfaction within the healthcare industry.

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### **Introduction:-**

Barely four decades since Total Quality management (TQM) was first engaged in Japan in the 1980s, the formula has been a critical tool in many disciplines including the field of healthcare in the segment of patient satisfactory service deliver the world over. From Japan, the concept was applied in Western countries like the US and Canada, and later on in Australia. By 1990, TQM had already become an indispensable tool not only in the public sector but also in the corporate world, and many organisations endeavoured to apply TQM to foster the performance of the business and enhance customer satisfaction (Fitzpatrick, 2007). In essence, TQM primarily entails the working together of processes and people to achieve a success that intimately borders organisational performance and customer gratification (Oakland, 2014). Healthcare systems face multiple challenges despite the essential roles healthcare organizations play in enhancing human health, whether private or public. The daily problems healthcare organizations entities encounter include; First, the billing pressure on healthcare organizations to lower prices of pharmaceuticals and clinical services to meet the minimum threshold of the World Health Organisation requirements before remitting practising licenses. Second, the escalating technological discoveries and innovation that compel healthcare organizations to buy expensive and complex machines to cope with the evolving medical field, is a challenge to modern healthcare organizations. Third, the increasing healthcare costs because of the rising cost of living, thus healthcare organizations have to spend more on consumables and pay more allowances and salaries. Finally, healthcare organizations face the demand for consumers, who are the patients, to receive quality medical care and hence satisfactory services. The many challenges that healthcare organizations combat is what compels these healthcare institutions to employ a balanced quality system to manage, organise, and plan for the schemes of quality service delivery for patient satisfaction; hence the application and the interrelationship between patient satisfaction and the TQM philosophy.

Recently, quality service industries have grown up particularly in healthcare organizations. Many governments over the world have established several awards in order to recognize healthcare organizations that have reached high quality levels. Therefore, a number of healthcare organizations commencement to adopt quality methods in their operations and administrative systems. Principally, Dubai government recognized the worth of quality awards in many dynamic organizations to improve their performances. In addition, UAE decision makers have relied on implementing quality systems as they are a strategic source of competitive advantage for all industries. As a result, Dubai Quality Award was established in 1992 grounded on the Excellence Model of the European Foundation for Quality Management (EFQM). This research study is conducted because of the importance of the healthcare sector in the UAE since health is considered a basic requirement for all citizens and foreigners in the country. As part of the government's national strategy in the UAE, Dubai searches for raising up the quality of healthcare services to international best practices by 2021 by keeping up with rapid scientific progress in both medical and managerial areas in order to continuously improve quality and provide integrated healthcare services. In addition, patients are asking for superior quality services and employees are asking for additional scientific and managerial services. Therefore, the importance of TQM has grown-up as a method to improve quality in health services and maintain the rights of both patients and Employees. Furthermore, the significance of TQM is greater than before as a process to assure the satisfaction of those who benefit from health services and of the employees, since the awareness level of the patients and their expectations for a sufficient level of quality have increased.

In essence, contributions to the TQM literature and its application among different industries whether service or manufacturing have been made by several researchers who mainly sought to study the association between TQM and organizational performance. Notably, their findings have certainly, led to increase in the quality awareness in different organizations (Zhang et al., 2000; Hendricks & Singhal, 2001; Montes & Jover, 2004; Prajogo & Sohal, 2006; Shenaway et al., 2007; Arumugam et al., 2008; Singh et al., 2018). However, the current literature on TQM shows that there is a shortage of information on the implementation of TQM in the healthcare context in the Gulf countries and particularly in the UAE. Moreover, it also indicates that the relationship between TQM and patient satisfaction has been neglected in Dubai's healthcare services context. Consequently, there is a need for a comprehensive study on TQM and its application concerning the relationship between TQM and patient satisfaction. Therefore, the objectives of this study are:

1. To assess the level of implementing TQM within Dubai primary healthcare centers.

2. To measure the effects of implementing TQM factors on patient satisfaction in the primary healthcare centers in Dubai.

#### **Literature Review:-**

A widespread literature review of the previous studies on TQM have reviewed what TQM means and what the key factors for the success of TQM implementation are (Flynn et al., 1994; Kanji & Yui, 1997; Hellsten & Klefsjö, 2000; Zhang et al., 2000; Harvey & Brown, 2001; Antony et al., 2002; Sila & Ebrahimpour, 2002; Shenaway et al., 2007; Arumugam et al., 2008; Talib et al., 2010; Mosadeghrad, 2013; Sadikoglu & Olcay, 2014; Khadour et al., 2016; Singh et al., 2018). In essence, to implement TQM successfully within organizations, top managements need to have a clear understanding of the concept and practices of TQM. TQM is a diffuse concept and there is no universally accepted definition of TQM. Notably, TQM has been defined by many authors based on whose perspective is taken and within which context it is considered. TQM, therefore, has been defined as a “Comprehensive and integrated method” (Jeffries et al., 1996), a “holistic Approach” (Slack et al., 2007), a “Culture” (Kreitner, 2004), a “Philosophy” (Zhang et al., 2000), a “System” (Hellsten & Klefsjö, 2000), a “Strategy” (Harvey & Brown, 2001), and a “Process” (Oakland, 2014). Furthermore, TQM is relatively and conveniently used with other terms that hold similar meanings, like; Total Quality Control, Quality Management, and Quality Improvement (Ooi et al., 2011).

The successful implementation of TQM leads to improving organization performance, increasing productivity, improving service quality, enhancing customer satisfaction, reducing costs of poor quality and gaining competitive advantage (Zhang et al., 2000; Talib et al., 2012; Oakland 2014). Indeed, for TQM to work efficiently in the healthcare setting, top management should understand the concept and principles of TQM and then to be committed to quality related activities focusing on continuous improvement process and creating a quality culture across their organization. Furthermore, the stakeholders should be trained on how to handle and attend to their professional roles to meet the objectives of the organisation. Some of the critical factors for the top management to consider are the recognition that; customers are always focused on quality services, patients and hence clients always demand being at the centre of focus in medical processes, teamwork is fundamental, long term planning remains to be the cardinal challenge, and also the continuous renovation and innovation of the working systems (Al Shdaifat, 2015). Within the healthcare environment, the liability of the medical practitioners is often derived from the evaluation and the implementation of the TQM programs (Ooi et al., 2011). Both the management of the healthcare organizations as well as the medical practitioners should be abreast of the TQM processes. Therefore, the inception and eventually the implementation of the TQM within the organizations operations is an essential process.

TQM practices found in the literature vary from one author to another and no study has identified a common set of practices for successful implementation of TQM. Several empirical studies on TQM implementation within different service industries have reported different sets of TQM practices that can determine the success of TQM programs in the service environment. In the healthcare services context, Meyer and Collier (2001) using data from 220 US hospitals. The results showed that leadership, information and analysis, strategic planning, human resource development and management, and process management were all identified as critical success factors for the effective implementation of TQM in the healthcare organizations. Salaheldin and Mukhalalati (2009) evaluated the approaches that were used by hospitals in Qatar to implement TQM. The study found that the implementation of the TQM depended on the level of support that was given by the top management to the employees. The training and involvement of the employees on the TQM implementation also affected success. Importantly, the study acknowledged that TQM played a crucial role in improving the quality of services in healthcare. Talib et al. (2010) highlighted some of the current affairs of TQM implementation and proposed a framework of TQM implementation which can lead to a higher business performance of the healthcare industry. In their developed TQM framework, they found the critical success factors of TQM implementation were leadership, resources and competency development, process management, teamwork and participation and continuous improvement. Furthermore, and in their continuous academic efforts, they conducted another study in 2012 to identify a set of TQM practices for its successful implementation in healthcare organizations through a systematic review of literature. As a result, eight essential TQM factors were identified namely, top management commitment, teamwork and participation, process management, resource management, organizational culture, continuous improvement, training and education, and customer focus. They indicated that these eight TQM factors are important for the successful implementation of TQM in the healthcare organizations and will result in improved performance and patient satisfaction. Similarly, Mosadeghrad (2014) surveyed the TQM literature between 1980 and 2010 to explore the critical successful factors for TQM implementation in the healthcare industry. A systematic review of healthcare sector TQM critical factors

studies was undertaken using content analysis. From 954-screened papers, 52 TQM success factors were derived from the literature review. The study found that leadership, employee involvement, training, process management, top management support, planning and resource allocation were the most commonly extracted TQM factors across empirical TQM studies. Another study on Saudi organizations by Abdulrahman et al. (2015) assessed the success factors for TQM implementation in healthcare context. The study concluded that organization culture, involvement of the employees, communication, training, and development were all keys to the success of TQM implementation within the healthcare. Baidoun et al. (2018) after thoroughly reviewing the literature identified a set of seven TQM practices in the Palestinian healthcare organizations, namely leadership, strategic planning, human resources focus, process management, information and analysis, and performance results.

From the review of the TQM literature, it can be obviously concluded that TQM practices vary from one author to another and there was no study that has identified a common set of practices for successful implementation of TQM. In fact, there are many TQM models such as EFQM, Malcolm Baldrige National Quality Award (MBNQA), and Deming prize that have been adopted by several studies and used by organizations in practice as a guide for successful implementation of TQM (Wilson & Collier, 2000; Lau et al., 2004; Manjunath et al., 2007; Sit et al., 2009; Ooi et al., 2011; Jaeger et al., 2013; Sabella et al., 2014; Baidoun et al., 2018). Bou-Llusar et al. (2009) stated that “they reproduce TQM by capturing its main constituent parts and by replicating its core ideas in clear and accessible language” (Bou-Llusar et al., 2009, cited in Baidoun et al., 2018, p. 101). In this research study, the developed theoretical framework is based on the MBNQA model which has six TQM factors, namely leadership, human resource focus, process management, information and analysis, strategic planning, and customer focus. The main reasons for selecting these practices are that these practices have been widely recognized and used by quality award models and different researchers in the healthcare industry. Furthermore, the MBNQA model has been well accepted as one of the benchmarks of TQM and several researchers have supported MBNQA structure to represent the core of TQM practices (Terziovski, 2006).

#### **Relationship between TQM Factors and Patient Satisfaction**

According to Dimitriadis (2006), customer satisfaction is considered to be the key measure of organizational success. Only the organizations that can consistently meet the expectations of the customer are successful in a competitive service industry. The ability to meet and satisfy customer is a key indicator of the effectiveness of an organization and to customer stay loyal longer. Satisfaction of the customer is regarded as the experience that they have after purchasing a product or using a service and is shown through the affection reaction between what the client got and what they expected (Liu et al., 2011). Essentially, if the service or product does not meet the expectations, the customer will be dissatisfied. On the other hand, if the expectations of the customer are met or exceeded this will result in higher satisfaction levels (Laohasirichaikul et al., 2010).

A focus on customers is a crucial aspect of TQM because it can help organizations overcome competitors by forecasting the needs and wants of customers (Arumugam et al., 2009). According to various previous studies, it is very clear that TQM has become the key element for improving the performance of organizations and satisfaction of customers (Terziovski, 2006). In their study, Kristianto et al. (2012) concluded that implementing TQM leads to obtain a higher level of customer satisfaction. Another study by Mehra and Ranganathan, (2008) supported the arguments that TQM strategy has a positive relationship with customer satisfaction. Sit et al. (2009) conducted a study to investigate the relationship between TQM practices and customer satisfaction in Malaysia's service sector. The findings provided empirical evidence that TQM have significant and positive association with customer satisfaction. Another study on service organizations indicated that implementing TQM leads to improved customer satisfaction (Ooi et al., 2011). In the healthcare context, Lashgari et al. (2015) measured the effects of TQM implementation on patients' satisfaction and they found that TQM impacts on increasing the satisfaction level among patients toward healthcare services provided by hospitals. Similarly, several previous studies on TQM implementation found that implementing TQM leads to increasing the patient satisfaction level within healthcare organizations (Chiarini & Baccarani, 2016; Schakaki & Watson, 2017).

In this paper, Six TQM factors were identified, namely leadership, human resource focus, process management, information and analysis, strategic planning, and customer focus. To understand the relationship between each TQM factor and patient satisfaction, the following hypotheses were formulated and will be tested.

### *Leadership*

The concept of the leadership underscores the ability of the senior management to establish, develop and practice a long-term vision for the organization, which seeks to address the changing needs of the customers (Zhang et al., 2001). Several previous studies in TQM implementation highlighted the important role of leadership in driving overall TQM implementation process in the organizations and considered it as one of the essential factors for the successful implementation of TQM (Fecikova, 2004; Soltani et al., 2008; Teh et al., 2008; Zakuan et al., 2010; Mosadeghrad, 2013; Oakland, 2014). Furthermore, various studies showed that leadership significantly affects the customer satisfaction (Brookshaw & Terziovski, 1997; Pannirselvam & Ferguson, 2001; Rad, 2006; Sit et al., 2009; Talib et al., 2011). Therefore, the following hypothesis was proposed:

H1: Leadership has a positive effect on patient satisfaction.

### *Human resource focus*

Human resource can be defined as “the policies and practices one needs to carry out the ‘people’ or human resource aspects of a management position including recruiting, screening, training, rewarding and appraisals” (Dessler, 2000, p. 678). Human resource practice covers a wide range of subjects pertaining to staff empowerment, motivation, teamwork and participation, performance appraisal system, education and training and safe work environment (Baidoun et al., 2018). In essence, human resource practice is accepted as a basic undertaking of any organization, but this becomes even more important when there is an attempt to implement quality management practices such as TQM (Deros et al., 2006). Consequently, human resource is a notable support system of ensuring that TQM is implemented successfully. For example, training and education of the employees in the quality management practices can predict the success of TQM practices (Wardhani et al., 2009). Indeed, a significant link is found between human resource practice and customer satisfaction supported by several previous studies such as Adsit et al. (1996), Ott and Dijk (2005), Yang (2006), and Sit et al. (2009). Hence, the following hypothesis is proposed:

H2: Human resource has a positive effect on patient satisfaction.

### *Process management*

“Process management is a systematic approach in which all the resources of an organization are used in most efficient and effective manner to achieve desired performance” (Sit et al., 2009, cited in Talib et al., 2013, p. 288). In the context of quality management, the process is regarded as a network of activities, which are designed to create value for customers (Bergman & Klefsio, 2007). Notably, TQM focuses on studying, understanding and improving the processes. A major reason why organizations implement TQM practices is to improve processes which leads to improve the quality of services to the customers. Effective management of processes is essential to ensuring successful implementation of TQM (Mosadeghrad, 2005). In the healthcare sector, a focus on the improvement of processes to reduce medical errors and a focus on patients is a crucial practice (Duggirala et al., 2008). In several empirical studies, Maddern et al. (2007) and Kumar et al. (2008) systematically investigated the relationships between process management and customer satisfaction. The results of these studies showed positive correlation between them. Hence, the following hypothesis is proposed:

H3: Process management has a positive effect on patient satisfaction.

### *Information and analysis*

Previous research in TQM practices emphasizes the critical role of information and analysis in supporting TQM implementation in the organizations (Prajogo, 2005; Yusuf et al., 2007; Teh et al., 2009; Baidoun et al., 2018). A key ingredient in successfully implementing TQM is the development of an effective performance system. Notably, an effective performance system ensures that information is provided and analyzed in a clear manner and that any misunderstandings are clarified. Notably, having a comprehensive and effective performance management system permits organizations to adjust their performance according to the changes in the environment. Furthermore, it makes all staff understand the indicators linked to their performance well and help top management to adjust the organization’s policy and strategy by analyzing information and facts (Baidoun et al., 2018). Several researchers highlighted the significant role of information and analysis for improving business performance and enhancing customer satisfaction (Ching et al., 2001; Min et al., 2002; Sit et al., 2009). Therefore, the following hypothesis was proposed:

H4: Information and analysis has a positive effect on patient satisfaction.

*Strategic planning*

Indeed, organizations should have a clear and well defined strategic objectives that fully concern the various potential factors for providing the best value to the customers and then accomplish their targeted goals. Therefore, strategic planning can be explained by the ability of the organizations to set a process of strategy formulation and actions plan implementation, which should be effectively communicated to all staff to address the changing needs of the customers (Tari, 2005). According to the review results from Kantabutra and Avery (2007), having a clear organizational vision and a well-formulated strategy leads indirectly to enhancing customer satisfaction. Notably, several researchers such as Kantabutra (2008) and Miyonga et al. (2018) supported this result. In their study, Miyonga et al. (2018) concluded that to increase customer satisfaction, organizations should adopt strategic management practices which include strategic planning. Furthermore, they indicated that staff commitment to customer needs can also stem from clear strategy planning which will lead to enhancing employee and customer satisfaction. Therefore, the following hypothesis was proposed:

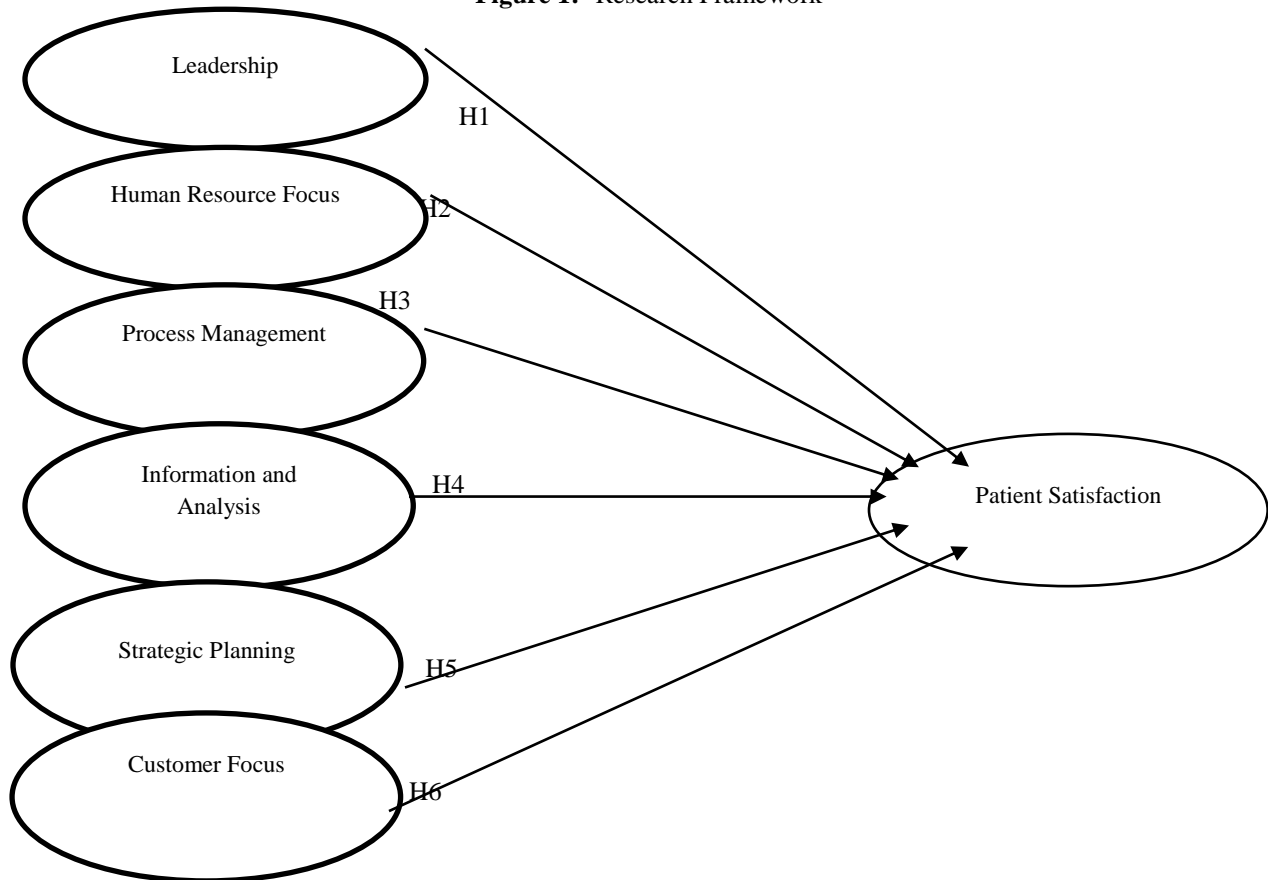
H5: Strategic planning has a positive effect on patient satisfaction.

*Customer focus*

The success of the TQM requires that the different groups collaborate to meet customer needs and expectations. A focus on customers is a crucial aspect of TQM because it can help organizations overcome competitors by forecasting the needs and wants (Arumugam et al., 2009). In addition, the focus on customers is seen as essential for the long-term growth and performance of the business. The concept of customer focus underscores the ability of organizations to continuously satisfy their customers’ requirements and expectations (Zakuan et al., 2010). Several studies on TQM implementation found a positive relationship between customer focus and customer satisfaction (Zhang, 2000; Sit et al., 2009; Zakuan et al., 2010; Talib et al., 2012). Obtaining and analyzing information about customer is one of the most frequently used TQM implementation practices. According to Zakuan et al. (2010), analyzing the information collected from customers satisfaction surveys can contribute to improving service quality and increasing customer satisfaction. Siddiqui and Rahman (2007) supported this finding, they concluded that customer focus leads to increase customer satisfaction. Thus, the following hypothesis was proposed:

H6: Customer focus has a positive effect on patient satisfaction.

**Figure 1:- Research Framework**



**Research Framework:-**

Based on the above hypotheses, a research framework of TQM factors and patient satisfaction was formulated. In this study, the identified TQM factors derived from the literature are independent variables and the construct of patient satisfaction is the dependent variable. The relationship between the six TQM factors and patient satisfaction is demonstrated in figure 1.

**Methodology:-**

This study adopts a quantitative method and a survey research design in order to achieve the objectives of the research. A questionnaire as the main quantitative tool was adopted to collect data through a self-administered method using the drop-off technique. The questionnaire was designed to determine the level of TQM implementation in the targeted healthcare centers, and to identify the causal relationships between TQM practices and patient satisfaction.

The target population of this study was senior employees from twelve healthcare centers. These healthcare centers were drawn from the list of Dubai Health Authority (DHA) Yearbook (2018), all of which have been accredited by Joint Commission International institute, have been granted ISO certification and implementing TQM strategy. Based on its Yearbook, the DHA determined which healthcare centers had implemented TQM. DHA is responsible for regulating the healthcare sector in Dubai. In addition, DHA oversees education and research institutions. DHA owns 12 primary healthcare centres and providing a ratio of one health center for every 30,000 individuals. The geographical distribution of these centers takes into consideration the ease of accessibility of patients to them. The healthcare centers are constructed and equipped with the necessary medical facilities and staffed with qualified health workers trained to serve in this field. Consequently, the targeted sample in this study is considered to be a valid representation of the population because DHA has been a well-established healthcare organization in Dubai for over 40 years.

In this study, the unit of analysis was the senior employees. The sample unit includes all senior administration and senior clinical staff at those healthcare centers such as CEO, directors of departments, heads of healthcare centers, quality managers, clinical and non-clinical supervisors and senior quality delivery staff. According to Sit et al. (2009), those targeted staff possessed adequate knowledge of their organizational practices pertaining to quality management while had great understanding about the level of patient satisfaction in their organizations. Furthermore, several scholars had selected this sample unit as their target population in relation to the empirical study of TQM (Samat et al., 2006; Sit et al., 2009; Ooi et al., 2011). Therefore, this sample group was targeted in this study. The extent of this research is in Dubai and the period of the survey was from 9<sup>th</sup> of December 2018 to 23<sup>rd</sup> of December 2018.

Due to the inability to get the list of sampling frame in those healthcare centers, non-probability sampling method using the convenience sampling technique was adopted in this study, since each of population entity being part of the sample is unknown. Accordingly, the questionnaires were handed to the senior employees based on their number in each healthcare center. The questionnaires were distributed in Dubai primary healthcare centers within several regional areas of the Dubai city. The data collection of questionnaires was administered by handing in the questionnaires to the senior employees with consideration to maintain the percentages of the various professions when distributing and collecting the questionnaire. Later, a follow-up process such confirmation calls and multi visits to the targeted centers were made to collect the questionnaires in person. The study population represented the total primary healthcare sector personnel. The total population was 300 senior individuals working in the primary healthcare sector. A sample of 169 was calculated at the confidence level of 95 percent. Of the 169 drop off survey questionnaires, 103 questionnaires were returned, Then, out of the collected questionnaires, a total of 11 were excluded due to incomplete or unusable data. Overall, 92 useable questionnaires were able to be analyzed yielding a 65.1% response rate.

**Research Instrument and Measurements**

Six TQM constructs were measured, namely leadership, human resource focus, process management, information and analysis, strategic planning, and customer focus. This measure is based on the MBNQA model. In fact, the TQM practices construct identified in this study measures the extent of TQM practiced in the targeted healthcare centers. Each of these TQM constructs consists of many items. Leadership construct was measured by 5 items, strategic planning was measured by 7 items, customer focus was measured by 4 items, process management was measured by 5 items, information and analysis was measured by 5 items. Finally, human resource focus was

measured by 6.items. Thus, a total of 32 items were adopted to measure those TQM constructs. Responses to these items were on a five-point Likert scale ranging from strongly disagree to strongly agree. In relation to the patient satisfaction construct, respondents were asked to indicate the level of patient satisfaction at their healthcare centers with the statement "Overall, how satisfied are the patients with services provided by this center as a whole?" This one-item scale measuring global satisfaction is adapted from Scotti et al. (2007). A 5-point Likert scale ranging from very dissatisfied to very satisfied was used to record responses.

### Measurement Model Analysis

The research instrument was used in this study to obtain primary data from healthcare centers to test the hypothesized theoretical model. Before testing the theoretical model, it was required first to evaluate the reliability and validity of the instrument. For all intents and purposes, hypothesis testing can be conducted only based on the reliable and valid measurement scales. Reliability analysis and Factor loading analysis were performed to determine the data reliability for the TQM practices measures. In this study, Cronbach's alpha coefficient was used to assess the internal consistency reliability, while factor loading analysis was used to assess the construct validity for the TQM factors. The results of the internal consistency reliability and factor analysis tests are displayed in table 1. Table 1 shows that that the reliability coefficients ranged from 0.856 to 0.928. In addition, Table 1 shows that all items loadings were above the minimum of 0.5 recommended by Hair et al. (1998). Therefore, it can be concluded that the measures used in this study are valid and reliable.

**Table 1:-** Internal Consistency and Factor Loading Tests for TQM Practices

TQM Variables	Factor Loading	Eigenvalue	% Variance	Cronbach's Alpha
<b>LD Factor</b>		3.615	72301	0.903
LD1	0.645			
LD2	0.723			
LD3	0.757			
LD4	0.778			
LD5	0.712			
<b>HRF Factor</b>		4.145	69.087	0.909
HRF1	0.694			
HRF2	0.721			
HRF3	0.628			
HRF4	0.728			
HRF5	0.735			
HRF6	0.639			
<b>PM Factor</b>		3.190	63.791	0.856
PM1	0.661			
PM2	0.648			
PM3	0.660			
PM4	0.661			
PM5	0.561			
<b>IA Factor</b>		3.645	72.905	0.907
IA1	0.768			
IA2	0.760			
IA3	0.757			
IA4	0.733			
IA5	0.627			
<b>SP Factor</b>		4.892	99.880	0.928
SP1	0.716			
SP2	0.660			
SP3	0.771			
SP4	0.723			
SP5	0.694			
SP6	0.685			
SP7	0.642			
<b>CF Factor</b>		2.833	70.821	0.858
CF1	0.780			



CF2	0.751			
CF3	0.580			
CF4	0.772			

## Data Analysis Results

### Characteristics of Respondents

Respondents' characteristics have been broken down into five main categories, which are gender, age, level of education, current position and years of experience in the primary healthcare center. Descriptive statistical analysis were employed in this part of the questionnaire using the frequency distributions statistical method such as percentage frequencies and frequency tables. The characteristics of respondents is presented in Table 2.

Table 2 shows that 12% (11) out of 92 respondents were male while 88% (81) were female. The high percentage of female respondents is due to the fact that the majority of the senior employees working in the primary healthcare sector are females. The table also shows that the age category is presented at four main levels, where 5.4% (5) of respondents were aged between 20 and 30 years, 28.3% (26) were aged between 31 and 40 years, 47.8% (44) between 41 and 50 years and 18.5% (17) were over 50 years old. Therefore, (31-40) and (41-50) age groups accounted for over two-thirds of the sample (76.1%). In relation to the respondents' educational profile, Table 2 indicates that the respondents are well educated and that the targeted health centers have an interest in educational qualifications for their managers and employees. Table 2 shows that 46.7% (43) of 92 respondents hold postgraduate degrees, 43.5% (40) hold bachelor degrees, and 9.8% (9) of them hold diplomas. Concerning the distribution of participants by current position, table 2 shows that the majority of the respondents 64.1% (59) were senior employees, 28.3% (26) were middle management employees and 7.6 % (7) of them were leadership. Finally, Table 2 shows that the respondents had a good level of experience, where the majority of them (57.7%) having more than 5 years experience in their centers. The table also shows that 32.6% (30) of respondents had been with their hospitals for between one and five years, while only 12% (11) had been in their job for less than one year. This indicates that the surveyed participants in this study were experienced enough to enable the level of total quality management practices in their centers to be assessed.

**Table 2:-** Respondents' Profiles

	Total No of Respondents	Frequency	Percent (%)
<b>Gender</b>			
Male	92	11	12.0
Female		81	88.0
<b>Age Group</b>			
20-30	92	5	5.4
31-40		26	28.3
41-50		44	47.8
Over 51		17	18.5
<b>Education Level</b>			
Diploma	92	9	9.8
Bachelor Degree		40	43.5
Master Degree		36	39.1
PhD Degree		7	7.6
<b>Current Position</b>			
Leadership	92	7	7.6
Middle Management		26	28.3
Senior Staff		59	64.1
Other		0	0.0
<b>Years of Experience</b>			
Less than 1 Year	92	9	9.8
1-5 Years		30	32.6
6-10 Years		42	45.7
More than 10 Years		11	12.0

**TQM Implementation Level**

In order to measure the level of implementation of the six TQM factors namely leadership, human resource focus, process management, information and analysis, strategic planning, and customer focus, a descriptive analysis of the data using the central tendency method (mean) was performed. The implementation level of the six TQM elements was measured by a set of statements, which built on a five-point Likert scale (1=Strongly Disagree, 2= Disagree, 3=Neither Agree nor Disagree, 4=Agree, 5=Strongly Agree). Upon the recommendations of Elfaituri (2012), the level of TQM implementation can be calculated for each of the factors by adding 0.8 to each scale code. In this study, 0.8 was added to the each scale to assess the level of TQM factors implementation as displayed in table 3.

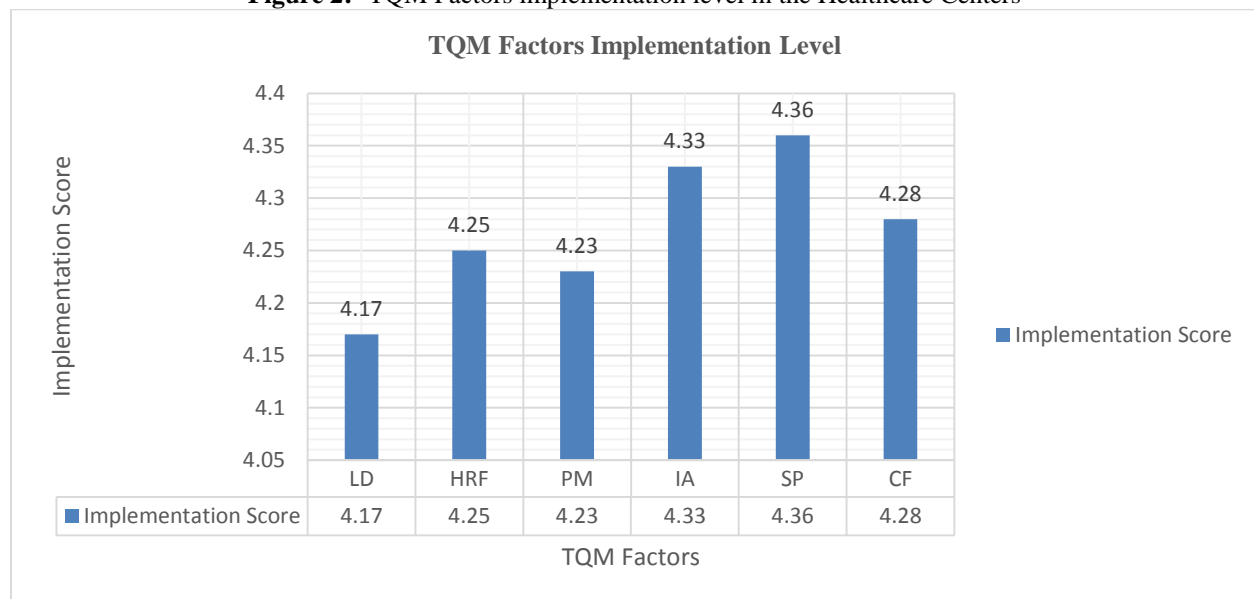
**Table 3:-** The Range of TQM Implementation Level Scale

Scale Codes	Scale Range	Level of TQM implementation
“1.0 =Strongly Disagree”	1.00 - 1.80	Very Low Level
“2.0 = Disagree”	1.81 - 2.60	Low Level
“3.0=Neither Agree nor Disagree”	2.61 - 3.40	Medium Level
“4.0= Agree”	3.41 - 4.20	High Level
“5.0=Strongly Agree”	4.21 – 5.00	Very High Level

Source: Elfaituri (2012, p. 159).

Figure 2 below shows the implementation level of each of TQM factors identified in this study. The table indicates that the extent and degree of implementation of the six TQM factors ranged from high to very high implementation level. The strategic planning factor in TQM adoption in the targeted healthcare centers has ranked at the top level of TQM implementation compared with the other TQM factors with a mean of 4.36. In addition, the figure below shows also that information and analysis has recorded the second highest level of implementation among TQM factors with a mean of 4.33, followed by customer focus (4.28), human resource focus (4.25), process management (4.23). Moreover, the figure below reveals that the leadership factor in this study has recorded the lowest level of TQM implementation compared with the other TQM factors with a mean of 4.17. Overall, it can be concluded that the TQM implementation level in the primary healthcare centers in Dubai is very highly implemented with a mean of 4.27.

**Figure 2:-** TQM Factors implementation level in the Healthcare Centers



LD: Leadership; HRF: Human Resource Focus; PM: Process Management; IA: Information and Analysis; SP: Strategic Planning; CF: Customer Focus.

**Results from Testing the Theoretical Model**

To test the hypothesized theoretical model in this study, Multiple Regression Analysis (MRA) was performed. In the proposed model, patient satisfaction construct acts as the dependent variable and TQM factors namely, leadership,

human resource focus, process management, information and analysis, strategic planning, and customer focus, as the independent variables. Correlation analysis using Pearson's correlation coefficient was performed to show the correlation between the independent (TQM factors) and dependent (patient satisfaction) variables and to illustrate the correlation between the independent variables themselves. The results of the correlation between the variables are presented in table 4. The results displayed in table 4 below indicate that there is a significant correlation between all the TQM factors and patient satisfaction at 0.01 level and the correlation ranged from 0.640 to 0.862. Concerning the correlation among the independent variables themselves, table 4 below shows that there is a correlation between the independent variables themselves. Furthermore, it shows that the highest value of correlation coefficient is between customer focus and process management variables with  $r$ -value of 0.862. It is, thus, expected that there will be issues concerning multicollinearity between the independent variables. As noted by Hair et al. (1998), the  $r$ -value between each pair of independent variables in the correlation should not exceed 0.90. In addition, Hair et al. (2004) indicated that there are various methods for assessing multicollinearity which are the Tolerance values and the Variance Inflation Factor (VIF) methods. They noted that if the VIF value exceeds 10 and the tolerance value is less than 0.1 then there is a problem with multicollinearity. In this study, the VIF showed no values that exceed the generally accepted maximum level of 10 and the tolerance values showed no values less than the maximum level of 0,1 (See table 5). Moreover, the highest value of coefficient among the independent variables is 0.862 which is smaller than 0.90. Accordingly, it can be confirmed that multicollinearity does not exist among the independent variables in the measurement model.

**Table 4:-** Correlation between Variables

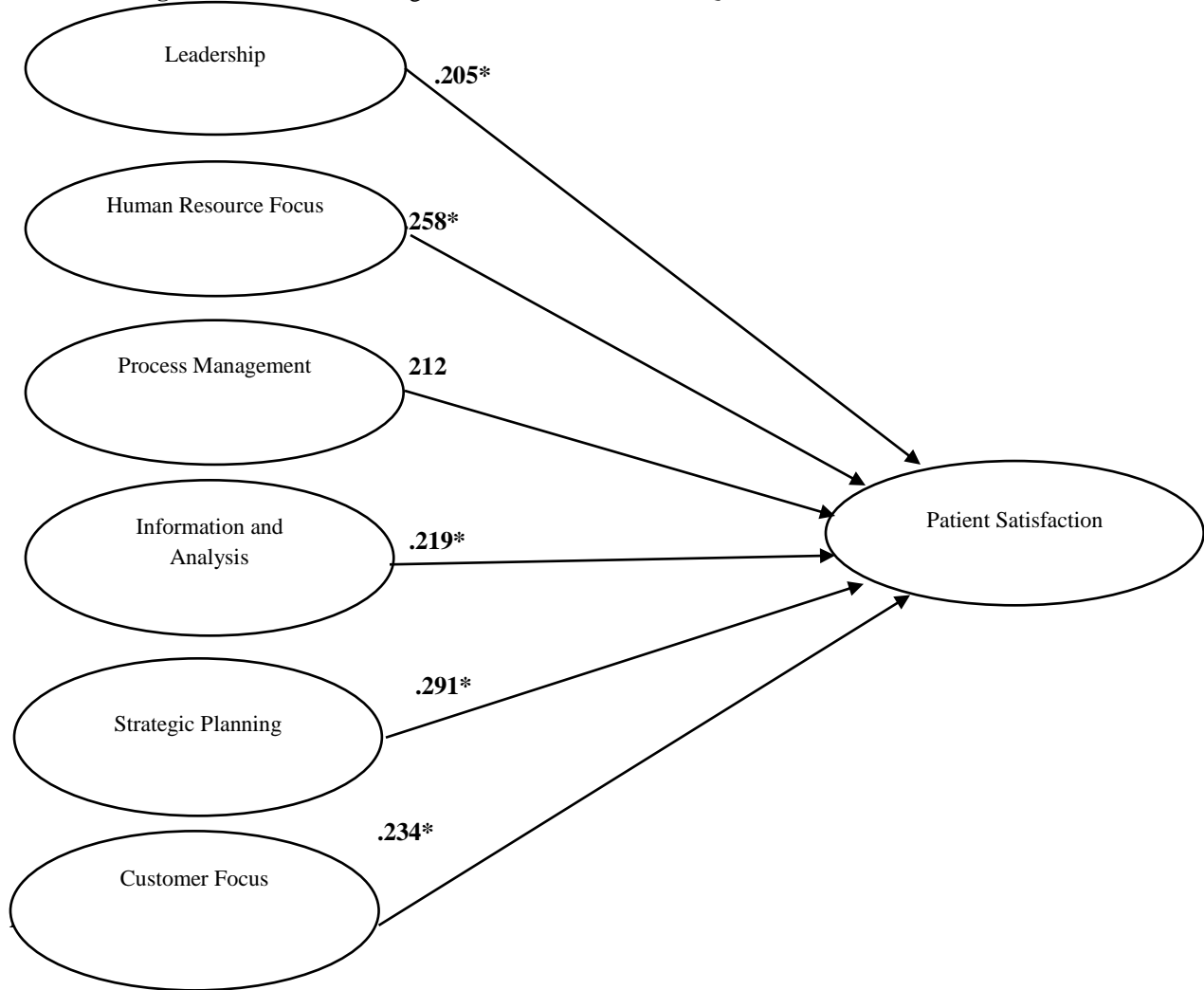
		LD	HRF	PM	IA	SP	CF	PS
LD	Pearson Correlation	1	.777**	.699**	.725**	.728**	.640**	.756**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	92	92	92	92	92	92	92
HRF	Pearson Correlation	.777**	1	.799**	.804**	.744**	.682**	.786**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	92	92	92	92	92	92	92
PM	Pearson Correlation	.699**	.799**	1	.778**	.785**	.862**	.821**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000
	N	92	92	92	92	92	92	92
IA	Pearson Correlation	.725**	.804**	.778**	1	.854**	.686**	.711**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	92	92	92	92	92	92	92
SP	Pearson Correlation	.728**	.744**	.785**	.854**	1	.794**	.797**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	92	92	92	92	92	92	92
CF	Pearson Correlation	.640**	.682**	.862**	.686**	.794**	1	.804**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000
	N	92	92	92	92	92	92	92
PS	Pearson Correlation	.756**	.786**	.821**	.711**	.797**	.804**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	92	92	92	92	92	92	92

\*\* Correlation is significant at the 0.01 level (2-tailed)

A regression analysis on TQM factors and patient satisfaction was performed to test the hypotheses in this study. Table 5 shows the results of the MRA in which points out that R square is 0.796 indicating that 79.6 per cent of the variation in patient satisfaction can be explained leadership, human resource focus, process management, information and analysis, strategic planning, and customer focus. In addition, the table shows that the F-statistic= 55.380 (p-value = 0.000) indicates that the multiple regression model with independent variables TQM implementation is significant at 1% level in predicting the variability of patient satisfaction. Thus, the regression model is a good fit of the data. Table 5 also shows that strategic planning ( $\beta = 0.291$ ,  $p < 0.05$ ), human resource focus ( $\beta = 0.258$ ,  $p < 0.05$ ), customer focus ( $\beta = 0.234$ ,  $p < 0.05$ ), information and analysis ( $\beta = 0.219$ ,  $p < 0.05$ ), and leadership ( $\beta = 0.205$ ,  $p < 0.05$ ) had a significant and positive effect on patient satisfaction. This provides evidence to support H1, H2, H4, H5, and H6. Process management TQM factor, however, is the only independent variable which do not indicate the significant effect on patient satisfaction at the 5% level ( $\beta = 0.212$ ,  $p > 0.05$ ). Therefore,

this provides evidence to reject H3. Based on the standardized coefficients  $\beta$  values, strategic planning has the highest effect on patient satisfaction followed by human resource focus, customer focus, information and analysis, and then leadership.

**Figure 3:-** Result of Testing the Theoretical Model of TQM Factors and Patient Satisfaction



**Table 5:-** Regression Results between TQM Factors and Patient Satisfaction

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.892 <sup>a</sup>	.796	.728	.33638

a. Predictors: (Constant), CF, LD, IA, HRF, SP, PM

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.599	6	6.267	55.380	.000 <sup>b</sup>
	Residual	9.618	85	.113		
	Total	47.217	91			

a. Dependent Variable: Overall Patient Satisfaction

b. Predictors: (Constant), , CF, LD, IA, HRF, SP, PM

Coefficients <sup>a</sup>								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.398	.277		-1.438	.154		
	LD	.230	.094	.205	2.456	.016	.344	2.906
	HRF	.287	.113	.258	2.539	.013	.233	4.293
	PM	.266	.129	.212	1.758	.082	.164	6.080
	IA	-.265	.134	-.219	-1.974	.042	.195	5.125
	SP	.340	.134	.291	2.538	.013	.182	5.494
	CF	.257	.119	.234	2.168	.033	.206	4.848

a. Dependent Variable: Overall Patient Satisfaction

### Discussion:-

The main aim of this study was to assess the level of TQM implementation and examine its relationship with patient satisfaction within the primary healthcare context in Dubai. Overall, the TQM implementation level in the primary healthcare centers in Dubai was very highly adopted and the results of the regression analysis implied that most of the TQM factors had a significant and positive effect on patient satisfaction.

Generally, the results obtained from the analysis of the questionnaire revealed that the level of TQM implementation in the primary healthcare sector was very high. Therefore, this result provides a strong indication that the top management of the healthcare centers were aware of the value and the significant role of TQM implementation in enhancing the patient satisfaction level and success in their healthcare centers. The main aim of implementing the TQM strategy within the healthcare organizations is to improve performance and build efficiency with a focus on meeting the expectations of the patients. High level of TQM implementation ensures best care outcomes for the patients through optimally utilizing the available resources, focusing on customer and monitoring performance. These results seem to be consistent with other similar studies that conducted in the healthcare context in gulf countries (Salaheldin & Mukhalalati, 2009; Khadour et al., 2016).

The results of the descriptive analysis for each of the TQM factors identified in this study shows that strategic planning recorded the highest level of implementation compared with other TQM factors. This result indicates that the primary healthcare sector top management are aware of the value of applying and implementing strategic planning practices within their healthcare centers to improve the quality of services and enhance patient satisfaction. In fact, the idea stands beyond strategic planning is that the organizations should have clear and well defined strategic objectives that fully concern the various potential factors for providing the best value to the customers and then accomplish their targeted goals. Furthermore, it is necessary to keep on improving the process to perfect in carrying out tasks, which consequently leads to reducing medical errors and health service defects. Furthermore, strategic planning is a key concept in the TQM strategy and it is considered as a basic concept to organization success (Talib et al., 213). This result mirrors the TQM literature (Tari, 2005; Sit et al., 2009; Talib et al., 2010; talib et al., 2013; Baidoun et al., 2018). On the other hand, although the results show that leadership to TQM implementation recorded a high level of implementation, it has scored the lowest level of TQM implementation compared with other TQM factors in this study. This can be explained by the low means of the measurement practices related to this factor such as discussing quality-related issues at healthcare center meetings and arranging adequate resources for TQM implementation practices. Overall, the findings indicate that top executives are obviously committed to the TQM implementation and aware of the important role of top management commitment in implementing TQM philosophy in their healthcare centers. Notably, the leadership factor is a key determinant of success in implementing TQM and without strong commitment shown by the top management, the implementation of TQM may face difficulties. The awareness of the healthcare management of the important role of the leadership factor in TQM implementation seems to be in line with several studies that reported similar results (Kozak et al., 2007; Hamidi & Zamanparvar, 2008; Mosadeghard, 2013).

The second objective of this study was to measure the effects of implementing TQM factors on patient satisfaction. Generally, the results of the MRA implied that TQM has a significantly positive effect on patient satisfaction.

### *Leadership*

Statistical results revealed that leadership is found to be significant to affect the level of patient satisfaction ( $P < 0.05$ ) with Beta coefficient value effect of 0.205. This finding indicates that the healthcare centers' top management are obviously committed to the TQM implementation in their centers which reflect that they are aware of the important role of leadership in implementing TQM philosophy to improve the quality level of services provided by their centers and then enhance patient satisfaction. Particularly, a supportive management environment builds organizational commitment and job satisfaction, reduces turnover intentions, and enhances employee performance to deliver high quality service and enhance customer satisfaction. Furthermore, leadership acts as the main driver for TQM implementation, creating values, goals and systems to improve service quality and satisfy customer expectations (Rad, 2006). The findings in this study show a high level of TQM implementation associated with high level of patient satisfaction. However, findings of the current investigation show a clear impact of adopting and implementing a TQM philosophy on patient satisfaction, which is consistent with the previous studies such as Pannirselvam and Ferguson (2001), Rad (2006), Sit et al. (2009), and Talib et al. (2011).

### *Human resource focus*

The hypothesis that human resource focus has a positive effect on patient satisfaction was confirmed ( $p < 0.05$ ) with Beta coefficient value effect of 0.258. Consequently, the findings in this study support that higher human resource practices leads to higher level of patient satisfaction. This indicates that the healthcare centers' management has a clear understanding of the value of training, empowering, motivating and involving employees' in their centers to improve patient satisfaction. In addition, this result reflects that the top executives in the healthcare centers invested on the development of their employees and so succeed to appreciate the significance of their employees as a valuable asset to the healthcare centers. In essence, it is helpful for patients to place confidence toward the quality of services when healthcare staff were involved to address quality problems and encouraged to report their own working problems they find in other areas. Moreover, the main objectives of education and training programs in the service organizations are to improve employees' skills and enhance their commitment toward services provided and patients' requirements. The results of this study are also in contrast with the findings of other studies. Sit et al. (2009) concluded that there is a significant impact of human resource management on customer satisfaction in relation to TQM. Furthermore, this current finding is in line with the empirical findings of researchers such as Dijk (2005) and Yang (2006), where they both supported that human resource focus is an essential building block of customer satisfaction.

### *Process management*

Although the findings reported above indicated a high level of TQM implementation in regards to the process management factor in the healthcare centers, the questionnaire survey data did not support the hypothesis that process management has a positive effect on patient satisfaction. The relationship between process management from one side and patient satisfaction from another side is found to be positive (0.821) but insignificant ( $p > 0.05$ ). This reveals that process management practices do not have a great role to play in enhancing patient satisfaction. Notably, effective management of processes is essential to ensuring successful implementation of TQM (Mosadeghrad, 2005). In the healthcare sector, a focus on the improvement of processes to reduce medical errors and a focus on patients is a crucial practice (Duggirala et al., 2008). The results in this study are not in line with TQM literature. In an empirical study, Kumar et al. (2008) concluded that the process management practices within organizations are essential to improve customer satisfaction. In addition, Maddern et al. (2007) and Tari (2005) systematically investigated the relationships between process management and customer satisfaction. The results of these studies showed positive correlation between them. In contrast, the result was supported with the findings of Sit et al. (2009) in which they indicated that there was no effect of process management on patient satisfaction.

### *Information and analysis*

The questionnaire survey findings provided significant statistical evidence to support the hypothesis that information and analysis have a positive effect on patient satisfaction ( $\beta = 2019$  . $P < 0.05$ ). As a result, this factor is performs to be another valuable predictor of patient satisfaction. Information and analysis mainly involves the practices of effective performance management system, performance indicators, and analyzing information based on facts. Previous research on TQM practices emphasizes the critical role of information and analysis in supporting TQM implementation in the organizations (Prajogo, 2005; Yusuf et al., 2007; Teh et al., 2009; Baidoun et al., 2018). A key ingredient in successfully implementing TQM is the development of an effective performance system. Notably, an effective performance system ensures that information is provided and analyzed in a clear manner and that any misunderstandings are clarified. Many studies in TQM literature match the current study results such as Ching et al.

(2001), Min et al. (2002), and Sit et al. (2009) in which the researchers revealed that information and analysis was found to be significant to enhance patient satisfaction.

#### *Strategic Planning*

The questionnaire survey findings provided significant statistical evidence to support the hypothesis that strategic planning has a positive effect on patient satisfaction ( $P < 0.05$ ). Among the TQM factors in this study, the findings indicated that strategic planning had the strongest effect on patient satisfaction with Beta coefficient value effect of 0.291. Therefore, there is a strong indication that the health center's management considered the strategic planning factor as a key determinant of success in TQM implementation to improve the quality of services and increase patient satisfaction within their healthcare centers. Strategic planning plays a critical role in formulating goals and ensures effective communication to all staff to address the changing needs of the customers, and then provide proper quality level to beneficiaries. The study findings are consistent with the result obtained from Kantabutra and Avery (2007) who found that having a clear organizational vision and well formulated strategy lead indirectly to enhancing customer satisfaction. Particularly, several researchers such as Kantabutra (2008) and Miyonga et al. (2018) supported this result. In their study, Miyonga et al. (2018) concluded that to increase customer satisfaction the organizations should adopt strategic management practices which include strategic planning.

#### *Customer Focus*

The questionnaire findings revealed that customer focus has positive effects on patient satisfaction ( $P < 0.05$ ) with Beta coefficient value effect of 0.234. The focus on the customers is seen as essential for the long-term growth and performance of the business. A successful firm recognizes the need to put the customer first in every decision. Several studies on TQM implementation supported the study findings in which they indicated a positive relationship between customer focus and customer satisfaction (Sit et al., 2009; Zakuan et al., 2010; Talib et al., 2012). Obtaining and analyzing information about customer is one of the most frequently used TQM implementation practices. According to Zakuan et al. (2010), analyzing the information collected from customer satisfaction surveys can contribute to improving service quality and increasing customer satisfaction. Siddiqui and Rahman (2007) supported this finding also, they concluded that customer focus leads to increasing customer satisfaction.

#### **Theoretical and practical Implications**

In light of result of assessing the level of TQM implementation within the primary healthcare centers and examining its impact on patient satisfaction, this study provides empirical evidence of the academic body of knowledge and a number of contributions at the practical level. From the theoretical perspective, the current study emphasizes the significance and the important role of TQM implementation in contributing to patient satisfaction within the primary healthcare sector. The examination of the relationship between TQM factors and patient satisfaction in the primary healthcare sector fills the current gap in knowledge. In addition, the research theoretical framework developed in this study stresses the significance of the identified TQM factors in determining a high level of patient satisfaction within the healthcare context. Notably, the developed framework could lay the ground for further research on other areas such as banking, hospitality and education industries. At the managerial level, it increases the awareness of the importance of TQM implementation among healthcare managers, which could help them to have a better understanding of the advantages of implementing TQM and how TQM could be successfully implemented. The proposed model in this study provides a framework for the successful implementation of TQM in healthcare centers therefore it could serve as a guideline for the top management in the form of the successful factors that can enable patient satisfaction. Finally, this research study provides a set of practical recommendations to the health centers managers which could help them to explicitly identify areas of improvement and take corrective actions.

#### **Research limitations and future research**

Like other studies, this research study has several limitations which should be considered in order to determine possible future research opportunities. Although this study has adopted a cross-sectional design using the survey questionnaire to collect data, it should be noted that longitudinal research design could be used by other studies to present the evidence of causation among variables over time. This study has only identified successful factors for TQM implementation therefore a comprehensive study would be required to identify the barriers that effect the implementation of TQM in the healthcare context. In addition, this study was conducted only in the primary healthcare service, so it is recommended that future research could cover other service sectors such as banking, education and information technology services. Moreover, only one business performance key was identified in this study which is patient satisfaction, thus it is suggested that future research would examine the effect of

implementing TQM factors on other possible business performance like service quality and health business strategy. Finally, the data in this study were elicited from senior employees only using survey questionnaire as a main tool. Therefore, it would be recommended that future research would make data collection less subjective by using data triangulation methods such as observations and interviews of healthcare managers.

### Conclusion:-

The main purpose of this research study was to assess the level of implementing TQM in the accredited primary healthcare centers in Dubai and investigate the relationship between TQM practices and patient satisfaction as perceived by senior employees' perspectives. Six TQM factors were identified, namely leadership, human resource focus, process management, information and analysis, strategic planning, and customer focus. The findings provided empirical evidence that TQM implementation level in the accredited healthcare centers in Dubai was very high. In addition and among the six TQM factors identified in this study, the findings revealed that the TQM factors leadership, human resource focus, information and analysis, strategic planning, and customer focus significantly and positively affect patient satisfaction. Finally, it was found that among the TQM factors identified in this study, strategic planning and human resource focus factors had the greatest influential power on patient satisfaction within the primary healthcare centers in Dubai.

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