

Effect of Total Quality Management Educational Program on Nurses' Commitment and Performance at Alrass General Hospital, Saudi Arabia

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ABSTRACT:

Background: The total quality management educational program improves nurses' commitment and performance by increasing their knowledge of quality principles, enhancing engagement and accountability, and promoting better adherence to standards, which leads to improved patient care and alignment with organizational goals.

Aim: The study aimed to evaluate the effect of the total quality management educational program on nurses' commitment and performance at Alrass General Hospital, Saudi Arabia.

Method: A quasi-experimental design with pre-test and post-test was utilized in conducting the study on 112 staff nurses. The study was conducted in all departments of Al-Rass General Hospital, Saudi Arabia. Three tools were used for data collection: Total Quality Management (TQM) Knowledge Questionnaire, Nurses' Provider-Perceived TQM Questionnaire, and Multi-Dimensional Organizational Commitment Questionnaire.

Results: The Total Quality Management (TQM) educational program demonstrated a significant positive effect on nurses' commitment and performance at Alrass General Hospital. Nurses' commitment levels showed a statistically significant improvement following the program, with the mean score increasing from 57.16 ± 23.19 pre-intervention to 69.94 ± 16.48 post-intervention ($p < 0.001$), and an improvement rate of 22.35%.

Conclusion: The Total Quality Management educational program effectively improved nurses' commitment and performance at Alrass General Hospital, demonstrating the positive impact of structured, quality-focused education on organizational attitudes and work outcomes. Continuous training and regular follow-up are recommended to sustain these improvements over time.

Keywords: Nurses' commitment, Performance, and Total quality management

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Introduction

Total Quality Management (TQM) plays a crucial role in enhancing nurses' commitment and performance within healthcare settings. By fostering a culture of continuous improvement, TQM encourages nurses to engage in collaborative decision-making, prioritize patient care, and embrace best practices. This approach not only improves the quality of care provided but also boosts job satisfaction and commitment among nurses. When healthcare organizations implement TQM principles, such as effective communication, teamwork, and ongoing training, they empower nurses to take ownership of their roles, leading to improved performance outcomes and higher levels of patient satisfaction (Alzoubi et al., 2023).

Total Quality Management (TQM) is a comprehensive management approach that focuses on continuous improvement in all aspects of an organization, aiming to enhance product quality and customer satisfaction. TQM involves the participation of all employees, from top management to frontline workers, in the pursuit of quality improvements. This holistic approach emphasizes the importance of understanding customer needs and aligning organizational processes to meet those needs effectively. By fostering a culture of quality, organizations can achieve long-term success and competitive advantage in their respective markets (Barone, Anderson, & Perez, 2022).

Implementing TQM requires a strategic and systematic approach, which includes assessing current practices, setting clear quality objectives, and fostering effective communication across all levels of the organization. Management plays a crucial role in facilitating TQM by providing the necessary resources, training, and support to employees. Successful TQM implementation can lead to numerous benefits, such as reduced operational costs, improved product quality, and increased customer loyalty. However, it also demands a significant commitment from all employees and may take time to yield visible results (Pham & Van Tam, 2025).

Nurses' commitment refers to the psychological attachment and loyalty that nurses feel towards their organization, which influences their willingness to remain in their roles and contribute positively to the workplace. This commitment is crucial for maintaining a stable workforce in healthcare settings, as it directly impacts job satisfaction, retention rates, and the overall quality of patient care. Organizational commitment in nursing can be understood as a combination of emotional attachment to the organization, a sense of obligation to remain, and the perceived costs associated with leaving the organization (Paparisabet et al., 2024). This study aimed to evaluate the effect of the total quality management educational program on nurses' commitment and performance at Alrass General Hospital, Saudi Arabia.

Method

Study Design

A quasi-experimental design with pre-test and post-test was utilized in conducting the study.

Study Setting

The study was conducted in all departments of Al-Rass General Hospital, Saudi Arabia.

Study Sample:

A Convenient sample was utilized, which includes (**N= 112**) staff nurses who are responsible for providing care for patients in all above-mentioned settings and fulfilled the criteria of having at least one-year of experience and were willing to participate in the study.

Tools of Data Collection

Four tools were used for data collection in the present study, namely the Total Quality Management (TQM) Knowledge Questionnaire, the Provider-Perceived TQM Questionnaire, multidimensional Organizational Commitment Scale, and the Nursing Performance Instrument (NPI)

Tools I: Total Quality Management (TQM) Knowledge Questionnaire

The tool consisted of two parts:

First part: This part included personal data of the studied staff nurses, such as age, gender, marital status, educational qualifications, years of experience, and attending any training program regarding Total Quality Management.

Part 2: It was developed by the researcher based on reviewing related literature (Al-Zoubi et al., 2023). To assess nurses' knowledge about Total Quality Management. It consisted of several questions in the form of true and false and multiple-choice questions that related to Total Quality Management. The questions were scored as "1" for a correct answer, and "zero" for an incorrect answer. Scoring system: The scoring system of the Total Quality Management (TQM) Knowledge Questionnaire was classified into two categories based on a predetermined cut-off point, as follows:

Low level (<50% of total scores), Moderate level (50-75% of total scores), and High level (>75% of total scores).

Tool (II): Provider-Perceived TQM Questionnaire

This instrument was developed by Duggirala, Rajendran, & Anantharaman (2008). to measure the provider's perception of quality of care delivered. The instrument contains 107 items corresponding to the 14 dimensions of provider-perceived TQM in hospitals. The instrument is a 7-point Likert scale, where "1" is the lowest possible score that can be given and "7" is the highest possible score. The items have been jumbled and arranged in a random order in the actual instrument. Scoring system: The scoring system of the Provider-Perceived TQM Questionnaire was classified into two categories based on a predetermined cut-off point, as follows: Low level (<50% of total scores), Moderate level (50-75% of total scores), and High level (>75% of total scores).

Tool (III): Multi-Dimensional Organizational Commitment Questionnaire

It was developed by Allen (1996). This organizational commitment scale consists of 18 items (6 items each for affective commitment, continuance commitment, and normative

commitment). All the items were measured using a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Scoring system: The scoring system of the Multi-Dimensional Organizational Commitment Questionnaire was classified into two categories based on a predetermined cut-off point, as follows: Low level (<50% of total scores), Moderate level (50-75% of total scores), and High level (>75% of total scores).

Tool (IV): Nursing performance instrument (NPI)

This tool was developed by Sagherian et al., (2018). The NPI consists of nine items on a 6-point Likert scale (1 = strongly disagree to 6 = strongly agree). These items address physical (1, 4, 8), mental (5, 7), and general (2, 3, 6, 9) tasks of performance during a work shift. Items 1, 2, 5, 7, and 9 are reverse-coded, with higher item mean scores indicating higher nursing performance. Scoring system: The scoring system of the Nursing Performance Instrument (NPI) was classified into two categories based on a predetermined cut-off point, as follows: Low level (<50% of total scores), Moderate level (50-75% of total scores), and High level (>75% of total scores).

Validity and reliability: The tools were tested for their face and content validity by five experts in the field of study, and accordingly, the necessary modifications will be made. Reliability testing: The tools were tested for their reliability by using the Cronbach alpha test in statistical Package for social Science (SPSS) version 29. The reliability of the instrument is judged by estimating how items reflect the same construct and yield similar results. Total Quality Management (TQM) Knowledge Questionnaire, Provider-Perceived TQM Questionnaire, Multi-Dimensional Organizational Commitment Questionnaire, and Nursing Performance Instrument (NPI) were tested by Cranach's Alpha. Reliability was computed and found to be (0.98), (0.86), (0.89), & (0.97), respectively.

Data Collection

An official letter to carry out the study was submitted from the faculty of Nursing, Mansoura

University, to the director of Eradah Complex for Mental Health in Tabuk, Saudi Arabia, to conduct the study after an explanation of the purpose of the study. Data was collected from the staff nurses during work hours in varied shifts according to their available time. The researcher was present all the time for data collection for clarification. The actual field work started from the beginning of December 2024 to the end (30th March 2025). The researcher meets staff nurses in three shifts: morning, afternoon, and night every day. Staff nurses filled in the tools individually at once, and they read the questionnaires and gave them 25-30 minutes to fill in the questionnaire sheet.

Data analysis

The collected data were organized, tabulated, and statistically analyzed using SPSS software (Statistical Package for Social Sciences, version 25, 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. A two-way ANOVA test was conducted to test differences in repeated measures when variables are parametric and continuous. Friedman's test was conducted to test differences in repeated measures when the variables are ordinal. An independent t-test was used to test the difference between two means of continuous variables, and a one-way ANOVA test was used to test the difference between more than two means of continuous variables. The 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).

Ethical Consideration

The research received ethical approval from the Research Ethics Committee of the Faculty of Nursing, Mansoura University, under IRB Approval No. 673. A green light to carry out the research was also granted by the chosen hospital before data collection. The research adhered to the principles outlined in the Declaration of Helsinki. Nurses eligible for the study inclusion criteria were briefed on the study's aim, and their

filling the questionnaire was taken as their consent in writing. Voluntary participation was assured and participants were made aware that they could drop out of the study at any time without facing any negative consequences. All collected data were kept anonymous and confidential and this was strictly enforced.

Results

Table 1 illustrates the personal characteristics of the studied staff nurses. The table showed that nurses had a mean age of 34.32 ± 6.13 , and more than half of them (57.1%) were in the age group from 35 to 50 years, and nearly two-thirds of them (63.4%) were female. Regarding educational qualifications in nursing, the majority of them (83%) hold a bachelor's degree in nursing. Regarding the years of experience, the nurses' years of experience mean score (7.23 ± 2.32 years), more than a third of them (40.2 %) had (6- 10) years of experience. Regarding attendance training, more than half of them (56.3) were attending a training program regarding total quality management.

Figure 1: Shows the presence of the training program in total quality management by the studied staff nurses. The figure revealed that more than half of them (56.2%) were attending a training program regarding total quality management, while (43.8%) of them were not attending a program regarding total quality management.

Table 2 illustrates levels of staff nurses' knowledge regarding total quality management in repeated measurements. There are slight improvements between pre-test and measurement after the educational program, as the percentage of high level reached (84.8%), while the improvement rate decreased in the post-test of the high level after three months to reach (80.4). It was noticed that there were statistically significant as regards Staff nurses' knowledge regarding total quality management in repeated measurement at ($p \leq 0.05$).

Table 3) illustrates statistically significant differences between measurements among staff nurses' knowledge regarding total quality management, while ETA square recorded (0.328);

this shows that the application of the educational program had a significant positive effect on the level of staff nurses' knowledge regarding total quality management, with a percentage (32.8%).

Table (4) shows statistically significant differences between pre- and post-measurements of perception for the post measurement, while the improvement rate recorded to (66.25%); that illustrates a highly positive effect of applying educational programs on Staff nurses' knowledge regarding total quality management

Table 5 illustrates levels of staff nurses' commitment in repeated measurement. There are improvements between pre-test and measurement after the educational program, as the percentage of high level reached (57.1%), while the improvement rate increased slightly in the post-test of the high level after three months to reach (58.9). It was noticed that there were statistically significant as regards Staff nurses' commitment in repeated measurement at ($p \leq 0.05$).

Table (6) illustrates statistically significant differences between measurements among staff nurses' commitment, while ETA square recorded (0.360); this shows that the application of the educational program had a significant positive effect on the level of staff nurses' commitment, with a percentage (36%).

Table 7 illustrates levels of staff nurses' performance in repeated measurements. There are improvements between pre-test and measurement after the educational program, as the percentage of moderate level reached (51.8%), and the improvement rate increased in the post-test of the high level after three months to reach (48.2). It was noticed that there were statistically significant as regards Staff nurses' performance in repeated

measurements at ($p \leq 0.05$) expect in pre-measurement.

Table (8) illustrates statistically significant differences between measurements among staff nurses' performance, while ETA square recorded (0.505); this shows that the application of the educational program had a significant positive effect on the level of staff nurses' performance, with a percentage (50.5%).

Table (9) and Figure (2): Present the correlation between staff nurses' knowledge regarding total quality management and staff nurses' performance after applying the education program. There was a statistically significant correlation between staff nurses' knowledge regarding total quality management and staff nurses' performance after applying the education program at ($R = 0.445$) and ($P\text{-value} < 0.05$).

Table (10) and Figure (3): Present the correlation between staff nurses' knowledge regarding total quality management and staff nurses' commitment after applying the education program. There was a highly statistically significant correlation between staff nurses' knowledge regarding total quality management and staff nurses' commitment after applying the education program at ($R = 0.476$) and ($P\text{-value} < 0.05$).

Table (11) and Figure (4): Present the correlation between staff nurses' knowledge regarding total quality management and staff nurses' performance after applying the education program. There was a statistically significant correlation between staff nurses' knowledge regarding total quality management and staff nurses' performance after applying the education program at ($R = 0.445$) and ($P\text{-value} < 0.05$).

Table (1): Personal characteristics of the studied staff nurses (N= 112)

Personal characteristics	N	%
Age		
▪ 20 – 35	48	42.9
▪ 36 – 50	64	57.1
▪ < 50	0	0
Rang	20 - 45	
Mean $\pm$ SD	34.32 $\pm$ 6.13	
Gender		

▪ Male	41	36.6
▪ Female	71	63.4
Educational qualification		
▪ Bachelor's degree in nursing	93	83
▪ Master	12	10.7
▪ PHD	5	4.5
▪ Other	2	1.8
Experience years		
▪ < 1	3	2.7
▪ 1 – 5	29	25.9
▪ 6 – 10	45	40.2
▪ > 10	35	31.3
Mean ± SD	7.23 ± 2.32	
Attend any training program regarding total quality management.		
▪ Yes	63	56.3
▪ No	49	43.8



Figure (1): Presence training program in total quality management (n=112)

Table 2: Levels of Staff nurses' knowledge regarding total quality management in

Levels of staff nurses' knowledge regarding total quality management	Score	Before		After		After (3) Month	
		N	%	N	%	N	%
▪ Low (<50%)	0 - 14	22	19.6	5	4.5	15	13.5
▪ Moderate (50% - < 75%)	15 - 22	6	5.4	12	10.7	7	6.3
▪ High ($\geq$ 75%)	23 - 30	84	7.5	95	84.8	90	80.4
Chi-squared tests:		9.09/		13.42/ 0.000		11.23/ 0.000	
X ² / P		0.000					

* Significant if ($p \leq 0.05$) ** Highly significant if ($p \leq 0.01$)

Table (3) One-way Anova (repeated measures) among the studied staff nurses in (staff nurses' knowledge regarding total quality management) (n=112)

Variable	Source	Sum of Squares	df	Mean Square	F-value	P	Eta Squared
Staff nurses' knowledge regarding total quality management	Between Measures	736.28	2	368.14	54.11	0.000	0.328

Eta squared: to measure the effect size * Significant if ($p \leq 0.05$) ** Highly significant if ($p \leq 0.01$)

Table (4) Levels of staff nurses' perception regarding (TQM) in repeated measurement (n=112)

* Significant if ($p \leq 0.05$) ** Highly significant if ($p \leq 0.01$)

Levels of staff nurses' perception regarding TQM)	Score	Before		After		After (3) Month	
		N	%	N	%	N	%
▪ Low (<50%)	1 - 363	68	60.7	7	6.3	13	11.6
▪ Moderate (50% - < 75%)	364 - 546	16	14.3	11	9.8	12	10.7
▪ High ($\geq 75\%$)	547 - 728	28	25	94	83.9	87	77.7
Chi-squared tests: X ² / P		3.97/ 0.000		12.92/ 0.000		9.91/ 0.000	

commitment in repeated measurement (n=112)

* Significant if ($p \leq 0.05$) ** Highly significant if ($p \leq 0.01$)

Levels of staff nurses' commitment	Score	Before		After		After (3) Month	
		N	%	N	%	N	%
▪ Low (<50%)	1 - 44	20	17.9	12	10.7	6	5.4
▪ Moderate (50% - < 75%)	45 - 67	39	34.8	36	32.1	40	35.7
▪ High ($\geq 75\%$)	68 - 90	53	45.3	64	57.1	6	58.9
Chi-squared tests: X ² / P		14.69/ 0.001		36.28/ 0.000		48.50/ 0.000	

Table (6) One-way Anova (repeated measures) among the studied staff nurses in (staff nurses' commitment) (n=112)

Variable	Source	Sum of Squares	df	Mean Square	F-value	P	Eta Squared
Staff nurses' commitment	Between Measures	16795.5	2	8397.7	62.52	0.000	0.360

Eta squared: to measure the effect size * Significant if ($p \leq 0.05$) ** Highly significant if ($p \leq 0.01$)

Table (7) Levels of staff nurses' performance in repeated measurement (n=112)

Levels of staff nurses' performance	Score	Before		After		After (3) Month	
		N	%	N	%	N	%
▪ Low (<50%)	1 - 26	44	39.3	23	20.5	18	16.1
▪ Moderate (50% - < 75%)	27 - 40	41	36.6	58	51.8	40	35.7
▪ High ($\geq 75\%$)	41 - 54	27	24.1	31	27.7	57	48.2

Chi-squared tests: χ^2 / P	4.41/ 0.110	18.01/ 0.000	17.64/ 0.000
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* Table (8) One-way Anova (repeated measures) among the studied staff nurses in (staff nurses' performance) (n=112)

Variable	Source	Sum of Squares	df	Mean Square	F-value	P	Eta Squared
Staff nurses' performance	Between Measures	9967.5	2	4983.7	113.20	0.000	0.505

Eta squared: to measure the effect size * Significant if ($p \leq 0.05$) ** Highly significant if ($p \leq 0.01$)

Table 9: Relationships between staff nurses' knowledge regarding total quality management and staff nurses' performance after applying the education program.

		Staff nurses' knowledge Regarding total quality management
Staff nurses' performance	R	0.445*
	P	0.000

*Statistically significant ($p \leq 0.05$) / ** Highly statistically significant ($p \leq 0.01$).

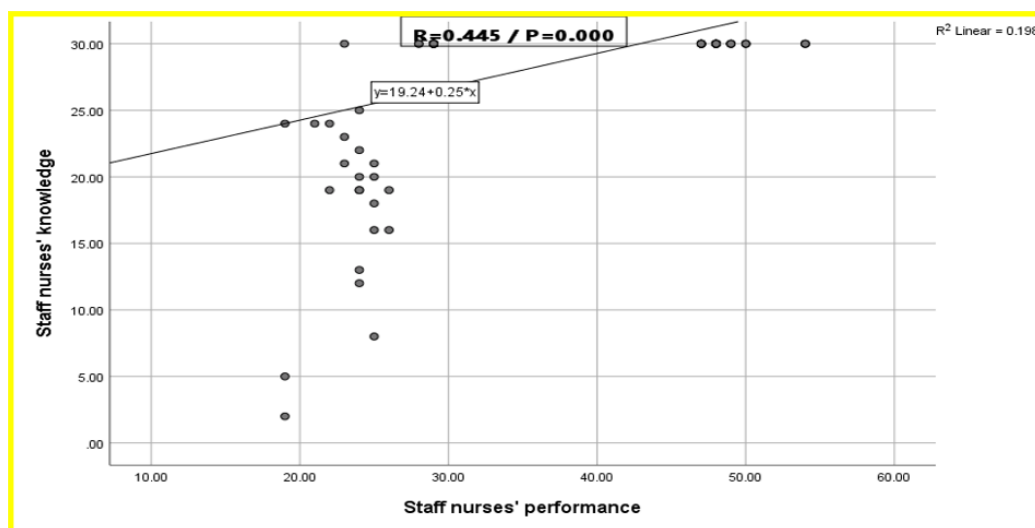


Figure 2: Correlations between staff nurses' knowledge regarding total quality management and staff nurses' performance after applying the education program. (N=112)

Table 10: Relationships between staff nurses' knowledge regarding total quality management and staff nurses' commitment after applying the education program.

		Staff nurses' knowledge Regarding total quality management
Staff nurses' commitment	R	0.476**
	P	0.000

*Statistically significant ($p \leq 0.05$) / ** Highly statistically significant ($p \leq 0.01$).

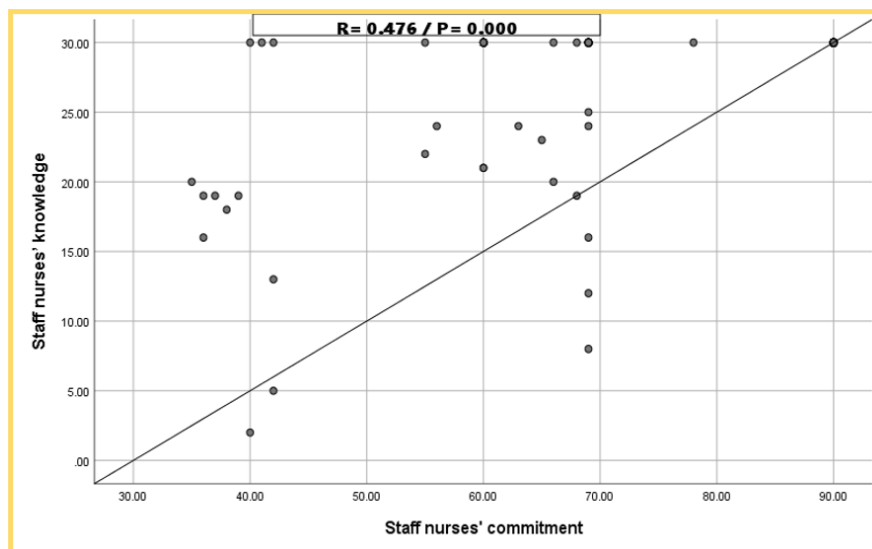


Figure 3: Correlations between staff nurses' knowledge regarding total quality management and staff nurses' commitment after applying the education program. (N=112)

Table 11: Relationships between staff nurses' commitment regarding total quality management and staff nurses' performance after applying the education program.

		Staff nurses' commitment
Staff nurses' performance	R	0.186*
	P	0.050

*Statistically significant ($p \leq 0.05$) / ** Highly statistically significant ($p \leq 0.01$).

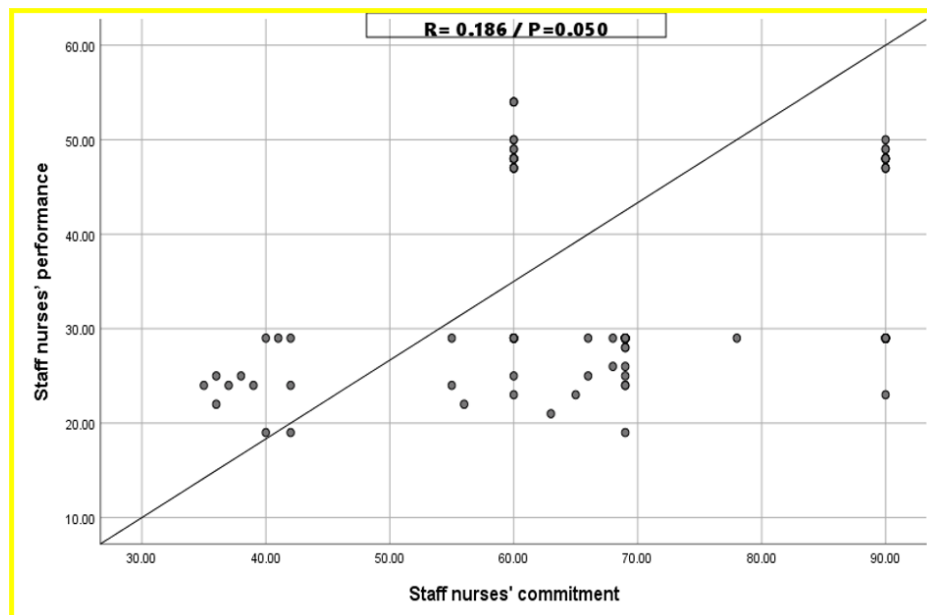


Figure (4): Correlations between staff nurses' commitment to total quality management and staff nurses' performance after applying the education program (N=112)

Concerning Staff nurses' knowledge regarding total quality management at Alrass General Hospital, Saudi Arabia.

Current results illustrate the levels of staff nurses' knowledge regarding total quality management in repeated measurements. There were low pre-test scores before the educational program, which improved in the post-test and slightly declined after three months. It was noticed that there were statistically significant as regards Staff nurses' knowledge regarding total quality management in repeated measurement at ($p \leq 0.05$). This shows that the application of the educational program had a significant positive effect on the level of staff nurses' knowledge regarding total quality management.

This may be attributed to the effectiveness of the educational program in filling knowledge gaps and enhancing staff nurses' understanding of Total Quality Management (TQM) principles. Similarly, a study was done by Fouada, Sanaa, & Soha, (2018) studying the Evaluation of Total Quality Management Program for Unit Nurse Managers at Menoufia University Hospital in Egypt, a quasi-experimental pre, post, and follow-up on 60-unit nurse managers across four hospitals. Intervention: a structured TQM educational program covering TQM criteria for healthcare, organizational development/effectiveness, patient outcomes evaluation, nursing information systems, patient rights, and roles of nurse managers. The researcher-developed TQM knowledge test and found pre, immediate post, and follow-up (timing reported as follow-up but paper shows retention months afterwards), immediate, statistically significant knowledge gains with most improvement retained at follow-up, though some items showed partial decline from post to follow-up.

In the same line, a study was done by Hsieh & Chen, (2020). studying the effectiveness of an evidence-based practice educational intervention among school nurses. This quasi-experimental single-arm study in Taiwan evaluated an 18-hour blended evidence-based practice program (EBP) using a flipped classroom, online modules, and supervised practice. for 193 school nurses. Outcomes included the School Nurse Evidence-Based Practice Questionnaire (knowledge) at baseline, immediate post, and 3-month follow-up. Repeated measures analyses showed a large,

statistically significant improvement in the knowledge subscale; reported mean knowledge scores rose from baseline.

As well as Alzoubi, Hayati, Rosliza, (2023) studying the effect of total quality management intervention on nurse commitment and nurse performance: A Quasi-Experimental Study, in Jordan, a quasi-experimental multiple time-series with control, an intervention: a multi-component TQM intervention implemented across hospital units. The authors concluded that the intervention improved job performance (and indirectly commitment). The authors' explicit TQM knowledge test improved.

Also, a quasi-experimental study was done by Mohamed (2022) in the Assiut Scientific Nursing Journal, Nursing staff knowledge about quality orientation and TQM educational program, in Egypt, found the effect of a nursing quality orientation/TQM training program on nursing staff. Found that there was a statistically significant increase from pre to post and from pre to 3-month follow-up, improvement mostly remained for three months with a slight decline.

As well as a quasi-experimental study was done by Thabet, (2024) studying the effectiveness of using scenario-based learning strategy on nurses' organizational Excellence and TQM Knowledge, in Egypt, evaluating scenario-based learning (SBL) strategy intended to teach TQM/organizational excellence content to nurse managers/staff. TQM knowledge/organizational excellence measures: The authors measured cognitive flexibility, organizational excellence, and TQM-related knowledge at pre, post, and follow-up. Results: highly statistically significant improvements from pre- to post-maintained or further improved at follow-up on organizational excellence scores; authors report $p = .000$ for several correlations and pre/post/follow-up changes. This immediate significant gains and maintenance at follow-up.

As well as a study was done by Shen, (2024) in a multi-site context include hospitals using quality management training, this action-research study evaluated repeated training cycles aimed at improving "quality management" knowledge (authors explicitly reference PDCA, quality

management frameworks of TQM). In pre / immediate post assessments across rounds and after repeated/iterative implementation rounds, authors present pre-post gains in theoretical knowledge of quality management, and report sustained improvements after multiple implementation rounds (timing of follow-up varies; some gains measured after multiple cycles rather than a single 3-month follow-up).

Concerning staff nurses' perception regarding (TQM) at Alrass General Hospital, Saudi Arabia

Current results illustrate the levels of staff nurses' perception regarding total quality management in repeated measurements. The pre-test results showed limited perception before the educational program, which improved notably in the post-test and slightly declined after three months. It was noticed that there were statistically significant as regards Staff nurses' perception regarding total quality management in repeated measurement at ($p \leq 0.05$).

This may be related to several interconnected factors influencing staff nurses' perception of Total Quality Management (TQM). The initial low scores in the pre-test likely reflect a lack of prior exposure, limited training, or insufficient emphasis on TQM concepts within routine nursing practice. The noticeable improvement in the post-test results suggests that the educational program effectively enhanced nurses' understanding and awareness, equipping them with the necessary knowledge to apply TQM principles in their work. Current results illustrate the statistically significant differences between measurements among staff nurses' perception regarding total quality management, this shows that the application of educational program had a significant positive effect on the level of staff nurses' perception regarding total quality management with percentage.

In the line with current results (Eissa et al., 2025) studying a comparative study of total quality management in healthcare from provider and patient perspectives at Al-Mouwasat University Hospital on nurses showed neutral attitudes toward TQM principles; although they supported

scientific methods for improving performance, it underscores that awareness doesn't necessarily translate to perceptual gains post-training. Similarly, Alzoubi et al., (2025) studying the quality management for nurses' performance and commitment on government hospitals: A cross-sectional study, found that attending a TQM course did not significantly influence nurses' commitment in regression analysis, suggesting no measurable effect from training alone. Despite time-series measurement, while patterns differed over time and the group-by-time interaction was significant, overall differences between groups in performance and commitment weren't definitively superior, suggesting mixed outcomes.

Similarly, a Jordanian Study on TQM (Alzoubi et al., 2023) studied the effect of total quality management intervention on nurse commitment and nurse performance. *Medicine*, 102(40), e35390. found that nurses in the intervention group showed statistically significant improvement in job commitment and performance between pre-test, post-test, and follow-up, while the control group did not. As well as Alzoubi et al., (2019) studying the total quality management in the health-care context: integrating the literature and directing future research on a Pakistani hospital, Quasi-Experimental, who found that after TQM training, the intervention group's score increased from 62% to 87%, with $p < 0.001$ a significant positive change.

Concerning the staff nurses' level of commitment at Alrass General Hospital, Saudi Arabia

Current results illustrate the levels of staff nurses' commitment in repeated measurement. The pre-test results revealed low commitment levels before the educational program, which improved markedly in the post-test and slightly declined after three months. It was noticed that there were statistically significant differences regarding Staff nurses' commitment in repeated measurements at ($p \leq 0.05$). This shows that the application of the educational program had a significant positive effect on the level of staff nurses' commitment. Moreover, the pre-test results showed low commitment levels before the educational

program, which improved after the program and slightly decreased after three months. These results show a positive effect of the educational program on staff nurses' commitment.

This may be explained by the role of educational programs in strengthening nurses' awareness of their professional responsibilities and enhancing their sense of belonging to organizational goals. The low pre-test scores likely indicate that staff nurses had a limited understanding of how Total Quality Management (TQM) principles relate to their professional commitment and daily practice. The current findings are supported by Chiampou et al., (2024), who reported that continuing training programs positively influenced nurses' organizational commitment. Their results revealed that nurses who received structured professional development opportunities demonstrated stronger attachment to their organizations, aligning with the current study's observation that educational programs significantly improved staff nurses' commitment in post-test and follow-up phases. These parallel underscores how continuous training fosters sustained commitment through enhanced professional growth and workplace integration.

Along with these findings, Rawashdeh & Tamimi (2020). studying the impact of employee perceptions of training on organizational commitment and turnover intention: An empirical study of nurses in Jordanian hospitals, confirmed that nurses' perceptions of training were strongly correlated with organizational commitment and lower turnover intention. Their results from Jordanian hospitals are consistent with the current study's evidence of statistically significant increases in nurses' commitment after educational intervention. The convergence of these results suggests that nurses' perceptions of structured training play a critical role in shaping their professional loyalty and reducing disengagement over time.

As well as these results, Chang, Hsu, & Ouyang (2022) studied the effects of integrated workplace violence management intervention on occupational coping self-efficacy, goal commitment, attitudes, and confidence in

emergency department nurses: a cluster-randomized controlled trial demonstrated that integrated workplace violence management interventions significantly improved nurses' goal commitment, attitudes, and coping confidence. Although the context differed, the underlying principle, that structured interventions enhance nurses' psychological and professional commitment, resonates with the present study. Their findings reinforce the idea that educational programs, regardless of content area, foster lasting improvements in commitment when applied systematically.

Relationships between staff nurses' knowledge regarding total quality management and staff nurses' performance after applying the education program. The result of the present study revealed a correlation between staff nurses' knowledge regarding total quality management and staff nurses' performance after applying the education program. There was a statistically significant correlation between staff nurses' knowledge regarding total quality management and staff nurses' performance after applying the education program. suggests that increased knowledge of TQM principles is associated with enhanced professional performance. This implies that the education program effectively improved nurses' understanding of quality management concepts, which translated into better adherence to quality standards, more efficient clinical practices, and improved patient care outcomes. The finding highlights the importance of targeted educational interventions in fostering both cognitive and practical competencies, indicating that knowledge acquisition in TQM is a critical driver for performance improvement in nursing practice. Overall, this result reinforces the role of continuous professional development programs in strengthening healthcare quality through knowledge-performance linkages.

This result agrees with Ozdal and Oyebamiji (2018). who reported that the implementation of total quality management (TQM) in a teaching hospital in Oyo State, Nigeria, had a positive impact on employees' performance, as it enhanced staff efficiency, commitment, and overall service delivery. Their findings highlighted

that when employees were adequately informed and trained on TQM principles, their performance improved significantly. This result is consistent with the present study, which revealed a statistically significant correlation between staff nurses' knowledge regarding TQM and their performance after applying the educational program. Both studies confirm that enhancing staff knowledge and understanding of TQM practices translates into measurable improvements in job performance and quality of care outcomes. While this result disagrees with Alzoubi et al. (2023), who found that

A quasi-experimental study involving 132 Jordanian nurses revealed no significant differences in job performance or commitment between the intervention and control groups after a TQM educational program. While the overall effect of time was significant, indicating changes over time, the specific impact of the TQM intervention on performance was not statistically significant. In addition, Mohamed et al., (2021) A descriptive study at Assiut University Hospital assessed nursing staff's awareness of challenges in applying TQM. This result disagrees with the present findings which found no statistically significant differences between TQM application challenges and personal or occupational characteristics of the nurses, suggesting that factors other than knowledge might influence TQM implementation

Relationships between staff nurses' knowledge regarding total quality management and staff nurses' commitment after applying the education program. The result of the present study revealed that a statistically significant positive correlation between staff nurses' commitment to total quality management (TQM) and their performance following the implementation of the educational program. This result may be related to the fact that nurses who demonstrate stronger commitment to total quality management (TQM) principles are more likely to apply the knowledge and skills gained from the educational program in their daily practice, leading to improved performance. Commitment fosters motivation, responsibility, and adherence to quality standards, which enhances the ability of staff nurses to deliver

efficient and patient-centered care. The significant positive correlation, therefore, indicates that the educational program was successful not only in raising awareness but also in instilling a culture of accountability and continuous improvement. Ultimately, this finding underscores the importance of integrating TQM-focused training to strengthen both the professional commitment and performance of nursing staff.

This result in the same line with Alzoubi et al., (2025), the findings are consistent with the present results, which demonstrate a statistically significant positive correlation between staff nurses' commitment to total quality management (TQM) and their performance following the implementation of the educational program. Alzoubi and colleagues reported that nurses' commitment and performance levels in government hospitals were significantly associated with educational level and work experience, showing that higher professional development enhanced both commitment and performance. Their results highlight that increased commitment to quality management principles directly contributes to improved job performance, which aligns with the current study's outcome. Thus, both studies support the notion that strengthening nurses' commitment to TQM through training and development initiatives plays a pivotal role in enhancing their performance in clinical settings.

There was a highly statistically significant correlation between staff nurses' knowledge regarding total quality management and their commitment after applying an education program. This result may be related to the fact that improving staff nurses' knowledge regarding total quality management (TQM) through the education program enhanced their awareness of the importance of quality standards, which in turn fostered a stronger sense of professional responsibility and organizational loyalty. As nurses became more knowledgeable about TQM principles, they likely developed a clearer understanding of how their roles contribute to overall healthcare quality, thereby increasing their motivation and commitment to applying these practices in daily work. This suggests that

educational interventions not only expand cognitive understanding but also strengthen emotional and behavioral aspects of commitment, ultimately supporting a sustainable culture of quality improvement within nursing practice. This result is consistent with Alzoubi et al., (2023), who conducted a quasi-experimental study to investigate the impact of a TQM intervention on nurse commitment and performance. The results indicated a significant improvement in both commitment and performance among nurses who participated in the TQM education program. Similarly, Mohamed et al., (2021) assessed nursing staff awareness regarding challenges for applying TQM at Assiut University Hospital. The study found that conducting awareness sessions and training programs on TQM significantly improved nurses' understanding and commitment to quality management practices.

The findings of the present study are in agreement with those reported by Alzoubi et al., (2023), who demonstrated that implementing a total quality management (TQM) intervention led to significant improvements in both nurse performance and commitment. Their quasi-experimental study confirmed that enhancing nurses' knowledge and awareness of TQM principles directly translated into better professional performance outcomes. This aligns with the current results, which revealed a statistically significant correlation between staff nurses' knowledge of TQM and their performance following the educational program. Both studies highlight that investing in TQM-related education and interventions is an effective strategy for improving nurses' practice and overall quality of care. The results of the current study are consistent with the findings of Mun and Ghani (2013), who emphasized that applying Total Quality Management (TQM) principles in nursing education fosters continuous improvement by enhancing both knowledge acquisition and professional practice. Their study highlighted that strengthening nurses' understanding of TQM concepts leads to improved performance outcomes and higher quality standards in healthcare education and services. Similarly, the present study revealed a statistically significant

correlation between staff nurses' knowledge of TQM and their performance after the educational program, confirming that investing in TQM-based training positively influences nursing competencies and professional effectiveness.

Implications

The results of this study show that Total Quality Management (TQM) educational programs play a pivotal role in improving staff nurses' knowledge, perception, organizational commitment, and performance. The improvements that were statistically significant right after the program and which remained at the three-month follow-up demonstrate the importance of having structured, continuous quality-focused educational programs within hospital settings. It can be inferred from these results that regularly providing TQM training to nurses not only raises their awareness of the quality principles but also fosters a positive quality culture and leads to an increased commitment to the organizational goals, thereby resulting in better nursing performance and patient care outcomes. It is suggested that hospital administrators and nursing leaders should make it a point to integrate TQM education into the ongoing professional development of nurses and also be able to provide support for the use of sustained reinforcement strategies so as to reduce the rate at which knowledge declines over time. Additionally, the findings indicate that there should be institutional policies that promote leadership involvement, implementation of continuous quality improvement practices, and the use of performance evaluation frameworks based on TQM principles. It is of interest that further studies continue to investigate the long-term effects of TQM education in different healthcare environments and the development of context-specific strategies that psychologists, nurses, and other healthcare professionals can use to maintain quality improvement and nursing excellence.

Limitation

The present research has a number of restrictions, which should be recognized. One cannot be sure that the training program had a positive effect on the change in outcomes due to the use of a quasi-

experimental pre-test and post-test design without a control group. Nurses' convenience sampling and the small number of nurses from one hospital who participated in the study may be reasons for the limited applicability of the results to other healthcare environments or nursing populations. Furthermore, the self-administered nature of the questionnaires may have resulted in response bias in the participants, with knowledge, commitment, and performance being either overestimated or underestimated. Although the study relied on validated instruments for measuring Total Quality Management knowledge, perceived TQM, organizational commitment, and nursing performance, the tools used may not have been able to completely encompass all the local healthcare setting's contextual or organizational factors.

Recommendation

Based on the findings and supported research hypotheses, it is recommended that total quality management (TQM) educational programs be regularly implemented for staff nurses to enhance their knowledge, commitment, and performance. Hospital administrators should integrate TQM training into continuous professional development plans and orientation programs for newly appointed nurses. Ongoing evaluation and follow-up training sessions are also recommended to sustain improvements in nurses' commitment and performance over time. Additionally, creating a supportive organizational environment that encourages participation in quality improvement activities will help maximize the long-term impact

of TQM principles on nursing practice and overall hospital performance.

Conclusion

The Total Quality Management (TQM) educational program had a statistically significant positive effect on staff nurses' knowledge, perception, commitment, and performance at Alrass General Hospital. Nurses' knowledge regarding TQM significantly improved immediately after program implementation, with a slight decline at three-month follow-up but remaining higher than pre-program levels. Similarly, nurses' perception of TQM showed marked improvement post-program, reflecting enhanced awareness of leadership commitment, continuous improvement, patient focus, and quality culture. Significant improvements were also observed in nurses' commitment—across affective, continuance, and normative dimensions—as well as in overall performance, including physical, mental, and general performance aspects.

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Availability statement

The corresponding author may obtain data substantiating the study's conclusions upon a reasonable request.

Conflicts of interest

The authors declare no conflicts of interest related to this article.

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