

Factors Affecting Application of Total Quality Management Activities at Oncology Center Mansoura University



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1.ABSTRACT

Background: Nowadays, the ability to deliver excellent quality to customers is key to an organization's survival and global competitiveness. Essentially, delivering excellent quality increases customer satisfaction and enhances the productivity of institutions. The implementation of quality improvement initiatives, such as Total Quality Management (TQM), is one way that organizations are seeking to deliver quality services to customers. **Aim:** the study aimed to assess factors affecting application of total quality management activities at Oncology Center Mansoura University. **Method:** A descriptive research design was utilized to conduct this study on 239 nursing staff working at Oncology Center Mansoura University using one tool as: total quality management activities Questionnaire. **Results:** The results indicated that more than tow third of nursing staff had moderate agreement score about factors affecting application of total quality management activities. Method used for quality indicators measurement was found the highest and ranked first. Whereas Financial and moral incentives was significantly the lowest and ranked last one. That there was highly statistically significant positive relationship between nurses 'perception for overall score related to factors affecting application of total quality management activities. **Recommendation:** Hospital manager sustain more flexible remuneration and reward systems to promote nursing staff satisfaction. Hospital manager should provide open channels of communication between top management and nursing staff and providing them with feedback on progress.

Keywords: total quality management, Factors, Implementation.

2.Introduction:

Today, all types of organizations are facing challenges, so they have to evaluate their internal and external environment for opportunities and challenges in order to maintain their growth and remain competitive. Many organizations have adopted and implemented the total quality management (TQM) strategy, which is widely recognized as a major factor in the success and survival of the organization. One type of the fastest growing organizations is health care organizations, which have now been restructuring the service delivery system in order to reduce the costs, to increase competitiveness and to survive ⁽¹⁾. Improved healthcare has become an important and critical issue, and many hospitals managers are working to improve healthcare quality. The pressure for quality improvement from government and insurance organizations, increasing competition in health market and increasing awareness about patient safety make health system more complex, which led to adopting hospital quality management system ⁽²⁾. The concept of quality refers to the standard of anything that is examined and/or measured against something that is of the same domain or is considered as the

benchmark in any regards. It can also be defined as something suitable for its purpose along with satisfying the expectations of consumers ⁽³⁾.

The World Health Organization (WHO) defines quality healthcare as care that is effective, efficient, integrated, patient centered, equitable and safe. Additionally, the degree to which healthcare quality can be defined as acceptable is strongly dependent on service providers' ability to meet the needs of the users and adapt to their expectations and perceptions. The patients' interests do not always coincide with those of their relatives, and family and informal caregivers may perceive the situation differently than the patients ⁽⁴⁾.

Various dimensions of quality that need to be addressed are effectiveness, efficiency, technical competence, safety, accessibility, interpersonal relations, continuity and amenities. Healthcare quality does not mean that care is given by the most learned and highly experienced professors of medicine. But that the system is devised in such a way that in any situation most ordinary yet adequately trained doctor can deliver appropriate treatment to the needy patient. Quality is therefore based on the principles of cost saving ⁽⁵⁾.

Quality management process consists of three types which are quality control, quality assurance and total quality management (TQM). First, quality control which is to monitor the commodities and services, detect and fix the possible errors. Second, Quality assurance which is the planned and systematic efforts that ensures compliance of the service with quality standards or its fulfillment of all the expectations in terms of quality. Finally, (TQM) which does not focus on the quality of output acquired at the end of the system, but on ensuring quality at every stage ⁽⁶⁾.

TQM is defined as a holistic management philosophy that requires organizational culture change. It also defined as a management philosophy that encompasses the entire organization activities to reach operational excellence. The interesting substance of TQM is the concept of total quality in achieving the goals of organization, such as top management commitment, gradual principle in achieving quality, continuous improvement, commitment refraction of top management in the cultivation of culture, and work ethic in all organizational lines ⁽⁷⁾.

Healthcare leaders have already adopted the concept of TQM, which has its background in industrial production. In the healthcare, the philosophy of TQM is based on management and leadership practices that commit to continuous improvement of the quality. It can provide energy and motivation for improvement of service delivery in the healthcare ⁽⁸⁾.

The key elements of TQM implementation drawn from quality experts and organizations with quality awards include leadership, employees satisfaction, leadership and management of internal stakeholders, quality improvement, emphasis on teamwork, communication for quality, resource management, supplier management, system and process management, policy and strategy ⁽⁹⁾.

Commitment by leadership and top management towards quality involves providing a stimulating vision, guiding quality values, encouragement and quality direction to subordinates in a manner that is understood by all. Leadership and top management commitment also should involve cross-functional system approach, making decisions based on fact and motivating employees for TQM ⁽¹⁰⁾.

Job satisfaction is commonly defined as an evaluation of the extent to which people like or dislike their jobs. The relationship between TQM and job satisfaction is an important topic as

scholars have argued that the ultimate goal of TQM, that is (external) customer satisfaction, cannot be achieved without employee satisfaction (i.e. internal customers). Indeed, employee job satisfaction has long been considered as one of the key determinants of an organization's success and growth ⁽¹¹⁾.

Continuous quality improvement culture plays a significant role on TQM implementation. In order to build continuous quality improvement culture, an integration of tools, techniques, and training is very much essential. This right integration will ensure the improvement of operations in all disciplines of a firm. Three elements of continuous improvement are process improvement, total involvement, and customer focus ⁽¹²⁾.

The concept of teams and teamwork is increasingly becoming an important key to productivity in the contemporary workplace. Within the context of TQM, teamwork is an important outcome and a condition for continuous improvement. It facilitates collaborative efforts to solve quality problems allows greater sharing of information within the work group and facilitates greater cooperation to improve continuously the functioning of the work group ⁽¹³⁾.

Good communication provides vital feedback to management on their quality efforts. The effectiveness of the management is facilitated by communication. Effective communication holds together the pieces of the total quality process and is important for the success of the quality initiative. When management explains quality goals and policies to employees; they encourage their commitment to the TQM program ⁽¹⁴⁾.

Total quality management implementation can be dividing into three stages: first preparation stage, second Planning stage and third Execution stage. those three stages must be implemented well with the commitment from management and employees involvement and others factor such as training and communication ⁽¹⁵⁾.

The successful TQM implementation requires a thorough understanding of critical success factors, barriers to achieving these factors, and managerial tools and techniques to overcome these barriers along with continuous organizational learning. The barriers of the implementation of the TQM are resistance to change and people's attitudes, problems in finding funding and time for training, while maintaining current services in the library and difficulty in making a change in organizational structures ⁽¹⁶⁾.

Aim of the study

The aim of this study was to assess factors affecting application of total quality management activities at Oncology Center Mansoura University.

Research questions:-

RQ: What are the factors affecting application of total quality management activities at Oncology Center Mansoura University?

3. Method

Research design:

A descriptive research design was utilized to conduct this study.

The study setting :

This study was conducted at all departments of Oncology Center of Mansoura University. This center provides a wide spectrum of health services at delta region, with bed capacity of 500 beds and it consists of basement, ground floor and (11) floors.

Participants of the study:

The study included all nursing staff who are available during the time of data collection and willing to participate in the study at Oncology Center of Mansoura University. Total number was 239 nursing staff.

Tools of data collection:-

One tool was used for data collection

Factors affecting application of total quality management activities questionnaire. The questionnaire items adopted from **Al Kahlout, and Saadi Muhammad (2004)**⁽¹⁷⁾ it was used to assess factors affecting application of total quality management activities.

The questionnaire consists of three parts are:

Part one: personal characteristics it covered items related to nursing staff such as age, sex, marital status, qualification, professional experience and department name.

Part two: it consists of 5 factors to know their effect on application of total quality management activities. First factor: method used for quality indicators measurement consists of (13) statements. Second factor: financial and moral incentives consists of (15) statements. Third factor: Senior Management Commitment to Development Processes consists of (16) statements. Fourth factor: staff understanding to quality philosophy consists of (9) statements. Fifth factor: institutionalizing development processes consists of (17) statements.

The respondents check their answer through five points Likert scale from (1 strongly disagree, to 5 strongly agree).

Part three: It consists of open end question to clarify if there are other factors that significantly affected the effectiveness of the project of applying the total quality management in the hospital from study subject's perspective and mention it.

Validity and reliability:

The researcher tested the validity and reliability before administering the final tool. The content validity of the tool was done by a panel of five experts from nursing administration department from faculty of nursing at Mansoura University. Who revised the tool for clarity, relevancy, applicability, comprehensiveness, understanding, and ease for implementation and according to their opinions necessary modifications were done including clarification of certain items and simplifying work related words. The result of content value for the tool was 98%.

The reliability of the scale was tested by Cronbach's alpha test. The alpha values of the method used for quality indicators measurement; financial and moral incentives; senior management commitment to development process; staff understanding to quality philosophy and institutionalizing development process were 0.84, 0.80, 0.91, 0.73 and 0.78 respectively.

Pilot study:

A pilot study was carried out on 24 nursing staff (10%) of the study sample $n= (239)$ to test the clarity, feasibility of the statement and to determine the time needed to fill-in questions nursing staff who shared in the pilot study were excluded in the main study sample. Based on the pilot study, necessary modification includes clarification, and rewording.

Data Collection

The questionnaire sheet was distributed to nursing staff. The aim of the study and how to fill the questionnaire sheets was explained by the researchers. Nursing staff filled in the tools individually at once and they read the questionnaires and filling it sheet acquired from 10-15 minutes. The data collection process started from the beginning of January to the end of April 2021.

Data Analysis

Data entry and statistical analysis was performed using computer software the statistical package for social studies (SPSS) version 22 and appropriate statistical test used.

Ethical consideration:

Ethical approval was obtained from the Research Ethical Committee of Faculty of Nursing, Mansoura University. An official permission to conduct the study was obtained from the responsible administrator of the hospital. An informed consent was obtained from nursing staff who accept to participate in the study after providing the explanation of nature and aim of the study. All participants were informed that the

study is voluntary and they have the right to withdraw from the study at any time. All participants were assured about the confidentiality of the collected data and the privacy of the study sample was assured at all phases of the study.

Statistical analysis:

The collected data were organized, tabulated and statistically analyzed using SPSS software (Statistical Package for the Social Sciences, version 26, SPSS Inc. Chicago, IL, USA). The normality assumption was accepted. Therefore categorical variables were represented as frequency and percentage. Continuous variables were represented as mean, and standard deviation. Independent t-test was used to test the differences between two mean of continuous variables. ANOVA test was used to test the differences between two mean of continuous variables. Pearson correlation coefficient test was conducted to test the association between two continuous variables. Statistically significant was considered as (p-value < 0.01 & 0.05).

4. Results:

Table (1): Illustrated Personal characteristics of the studied nurses. This table showed that more than third of studied nursing staff aged from 20-30 years. The most of them were female 88, 4%. Over half of them were married 69.3 %. Regarding educational level more than third of them have diploma of secondary nursing school 44.2%. The high percentage 98% were staff nurses and 53.5% of them have experience of >10 years. Finally two third of them attending TQM training.

Table (2): Illustrated opinion of the studied nurses toward factors affecting application of total quality management activities. This table showed that about half of nursing staff in high level of agreement regarding method used for quality indicators measurement and senior management commitment to development processes (49.3%, 41.9%) respectively. While more than third of them in low level of agreement regarding financial and moral incentives factor 23.7%

Table (3): Illustrated mean score of factors affecting application of total quality management activities. They showed that agreement about factors affecting application of total quality management activities were compared and significantly different to mean scores. As ensure method used for quality indicators measurement was found the highest mean was 46.24±7.71 and ranked first. while Financial and moral incentives as sub item of agreement about factors affecting application of total quality management activities was significantly the lowest 41.18±9.75 and ranked last one.

Table (4): Illustrated levels of agreement of the studied nurses' related factors affecting application of total quality management activities. This table showed that more 40% of nursing staff in high level of agreement regarding method used for quality indicators measurement as a factor affecting application of total quality management activities, 44.7%. While over than 30% of them in low level of agreement regarding financial and moral incentives, 38.6%. Regarding total score, 85.6% of the studied sample in moderate level, 9.8% of them in high level and 4.7% of nursing staff in low level

Table (5): Illustrates relationship between factors affecting application of total quality management activities as perceived by studied nurses. It indicated that there were highly statistically significant positive relationships between nurses perception for overall score related to factors affecting application of total quality management activities (p≤0.00)

Part I: Personal Characteristics of the Studied Nurses (n=215)

Table (1): Personal Characteristics of the Studied Nurses at Oncology center Mansoura University (n=215)

Variables	n	%
Age years:		
▪ 20-30	93	43.3
▪ 30-40	84	39.1
▪ >40	38	17.7
Mean±SD	32.91±8.35	
Gender		
▪ Male	25	11.6
▪ Female	190	88.4
Marital status		
▪ Single	43	20.0
▪ Married	149	69.3
▪ Divorced	9	4.2
▪ Widowed	14	6.5
Level of education		
▪ Diploma degree	95	44.2
▪ Technical degree	59	27.4
▪ Bachelor degree	58	27
▪ Master degree	3	1.4
Nursing position		
▪ Nursing director	1	0.5
▪ Head nurse	3	1.4
▪ Staff nurse	211	98.1
Experience years:		
▪ 1-5	58	27.0
▪ 6-10	42	19.5
▪ >10	115	53.5
Mean±SD	12.69±8.89	
Attending TQM training		
▪ Yes	136	63.3
▪ No	79	36.7

Table (2): opinion of the Studied Nurses toward Factors Affecting Application of Total Quality Management Activities at Oncology Center Mansoura University (n=215)

Factors affecting application of TQM activities	Strongly disagree		Disagree		Neutral		Agree		Strongly agree	
	n	%	n	%	n	%	n	%	n	%
1. Method used for quality indicators measurement	5	2.3	22	10.2	59	27.4	106	49.3	23	10.7
2. Financial and moral incentives	39	18.1	55	25.6	58	27.0	51	23.7	12	5.6
3. 2.a.Financial incentives	56	26.0	68	31.6	53	24.7	33	15.3	5	2.3
2.b. Moral incentives	27	12.6	46	21.4	61	28.4	64	29.8	17	7.9
4. Senior management commitment to development processes	8	3.7	19	8.8	86	40.0	90	41.9	12	5.6
5. Staff understanding to quality philosophy	22	10.2	48	22.3	60	27.9	70	32.6	15	7.0
6. Institutionalizing development processes	10	4.7	27	12.6	82	38.1	81	37.7	15	7.0
Total factors affecting TQM activities	16	7.4	33	15.3	71	33.0	80	37.2	15	7.0

Table (3): Mean Score of Factors Affecting Application of Total Quality Management Activities at Oncology center Mansoura University (n=215)

Domains of factors affecting application of total quality management activities	No of items	Min - Max	Mean±SD	Mean percentage	Rank
1. Method used for quality indicators measurement	13	17.0-65.0	46.24±7.71	71.13%	1
2. Financial and moral incentives	15	15.0-75.0	41.18±9.75	54.90%	5
2.a. Financial incentives	6	6.0-30.0	14.19±5.40	47.3%	5.2
2.b. Moral incentives	9	9.0-45.0	26.98±5.99	59.95%	5.1
3. Senior management commitment to development processes	16	16.0-80.0	54.00±9.38	67.5%	2
4. Staff understanding to quality philosophy	9	11.0-45.0	27.34±5.41	60.75%	4
5. Institutionalizing development processes	17	17.0-85.0	56.11±10.16	66.01%	3
Total factors affecting TQM activities	70	76.0-35.0	224.88±31.98	64.25%	

Table (4): Levels of Agreement of the Studied nurses Related Factors Affecting Application of Total Quality Management Activities at Oncology center Mansoura University (n=215)

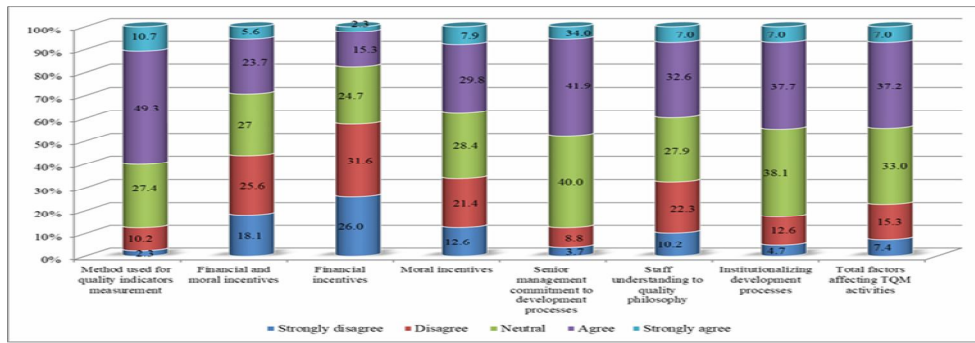
Domains of factors affecting application of total quality management activities	Low agreement		Moderate agreement		High agreement	
	n	%	n	%	n	%
1. Method used for quality indicators measurement	11	5.1	108	50.2	96	44.7
2. Financial and moral incentives	83	38.6	117	54.4	15	7.0
2.a. Financial incentives	124	57.7	72	33.5	19	8.8
2.b. Moral incentives	55	25.6	132	61.4	28	13.0
3. Senior management commitment to development processes	15	7.0	149	69.3	51	23.7
4. Staff understanding to quality philosophy	36	16.7	149	69.3	30	14.0
5. Institutionalizing development processes	14	6.5	156	72.6	45	20.9
Total factors affecting TQM activities	10	4.7	184	85.6	21	9.8

Table (5): Relationship between Factors Affecting Application of Total Quality Management Activities as Perceived by the Studied Nurses at Oncology Center Mansoura University (n=215)

Factors affecting application of total quality management	Method used for quality indicators measurement		Financial and moral incentives		Financial incentives		Moral incentives		Senior management commitment to development processes		Staff understanding to quality philosophy		Institutionalizing development processes	
	r	p	r	p	r	p	r	p	r	p	r	p	r	p
1. Method used for quality indicators measurement	1													
2. Financial and moral incentives	0.42	0.000 **	1											
2.a. Financial incentives	0.32	0.000 **	0.83	0.000 **	1									
2.b. Moral incentives	0.39	0.000 **	0.87	0.000 **	0.46	0.000 **	1							
3. Senior management commitment to development processes	0.48	0.000 **	0.51	0.000 **	0.29	0.000 **	0.55	0.000 **	1					
4. Staff understanding to quality philosophy	0.26	0.000 **	0.18	0.007 **	0.07	0.31	0.23	0.000 **	0.37	0.000 **	1			
5. development processes	0.45	0.000 **	0.41	0.000 **	0.22	0.000 **	0.48	0.000 **	0.71	0.000 **	0.47	0.000 **	1	
Overall factors scores	0.70	0.000 **	0.72	0.000 **	0.50	0.000 **	0.71	0.000 **	0.85	0.000 **	0.54	0.000 **	0.84	0.000 **

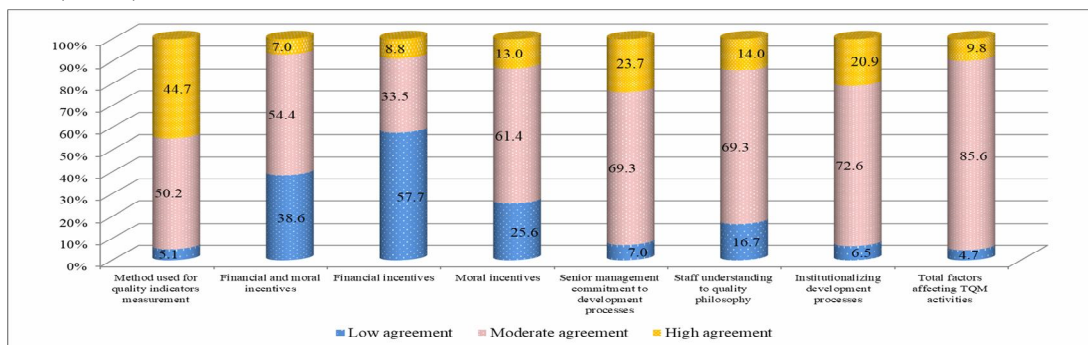
** Statistically significant (p ≤0.01)

Factors Affecting Application of Total Quality Management.....



TQM: Total quality management

Figure (1): Responses of the studied nurses toward factors affecting application of total quality management activities (n=215)



TQM: Total quality management

Figure (2) Levels of agreement of the studied nurses related factors affecting application of total quality management activities (n=215)

5. Discussion

Total Quality Management (TQM) is a management-based approach with the participation of all members of an organization in improving processes, products, services and the culture to achieve a higher level of satisfaction of customers and other associated stakeholders (Rahman, 2019).⁽¹⁸⁾ There is always a need to implement TQM in health care institutions to recognize requirements of the customer, a standard for best practices, improve processes for providing suitable care and severity of medical errors. The implementation of TQM may achieve high-quality care; improve patient satisfaction, improved employee morale, increase productivity, and profitability. Moreover, the implementation of the success of TQM in the health-care sector encouraged hospital leaders to check if it can work in hospitals. As a result, many managers have increasingly applied TQM dimensions to improve the results of the quality and efficiency in the hospitals (Alshourah, 2021).⁽¹⁹⁾

The present study aimed to assess factors affecting application of total quality management at oncology center at Mansoura University. The study result revealed that about half of nursing staff in high level of agreement regarding method used for

quality indicators measurement activities and ranked first followed by management commitment to development process, institutionalizing development process, staff understanding to quality philosophy and financial and moral incentives. This may be due to using of statistics in quality management is necessary for achieving quality improvement.

The study result agreed with **Wolfe, Taylor & Subramanyam (2021)**⁽²⁰⁾ who reported that Measurement is second nature to healthcare providers who measure elements of patient care and Throughout training, healthcare providers are able to evaluate these data with statistical studies to determine whether a process leads to improved outcomes and change that can be used in day-to-day management of patient care.

According to the findings, method used for quality indicators measurement activities was found the first factor which affects application of total quality management activities. This may be due to data is analyzed statistically, there is approved specification system in departments and work reports are prepared regularly.

The result agreed with **Rios-Zertuche et al., (2019)**⁽²¹⁾ who reported that quality indicators offer

a comparable, replicable and standardized framework to identify variations on quality of care. The indicators and methods such as health facility surveys are highly transferable and could be used to measure quality of care in other countries. Similarly, **Dupont et al., (2021)** ⁽²²⁾ reported that using both quantitative and qualitative analyses and instruments had good face validity, feasibility, discriminative power, and it is useful in terms of quality monitoring by caregivers. On the same line, **Báo, Amestoy, Moura & Trindade, (2019)** ⁽²³⁾ stated that quality indicators are a tool for improving care, assisting nurses in knowing the patients whom care is provided to, helping the clinical decision-making regarding best practices in health care, assisting nurses in the work process through stimulating the critical thinking and favoring a better understanding of care, as well as promoting the prevention of future damages and mistakes in this practice.

In contrast of this result, **Silveira, Prado, Siman & Amaro, (2015)** ⁽²⁴⁾ demonstrated that nurses understand that the indicators are instruments to evaluate and improve care. However, their knowledge of how to use these indicators and their importance for the assurance of quality nursing care was incomplete and fragmented and a small number of professionals used the results of these indicators to implement improvements in their sectors. On the same line, **Vuk, (2012)** ⁽²⁵⁾ stated that Implementation of quality indicators is a complex process which requires scientific approach as well as testing and verification before routine usage. Quality indicators should be monitored continuously, including trend monitoring and detection of deviations. The importance of each deviation should be assessed and decide on further activities.

According to the findings, the second most important factor which affects application of total quality management activities is senior management commitment to development processes factor. This may be due to the senior management believes in the importance of applying total quality as guarantee for the institutional development process, provides support to others and adopts their ideas and suggestions and it emphasizes the importance of patient satisfaction achievement as the main goal of the hospital.

This result is agreed with **Trang & Do, (2020)** ⁽²⁶⁾ who confirmed that continuous support from the top management and their effort towards never-ending continuous quality improvement leads to better overall performance in TQM practices. Thus, top-management commitment is a

driving force for the successful implementation of TQM practices. Similarly, **Aletaiby, Rathnasinghe & Kulatunga, (2021)** ⁽²⁷⁾ mentioned that the top management commitment has a vast contribution towards the successful TQM implementation and it has an inverse correlation between each of specific TQM barrier. This explains that each barrier required the organization to improve and enhance its top management commitment to improve its opportunities regarding overcoming or reducing the negative impact of these barriers that impeded successful TQM implementation.

As well, **Chiarini & Vagnoni, (2017)** ⁽²⁸⁾ reported that several healthcare organizations failed in implementing TQM programs or succeeded only in some parts of their complex organizations, such as in some departments in large hospitals due to of a lack of visionary leadership, senior management involvement and commitment. This result agreed with, **Talib & Rahman, (2015)** ⁽²⁹⁾ who found that lack of top-management commitment is the second most important TQM barriers following lack of communication. He also stated that top-management should take active initiatives to develop an atmosphere of trust and mutual understanding among employees and management within all departments to overcome these barriers.

In contrast, **Hoda, Wafaa & Hala, (2018)** ⁽³⁰⁾ reported that staff have difficulties in perception the importance of leadership involvement and commitment as a factor which affects implementation of hospital accreditation program. This due to the leadership vision was not obvious to all hospital staff and hospital leadership didnot involve all hospital staff.

According to the findings, the third important factor which affects application of total quality management activities is institutionalizing development processes this may be due to management commitment, the goals of development process are clear to all staff, staff are continuously trained in the development process and they are encouraged to give their suggestions and participate in the discussion and improvement seminars. Similarly, **Lebedeva, Yakovlev, Kepp & Ikramov, (2019)** ⁽³¹⁾ stated that innovative processes encourage the company to implement the TQM principles and methods. The innovation processes provide a number of advantages which, most often, justify the investments which are aimed at producing new products or services, or improving the production and management process. The companies which are engaged in innovative process strategies achieve improvement of their work at the operational and financial levels. In this

respect, **Pradhan, (2017)** ⁽³²⁾ reported that development process is one of nine main constructs of TQM implementation and organization management must use of experimental design in product design process, review of new product designs before production and encourage different departments in product development process.

On the same line, **Gözükara, Çolakoğlu & Şimşek, (2019)** ⁽³³⁾ stated that development culture has a positive impact on TQM and top management leadership enhances this impact. Also they highlighted that development culture includes top manager must adopt a total quality-based mindset, gain knowledge about TQM criteria, train their employees about total quality, establish clear and reasonable performance goals and provide regular feedback. Moreover, **Ballaro, Mazzi & Holland, (2020)** ⁽³⁴⁾ found that organizations' senior leaders have to focus on the change initiative, accelerate the improvement process, and implement a mandated talent management regulation to provide formal mentoring to achieve organizational development process successfully.

According to the findings, the fourth important factor which affects application of total quality management activities is staff understanding to quality philosophy this may be due to staff believes that quality doesn't means luxury, quality is the responsibility of all hospital staff, quality is tangible and can be measured by performance indicators and quality goals can be achieved without compromising the work assigned to them and in low cost. This result is agreed with, **Allen-Duck, Robinson & Stewart, (2017)** ⁽³⁵⁾ reported that improved understanding of healthcare quality is a vital, preliminary step toward healthcare quality research and initiatives. Without a clear meaning, quality improvement is likely to be fragmented or ineffective. This conceptualization of healthcare quality makes it easier to measure quality indicators and use healthcare quality to investigate its relationship with other concepts within the healthcare environment. As well, Atashzadeh, **Pazargadi & Zagheri, (2020)** ⁽³⁶⁾ stated that nursing managers must identify strategies to support and provide better nursing care quality which reflects purposeful care, nursing responsibility, appropriate relationships and patient respect and support for all clients. In addition, **Othman, Ghani & Choon, (2020)** ⁽³⁷⁾ reported that employee related factors such as training, self-awareness and personal attitude are most crucial factors affecting TQM implementation in the organization and quality can be improved when all employees are aware their

respective role in providing quality services.

In contrast of this finding, **Emel & Ekici, (2020)** ⁽³⁸⁾ stated that because nurses do not participate in quality management program implementations, they are likely to perceive these implementations as unnecessary and quality management as the responsibility of the quality department. In the same line, **Ghanem, (2021)** ⁽³⁹⁾ reported that nurses confront expanded work requests as a result of expansive ranges of control that has decreased their visibility and accessibility to strengthen and teach nursing staff, which led to disappointment for both medical caretakers and directors and undermining the quality of their working. The TQM implementation in hospital needs increasing nurse's awareness about the quality management, preparation and development of both framework and customer awareness.

According to the findings, the fifth important factor which affects application of total quality management activities is financial and moral incentives. This may be due to staff have the opportunity to receive an exceptional financial reward related to them performance, get bonuses and annual increments regularly, receive appropriate financial rewards for any additional work, feel the development and increase in skills during work, participate in making decision and feel good about them job.

As noted by **Aburayya et al., (2019)** ⁽⁴⁰⁾ reward activities have a positive indirect effect on quality through the effect of employee satisfaction. Therefore, rewards simply appear to make employees happy and to stop them from being dissatisfied, but they do not seem to have an impact on employees' performance or on the way how to deliver services. **Mohamed, (2019)** ⁽⁴¹⁾ stated that there is a strong relationship between the financial motivation and the level of performance of the employees in the company. He also cleared that the company has an effective system of financial motivation, which raises the level of performance of the employees of the company and thus maintain its employees as one of the important resources for the success and sustainability of the company. But also he cleared that company must Focus on the moral motivation along with the financial motivation to improve the performance of employees. In addition, **Abdelsalam, Fathi & Mohamed, (2020)** ⁽⁴²⁾ investigated the impacts of incentives on the level of performance of nursing staff within the Libyan Public Health Sector. Financial incentives come first, and then moral incentives come second according to their impact on the level of performance. This indicated that the

financial incentives have more impact on the level of performance among nurses than moral incentives. As well as, **McCoy, (2017)** ⁽⁴³⁾ reported that there is a clear and compelling relationship between employee reward systems and the level of employee engagement. And the greater motivation is derived when these rewards can be provided or created in a way that generates intrinsic rewards within the employee.

In contrast, **Aburayya et al., (2020)** ⁽⁴⁴⁾ reported that the relationship between reward and recognition and hospital service quality is found to be positive but insignificant this reveals that reward and recognition practices do not have a great role to play in ensuring hospital service quality.

6. Conclusion

The result indicated that more than half of nursing staff had moderate agreement score about factors affecting application of total quality management activities. Method used for quality indicators measurement factor was found the highest and ranked first followed by senior management commitment to development process and institutionalizing development process. Financial and moral incentives factor was significantly the lowest and ranked last one followed by staff understanding to quality philosophy. There was a significant relation between factors affecting application of total quality management activities with marital status and attending quality training.

7. Recommendation

Based on the study findings, the following recommendation are suggested

- Reconsider the incentive systems which are used and work hard to increase it in quantity and quality and develop it continuously on scientific grounds so that it retains its influence on the workers.
- Allocate various incentives for outstanding performance in general and for outstanding performance in the application of quality in particular.
- Encourage employees in decision-making processes in relation to work within departments and units in which they work.
- Incorporate quality culture in the hospital policy by giving the chance to everyone in the hospital to participate in quality related activities.

- Continues evaluation of performance in relation to progress towards implementation of total quality management activities.
- Provide rehabilitation, training and provision of the necessary support for leaders to be more aware and able to deal with developments in everything related to quality.
- Activate the role of higher administration in the hospital and increase the volume of its participation in adopting the implementation of total quality improvement activities.
- Provide open channels of communication between top management and nursing staff and providing them with feedback on progress.
- Increase cooperation and coordination with the relevant local quality committees reported by the ministry of health in order to exchange experience and expertise.
- Holding continuous meeting to discuss processes that enhance continuous improvement of quality.
- Work hard to find a clear mechanism to focus on patients and identify their needs and desires in a planned and thoughtful manner.
- Create work teams capable of formulating and developing a clear vision supported by the values of the hospital and policies that lead to the development of standards.

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