

Nursing Staff Awareness Regarding Concepts and Requirements for Applying Total Quality Management

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Abstract

Background: Total Quality Management is one of the most important changes which have taken place in the field of health care management.

Aim: To assess of nursing staff awareness regarding concepts and requirements for applying Total Quality Management.

Subjects and Methods: A descriptive study design with a sample contains all nurses working in General Surgical, Special Surgical, General Medical and Special Medical departments at Assiut University Hospital with total number of (n= 219). **Tools:** Total Quality Management questionnaire, which include two parts: 1st part included personal and occupational data about the study subject, 2nd part is a sheet which adopted from Korani, (2017). It consists of questions related to nurse's concepts of quality; and requirements for applying TQM which classified into: leadership, capability, training, communication and encouragement and teamwork. **Results:** This study clarified that approximately half of studied nursing staff "agree" for the items of quality management concepts and quality application requirements.

Conclusions: According to the results, there are positive correlations among quality management concepts and quality application requirements, (leadership, capability, training, communication & encouragement and team work) with highly statistical differences.

Recommendations: Are suggested, formulate awareness sessions about total quality management between nursing staff at Assuit University Hospital; And availability of total quality management training course or program to all nursing staff at Assuit University Hospital

Key words: Concept, Nurses Awareness, Requirements, Total Quality Management .

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I. Introductions

Total Quality Management (TQM) is one of the recent managerial concepts that depend on a group of thoughts and principles that could be adopted by any organization to achieve the best possible performance and enhance the productivity, and increase profitability in the light of the huge increase in the number of organizations and institutions and violent national and international competition among them. Total Quality Management is based on all members of an organization participating in improving processes, products, services and the culture in which they work (AlDeeb, et al., 2019).

Hospitals are the core component of the healthcare sector. They are responsible to provide adequate health service to a very sensitive patient with all complex medical procedure whenever needed. The ultimate goal of hospitals, as a healthcare provider, is to ensure safe, qualified, acceptable, efficient and equal service for their patients (Khawka, 2016).

Total quality management involved activities such as: meeting customer needs, involvement of both the employers and employees, teams improvement, reducing the time required for change to have occurred , focus on how to improve the businesses plans, ownership of line management, reduction of products and services costs, just in time flow production, systems to facilitate improvement, challenging the already achieved goals and benchmarking by brainstorming among teams, employee empowerment and active involvement, specific incorporation in strategic planning, recognition and celebration of one's achievements. Total quality management activities if practiced by all departments in an organization, the business will improve significantly and the customers will be satisfied (Faloudah, et al., 2015).

Total Quality Management enables healthcare organizations to identify customer requirements, benchmark for best practices and improve processes to deliver appropriate care and reduce the frequency and severity of medical errors. Total quality management implementation may lead to higher quality care, improved patient satisfaction, better employee morale and increased productivity and profitability. The total quality management success in the organization has encouraged healthcare managers to examine whether it can work in the health sector. Accordingly, many healthcare organizations increasingly implemented total quality management principles to improve the quality of outcomes and efficiency of healthcare service delivery (**IGI Global; Information Resources Management Association, 2018**).

General objectives:

Aim of the study : The aim of the current study is to assess nursing staff awareness regarding concepts and requirements for applying total quality management at Assuit University Hospital, through:

Specific objective:

The specific objectives for this study were to:

- Identify nursing staff concepts of total quality management at Assuit University Hospital.
- Identify nursing staff requirements needed to apply total quality management at Assuit University Hospital.

II. Material and Methods

Study Design:

Sample: A convenience sample of studied nursing staff at Assuit University Hospital.

Setting: The study was conducted in General Surgical, Special Surgical, General Medical and Special Medical departments at Assuit University Hospital.

Subjects: The present study included all head nurses and staff nurses worked in the previously settings, which contains head nurses (n= 17) and (n= 202) staff nurses which distribution as follow. General Surgical and Special Surgical departments number of head nurses (n= 8) and (n= 80) of staff nurses and General Medical and Special Medical departments number of head nurses (n= 9) and n = 122 of staff nurses.

Study Tools:

Self administered questionnaire namely **Total Quality Management Questionnaire**. It includes two parts:

- **1stpart Personal and Occupational Data;** it was including information about head nurses and staff nurses. The data included items related to age, gender, unit, educational qualification, years of experience, and attended training courses.

- **2ndpart Total Quality Management questionnaire;** this tool was developed by **Korani, (2017)**. This tool was adopted and included 2 subscales component as follow: nurse's concepts of quality (20 items), and requirement for applying TQM (43 items), which classified into: leadership (13 items), capability (5 items), training (11 items), communication and encouragement (8 items) , and teamwork (6 items). Each Item was measured with five points Likert scale as (Strongly Disagree= (1), Disagree= (2), Neutral= (3), Agree = (4), and Strongly Agree= (5).

Pilot Study: A pilot study was conducted on 10% of head nurses (2) and 10% of staff nurse (20) prior to begin the field of data collection in order to obtain information which could improve the research plan and facilitate the execution of the study. The main purposes of the pilot study were to :Test the data collection tool regarding the phrasing, the order, and the need for adding or omitting questions or items that included in the tool. Determine what kinds of difficulties that could arise and how to deal with them.

Ethical Considerations: The studied subjects were informed that their participation in the study was completely voluntary and there was no harm if they are not participate in the study. Oral consent was obtained from the head nurses and staff nurses participating in the study after explaining the nature, purposes, and benefits of the study. Each assessment sheet was coded and participants' name was not appearing on the sheets for the purpose of anonymity and confidentiality.

Statistical Design: Data entry and statistical analysis were done using SPSS version 20.0 (Statistical Soft Ware Package). Data were presented using descriptive statistics in the form of frequency, mean, standard deviation, and range. Pearson correlation analysis was used for assessment of the inter-relationships among quantitative variables. Statistical significance was considered at p-value ≤ 0.05 .

III. Results:

Table (1): Percentage distribution of personal and occupational characteristics as reported by the studied nursing staff at Assuit University Hospital (N=219).

Personal and occupational characteristics	No.	%
Age: (years)		
< 30	55	25.1
30 - 40	93	42.5
> 40	71	32.4
Mean ± SD	36.06 ± 8.88	
Occupation:		
Staff nurse	202	92.2
Head nurse	17	7.8
Educational qualification:		
Bachelor Degree of Nursing	16	7.3
Technical Institute of Nursing	35	16.0
Secondary school of Nursing Diploma	138	76.7
Years of experience:		
< 10	42	19.2
10 - 20	95	43.4
> 20	82	37.4
Mean ± SD	17.11 ± 8.69	
Attended training courses :		
Yes	111	50.7
No	108	49.3
Training courses:≠		
Infection control	90	81.1
CPR	6	5.4
Quality	20	18.0
Occupational safety and health	4	3.6

≠ more than one answer

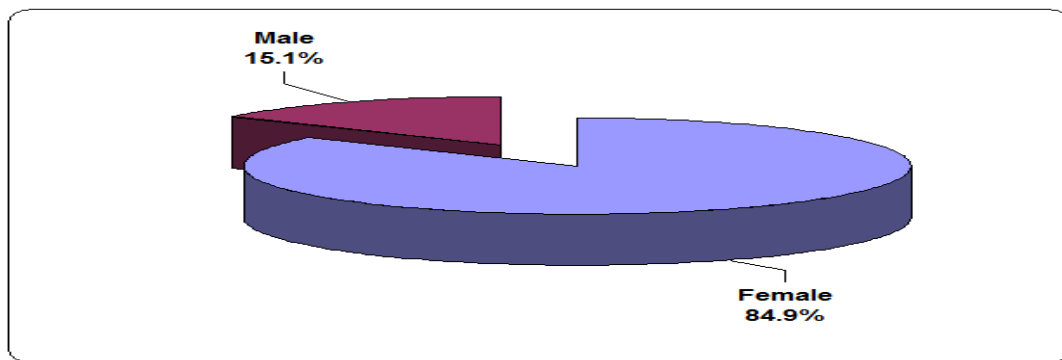


Figure (1): Distribution of gender of the studied nursing staff at Assuit University Hospital (N=219).

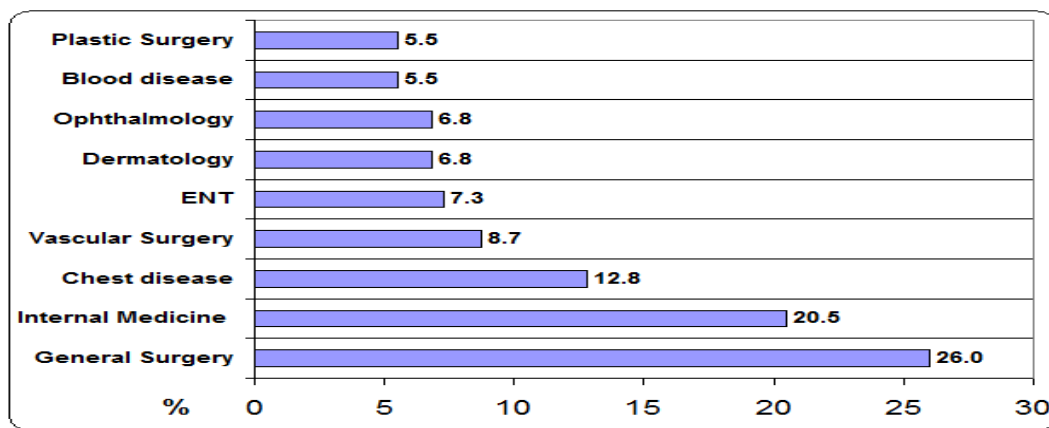


Figure (2): Distribution of work place of the studied nursing staff at Assuit University Hospital (N=219).

Table (2): Mean scores of quality management concepts and quality application requirements of the studied nursing staff at Assuit University Hospital (N=219).

Items	Range	Mean ± SD
Quality management concepts	40.0-100.0	80.73 ± 10.58
Quality application requirements:	85.0-215.0	174.96 ± 23.96

Table (3): Relation between quality management concepts and quality application requirements with personal characteristics of the studied nursing staff at Assuit University Hospital(N=219).

Personal and occupational characteristics	Quality management concepts	F-value	P-value	Quality Application requirements	F-value	P-value
	Mean ± SD			Mean ± SD		
Age: (years)						
< 30	80.40 ± 10.08	0.373	0.689	176.85 ± 20.08	1.376	0.255
30 - 40	82.02 ± 10.64			173.44 ± 26.72		
> 40	79.30 ± 10.83			175.48 ± 23.09		
Educational qualification:						
Bachelor Degree of Nursing	80.14 ± 11.15	1.151	0.318	173.75 ± 24.12	0.919	0.401
Technical Institute of Nursing	82.31 ± 11.40			178.69 ± 33.28		
Secondary school of Nursing Diploma	82.86 ± 6.57			179.06 ± 17.47		
Years of experience:						
< 10	79.74 ± 9.93	1.111	0.331	171.76 ± 25.35	0.507	0.603
10 - 20	81.95 ± 10.78			176.23 ± 24.21		
> 20	79.83 ± 10.65			175.12 ± 23.08		
		T-value	P-value		T-value	P-value
Gender:						
Female	80.70 ± 8.03	0.025	0.984	175.97 ± 18.40	-0.323	0.793
Male	80.74 ± 10.99			174.78 ± 24.86		
Occupation:						
Staff nurse	80.60 ± 10.56	-0.610	0.527	174.62 ± 23.21	-0.548	0.470
Head nurse	82.29 ± 11.04			179.00 ± 32.25		
Attended training courses :						
Yes	79.39 ± 9.37	0.507	0.603	173.31 ± 24.32	-1.035	0.302
No	82.11 ± 11.59			176.66 ± 23.59		
Work place:						
Surgery	81.72 ± 10.03	1.149	0.260	177.49 ± 21.94	1.317	0.201
Medicine	80.07 ± 10.93			173.26 ± 25.17		

Table (4): Correlation Matrix between quality management concepts and quality application requirements of the studied nursing staff at Assuit University Hospital(N=219).

		Quality management concepts	Quality application requirements	Leadership	Capability	Training	Communication & encouragement	Team work
Quality management concepts	r-value							
	P-value							
Quality application requirements	r-value	0.643						
	P-value	0.000*						
Leadership	r-value	0.602	0.868					
	P-value	0.000*	0.000*					
Capability	r-value	0.515	0.821	0.667				
	P-value	0.000*	0.000*	0.000*				
Training	r-value	0.573	0.896	0.711	0.747			
	P-value	0.000*	0.000*	0.000*	0.000*			

Communication & encouragement	r-value	0.514	0.815	0.542	0.591	0.646		
	P-value	0.000*	0.000*	0.000*	0.000*	0.000*		
Team work	r-value	0.472	0.819	0.588	0.587	0.630	0.779	
	P-value	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	

Table (1): Indicates that the age of the studied nursing staff one quarter of them (25.1%) age less than 30 years old, less than half of them (42.5%) age from 30 to 40 years old respectively, and more than one third of them (32.4%) age more than 30 years old with mean age (36.06 ± 8.88). Majority of them (92.0%) are staff nurse .Educational qualification more than three quarter (76.7%) were secondary school of nursing, while less than quarter of them (16.0%) have technical institute of nursing, and the lowest percentage of them (7.3%) Faculty of Nursing from table for years of experience less than half of them (43.4%) have twenty years of experience, while more than one third of them (37.4%) have less than twenty years of experience, and less than quarter of them (19.2%) had more than years of experience respectively with mean (17.11 ± 8.69), more than half of them attended training courses (50.7%), which classified according to training courses about (81.1%) have infection control training courses, and less than quarter of them (18.0%) have training on quality courses. **Fig(1):** Shows that the majority (84.9%) of studied nursing staff are females.

Fig(2): Illustrates that about place of work more than quarter of the studied nursing staff in General Surgery (26.0%), while less than quarter of the studied nursing staff in Internal Medicine (20.5%), and the lowest percentage (5.5 %) working in Plastic Surgery and Blood Disease respectively.

Table (2): Illustrates that the highest mean scores are in quality application requirements (174.96 ± 23.96), followed by quality management concepts (80.73 ± 10.58).

Table (3): Clarifies that the highest mean scores are in quality management concepts with personal characteristics; educational qualification (82.86 ± 6.57); occupation (82.29 ± 11.04); age (82.02 ± 10.64); attending training courses (82.11 ± 11.59); years of experience (81.95 ± 10.78); work place (81.72 ± 10.03), and gender (80.74 ± 10.99); while the highest mean scores are in quality application requirements with personal characteristics; educational qualification (179.06 ± 17.47); occupation (179.00 ± 32.25); work place (177.49 ± 21.94); age (176.85 ± 20.08); attending training courses (176.66 ± 23.59); years of experience (176.23 ± 24.21) and gender (175.97 ± 18.40).

Table (4): Clarifies that there are positive correlations among quality management concepts and quality application requirements, (leadership, capability, training, communication & encouragement and team work) with highly statistical significant differences $P < (0.000)$.

IV. Discussion:

Total Quality Management is one of the most important changes which have taken place in the field of health care management. Total Quality Management is a comprehensive and applied strategy to achieve administrative development and improve the quality of services to respond to the needs and expectations of the society. The current study aim was to assess of nursing staff awareness regarding concepts and requirements for applying Total Quality Management at Assuit University Hospital.

The finding of the present study revealed that the majority of the nursing staff were females. This indicates that the female attracted to nursing so nursing is a feminine profession . This result is on the same line with **Ragab, (2008) & Mohamed, (2012)** who stated that the nursing profession still depends on women rather than men. This result is consistent with **Elewa & Elkattan, (2017)** who indicate that less than three quarter of them were females and more than one quarter of them were males. This result is incongruent with **Alaraki, (2018)** who stated that more than three quarter of them were males, and less than one quarter of them were females.

The study finding revealed that less than half of the nursing staff was between 30 – 40 years old, more than quarter of the studied nursing staff were graduated from Secondary School of Nursing and the majority of them were staff nurses. In the other hand less than half of the studied nursing staff had experienced between 10 < 20 years, and less than half of nursing staff did not have any training courses. This result is congruent with **Elewa & Elkattan, (2017)** who shows that the mean age of the nurses was more than quarter of them and less than half of them were in the age group of 30 - < 40 years. Less than three quarter of them had nursing diploma, less than half of them had from 1 - < 5 years of experience in hematology units, while less than three quarter of them didn't receive any training courses. This result is incongruent with **Mohamed, (2016)** who stated that the majority of the respondents had attained a Bachelor's degree followed by diplomas then Master's degree and finally certificates in various fields. This showed that the respondents had the adequate ability to understand and answer the questions relating to TQM and competitive advantage.

Furthermore, the result in the present study clarified that there is highly statistical significant correlation between leadership and quality management concepts. This might be due to that nurses is identify the impact of leadership on applying total quality management. This result is in line with **Kumar & Sharma,**

(2018) who indicated that there is a statistically significant relationship between leadership styles and total quality management.

Additionally, the result of the present study clarified that there is highly statistical significant correlation between leadership and quality application requirements. This might be due to those nurses are a wear of the impact of strong leadership on applying total quality management and their effect on improving nurses performance. This result is congruent with **Achour & Sarra, (2016)** who found that the implementation of total quality management is positively influenced by the leadership. Like wise **Bronkhorst, Steijn, & Vermeeren, (2013)** their result show transformational leadership have positive influence in goal setting by helping employees in overcoming obstacles regarding goal setting.

Furthermore, the result of the present study finding illustrated that there is highly statistical significant correlation between capability and quality management concepts. This might be due to the nurses identify the importance of availability of resources and understanding the importance of disseminating the concept of total quality management which success the implementation of total quality management. This result is consistent with **Fu et al, (2015) & Talapatra & Uddin, (2018)** who mentioned that continuous quality improvement culture plays a significant role on total quality management implementation.

Also, the result of the present study finding revealed that there is highly statistical significant correlation between training and quality management concepts. This might be due to the nurses known the impact of training to improve nurse's knowledge about the total quality management concepts and their effect on nurse's satisfaction and improvement of performance. This result is consistent with **Noman, & Hasan, (2012)** who found that education and training have positive effect on employee satisfaction. Employees had the capacity to do their jobs better, but they need training and education to make use of this capacity.

Moreover, the result finding of the present study showed that there is highly statistical significant correlation between training and quality application requirements. This may be due to nurses identify that Assiut University Hospital is seeking accreditation and has accredited laboratories as well as an accredited blood bank. This result is agreement with **Yukl, (2012)** who found that relations-oriented have positive influence in increasing performance of task execution, through training, encouraging and motivating employees.

Additionally, in the present study showed that there is highly statistical significant correlation between communication & encouragement and quality management concepts. This result agreement with **Shokry (2016) & Leung et al., (2013)** who indicated that increased staff engagement and communication, good leadership and staff awareness of quality improvement were perceived positively as internal strength factors that may facilitate the successful implementation of accreditation programs.

Moreover , there is highly statistical significant correlation between team work and quality management concepts. This result is supported by **Khawka, (2016)** who found that the chief executive officer (CEO's) personal values as a whole created and maintained an ideal type of communication with different categories of employees, who were engaged in the total quality management implementation process and had high integrity communication will have a positive influence on teamwork.

Also, there is highly statistical significant correlation between team work and quality application requirements. **Khawka, (2016)** who found that the dimensions of total quality management are connected in a positive with teamwork and also these dimensions have an impact on teamwork.

Additionally, there is highly statistical significant correlation between communication & encouragement and quality application requirements. This result is in line with **Madanat & Khasawneh, (2017)** who indicates that the implementation of two total quality management principles has a significant impact on the effectiveness of training and development.

Moreover, there is no statistical significant correlations between quality management concepts and quality application requirements with occupation and experience . This result is consistent with **Al-Daibat, & Al-Daibat, (2016)**. There is no statistically significant effect of demographic factors (gender, age, experience, job title) to implements of total quality management.

The result of the present study revealed that there is no statistical significant difference between quality management concepts and quality application requirements with academic qualification. This might be due to that the academic qualification of nurse specialist and nurse does not affect total quality management. This result is agreement with **Shokry & Soliman, (2016)** who illustrated that educational level didn't significantly affect the nursing educators perceptions of influences on application of total quality management and academic accreditation standard (AAS) at Shaqra University. This result is inconsistent with **Mohamed et al., (2015)** who revealed that significant differences among nursing educators across academic departments regarding their perception of overall institutional quality and its dimensions.

The finding of the present study clarified that there is no statistical significant relation between quality management concepts and quality application requirements with attending training courses. This might be due to that the nurses did not attend total quality management training courses or program to know all information about total quality management. This result is incongruent with **Omware et al., (2014)** who found that there is

evidence of existence of a significant relationship between training of employee and quality management practices. This implies that employee's training is a determinant of quality management practice.

The finding of the present study clarified that there is no statistical significant correlation between quality management concepts and quality application requirements with place of work. This might be due to that nurses have the same information about total quality with different departments. This result is incongruent with **Korani, (2017)** who found that there was statistical significant difference between working place of the studied sample and their opinion about the concepts, reason, requirements and obstacles.

V. Conclusions

According to the results, there are positive correlations among quality management concepts and quality application requirements, (leadership, capability, training, communication & encouragement and team work) with highly statistical significant differences.

VI. Recommendations:

- Continuous controlling availability of TQM training course or program to all nursing staff at Assuit University Hospital.
- Formulate awareness sessions about total quality management between nursing staff at Assuit University Hospital.
- Availability of quality assurance coordinator nurse in each department who works to implement quality polices in the departments and act as a link between the department and the Quality Committee.
- Increasing competition between departments in implementing quality by rewarding the department that follows quality policies.
- Availability of sufficient supplies and equipments should be available at different departments.

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