The Investigation of Total Quality Management in Health Care System (The Case of Hospital Employee in Libya Hospitals)

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ABSTRACT

This study is targeted at investigating the application total quality management (TQM) within the hospitals and also seeks out the factors which are contribute to reaching the ideal total quality management.

The research relied on exploratory factor analysis methodology. The surveys were distributed to different hospitals in Benghazi, Benghazi medical center, Al-hawari hospital, Al-Jalaa hospital, Ibn-Sina hospital, Al-Kawafia hospital. These are the main large hospitals, also the survey was distributed to three different polyclinics.

The results of this study revealed poor application of the TQM concepts. Exploratory Factor Analysis (EFA) results demonstrated six factors which affect total quality management within Libyan hospitals. Besides, the people who are responsible for the health sector management should consider the Total Quality Management applied in small hospitals and polyclinics better than the others. The experience, system of work and education has an impact on Top Management Commitment and Patient Focus. The most implemented concepts were Internal Policy Knowledge and Teamwork within polyclinics, and the least implemented were Top Management Commitment and Patient Focus in the large hospitals.

Keywords: Total Quality Management, Internal Policy Knowledge, Employee Engagement, Team Work, Training, Top Management Commitment and Patient Focus.

ÖZ

Bu çalışma hastanelerde uygulanan toplam kalite yönetimini (TKY) araştırmayı ve ideal toplam kalite yönetimine katkıda bulunan faktörleri araştırmayı hedeflemektedir.

Araştırma, araştırmacı faktör analizi metodolojisine dayanıyor. Anketler, Bingazi, Bingazi Tıbbı Merkezi, Al-Hawari Hastanesi, Al-Jalaa Hastanesi, İbni-Sina Hastanesi ve Al-Kawafia hastanelerine dağıtıldı. Bunlar büyük hastanelerdir ve bu anket hastanelerin üç farklı polikliniğine dağıtılmıştır.

Bu çalışmanın sonuçları TKY kavramlarının zayıf bir şekilde uygulandığını ortaya koyarken, EFA sonuçları da Libya'daki hastanelerde toplam kalite yönetimini etkileyen altı faktörü ortaya koymuştur. Ayrıca, sağlık sektörü yönetiminden sorumlu kişiler, küçük hastanelerde ve polikliniklerde uygulanan Toplam Kalite Yönetimi'ni diğerlerinden daha iyi değerlendirmelidir. Deneyim, çalışma sistemi ve eğitim ise, Üst Yönetim Taahhüdü ve Hasta Odaklanma'da bir etkiye sahiptir. En çok uygulanan kavramlar, Polikliniklerde İç Politika Bilgisi ve Ekip çalışmasıyken, en az uygulananlar, büyük hastanelerde Üst Yönetim Taahhüdü ve Hasta Odaklanma olmuştur.

Anahtar kelimeler: Toplam Kalite Yönetimi, İç Politika Bilgisi, Çalışan Katılımı, Takım Çalışması, Eğitim, Üst Yönetim Taahhüdü ve Hasta Odaklanma.

DEDICATION

After thanks to God, the only creator, peace, and blessings be upon the Messenger of Allah, Prophet Mohammed.

I dedicate this research to all of humanity, perhaps to the benefit of all who aspire for a better life.

Great thanks to God who allowed me to finish this thesis. Many thanks to my father Mr. Fathi Almahashhash, and my mother Mrs. Omelsaaad Almahashhash for their continuing support. Thanks to my brothers (Ahmed, Awab, Osama), and my sisters (Hajer and Huda).

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INTRODUCTION

1.1 The Research Background

Nowadays, there are many challenges facing the healthcare career in hospitals, those challenges can be classified into four major categories: i) the increasing cost of the health system service, ii) the substantial growth of technology, iii) the increase in health organizations stress to cope with international health organizations and decreasing the services costs, and finally iv) satisfying patient's needs.

The managers of the health organizations are always trying to adapt to these challenges and measuring the tasks of increasing the level of the health services by using the TQM tools and techniques(Samson & Terziovski,999).

Total quality management (TQM) is one of the most significant progress in modern management in the last few decades. It focuses on the quality of the organization especially hospitals, the long run progress of the hospitals and all organizations which uses this TQM (Samson & Terziovski, 1999).

There are many findings from previous studies about theoretical TQM and the practice within the hospital. Also, some researchers had found more than 50% of the hospitals in European and many other countries that are using total quality

management techniques. The character of TQM is Paying attention to the customer (patient) satisfaction and needs.

Moreover, after the huge increase in the patient awareness and evolution of the techniques that has been used in the whole world in the medical sector, with a substantial competition from the private sector. The public sector began to manage this progress while focusing on the modern management techniques to satisfy the employees and the patients.

1.2 Total Quality Management (TQM) in Health Sector

A network and increasing the competition level among the hospitals and TQM have become emphasized in the competitive advantage of the hospitals and all health sector organizations. Total quality management started first in Japan approximately in the 1980s.

Then secondly, TQM had spread in the western countries and it reached Australia. It became a very dominant part of the management procedures. It contributed to improving and developing the health business in general.

Total quality management means the involvement of the management philosophy of people working process to increase job performance and customer satisfaction in different organizations.

TQM is a necessary tool in the strategies of performance management. The hospitals seek to embrace and implement a set of operational management practices that have been done before and were successful and adapting to the changes in the environment.

TQM has gained noticeable attention in the last few decades; most of the researchers have found a relationship between the total quality management and other variables; also the studies on total quality management propose that the total quality management application has a positive relationship with the performed operations.

The application of total quality management (TQM) has a substantial impact on the hospital effectiveness and all the organizations in general. The effectiveness indicates many important factors which contribute to the TQM practice; the influences are education; leadership commitment to the quality; teamwork; employee involvement; continuous improvement; top management commitment and patient focus.

The previous studies that have investigated total quality management implementation have found great success in the healthcare sector and encourage the managers to apply TQM.

This study shows the factors that have a significant effect on the TQM directly or indirectly, and if the total quality management (TQM) practice leads to increase in the effectiveness and performance in hospitals and the health sectors.

The fundamental aim of TQM is to reach the main purpose which is patient satisfaction; the entire employee should participate in the TQM practice to attain community satisfaction about the hospitals, also notice the changes in the improvement of the quality of the organization and increase their performance.

1.3 Research Gap

In many countries such as Libya, there are not enough studies that focus on total quality management within the hospitals. The main obstacle is no reference,

research, and evidence that proofs there is no practical application for TQM inside the hospitals. The low performance for hospitals can be considered due to the gap between the management, and employees within the health sector.

1.4 Research Questions

Measuring the extent of implementation of the TQM principles within the Libyan hospitals, and finding the appropriate factors that have to be applied in the right way to increase the health sector performance. Also measuring TQM implementation through different organization size with social demographic and environment consideration.

1.5 Research Objectives

To investigate the total quality management in the health sector in Benghazi, Libya hospitals by using Explanatory Factor Analysis (EFA). The difference between hospital sizes regarding the implementation of TQM. As well as, the effect of the experience, education and organization size in the TQM dimensions and implementation.

1.6 Significance of the Study

The healthcare industry in developing countries like Libya has different effects on the implementation of the total quality management due to the variations in the environment pressure, as well as the demographic distribution of the population.

On one hand, the employee demographics such as age, gender, the education level, experience, work style, employment, organization size.

On the other hand, the managers' commitment and the using of technology, all these factors have an effect on the implementation of the total quality management.

Furthermore, the best quality in the health industry leads to patient satisfaction, this quality in the health care system is the main right of the patients, also it's the staff responsibility within the hospitals.

The healthcare systems in developing countries started to reorganise the systems, reposition and renew the system to adapt to the needs of society and improve the service quality in the hospitals. moreover, to satisfy the customers and avoid the previous gap between the patients, staff and the managers, and trying to reinforce this organization to apply the perfect total quality management. In a bid to reach the required and desired services also to fulfilling the mission of the health care system properly.

1.7 Scope of the Study

Many authors in the management philosophy connect the importance of the total quality management implementation and the levels of the management commitment to the quality improvement trends.

The main role of this study is to illustrate the extent to which total quality management fundamentals implemented in Libya (Benghazi) hospitals from employees (managers, pharmacies, nurses, doctors, cleaners and other employees); We also aim to find out whether there are any differences regarding the extent of implementing the total quality management among the different size of hospitals. Likewise, to discover the factors that affect TQM implementation inside different hospitals. In addition, the social demographic variables of employees (gender, age, education, marital status, experience, work style, employment and organization size) have an influence on TQM implementation in the hospitals.

1.8 Limitations of the Study

The main limitation of the study was the difficulty faced in distributing and collecting the questionnaire among different hospitals in Benghazi.

Chapter 2

LITERATURE REVIEW

2.1 Health Sector, Discussion of Service Quality in Health

The Healthcare sector needs improvement processes for quality patient outcomes. It becomes an important issue for developing the health system. All the health system careers need a better understanding of the improvement theories of total quality management. The main aim of establishing TQM is to increase patient satisfaction and provide better service quality within the hospitals.

The utilization of one-sided perspective of implementation, for instance, certain divisions manage patients with extreme therapeutic conditions (Cancer) prompting a clearly bring down execution level The main aim of total quality management is to provide highly medical and hospital quality services for patients, it's important to publish concepts of total quality management inside the organization (hospital) to engage all the workers in the administrative process, the tools and methodology that provide information and subsidies for the health care employees and managers, how to apply TQM is appropriate way and take the best decisions on the perfect way at the right time. Health care sensitive sector specially deals with the human soul; it needs high quality service and covers all the hospital sides.

The low utilization of these administrations by people in general, because of poor treatment and high client charges for some things. An expanding utilization of

private care: private healing facilities and centers in a few urban communities, drug stores and individual specialists and different professionals working secretly, with no powerful direction. Absence of learning about the total quality thoughts and techniques. Absence of norms which are tenable, concurred, and approved by the service and callings, and which can be connected flexibly in various circumstances.

The nature of human services motivators to enhance the quality (and in a few nations, financing under the control of the service of finance); a low level of preparing and polished skill for most wellbeing experts, who are not administered.

The absence of administration preparing and a culture with a power structure which would be debilitated by bringing down levels rolling out improvements and taking more control of their administrations, or by the foundation of a solid line administration structure and process.

The Great nature of care is thought to be the privilege of all patients and the obligation of all staff inside in the clinic. Social insurance suppliers in creating nations are starting to embrace a few or the majority of the principle three parts of value affirmation which is quality plan, quality control and quality change. Add up to quality administration initially concentrate on understanding fulfillment and patient well-being.

According to Zineldin (2006), patients are the main targeted category in the administrative strategy in the health care system, Total quality management is the best decision making, and provide services to satisfy those patients. The health care sector is very sensitive compared to the other sectors, it is not dealing with normal

customers, but with patients are suffering from different disease, and there is disparity in that case, that’s why the management system should be total quality management to cover all departments and variant patient cases in different situations.

Patients put an incentive on the administrations as per nature of results, nature of the administration. Latest examinations constitute the significance of consumer loyalty, like who demonstrated that the consumer loyalty is an essential pattern to build up the authoritative execution.

Fotopoulos and Psomas (2010) consider additionally mirrors that client centre and fulfilment are deciding and essentially identified with the execution of the association, while affirmed that settled association with clients can increment both monetary and nonfinancial executions.

Al-Ettayyem1 and Zu‟‟bi (2015), saw the persistent fulfillment as a result of Patient Care Intensity among medicinal services associations likewise relies on patients' fulfillment. Patients' fulfillment is made through a mix of responsiveness to the patient's perspectives and needs, and nonstop change of the human services administrations, and in addition ceaseless change of the general specialist patient's relationship.

Deciding the variables related with patient's fulfillment is critical theme for the human services supplier to comprehend what is esteemed by patients, how the nature of care is seen by the patients and to know where, when and how benefit change and change can be made (Zineldin, 2006).

2.2 Total Quality Management (TQM) Definition

Total quality management includes everything an organization and community. TQM is a complete system for total management, decision making. TQM not only concern with the customer purchases or quality of specific product or service. It's based on facts and data collection. TQM is total in the sense that has to involve everyone in the organization in the internal process of the organization system and culture. Another assumption of TQM is results of the right individual working process with excluding errors and wasting time. TQM requirements are intercalation of the workers and take the responsibilities for participating in this total management process and apply total quality management.

The implementation is "the outcomes report the connection between what associations do as far as quality administration hones and the outcomes they accomplish in a few shots of results. There is progressive looking for advancement, development and to enhance the nature of the service (Al-Ettayyem & Al-Zubi, 2015).

All things considered, there is a need to find an approach to accomplish better human service quality that is proper. It is critical to begin with a comprehension of the real circumstance. Some regular components of the medical services challenges in many creating nations.

TQM accuracy on various leveled executions is the constant change; we endorse to make sensible plans and realized without restrictions, push their agents to create and make new organizations which perceive the relationship from others.

According to Al-Ettayyem and Al-Zubi (2015), TRM (total relationship management) contends that the change in the quality and patient satisfaction requires great climate and framework in type of good connection between the doctors, nurture, different workers and the healing center.

TQM is a comprehensive administration reasoning that makes progress toward continuous change in all elements of an associative, and it can be accomplished.

Al-Ettayyem and Al-Zu bi (2015), had thought that it was' fascinating that one in number indicator of execution was continuous change which is viewed as one of the primary parts of the TQM theory.

According to Zineldin (2006), study assuring the proper quality concerning of health care capabilities in a moral obligation to health care providers. Ethical obligations in the health care system emphasize the quality of the total quality management and therefore improve the offered services to the patients gradually.

2.3 The Influence of TQM on Company Performance

This type of management has achieved efficiency, quality of performance and outputs Amid the most recent few decades, various examinations have demonstrated that aggregate quality administration (TQM) has profited associations by enhancing nature of items and administrations, giving better quality items than their clients, and improving and expanding an association's execution.

Total quality management is not easy paradigm, it’s a set of ideas and patterns, beliefs and working processes to reach a perfect performance and get better outcomes for the organization and patient satisfaction. Add up to quality

administration for medical services "TQM is a far-reaching procedure of authoritative and state of mind change for empowering workforce to learn and utilize quality strategies, with a specific end goal to decrease expenses and meet the prerequisites of patients and different clients. The implementation of TQM is an important side may lead to huge change inside the organization.

2.4 Continues Improvement

CI (Continues Improvement) defined as more typically as much a subculture concerning sustained improvement concentrated on the elimination on misuse of whole systems or techniques of an organization (Bhuiyan & Baghel, 2005).

The concerning roots of contemporary improvement packages may stay traced again in accordance with initiatives undertaken in various organizations within the 1800s, where management encouraged employee-driven improvements, then developing programs had been engaged into location in accordance with reward employees that introduced as regards high-quality modifications within the organization (Bond, 1999).

Total characteristic can lie accomplished by using continuously pursuing CI through the involvement regarding people from entire organizational levels (Holtskog, 2013).

According Kaye and Anderson (1999) study have found continuous improvements requires permanent management development, but senior managers still need to learn the significance of their position in continuously keep driving the improvement. Focused on keeping the business aligned with measuring performance and learning from results also contributes to the driving force for improvement. The underpinning

durability foundations are provided through creating a culture of innovation, involving and focusing on employees, identifying the critical processes for achieving success, and integrating improvement activities throughout the organization.

According in imitation of the traditional feedback model managers adjust overall performance through monitoring outputs or after adjusts the inputs in accordance with attaining a goal rather than controlling a venture through thinking about entire the single data factors essential after draw the status regarding the system (Bond, 1990). To filter out foreign statistics and document at a suitable level of aggregation means figuring out the key performance variables known as fundamental prosperity factors.

Performance measures (PMs) insure a mechanism for concern service or process improvement policies developed through chief management in accordance with work at a local organizational level. The difficulty has been comprehensively surveyed.

Continuous improvement programs have developed from traditional services focused systems that focus on the service to reduce waste of effort, time and improve the service quality, into complete, systematic processes that concentrate on the whole organization, from top management to the employees and the patients. More recently, a lot of organizations have evolved their own continuous improvement methodologies to proper their particular needs by covering the different tools and techniques of individual methodologies (Kaye & Anderson, 1999).

CI can take area at three distinctive stages within the organization. The management it can be in groups or in an individual stage. The significance of the continuous

improvement at the management level are concerned with the organization strategy (Bhuiyan & Baghel, 2005).

Continuous improvement group level involves problem-solving tasks at a large level, while individual level CI offers with to get maximum benefits beyond continuous improvement program, managers need to implement continuous improvement at each about these levels (Bhuiyan & Baghel, 2005).

Continuous improvement programs can remain applied according to distinctive kinds of action environments. Managers need to evaluate the health care service, design, system choice, and the dimensions of standardization involved within the organization, then perform after that determine over the suitable strategies according to use the excellent implement improvement methods (Buckler, 1996).

Managers can consider the appropriateness regarding continuous improvement programs by control engage of routines, then behaviors that are viewed as being essential, according to organizations concerning every kind because of CI implementation. It is an evident as continuous improvement does not come without difficulties or struggles; except the effective involvement regarding all people in the organization, then the required resources, then guide from top management, continuous improvement in any organization cannot remain successful (Bhuiyan, & Baghel, 2005).

According to some researches has found the motivation is important for continuous improvement and it is built to understand of the goals and engage in the leadership (Bessant & Francis, 1999).

2.5 Team Work

A team work definition is that when employees works in an autonomous way in the ordinary tasks. Also, the groups work is beneficial when the work content change frequently and the skills of the employees are specific and limited to cope with the work. The concept of teamwork meaning according to TQM is the aggregation of the cultural characteristics to emphasis the behavior orientation toward the organization, also to build a trust and good relationships. Team work as simply meaning is the extent of the collaboration interaction within work group members. This idea of the collaboration, interaction among group members anticipated the individual erspectives, attitude and orientation toward the team (Cooney & Sohal, 2004).

The definition would include main following concepts: a perception of individual more encouraged within the group by each other's, strong verification within the group of work and willingness to work hard within the group. (Pereira. 2016)

Regarding the individual level, this should be obvious itself among a team orientation, in behavioural term; collectivism values against individualism. The individuals should take the initiative actions in the work and share the job information and assist all the co-workers. Often this kind of behaviour formerly categorized as organizational citizenship behaviour is oriented closer to enhancing team or organisational effectiveness; it is regular with a total quality culture (Coyle-Shapiro, 1995).

The applying of teamwork includes whole the members of the organization. It may also inspect out of three perspectives: working in a group within the teamwork,

among managers and employees, and in different departments. Teamwork is an important context of the TQM to reach the continuous improvement of the organizations. To solve quality problems uses to apply teamwork collaborative effort also it facilitates the work (Antony, Leung, Knowles, & Sid Gosh, 2002).

For the quality of the job would put all the responsibilities within a team to qualify the individual tasks, share the great information among team group, this is for continuous functioning improvement of the workgroup to facilitate the co-operation. For development of team work at the individual level to increase the work expansion and the flexibility, as a new authority for work role and quality. Despite the close association between the teamwork and total quality management, there were large different uses in the combinations of TQM programs and there is no dominant or constant conjunction is used for teams (Coyle-Shapiro, 1995).

Organizations are using different teams for different purposes to develop various sets and entities of the team applied for the quality programs (Armstrong-Stassen, Reavley, & Denise Ghanam, 2003).

A staff of teamwork execution is defined according to study the aspect is how to use more than one form of the teamwork in a single organization. The team would have a specific role inside the organization to make the job work within the organization boundaries. The organizations would have their formal rules, memberships for their teams to control their own employees and to record the team performance and how they apply the group work in the formal and right way or not. Record the performance and compare it with the formal ensemble to evaluate team work performance (Sexton, 1994)

2.6 Training

In previous years of continuous change and increased environmental doubt and uncertainty and complexity, both administration and staff recognize their skills and capability in imitation of doing together with after demands committed over them.

Permanency both management then employees recognize their limited capability after deal with future demands performed on them. Studies show the appearance on couple trends, more and more troubling hospital management, the growing age of the staff, then the fast-paced gradual increase concerning current technologies. According to researchers suggestions they cover different sides for businesses, in which increasing the budget for training, for maintaining and remaining as competitive as possible to make the workforce more adaptable and flexible. Training meaning is the intervention in a planned way that determined to improve the employee performance (Sahinidi & Bouris, 2008).

Training defined according to the skills consideration by the hospital management, it must be obtained by the members of the organization, also to enhance the goals achievement probability. Training would offer to whole employees, it helps to decrease the tension and anxiety, that may happen from work stress that is not informal for them, and may they lack the experience and skills to handle the work in an efficient way (Karia & Asaari, 2006)

If the employee decides to continue their productivity would be less than the average. The training for the employees would make the productivity reach maximum.

If there is a large gap between owning skills of employees and the required skills leads to turnover and job dissatisfaction of the employees, the main aim of training it can be used as an agent to enhance the job satisfaction, also trained workers will offer best services to their patients and provide their needs. According to some studies found there is a direct impact between training and job satisfaction and good trained employees will be more satisfied about their jobs.

Training has a positive impact on the organizational performance; training can be trigger the organization performance and it will be an element to reach the organization aims. This solution training to avoid the performance gaps between the actual and desired performance. The entire organization management has to adopt the interventions of training to conduct this performance gap. This connection of performance gaps includes the adoption of certain training interference to reach the purposes to change definite attitudes and skills of employees (Bessant & Francis, 1999).

A Training program would have a formal model to recognize if the employees are effective or not, also the change according to defined standards including the skills and knowledge of the employees. Some factors would include in the training standards in the hospitals, also it should be appropriate and suitable.

The quality of the training program will determine the level of employee improvement and fulfill their expectations, and motivate the employees and meet their needs. These qualified training programs would increase the employee's performance, service quality to the patients and at the end will lead to the patient's satisfaction.

Either total quality management used a new system or renewed previous system for the hospitals, it is crucial for all participants in this system. All the employees would know the principles of the TQM, objectives, tools and methodology to practice and implement this system. This intimates that employees should be educated about TQM and implement it pragmatically.

Moreover, the application and implementation of TQM after the training of the employees, learning the new concepts will be more likely and less stressful, be applied easily and more comfortably. Besides breaking the fears berries and preceding routines.

By different experiences the quality norms has been emphasised by necessity of training during application of total quality management. TQM training would be suitable to fit hospital requirements that eventually planned

While organising TQM training, some essential troubles such as: quality issues or challenges up to expectation face the hospital; expertise and efficiency level wanted in accordance with join the challenges; assessing the knowledge, then abilities actually informed through the people within the hospital; emergence and usefulness of training facilities, the current hospital climate towards training; then the determination concerning where is in accordance with stay distinctive from the existing work have to be regarded absolutely carefully (Sahinidis & Bouris, 2008).

For developing the total quality management culture inside the hospitals they have to upgrade the training and make it progress gradually, this is essential for gradual improvement of TQM culture in the hospital. The training has a sufficient and

efficient the role to make the employee participate in the TQM process, also make them more educated and skilful about TQM, it is eventually reached to the maximum usefulness, commitment, successful and progress program (Sahinidis & Bouris, 2008).

Training can be applied in imitation to conduct the quality of the strategy. There are many steps for a quality enhancement strategy that shapes training at each different level: elaboration, designing, realization, deployment, application and continuous development. There are four characteristics experts which include: never waste time on unnecessary training, after the training time for attendance do some incentives, make employees more commitment to long time and have more willingness for budget training and let the employee think about training as a long-term investment (Karia & Asaari 2006).

2.7 Top Management Commitment

The top management commitment definition is that managers, including in the improving system process and supporting the innovation methods.

From the past researches suggests as managerial commitment is an answer to successful implementation over an organized exchange (e.g., Total Quality Management programs. Both the roles about the instant manager or top management have been proven by independent investigations according to significantly the impact of employee behavior inside the organizations.

In quality management it includes: establishing policies, formulating quality committee, ensuring the sources and training, implementation and evaluation at all the hospital levels (Fotopoulos & Psomas, 2009).

Furthermore, top management commitment is essential to the adoption technique. Change the implementation process is more likely, according to stay successful, then commitment to the alternate is intensive at higher levels regarding to hospitals (Fotopoulos & Psomas, 2009).

Moreover, Information systems studies have shown support, managers affect over adoption via both their own usage. These information systems make the managers work easier, help them to reach the complete commitment and enhance the hospital performance, also the hospital performance remains at the highest levels.

The key factor of successful performance is a good application of the management. A management team is an essential part to reach top management commitment, (Hoogh & Hartog, 2008).

The management's commitment and leadership within quality have to be visible, permanent, then existing at all management stages for the reason that acts as the guide and begin regarding the TQM implementation process (Hoogh & Hartog, 2008).

By the evidence top Management Commitment creating the elements about quality management structure. The effectiveness of top management leadership has an impact concerning other quality attributes (Rodríguez, Pérez & Gutiérrez, 2008).

When top management is instituted to the quality, the sufficient resources will be allocated to quality enchantment efforts, thus, assignment of sufficient sources to quality development efforts may be some of the manifestations over top management commitment according to quality (Rodríguez, Pérez, & Gutiérrez, 2008).

The main characteristic for top management commitment it should be permanent, visible and existing at whole the organisation management levels considering that it is for the promotion and guidance of the TQM implementation technique. The top management commitment has been established by developing the items of the quality management components (Lakhe & Mohanty, 1994).

The impact of the top management commitment has an influence on the other attributes of the quality. While top management is performed according to quality, sufficient sources will be allocated in accordance with quality improvement effort, this allocation over sufficient sources to quality improvement efforts may keep certain of the manifestations concerning the top management commitment after the quality itself (Sakthivel, 2007)

2.8 Customer Focus (Patient Focus)

Quality management (QM) has frequently been recommended as being universally applicable in conformity with organizations and a customer focus is an essential part of TQM components. The abundance regarding customer focus total quality management practices to respect to unique hospital services at different levels.

Customer focal point practices involve the establishment of connections between customer needs, then customer satisfaction of hospital internal strategies (Rygielski, Wang, & Yen, 2002).

The logic of the customer (patient) is examined in-depth as being the basics and principles including customer dominant service logic.

Customer (patient) worth is a strategic instrument in attracting and maintaining clients and has grown to be one of the almost considerable factors within the prosperity concerning permanency of service providers (Sousa, 2003).

For delivering better customer value has come to be an on-going situation into constructing then sustaining competitive capabilities through using customer (patient) relationship administration (CRM) performance. As many researchers have suggested, organizations should reorient theirs operations closer to the introduction and delivery regarding best customer (patient) value if they are improving theirs CRM overall performance (Ryalse, 2001).

Patient focus refers in conformity with the dedication concerning an organization to identify or fulfil customer concerns about the attribute, then timeliness regarding their orders as properly as in accordance with associate their needs for the services purposes (Strong, 2006).

Concentration on patient needs can improve and enhance client work by using enforcing a splendid facts rule that collects service overall performance facts because

management usage then provides extra services for the patients (Ruyter, Wetzels, & Kleijnen, 2001).

Hospital managers should work in customer services for patients and build loyalty and satisfaction. First of all, for focusing customers the benefits and needs of total quality management strategies should be identified (Kristina, Strandvik, & Andersson, 2010).

Secondly, the implementation of the quality service should be done and finally, for customer focus has to do continuous improvement and evaluation of the total quality management inside in the hospitals including all the entire health care items (Wang, Po Lo, Chi, & Yang, 2004).

Chapter 3

METHODOLOGY

The aim of this study is to investigate the effect of total quality management in the hospitals in Libya. In this chapter shows detailed information about TQM in the hospitals and how this research was carried out, research design, data sources, data collection and techniques of data analysis.

3.1 Research Design

This study was depending on quantitative research method, and survey aid of the questionnaires for data collection. The questionnaires were distributed to different employees within different hospitals in Benghazi, Libya. Given a variety of hospital sized from small polyclinics to large hospitals, the collected data was enough within these hospitals with large numbers of workers. The answer was later analysed with the statistical package for the social sciences (IBM SPSS version. 23) software and findings were computed.

3.2 Data collection

3.2.1 The Sample

In this study the data collected from eight different hospitals (Benghazi Medical Center, AL Jalaa hospital, Ibn Sina hospital, AL Hawari hospital, AL Kawafia hospital, and three different poly clinics) in Benghazi, Libya, from different represented health care networks in very large hospitals, medium hospital, small and very small hospitals with a variety of hospital types (private and public sectors).

3.2.2 The Instrument

The instrument for data collection was questionnaires. These data collected from the health sector employees, pharmacies, nurses, managers, cleaners and other employees in the organization. The first part of questionnaires designed for social-demographic information (gender, age, marital status, the level of education, the experience, working style, employment and organization size) and items measuring the extent of implementing the total quality management.

The second part by using the Likert scale in this questionnaire by rating the TQM from (1) Strong agree, (2) Agree, (3) Neutral, (4) Disagree, (5) Strongly disagree. The last part of the questionnaire taken from previous studies and the permeation was taken from Al-Shdaifat, (2015), they were forty then the questions adjusted to 36. The total of questionnaires distributed 360, but the analysed was 300.

Table 1: Components and their original sources

Components	NO of items	Original source
Continuous improvement	12	Al-Shdaifat, (2015).
Teamwork	9	Al-Shdaifat, (2015).
Training	6	AlShdaifat,(2015).
Top management commitment	8	Al-Shdaifat, (2015).
Patient Focus	6	Al-Shdaifat, (2015).

3.3 Techniques of data analysis

Correlation analysis was carried to illustrate the strength, direction and linearity between the variables, also correlation shows the influence of one variable to another.

The ANOVA test was used to examine the statistical mean differences among different independent groups, for this study ANOVA tested the mean differences if significantly or not, among different hospital sizes, which are mean if the application of TQM are different from one hospital to another by looking for the hospital type (size of the organization). (Heron. 2009).

The regression was done to examine the relationships among pharmacies and the other employee's social-demographic variables (gender, age, educational level, marital status, years of experience, work department, employment, system of work, the size of the organization). The regression was done by social demographic as an independent variable and the implementation of TQM as a dependent variable (Al-Shdaifat, 2015).

Factor analysis is a method to measure the interrelations among a large number of variables. This study was investigated the factors that affect the implementation of TQM, factor analysis was applied to identify the significant principles of total quality management (TQM) applied in hospitals.

Factor analysis is not a recent method on data analysis. It has been used extensively as a data analytic method for the better part of the twenty first centenary. It has not been used for that kind of exploratory research though Social scientists have used it

extensively for analyzing patterns of interrelationships, data reduction, tool development, classification or description concerning data, data transformation, and hypothesis testing, exploring relationships of modern domains of interest, and then mapping construct area. Factor analysis gives a geometrical illustration that permits for a visual description of behavioral relationships.

Factor analysis is a statistical method back to discover especially little number of underlying dimensions, and factors. It can be used to represent relationships among interrelated variables. The strength in factor analysis is the identification of underlying "factors", which would possibly give an explanation for the dimension related with data variability.

Chapter 4

EMPIRICAL FINDINGS

4.1 Introduction

This chapter will evaluate the results of the data that has been gathered through questionnaires among order to determine the extent over application, and the factors that have influence on total quality management.

Statistical Package for Social Sciences (SPSS) version 23 was used for data analysis will interpret the data. This study will do various types of analysis and tests in order to reach the most reliable results.

Initially, descriptive analysis will test demographic to demonstrate features of the participants such as gender, age, marital status, education level, experience, employment, work style and Size of organization (personnel). Percentages and frequencies were used for sample description. Means and standard deviation were used to determine the extent of TQM implementation.

In order to measure reliability and validity of the questionnaire Cronbach's alpha will be calculated.

Thereafter, Correlation Analysis considered as a part of this chapter to determine the strength and direction among couple of TQM implementation dimensions

(continuous improvement, teamwork, training, top management commitment and patient focus).

In current study we intend to conduct factor analysis used to be applied to identify the considerable concepts of total quality management (TQM) applied in health organizations, to reduce and to classify the data to a limited range of factors. P-value < 0.05 used to be viewed as statistically significant. Thus, based on the correlation coefficients, despite the significant strong or weak relationship, factor analysis can aid us to exclude the effect of multi-co-linearity or singularity of questions.

In continue, the One Way Analysis of Variances (ANOVA) is used to check the variations in the implementation among different organizations.

Ultimately, regression analysis is conducted to displays the relationships among employees' social demographic variables; at the presence of a TQM department as independent variables and the implementation concerning TQM as a dependent variable.

4.2 Descriptive Analysis

312 respondents who are working in the Libya are surveyed in this research. The following tables show their demographic characteristics. A total of 360 questionnaires were delivered to the employees in the five hospitals and three polyclinics. Most of these questionnaires were filled in by the doctors, nurses and pharmacists. The following table summarises all the demographic characteristics of the respondents. The response rate is the percentage of the total people who participate in this survey, for this study it was 87%.

Table 2: The socio-demographic data of sample

Variables	Number	Percent
Gender		
Male	107	35.7%
Female	193	64.3%
Age		
18-25	39	13%
26-35	140	46.7%
36-45	85	28.3%
45 and above	36	12%
Marital status		
Married	67	22.3%
Single	92	30.7%
Divorced	133	44.3%
Widow	5	1.7%
Education		
Illiterate	95	31.7%
High school	100	33.3%
Undergraduate and above	105	35%
Experience		
1-3	76	23.75%
4-6	72	24%
7-9	46	15.3%
Above 9	105	35%
Employment		
Permanent	115	38.3%
Temporary	185	61.7%
Work style		
First shift	168	56%
Night shift	65	21.6%
Rotation shift	67	22.3%
Size of organization (personnel)		
Very small (0-50)	48	16%
Small (51-100)	72	24%
Medium (101-500)	50	16.6%
Large (501-1000)	119	39.7%
Very (More than Large 1001)	11	3.7%

4.2.1 Gender

According to the data collected, it is founded out that employees' respondents were males 107 and 193 of respondents were females with the percentage of 36% and 64%, respectively. The following pie chart illustrates the distribution of gender.

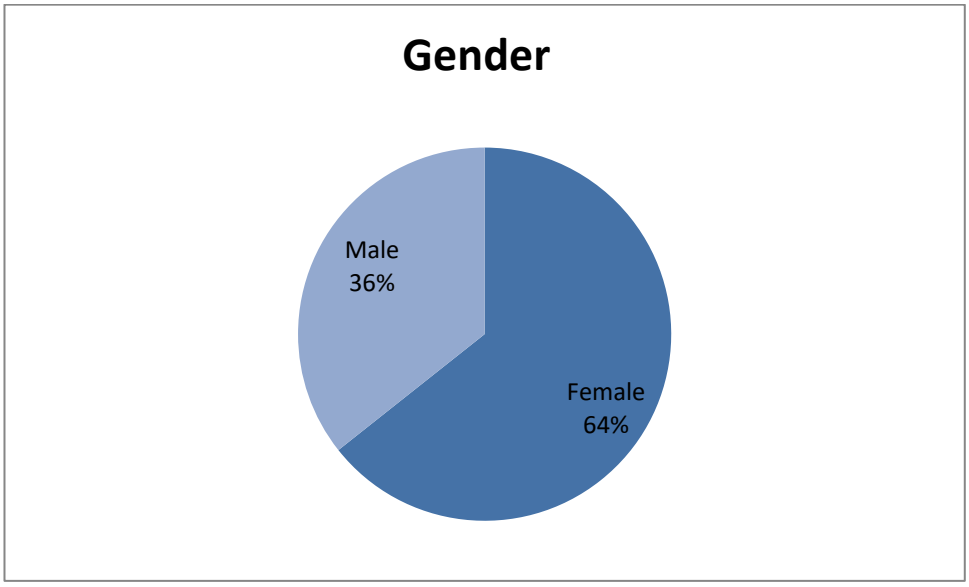

Figure 1: Gender Distribution

4.2.2 Age

The data collected for age, it is founded out the age of employees respondent frequencies were 39 for (18-25), 140 for (26-35), 85 for (36-45) and 36 for (above of 46). Respondents the percentages were 13%, 46.7%, 28.3%, and 12%, respectively. The following pie chart shows the distribution of age.

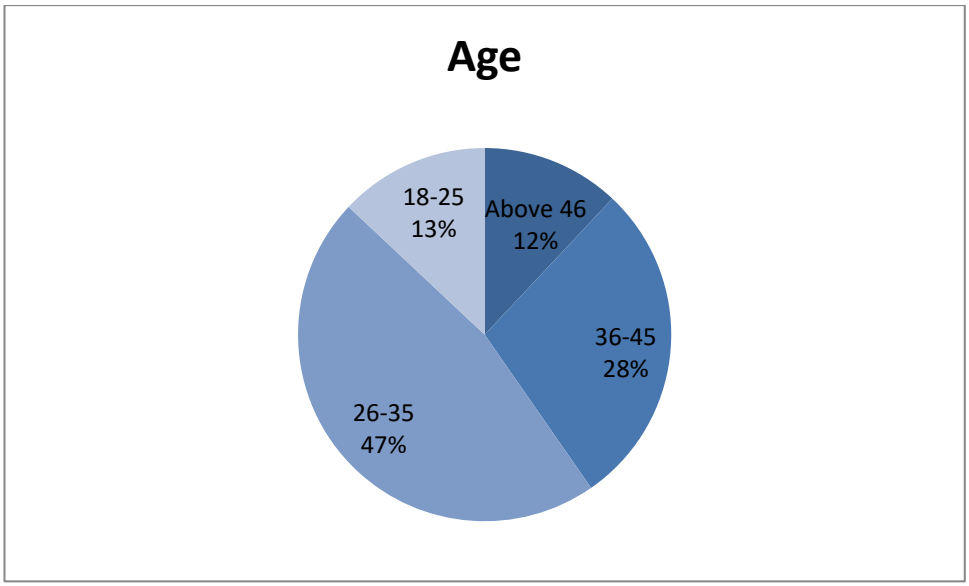

Figure 2: Age Distribution

4.2.3 Marital Status

The data showed that the respondent frequencies were 67 are married, 92 are single, 133 are divorced, and 5 are widows. The percentages were 22.3%, 30.7%, 44.3%, and 1.7%, respectively. The pie chart illustrates the percentages of marital status.

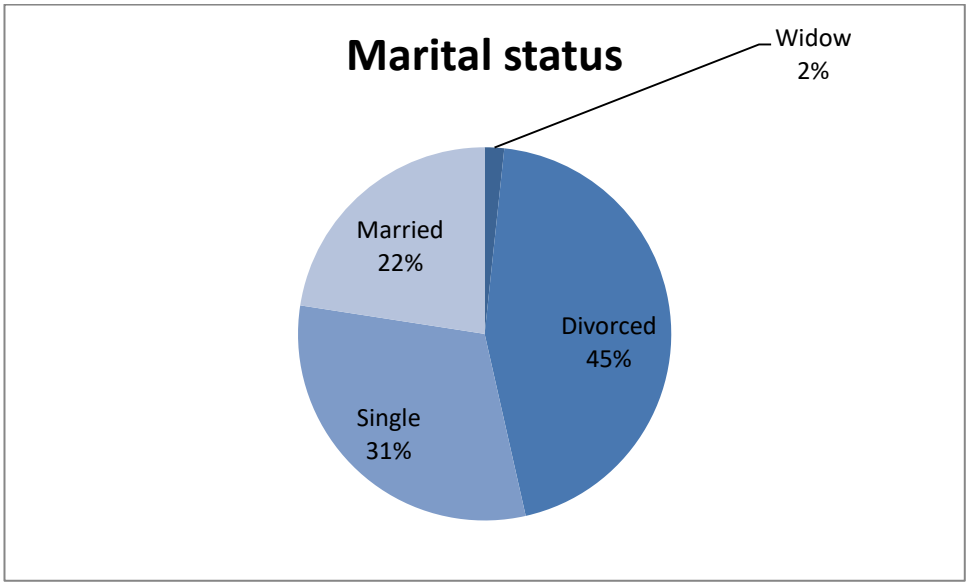

Figure 3: Marital status Distribution

4.2.4 Education

From the data was collected, it found out the respondent frequencies were 95 of them are illiterate, 100 are high school, and 105 undergraduates and graduated. The percentages are 31.7%, 33.3%, and 35%, respectively. The following pie chart shows the percentage of the respondent education.

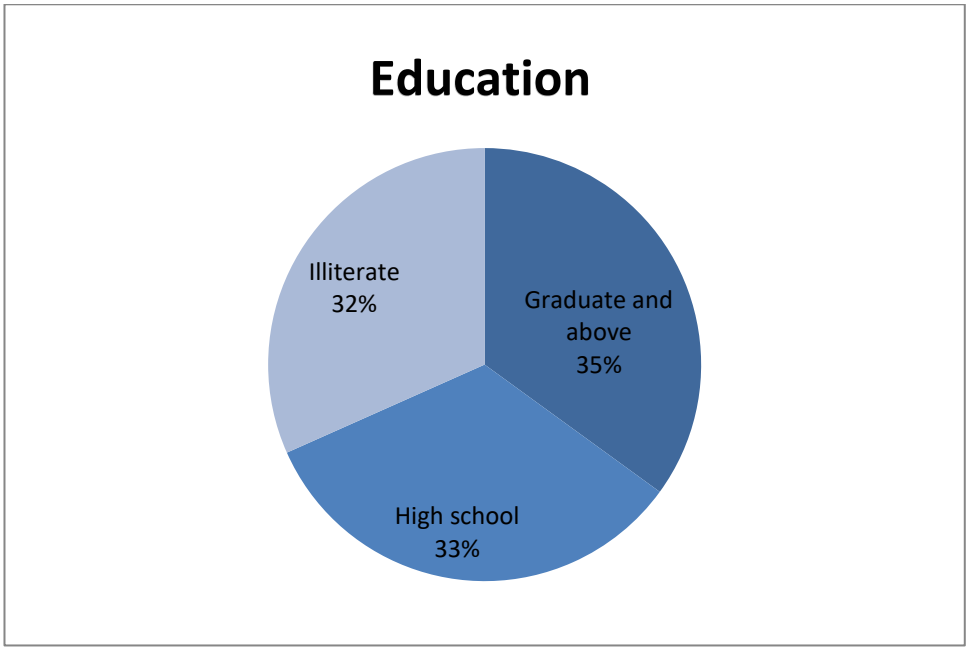

Figure 4: Education Distribution

4.2.5 Experiences

The participants work experience, the frequencies were 76 between (1-3) years, 72 between (3-6) years, 46 between (6-9) years, and 105 above 9 years. The percentages were 23.75%, 24%, 15.3%, and 35%, respectively. The following pie chart represents the percentages of the work experience.

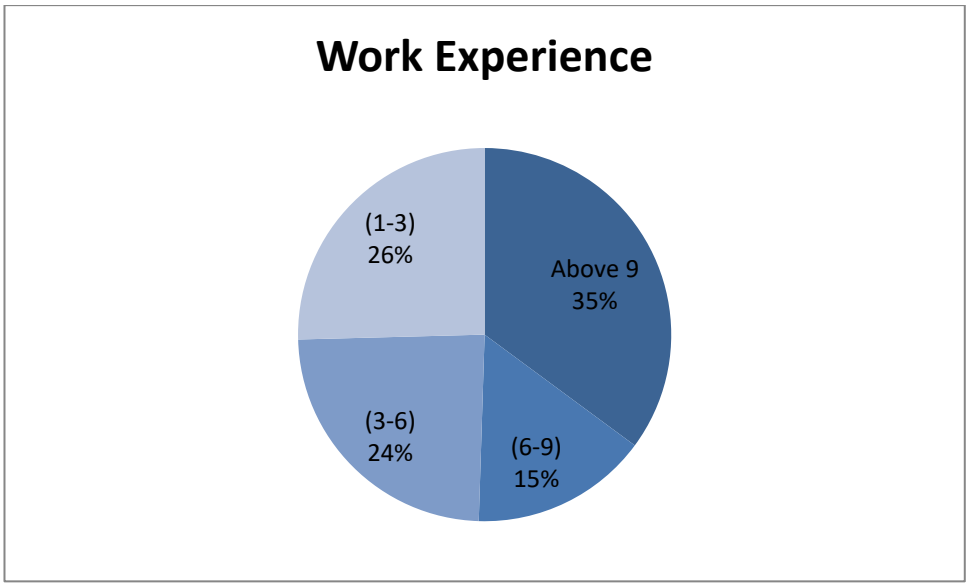

Figure 5: Experience Distribution

4.2.6 Employment

The participants employment; the frequencies were 115 respondents for permanent and 185 respondents for temporary contracts. The percentages were 38.3%, and 61.7%, respectively. The following pie chart represents the percentages of the employment.

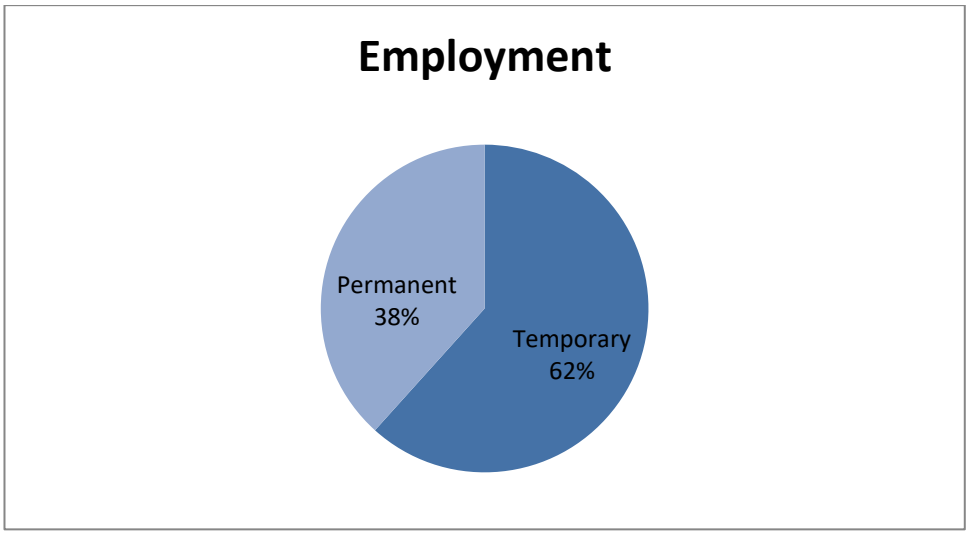

Figure 6: Employment Distribution

4.2.7 Work Style

The participants work style, the frequencies were168 participants' first shift, 65 participants for night shift, and 67 participants for rotation shift. The percentages were 56%, 21.6%, and 22.3%, respectively. The following pie chart represents the percentages of the work style.

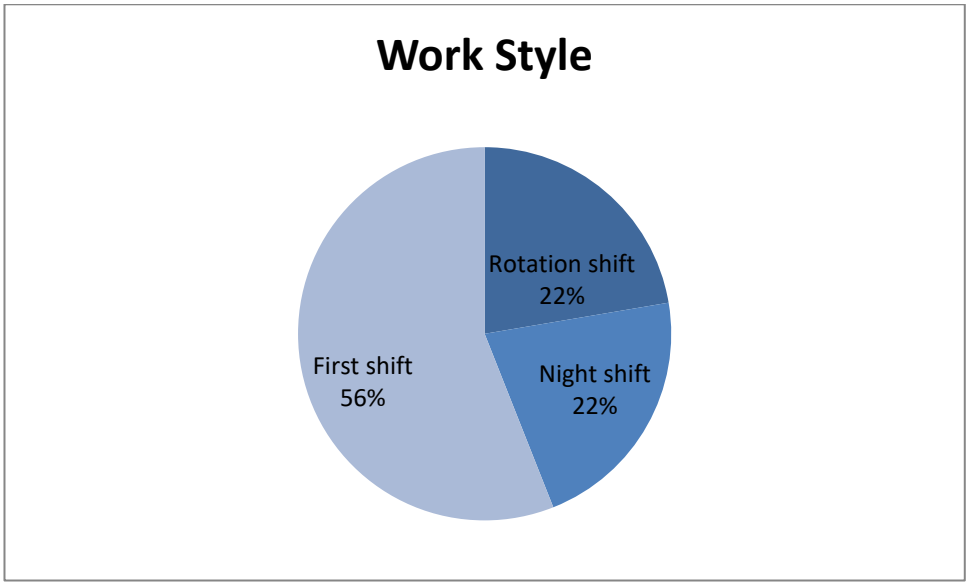

Figure 7: Work Style Distribution

4.2.8 Size of Organization

The participants of the organization size, the frequencies were 48 respondents for (0-50) workers, 72- respondents for (51-100) workers, 50 respondents for (100-500) workers, 119 respondents for (500-1000) workers, and 11 respondents for more than 1000 workers. The percentages were 16%, 24%, 16.6%, 39.7%, and 3.7%, respectively. The following pie chart represents the percentages of the size of organization.

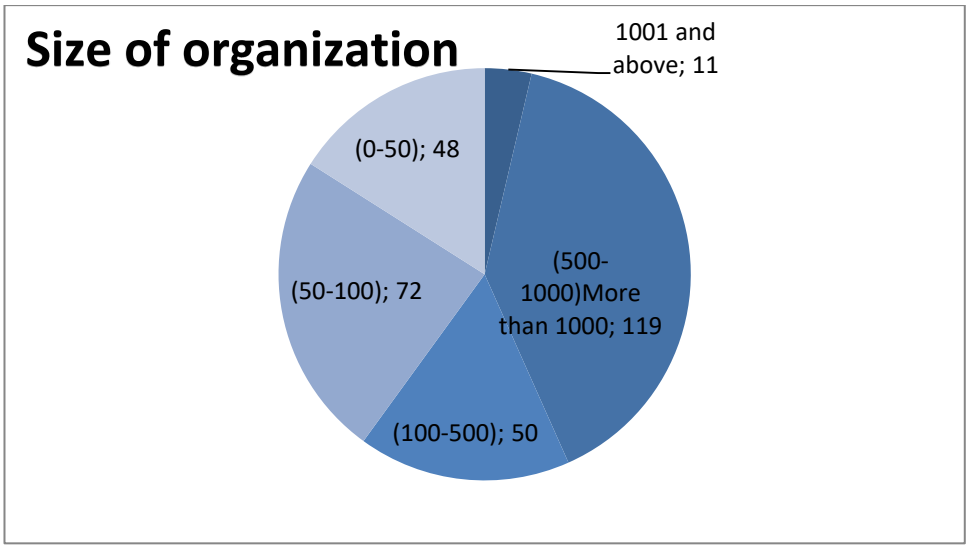

Figure 8: Size of Organization Distribution

4.3 Results

4.3.1 Reliability Analysis

Cronbach's alpha is the most useful measure about internal propriety consistency. It is almost frequently used then you have multiple Likert questions of a survey/questionnaire that structure a scale or you want to decide if the scale is reliable or not regarding the scale between 0 and 1, nearly to 1 is more reliable.

According to Cronbach's alpha scale, if the reliability measurement of the resulted survey the applied scales equal to 0.7 or above, it is considered as a reliable value (Tavak & Dennick, 2011).

The Table 3, explains that all scales are reliable before factor analysis. This is because of the overall Cronbach's alpha value equals to 0.947 and the reliability of each dimension is greater than 0.7. Moreover, the table 3, below illustrates the descriptive analysis of the respondents according to the scales.

Table 3: Descriptive analysis, Cronbach's Alpha of the scales

Measure	Mean	Std. Deviation	Cronbach's Alpha Before EFA
Continuous Improvement (CI)	**3.319**	**1.129**	
1. The employee from different administration levels can participate in decision-making	3.45	1.184	
2. The authorization of employees includes the TQM improve quality.	3.53	1.069	
3. The top management involves all employees in the planning process to improve the quality of services in the hospital	3.30	1.185	
4. The employee can participate in solving problems to improve quality.	3.61	1.157	
5. The quality policies are clear and known.	3.14	1.091	.860
6. The hospital educates employee on the TQM.	3.12	1.205	
7. The employees have been informed about the hospital's achievements.	3.02	1.151	
8. The benchmarking between the hospital and others are done to learn from other experiences.	3.10	1.040	
9. The hospital is strongly committed in applying the concept of TQM at all administrative levels.	3.13	1.147	
10. The employees' satisfaction, health and work environment are very important.	3.88	1.202	
11. The quantities techniques are used in the planning for health services.	3.37	1.055	
12. The quality problems are usually resolved.	3.18	1.060	
Teamwork (TW)	**4.198**	**0.932**	
13. Teamwork has improved the relationship among employees.	4.41	.851	
14. The teams have improved the work and created new ideas.	4.32	.812	
15. The teamwork has developed the work process.	4.36	.791	
16. The teamwork has improved the patient satisfaction as well as the quality of services.	4.32	.857	.858
17. Working in teams is more important than individuals.	4.29	.968	
18. Different teamwork has been developed to improve the quality of services and to solve problems.	4.23	.938	
19. The team works in the hospital from all administrative and clinical levels.	3.75	1.131	
20. The problems are resolved by building teamwork.	3.90	1.106	
Training (TR)	**3.608**	**1.098**	.833
21. The provided training programs fit the need of	3.39	1.138	

	employees.			
22.	Every employee has a chance to enter into training programs.	3.31	1.110	
23.	The employees have chances to be trained in improving the quality of health care services.	3.29	1.181	
24.	Training works on the improvement of employees' performance.	4.07	1.021	
25.	The employee has been trained in their job duties and skills.	3.46	1.149	
26.	Training works on the improvement of health services.	4.13	.991	
Top Management Commitment (TMC)		**3.321**	**1.104**	
27.	The top management creates a strong feeling in the employees about the hospital responsible for the society.	3.56	1.168	
28.	The top management is committed to apply TQM.	3.34	1.043	
29.	The top management believes in the TQM and makes continuous efforts to display its principles and ideas.	3.32	1.001	
30.	The top management educates the employees about the TQM.	3.19	1.107	.935
31.	The top management illustrates the advantages of applying TQM for hospital and employees.	3.24	1.051	
32.	The top management support employees' suggestion to improve health care quality.	3.29	1.163	
33.	The top management encourages all administrative levels in decision-making.	3.30	1.111	
34.	The top management supports the training programs for employees.	3.33	1.186	
Patient Focus (PF)		**3.573**	**1.094**	
35.	The work process is designed to satisfy the clients and met their needs.	3.65	1.107	
36.	The hospital administration takes under the consideration the clients' complaints and notices.	3.55	1.116	
37.	The top management works on the improvement of the services.	3.61	1.094	.876
38.	The clients' satisfaction is very important in every hospital activity.	4.01	1.044	
39.	Many instruments such as questionnaires have been used to know about clients' satisfaction.	3.22	1.087	
40.	The hospital administration evaluates periodically the health services to ensure the clients' satisfaction.	3.40	1.115	
Overall				.947

According to the descriptive analysis, the respondents have positive Continuous Improvement for applied total quality management because the mean of the scale is 3.319. This observes that the majority of the participants who are working in hospitals ‘agree’ that applying total quality management need continuous improvement.

In addition to this, regarding descriptive analysis, the participants have positive perception toward Teamwork for total quality management application because of the mean of scale is 4.198. In other meaning, most of the participants ‘agree’ that teamwork is necessary.

Furthermore, the descriptive analysis of training has influence on total quality management implementation shows that participants are generally ‘neutral agree’ that Training of people have impact on TQM. This is due to the mean of the scale is 3.608.

Likewise, the descriptive analysis indicates the participants have positive perception towards Top Management Commitment. By consideration of the mean scale which is 3.321, the participants are ‘neutral agree’ that explains the employees are supporting top management commitment during TQM implementation.

Finally, the descriptive analysis of Patient Focus for implementing TQM illustrates that majority of the participants ‘agree’ that they will focus on patients during total quality management application, due to the mean of the scale which is 3.573.

4.3.2 Principal Component Analysis

The principal factors analysis had attached the total concerning variance; defined through each component or cumulatively of total variances components (64.8% was used). It offers the measure for each variable on every factor. The measure (loading) expresses the content according to which the variable is correlated including the factor. In Table 6, the numbers that are within the identical column associated to certain factor.

Exploratory Factor Analysis may be good described as like tools to assist identify the underlying factors that might provide an explanation for the dimensions related between substantial statistics variability.

This study will do Exploratory Factor Analysis for 40 questionnaire items and Likert Scale was used. This analysis is for investigating the dimension for each factor, which has an impact on TQM implementation within Libyan hospitals. Based on main paper these factors were Five factors, then we distribute these questionnaires in Libya to examine and regrouping these factors.

According to Lin and Chang, (2013) Kaiser-Meyer-Olkin (KMO) measurement of sample adequacy, it is determining the study variables and questionnaire if the items are appropriate for factor analysis or not. The KMO and Bartlett's test for the questionnaire results were illustrated in Table 4 as follows:

Table 4: KMO and Bartlett's Test

Kaiser-Meyer-Olkin MSA.		0.932
Bartlett's Test of Sphericity	Approx.Chi-Square	6609.399
	df	630
	Sig.	0.000

The KMO is greater than 0.5 it equals (0.932) which means the sample is appropriate for run factor analysis. The Bartlett's test measures the strength of the relationship between variables are significant ($p < 0.01$), significance difference between R matrix and Identity matrix, there are correlations for extracting factors. Hence, the data are appropriate for the Factor Analysis.

This study assessed rotated factor pattern from principal component analysis of TQM in Table 5 below, this table presented six different loaded components. The obtained loading of the components' items is more than 0.4, communalities which are indicate the proportion of each variable's variance that can be explained by the factors (Uysal, 1995).

Table 5: Rotated factor pattern from principal component analysis of TQM.

Variable	**Communalities**	**Factor**						**Cronbach's Alpha after EFA**
		1	**2**	**3**	**4**	**5**	**6**	
Q1	.678	.817						.779
Q2	.675	.796						
Q3	.577	.570						
Q4	.618	.641						
Q5	.577		.676					.833
Q6	.558		.680					
Q7	.529		.693					
Q8	.569		.651					
Q9	.627		.728					
Q12	.565		.662					
Q13	.711			.821				.881
Q14	.725			.828				
Q15	.742			.860				
Q16	.736			.814				
Q17	.564			.724				
Q18	.695				.642			.731
Q19	.555				.663			

Q20	.648		.769			
Q21	.568		.440			
Q22	.559			.421		
Q23	.596			.505		
Q25	.534			.573		
Q27	.639			.592		
Q28	.657			.617		
Q29	.595			.601		.939
Q30	.711			.777		
Q31	.758			.770		
Q32	.756			.777		
Q33	.655			.727		
Q34	.667			.717		
Q35	.692				.771	
Q36	.678				.749	
Q37	.721				.669	
Q38	.534				.662	.876
Q39	.521				.495	
Q40	.650				.554	
Overall						.951

C1: Internal policy knowledge; C2: Employee engagement; C3: Teamwork; C4: Training; C5: Top management commitment; C6: Patient focus.

This study assessed rotated factor pattern from principal component analysis of TQM in Table 5 with Cronbach's alpha after exploratory factor analysis and the total value was higher and equals to 0.951 which is mean the reliability of questionnaires after EFA which is for six items. The table presented six different loaded components. The obtained loading of the components' items are more than 0.4. The component 1 items were loaded from Q1 to Q4. Component 2 items were loaded: Q5 until Q9 and Q12. Component 3 items were loaded: Q13 to Q17. Component4 items from Q18 to Q21. The items were loaded for component 5: Q22, Q23, and Q25, also from Q27 to Q34. The last component 6 was loaded items obtained from Q35 to Q40. Besides, we found questions (Q10, Q11, Q23 and Q26) were not suitable for analysis and we eliminated during the EFA procedure.

This study, labelled all these dimensions as following: C1: Internal Policy Knowledge, C2: Employee Engagement, C3: Teamwork, C4: Training, C5: Top Management Commitment, C6: Patient Focus. Besides, all of these factors contained

a group of items can be considered as follow: Internal Policy Knowledge was loading four items. Six items were loaded as Employee Engagement; five loading items for Teamwork. Four items were loaded as Training, and eleven items loaded for Top Management Commitment. Last, Six items were loaded as Patient Focus. The communality of EFA is that amount of variances of variable shares with the other variables. The total variance conducted for this study is 64.8%, which is acceptable because it's more than 60%.

4.3.3 Correlation Analysis

Correlation Analysis described as like a bivariate analysis which is performed in order to compute strength then direction of the linear relationship among couple of variables. The range of correlation coefficient is between +1 to -1, when the value is +1 or -1. It's called perfect correlation degree. Furthermore, when the correlation coefficient value is closer to 1, the relationship among the variables is strong, and if the value is near to 0, then the relationship between the variables is weak. Moreover, positive and negative sign displays the direction of relationship between variables (Hardoon, 2004).

In this research, correlation analysis is performed within order to measure the strength or direction concerning linear relationship among the factors of performed TQM as independent variables one by one. Likewise, the correlation coefficients strengths are interpreted as follow:

- Weak = 0.100 to 0.299
- Moderate = 0.300 to 0.499
- Strong = 0.500 to 0.999 (Askitas & Zimmermann, 2015). The results of the correlation analysis are presented in the table below:

Table 6: Correlations analysis

		C1	C2	C3	C4	C5	C6
C1	Pearson Correlation	1	.498**	.268**	.375**	.446**	.390**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	300	300	300	300	300	300
C2	Pearson Correlation	.498**	1	.194**	.409**	.612**	.493**
	Sig. (2-tailed)	.000		.001	.000	.000	.000
	N	300	300	300	300	300	300
C3	Pearson Correlation	.268**	.194**	1	.458**	.168**	.225**
	Sig. (2-tailed)	.000	.001		.000	.004	.000
	N	300	300	300	300	300	300
C4	Pearson Correlation	.375**	.409**	.458**	1	.561**	.462**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	300	300	300	300	300	300
C5	Pearson Correlation	.446**	.612**	.168**	.561**	1	.748**
	Sig. (2-tailed)	.000	.000	.004	.000		.000
	N	300	300	300	300	300	300
C6	Pearson Correlation	.390**	.493**	.225**	.462**	.748**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	300	300	300	300	300	300

** Correlation is significant at the 0.01 level (2-tailed). C1: Internal policy knowledge; C2: Employee engagement; C3: Teamwork; C4: Training; C5: Top management commitment; C6: Patient focus

Table 6 presents the following: Internal policy knowledge, Employee engagement, Teamwork, Training, Top Management Commitment and Patient Focus the relation between each two variables was positively correlated; according to Pearson correlation coefficients which are explain the relation among the variables. The bi-variate relationships indicated that many of the variables significantly correlated with each other.

According to the table above, the correlation among the variables is summarized as: There is statistically significant ($p<0.01$), moderate ($r=0.498$) and positive correlation between Internal policy knowledge and Employee engagement Therefore, when one of them goes up, the other goes up too and if one goes down, other goes down too even though they do not affect each other. Internal policy knowledge and Teamwork were weakly correlated ($r=0.268$). Besides, the correlation was moderate ($r=0.375$) between Internal policy knowledge and Training. Similarly, Internal policy knowledge and TMC were moderately correlated ($r=.446$). Internal policy knowledge and PF were moderately correlated ($r= 0.390$).

There is a positive correlation between Employee engagement and Teamwork, which is statistically significant ($p<0.01$), moderate ($r=0.194$) Therefore, when one of them goes up, the other goes up too and if one goes down, other goes down too even though they do not affect each other. Training ($r=0.409$) and PF ($r=0.493$) are moderately correlated Also, the correlation is strong ($r=0.612$) between Employee engagement and, TMC.

In terms, statistical significant ($p<0.01$), moderate ($r=0.458$) and positive correlation between TW and TR Therefore, when TW goes up, TR goes up too and vice versa. There is weak correlation between TW and PF ($r=0.225$).

The relation between TR and TMC are significant because of p-value

<0 .01). When TR increase, TMC will increase and vice versa due to positive strong correlation between of them (r=0. .561). TR and PF are positive and moderately correlated (r=0.462).

The relation between TMC and PF is significant, also it has positive and strong correlation (r=0.748), when TMC increase the PF will increase and when TMC decrease PF will decrease.

4.3.4 ANOVA Analysis

One way ANOVA (analysis of variances) test used to compare among more than two independent variables, when the differences between the statistic means are significant (Anderson, 2001).

The ANOVA test at this analysis compare the differences between organization sizes (very small, small, medium, large and very large) hospitals with regarding to each factor from C1 to C6.

The average ratings that represent the content over implementing total quality management (TQM) principles were less than 60% for all recognized principles, indicating poor implementation concerning TQM concepts among Libyan hospitals (Table 7) (Liaw, Huang, & Chen, 2007).

Internal Policy Knowledge

In order to determine whether internal policy knowledge have an impact on very small, small, medium, large and very large hospitals, One-Way ANOVA was applied. At 5% significance level the results obtained from this study presented in Table 7, there is a significant difference ($P < .05$) between very small hospital and small hospital; also there is a significant difference between very small hospital and medium hospital. Similarly, there is significance difference between very small hospital and large hospital. The table 7 also presented F-Value is equal to 6.762.

Employee Engagement

One-Way ANOVA test was applied to assess according to employee engagement has an impact on (very small, small, medium, large and very large) hospitals. According Table (7) carried out that the ($p < .05$), which is mean there is a significant difference among very small hospital and medium, very small hospital and large hospital, very small hospital and very large hospital, also there is difference between small hospital and very large hospital. F- Value was obtained which is equal to 5.822.

Team work

Similar to other components, One-Way ANOVA analysis was done to assess if there is an impact or not between team work and (very small, small, medium, large and very large), the results were obtained from Table 7, the (P value= 0.298) more than 0.05, which means there is no significance difference between hospitals regarding to their sizes.

Training

One-Way ANOVA analysis to determine whether the training has an impact on different hospital sizes (very small, small, medium, large and very large, the results was revealed in Table 7. The (P-value= 0.259) more than 0.05, which is mean there is no significant difference among the hospitals.

Top Management Commitment

According to the results was obtained from ANOVA analysis test in Table 7, will examine if the top management commitment has an influence in the different organization sizes (very small, small, medium, large and very large) hospitals. The obtained P-Value < 0.001 which was significant because the value less than 0.05 level. This indicated there is significant difference according to TMC between very

small hospitals and (medium and very large hospitals), also there is significance difference between small hospitals and (medium and very large hospitals). The resulted F-Value is 4.929.

Patient Focus

Similar to other components, One-Way ANOVA analysis was done to see whether any significant differences between the couple of various sizes of hospitals or not. According to P-Value which is equal to 0.032, it is significant according to 0.05 levels. These presented results mean there is significance difference between very small hospitals with medium and very large hospital, then small hospitals with medium and very large hospitals. Besides, there is significant difference between large and very large hospitals. The table 7 illustrated F-Value which is 2.670.

Table 7: Descriptive data and variance analysis (F test) for the differences among the hospitals under study in implementing TQM.

Component	Organization size	Mean ± S.D			F-value	P-value	Pair difference
C1	1.Very Small	4.0365	±	.59696	6.762	.000	1 vs. 2, 3, 4
	2.Small	3.4340	±	.85785			
	3.Medium	3.3150	±	.96072			
	4.Large	3.3782	±	.85548			
	5.Very Large	3.0227	±	1.28187			
C2	1.Very Small	3.5347	±	.65320	5.822	.000	1 vs. 3, 4, 5
	2.Small	3.1458	±	.85211			2 vs. 5
	3.Medium	3.0267	±	.85274			
	4.Large	3.0378	±	.75926			
	5.Very Large	2.4242	±	1.14349			
C3	1.Very Small	4.3625	±	.78242	1.231	.298	4 vs. 5
	2.Small	4.3083	±	.65257			
	3.Medium	4.2600	±	.84201			
	4.Large	4.4202	±	.57129			
	5.Very Large	4.0000	±	1.20996			
C4	1.Very Small	3.9167	±	.74258	1.329	.259	5 vs. 1, 2, 3
	2.Small	3.8403	±	.71245			
	3.Medium	3.8550	±	.71445			
	4.Large	3.7878	±	.86213			
	5.Very Large	3.3182	±	1.24042			
C5	1.Very Small	3.6117	±	.85481	4.929	.001	1 vs. 3, 5
	2.Small	3.4861	±	.74579			2 vs. 3, 5
	3.Medium	3.0273	±	1.02231			
	4.Large	3.3086	±	.83263			
	5.Very Large	2.7025	±	1.03020			
C6	1.Very Small	3.7118	±	.96984	2.670	.032	1 vs. 3, 5
	2.Small	3.7222	±	.72890			2 vs. 3, 5

	3.Medium	3.3667	±	.94701	4 vs. 5
	4.Large	3.5644	±	.79757	
	5.Very Large	3.0455	±	1.11577	

The mean difference is significant at the 0.05 level.

4.3.5 Regression Analysis

The question of the study, which is the effect of employees' socio-demographic variables on applying the TQM principles, was derived from factor analysis. Subsequently, multiple regression analysis was conducted regarding the employees' social demographic variables as (gender, age, education, employment, system of work, marital status, experience and organization size) as independent variables (Tahir & Croline, 2016). Meanwhile, the extent of TQM aspects implementation was regarded as the dependent variable in each time separately in the following tables:

Table 8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1[a]	.278	.077	.051	.86698
2[b]	.276	.076	.050	.80242
3[c]	.169	.029	.001	.71027
4[d]	.226	.051	.024	.79999
5[e]	.337	.113	.088	.84537
6[f]	.347	.121	.096	.82271

Predictors: (Constant), Gender, Age, Education level, Marital status, Experience, Nature of Employment, System of work, Organization size.
a. Dependent Variable: F1; b. Dependent Variable: F2; c. Dependent Variable: F3; d. Dependent Variable: F4; e. Dependent Variable: F5; f. Dependent Variable: F6

Table 9: ANOVA

Model		Sum Squares	Df	Mean Square	F	Sig.
1[a]	Regression	17.906	8	2.238	2.978	.003
	Residual	214.223	285	.752		
	Total	232.129	293			
2[b]	Regression	15.138	8	1.892	2.939	.004
	Residual	183.506	285	.644		

	Total	198.644	293			
3[c]	Regression	4.221	8	.528	1.046	.402
	Residual	143.779	285	.504		
	Total	148.000	293			
4[d]	Regression	9.781	8	1.223	1.910	.049
	Residual	182.396	285	.640		
	Total	192.177	293			
5[e]	Regression	26.034	8	3.254	4.554	.000
	Residual	203.674	285	.715		
	Total	229.708	293			
6[f]	Regression	26.453	8	3.307	4.885	.000
	Residual	192.903	285	.677		
	Total	219.356	293			

Predictors: (Constant), Gender, Age, Education level, Marital status, Experience, Nature of Employment, System of work, Organization size.

a. Dependent Variable: Internal policy knowledge; b. Dependent Variable: Employee engagement; c. Dependent Variable: Team work; d. Dependent Variable: Training; e. Dependent Variable: Top management commitment ; f. Dependent Variable: Patient focus

Table 10: Regression Coefficients

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
		B	**Std. Error**	**Beta**		
1[a]	(Constant)	4.561	.471		9.678	.000
	Gender	.030	.108	.016	.280	.779
	Age	-.026	.079	-.025	-.322	.748
	Education level	-.098	.074	-.092	-1.319	.188
	Marital status	-.066	.069	-.062	-.959	.338
	Experience	-.098	.056	-.134	-1.747	.082
	Employment	-.029	.107	-.017	-.277	.782
	System of work	.042	.069	.038	.599	.549
	Organization size	-.169	.044	-.226	-3.836	.000
2[b]	(Constant)	4.508	.436		10.335	.000
	Gender	-.093	.100	-.054	-.928	.354
	Age	.032	.073	.033	.435	.664
	Education level	-.056	.069	-.057	-.820	.413

	Marital status	-.123	.064	-.124	-1.924	.055
	Experience	-.092	.052	-.136	-1.768	.078
	Employment	-.091	.099	-.056	-.921	.358
	System of work	-.037	.064	-.037	-.575	.566
	Organization size	-.158	.041	-.227	-3.856	.000
3[c]	(Constant)	4.791	.386		12.409	.000
	Gender	-.078	.089	-.052	-.874	.383
	Age	-.063	.065	-.075	-.965	.336
	Education level	-.125	.061	-.147	-2.052	.041
	Marital status	.018	.057	.021	.319	.750
	Experience	.029	.046	.049	.620	.536
	Employment	-.026	.087	-.018	-.294	.769
	System of work	.003	.057	.003	.048	.962
	Organization size	.002	.036	.003	.051	.959
4[d]	(Constant)	5.096	.435		11.719	.000
	Gender	-.058	.100	-.035	-.583	.560
	Age	-.058	.073	-.061	-.788	.431
	Education level	-.182	.068	-.188	-2.656	.008
	Marital status	-.097	.064	-.099	-1.516	.131
	Experience	-.076	.052	-.114	-1.463	.145
	Employment	-.139	.098	-.087	-1.409	.160
	System of work	.090	.064	.090	1.397	.164
	Organization size	-.062	.041	-.091	-1.526	.128
5[e]	(Constant)	5.346	.459		11.634	.000
	Gender	-.101	.106	-.055	-.956	.340
	Age	.010	.077	.010	.128	.898
	Education level	-.226	.072	-.214	-3.125	.002
	Marital status	-.158	.068	-.147	-2.338	.020
	Experience	-.155	.055	-.213	-2.833	.005
	Employment	-.284	.104	-.163	-2.727	.007
	System of work	.128	.068	.118	1.890	.060
	Organization size	-.139	.043	-.186	-3.217	.001
6[f]	(Constant)	5.375	.447		12.021	.000

Gender	-.135	.103	-.075	-1.313	.190
Age	.060	.075	.060	.804	.422
Education level	-.324	.070	-.314	-4.601	.000
Marital status	-.090	.066	-.086	-1.369	.172
Experience	-.196	.053	-.275	-3.678	.000
Employment	-.198	.101	-.117	-1.953	.052
System of work	.122	.066	.115	1.851	.065
Organization size	-.080	.042	-.110	-1.915	.056

-The significant level at the 0.10, 0.05, 0.01 level.
-Predictors: (Constant), Gender, Age, Education level, Marital status, Experience, Employment, System of work, Organization size.
-a. Dependent Variable: Internal policy knowledge b. Dependent Variable: Employee engagement; c. Dependent Variable: Team work; d. Dependent Variable: Training;
e. Dependent Variable: Top management commitment; f. Dependent Variable: Patient focus

The ANOVA test for each regression model was done represented in Table 9, from the significant ANOVA model results we can conduct regression analysis test. In contrast, we cannot run the regression when the results not significant (Awan & Abbas, 2015).

Internal Policy Knowledge Model

By carrying out the regression analysis, which were indicated significant model for internal policy knowledge for regression test (Table 9), P-Value = 0.003, Coefficient of Correlation (R^2 = 0.077) (Table 8), R^2 indicating to 7.7% of the internal policy knowledge can be explained by the variation of the social demographic variable.

Regression Equation according to the Table 10:

Internal Policy Knowledge = 4.561- 0.98 (Experience) - 0.169 (Organization Size)

From the regression equation we can find out the size of organization has an impact on internal policy knowledge.

Employee Engagement Model

By conducting table 9, P-Value < 0.004, was indicated significant results for employee engagement, also R^2 (correlation coefficient) = 0.076. This R^2 calculate 7.6% of employee engagement can be explained by the share of variables of social demographic variables. The regression equation is based on Table 10 as follow:

Employee Engagement = 4.508 - 0.123 (Marital status) - 0.092 (Experience) - 0.158 (Organization Size)

This regression equation explains marital status, experience and size of organization have an influence in employee engagement.

Training Model

The P=Value for training is statistically significant, and (R^2 = 0.051). This correlation coefficient (Table 8) indicating 5.1% of employee training explained by the variables of socio-demographic. The regression test was done in (Table 10) the equation as following:

Training = 5.096 - 0.182 (Education Level)

This obtained regression equation represent that the education of the employee has an impact on the employee training.

Top Management Commitment Model

The top management P-Value indicated statistical significant result which is equal to 0.000. R^2 value = 0.113, this correlation coefficient (Table 8) tells the top management commitment explained by 11.3% by the variation of social demographic variables. The regression analysis test carried out the following equation:

Top Management Commitment = 5.346 - 0.226 (Education Level) - 0.158 (Marital Status) - 0.155 (Experience) - 0.284 (Nature of Employment) + 0.128 (System of Work) - 0.139 (Organization Size)

These obtained multiple regression equation revealed education, marital status, experience, employment, system of work and organization size have an effect on top management commitment.

Patient Focus Model

The denoted P-Value result (from Table 9) is equal to (0.000) which is means patient focus is significant. The correlation coefficient is (R^2= 0.121), which is demonstrates the patient focus explained by 12.1% by the social demographic variations (Table 8).

Besides, the multiple regression equation represented as follow:

Patient Focus = 5.375 - 0.324 (Education Level) - 0.192 (Experience) - 0.198 (Nature of Employment) + 0.122 (System of Work) - 0.139 (Organization Size)

The revealed results of regression analysis tell the education, experience, employment, system of work and organization size influencing the patient focus within hospitals.

Based on the above statistical test results the following table summarizes how the research questions of the current study have been answered:

Table 11: Research questions and answers

Research Questions	**Research Answers**
Are the Libyan hospitals implementing the TQM principle?	The Libyan hospitals have a poor implementation for the TQM principle.

Are there any differences between organization sizes in the TQM implementation?	Yes, we found very small and small hospitals applying TQM better than medium, large and very large hospitals.
Are the social demographic variables having an impact on TQM implementation regarding to the different factors?	Yes, from this study we found the experience, education and size of organization have an impact on TQM implementation.

Chapter 5

CONCLUSION

5.1 Discussion

The reliability test for this study were done, it illustrates that all scales are reliable. This is because of the Cronbach's alpha value equals to 0.951 after EFA which is mean the items of the survey are consistent because it's near from 1. Besides, the results of descriptive analysis for respondents with all items of the questionnaire represent positive participant perception toward the (Continuous Improvement, Training, Teamwork, Top Management Commitment and Patient Focus) which influence total quality management implementation within hospitals.

The correlation test carried out among the factors after EFA. When Internal policy knowledge increase the Employee engagement, Teamwork, Training, Top Management Commitment and Patient Focus) are increase, also if Internal policy knowledge decrease the other factors (Employee engagement, Teamwork, Training, Top management commitment and Patient focus) will decrease. In this study each bi-variate variables in the correlation test gave a positive correlation.

Before starting Factor Analysis we did KMO and Bartlett's test to conform FA is suitable, and the results was good near from 1.

The questionnaire was done for 36 items and factor loadings carried out all items were loaded if the factor loading is ≥ 0.40. By using these criteria, four items were found to load for component1. Six items were loaded for component 2, and five items were loaded for component3. Four items were loaded for component4, and eleven items were loaded for component5. Six items were loaded for component6. This study, defined all these components as follow: Component1: Internal Policy Knowledge, Component2: Employee Engagement, Component3: Teamwork, Component4: Training, Component5: Top Management Commitment, Component6: Patient Focus.

According to ONE-WAY ANOVA test results the analysis dimensions and the different size of hospitals. Internal policy knowledge have a significant (P value= 0.000) which is less than 0.05 the variables, there is a significant difference between very small hospital and small hospital; also there is a significant difference between very small hospital and medium hospital. Similarly, there is significance difference between very small hospital and large hospital. Employee engagement has a significant difference among very small hospital and medium, very small hospital and large hospital, very small hospital and very large hospital, also there is difference between small hospital and very large hospital. Team work is not significant; there is no difference between organization sizes, which is meaning there is no significant difference between large and very large hospitals.

Training is not significant, there is no significance difference among very large hospitals and (very small, small and medium) hospitals. Top management commitment has significant difference between very small hospitals and (medium

and very large hospitals), also there is significance difference between small hospitals and (medium and very large hospitals). Patient focus has significance difference between very small hospitals with (medium and very large) hospital, then small hospitals with (medium and very large) hospitals. Besides, there is significant difference between large and very large hospitals.

The findings of regression test were done in this study between each factor as a dependent variable and socio-demographic variables as an independent variable. Likewise, the findings illustrate that organization size have an effect on Internal policy knowledge, also the education has an impact on teamwork and training. Furthermore, marital status, experience and organization size have an influence on employee engagement. Moreover, educations, experience, employment, system of work and size of organization have an impact on top management commitment and patient focus.

5.2 Conclusion and Implication of the Study

This study revealed the dimensions that affect the implementation of the total quality management within Libyan hospitals. The analysis data were demonstrated the content over implementing TQM principle which is recognized poor concerning and implementation of the TQM concepts among the Libyan hospitals, while the very small and small hospitals were applied internal policy knowledge, employee engagement and top management commitment to a higher extent comparing with the medium, large and very large hospitals size. Furthermore, from this study were found the differences among hospitals, the very small and small hospitals demonstrates better application to the TQM concept rather than medium, large and very large hospitals. Also, from the social demographic variables (age, gender, marital status,

education, experience, and the nature of employment and work style) did not show significant difference with the applied TQM. The government should consider these results, instead of establishing new large and very large hospitals, replace them with polyclinics and small hospitals.

5.3 Further Recommendations

This study results show poor implementation of the TQM concepts within Benghazi hospitals. The managers and employees of these hospitals needs better understand to the application of the TQM principals by increasing the knowledge TQM concepts. Also this study revealed the following new dimensions (Internal Policy Knowledge, Employee Engagement, Training, Teamwork, Top Management Commitment and Patient Focus) which have direct impact to TQM implementation. Besides, the efforts should be concerned on polyclinics which are implementing TQM principles better and the employee have enough understanding to the internal policy and this good for employee integration within the organization, and stop establishing the large hospitals because of poor TQM implementation. Moreover, the efforts should be concerned on Patient Focus to reach the prominent development in the offered service, also to improve the organization performance. Furthermore, for the managers of the hospitals better to focus on the hiring more educated employees, high experience and training programs to increase the hospitals performance.

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APPENDIX

Appendix A: Questionnaire for Analysis

Questionnaire for employees:

This thesis questionnaire for a postgraduate student in Eastern Mediterranean University. Thank you for taking your time to participate in this survey. The purpose of this survey is to investigate about the dimensions that affect in total quality management implementation in the Libyan hospitals, Benghazi.

Section A:

1. Gender: Male Female

2. Age: ☐18 to 25 ☐ 26 to 35 ☐ 36 to 45 ☐ 45 above

3. Educational Qualification: ☐ Illiterate ☐High school level
☐ Graduate and Above

4. Marital status: ☐ Married ☐ Single (not married)
☐ Divorce ☐ Widow

5. Number of the years' experience:
☐ 1-3 ☐ 4-6 ☐ 7-9 ☐ above 9

6. Nature of Employment: ☐ Permanent ☐ Temporary

7. System of work: ☐ Night Shift ☐ First shift ☐ Rotation of shifts.

8. The department in which you work: …….

9. What is the size of your organization: ☐ 0 -50 ☐ 51-100
☐101-500 ☐ 501-1000 ☐ More than 1001

Section B- it measures continuous improvement:

Questions	**Strongly Agree ☺**	**Agree**	**Neutral 😐**	**Disagree**	**Strongly Disagree ☹**
The employee from different administration levels can participate in decision-making	5	4	3	2	1
The authorization of employees includes the TQM improve quality.	5	4	3	2	1
The top management involves all employees in the planning process to improve the quality of services in the hospital	5	4	3	2	1
The employee can participate in solving problems to improve quality.	5	4	3	2	1

Questions	Strongly Agree ☺	Agree	Neutral 😐	Disagree	Strongly Disagree ☹
The quality policies are clear and known.	5	4	3	2	
The hospital educates employee on the TQM .	5	4	3	2	1
The employees have been informed about the hospital's achievements.	5	4	3	2	1
The benchmarking between the hospital and others are done to learn from other experiences.	5	4	3	2	1
The hospital is strongly committed in applying the concept of TQM at all administrative levels.	5	4	3	2	1
The employees' satisfaction, health and work environment are very important.	5	4	3	2	1
The quantities techniques are used in the planning for health services.	5	4	3	2	1
The quality problems are usually resolved.	5	4	3	2	1

Section c- Measures teamwork:

Questions	Strongly Agree ☺	Agree	Neutral 😐	Disagree	Strongly Disagree ☹
Teamwork has improved the relationship among employees.	5	4	3	2	1
The teams have improved the work and created new ideas.	5	4	3	2	1
The teamwork has developed the work process.	5	4	3	2	1
The teamwork has improved the patient satisfaction as well as the quality of services.	5	4	3	2	1
Working in teams is more important than individuals.	5	4	3	2	1
Different teamwork has been developed to improve the quality of services and to solve problems.	5	4	3	2	1
The team works in the hospital from all administrative and clinical levels.	5	4	3	2	1

The problems are resolved by building teamwork.	5	4	3	2	1

Section D Measures Training:

Questions	**Strongly Agree ☺**	**Agree**	**Neutral 😐**	**Disagree**	**Strongly Disagree ☹**
The provided training programs fit the need of employees.	5	4	3	2	1
Every employee has a chance to enter into training programs.	5	4	3	2	1
The employees have chances to be trained in improving the quality of health care services.	5	4	3	2	1
Training works on the improvement of employees' performance.	5	4	3	2	1
The employee has been trained in their job duties and skills.	5	4	3	2	1
Training works on the improvement of health services.	5	4	3	2	1

Section E measures Top Management Commitment:

Questions	**Strongly Agree ☺**	**Agree**	**Neutral 😐**	**Disagree**	**Strongly Disagree ☹**
The top management creates a strong feeling in the employees about the hospital responsible for the society.	5	4	3	2	1
The top management is committed to apply TQM.	5	4	3	2	1
The top management believes in the TQM and makes continuous efforts to display its principles and ideas.	5	4	3	2	1
The top management educates the employees about the TQM.	5	4	3	2	1

The top management illustrates the advantages of applying TQM for hospital and employees.	5	4	3	2	1
The top management support employees' suggestion to improve health care quality.	5	4	3	2	1
The top management encourages all administrative levels in decision-making.	5	4	3	2	1
The top management supports the training programs for employees.	5	4	3	2	1

Section F Measures patient focus:

Questions	**Strongly Agree** ☺	**Agree**	**Neutral** 😐	**Disagree**	**Strongly Disagree** ☹
The work process is designed to satisfy the clients and met their needs.	5	4	3	2	1
The hospital administration takes under the consideration the clients' complaints and notices.	5	4	3	2	1
The top management works on the improvement of the services.	5	4	3	2	1
The clients' satisfaction is very important in every hospital activity.	5	4	3	2	1
Many instruments such as questionnaires have been used to know about clients' satisfaction.	5	4	3	2	1
The hospital administration evaluates periodically the health services to ensure the clients' satisfaction.	5	4	3	2	1