Knowledge, Attitude, Readiness, Facilitators, And Barriers to Continuous Quality Improvement (CQI) Among Hospital Employees in A Government-Retained Hospital

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ABSTRACT

Continuous Quality Improvement (CQI) is a deliberate, defined process which is focused on activities that are responsive to community needs and improving population health. As adopted in hospitals, it is important to assess the knowledge, attitude, and readiness of its stakeholders. This quantitative research made use of the descriptive, correlational, and comparative (non-causal) research design to assess the interrelationship and comparison of the knowledge, attitude, and readiness on CQI. Furthermore, the study determined the barriers and facilitators in involvement to CQI among hospital employees in Amai Pakpak Medical Center for the second quarter of 2022. Findings of the study revealed that majority of the respondents were falling within the age category of 19 to 40 years old or the young adult group. Majority of the respondents were female, and in terms of years of service, one third of the respondents served the organization for 6 years and above. Just over half of the respondents had attended CQI workshop, and over half of the respondents were unable to attend any CQI-related workshops. Respondents were knowledgeable about the fundamental principles on CQI. The respondents had a positive attitude towards CQI. Overall, the respondents were somewhat ready on CQI. There was a significant interrelationship among knowledge, attitude, and readiness on CQI. A CQI Readiness Plan was created.

Keywords: Attitude; Barriers and facilitators; Continuous Quality Improvement; Hospital employees; Knowledge; Readiness.

INTRODUCTION

Patients, healthcare providers, and insurers all have a stake in the healthcare system. Continuous quality improvement (CQI) in health care is "a structured organizational process for involving people in planning and executing a continuous flow of improvement to provide quality health care that meets or exceeds expectations" (Sollecito et al., 2013). International studies report reduced hospital admissions among patients with chronic conditions, reduced emergency department visits among older patients (Tricco et al., 2014), increased workforce capabilities and enthusiasm (Allen and Clarke Consulting Group, 2013; Lowitja Institute, 2015), and improved organizational efficiencies from timely local data (Crisp et al., 2000; Potter & Brough, 2004). CQI is mandated in the Philippines, with DOH Administrative Order No. 2012-0012 and Administrative Order No. 2020-0034 requiring health facilities to implement CQI, supported by Department Order Nos. 310-J s.2001 and 172-C s.2003, and the hospital where this study will be conducted is ISO certified with various CQI activities.

Despite ISO re-certification, sustaining this status remains challenging. The researcher observed employees, especially those without appointed ISO roles, lacking knowledge about CQI activities. Some employees knew only about customer feedback surveys, while others did not know the hospital's quality policy statement and doubted ISO benefits, viewing it as causing stress. When asked about involvement in CQI, some shrugged and said it is the management's job. Few knew total quality management tools such as fishbone analysis, gap analysis, and SWOT analysis. These observations, along with barriers to CQI implementation, raise concern for the researcher as ISO Chair, especially since no established manual or SOPPs on CQI mechanisms exist in the hospital despite the presence of Quality Management System Committees.

This leads to the reason why the researcher is interested in conducting this study to determine hospital employees' knowledge, attitudes, readiness on CQI, and barriers and facilitators to involvement as baseline information for developing a CQI Technical Manual. Alomari et al. (2015) showed knowledge positively correlated with hospital application of quality standards. As ISO Chair, the researcher aims to establish baseline data to draft a CQI employee development plan and framework, assessing interrelationships among knowledge, attitude, and readiness, and differences according to personal characteristics to ensure no one is left out. The researcher is confident that this work will establish needed baseline information for developing a CQI framework and employee development plan helpful for the hospital and other healthcare institutions.

RESEARCH OBJECTIVES

The purpose of the study was to assess the interrelationship and comparison of the knowledge, attitude, and readiness on Continuous Quality Improvement (CQI). Furthermore, the study determined the barriers and facilitators in involvement to CQI among hospital employees in Amai Pakpak Medical Center for the second quarter of 2022.

Specifically, it answered the following questions:

What were the personal characteristics of the hospital employees in terms of age; sex; years of service; department; attendance to CQI workshop; and participation in a CQI-related programs in the last 3 years?

What was the knowledge on the fundamental principles on CQI among hospital employees?

What was the attitude on CQI among hospital employees?

What was the readiness on CQI among hospital employees in terms of internal customer focus and use of team processes; understanding of process, use of data in decision-making; common understanding of quality and customers' wants and needs; and management's opportunity to lead CQ?

What were the facilitators in involvement in CQI among hospital employees?

What were the barriers to CQI among hospital employee?

Was there a significant interrelationship among knowledge, attitude, and readiness on CQI among hospital employees

Was there a significant difference in the knowledge, attitude, and readiness on CQI among hospital employees?

What CQI Readiness Sustenance Plan could be proposed based on the findings of the stud?

Statement of Null Hypotheses

Ho1: There was no significant relationship between knowledge and attitude CQI among hospital employees.
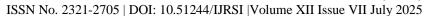
Ho2: There was no significant relationship between knowledge and readiness on CQI among hospital employees.

Ho3: There was no significant relationship between attitude and readiness on CQI among hospital employees.

Ho4: There was no significant difference in the knowledge on CQI among hospital employees.

Ho5: There was no significant difference in the attitude on CQI among hospital employees.

Ho6: There was no significant difference in the readiness on CQI among hospital employees.

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REVIEW OF RELATED LITERATURE AND STUDIES

Continuous Quality Improvement (CQI). Improving a system as critical and complex as a healthcare system is no small task, but as organizations seek to provide better care at lower costs, continuous quality improvement in healthcare is essential. CQI can help healthcare organizations become more efficient and patient-centered. With any CQI methodology, healthcare organizations should adhere to several best practices to ensure their CQI strategy is effective (Florida Tech, 2022). O'Neill et al. (2011) highlighted four key elements of CQI approaches as follows: (1) implemented in or by a health-care service; (2) collecting qualitative or quantitative data on intervention effectiveness, impacts, or success; (3) reporting client (or caregiver) health outcomes; and (4) aiming to change how delivery of care is routinely structured. CQI models vary according to local diversity between primary health-care services, the CQI team, and the external environment. There is no clear evidence that any one CQI model is better than another (Kaplan et al, 2011; Powell et al., 2009).

Once ISO 9001 certification is received, there is a need to keep refining Quality Management Systems to improve performance. Continuous Improvement is an ongoing effort to improve the organization's products, services, and/or processes. These efforts can be: (a) Gradual – seek "incremental" improvement over time and (b) "Breakthrough" improvement all at once. The ability to meet the customer's requirements is constantly being evaluated and improved to deliver more efficiency, effectiveness, and flexibility. This is not a separate endeavor, but rather is part of the ISO 9001 Quality Management System. Feedback is evaluated against the objectives. ISO 9001 asks for continuous improvement of the QMS. One way to achieve this is a better focus through a more critical eye and improving the knowledge to learn how to apply the tactics (The 9000 Store, 2022).

In the study of Carillo-Garcia et al. (2013), women represented up to three fourths of the total participants (73.4% of the interviewees), while men represented 26.6 percent. Women and men were generally distributed across professions in a similar ratio. Our data showed that the majority of the respondents were middle aged (31 to 50 years old). Of the total number of participants, 15% were young professionals (20 to 30 years old) and 18.3 percent were older than 50. The morning shift was the most frequently held shift, followed by a rotating shift. For affiliation level with the hospital, the largest group was the permanent staff, followed by temporary staff. Average seniority in the hospital was 8.3 years. For type of profession, the largest group was the nursing personnel, followed by nursing assistants, specialized physicians, resident physicians and professionals in administrative roles. The biggest healthcare profession in the US is nursing, with around 4.2 being registered throughout the country. Of those that are licensed, 84.1 percent work in the nursing industry. The US government forecasts that over 200,000 registered nurse jobs will be needed every year from 2021 to 2031, showing a high demand for skilled nurses in every state. The biggest partition in the healthcare employee sector is registered nurses, with 80 percent representing the provider's patients and long-term care at hospitals (Zauderer, 2022).

Although CQI was feasible and sustainable, demonstrating its effectiveness using administrative data was challenging suggesting the need to better align performance measurement systems with CQI efforts. Further, although the majority of staff were enthusiastic about utilizing this approach and reported provider and patient benefits, many noted that dedicated time was needed in order to implement and sustain it (Hunter et al., 2017)

Readiness on CQI. Based on the result of the study of Mokhtar et al. (2012), the level of CQI readiness shown 83 per cent which means, the organization is ready for the quality improvement and five key dimensions has been categorized to support the CQI readiness.

On influence of educational factors on level of response, the study showed it has no influence on staff awareness but it influenced quality of personnel, sufficient supervision, feedback mechanism and record department being computerized. Number of years on the job has influence on the availability of adequate resources, quality of services and record department being computerized. On the influence of cadre, it showed that level of awareness was affected but quality of personnel, quality of services and availability of functional diagnostic equipment was influenced (Vincent et al., 2019).

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Interrelationship of Knowledge, Attitude, and Readiness on CQI. The study of Alomari et al. (2015) revealed median percentage of participants' knowledge and attitude scores regarding healthcare quality was 48% and 80% respectively, with hospital support at 54% and implementation at 50%. Main barriers were staff resistance and deficient knowledge, with knowledge showing significant positive correlation with hospital application of quality standards. Dargahi and Rezaiian (2007) showed knowledge, attitude, and performance increased with academic degrees. Magd and Curry (2003) indicated organizations understood ISO certification's purpose, motivated by efficiency and competitive pressures, with benefits including improved documentation and efficiency. Hashish and Alsayed (2020) noted nurses had positive attitudes toward Evidence-Based Practice and Quality Improvement but lacked sufficient EBP knowledge, requiring educational support to enhance knowledge, attitudes, and skills. Geboers et al. (2001) found CQI implementation varied, with success in small projects, though workload was a barrier.

Thilakarathne and Chithrangani (2014) concluded there was a positive attitude towards ISO 9001 quality management systems, with perceived benefits in various sectors. Arnaud and Pierre-Antoine (2016) found operational workers had mostly positive perceptions of ISO 9001, contributing to organizational control. Successful CQI application results from leadership, culture, and teamwork (Nadeem et al., 2013; Sollecito & Johnson, 2011), with customer focus, systems thinking, measurement, teamwork, communication, and feedback motivating CQI processes (Candas et al., 2016). Tibeihaho et al. (2021) revealed district leadership supported CQI implementation, but high staff turnover hindered it. Leadership was key in institutionalizing CQI, monitoring results, mobilizing resources, and creating an enabling environment. The study of ul Haq et al. (2012) revealed significant positive linear correlations between knowledge-attitude, knowledge-practice, and attitude-practice. Fabrigar et al. (2006) found complexity increased attitude-behavior consistency under low-behavioral relevance, while knowledge amount had no effect. Zhu and Xie (2015) indicated risk information had a greater impact on attitude change, especially among participants with higher knowledge levels. Education is necessary for behavior change, though knowledge alone is not enough; it is critical to explain why behavioral changes are needed (Arlinghaus & Johnston, 2017).

Differences in the Knowledge, Attitude and Readiness on CQI. In the study of Siverbo et al. (2021), a two-day training program on quality improvement showed statistically significant changes in attitude among participants, with differences based on profession and years in their position, suggesting training can change attitudes but may need tailoring for different groups. Sisno (2017) found attitudes of administrators, teaching personnel, and administrative staff towards ISO 9001 did not differ significantly, with mostly positive perceptions, while Ehlers et al. (2017) reported overall supportive attitudes, though physicians were more skeptical with some extremely negative. Fita et al. (2021) showed 37.2% had good knowledge and 45.7% had favorable attitudes toward care of older people, with knowledge associated with age over 30, experience over 5 years, BSc degree and above, living with older people, and working in adult ICU, while attitude was associated with being female, BSc degree and above, living with older people, and caring for older people. Abou Hashish and Alsayed (2020) found age and educational level were significant factors for QI ratings, with younger nurses having lower and bachelor's nurses having higher QI ratings. Latif and Nor (2021) found CQI practice in vocational colleges was high, with significant differences by age group for customer focus and teamwork, suggesting input for planning improvement measures in VCs' quality management).

Facilitators to CQI. In the study of Candas et al. (2016), the most reported facilitators to CQI implementation are perception of feasibility, adoption of a formative approach, training and education, confidentiality, and assessing a limited number of quality indicators. Receptive attitudes, a sense of ownership and perceptions of positive impacts also facilitate the implementation. Finally, an organizational environment conducive to quality improvement has to be inclusive of all user groups, explicitly supportive, and provide appropriate resources. In the study of Sommerbakk et al. (2016), barriers and facilitators in the implementation of quality improvements were connected to (1) the innovation (e.g. credibility, advantage, accessibility, attractiveness); (2) the individual professional (e.g. motivation, PC expertise, confidence); (3) the patient (e.g. compliance); (4) the social context (e.g. leadership, culture of change, face-to-face contact); (5) the organizational context (e.g. resources, structures/facilities, expertise); (6) the political and economic context (e.g. policy, legislation, financial arrangements) and (7) the implementation strategy (e.g. educational, meetings, reminders).

Barriers to CQI. Quality improvement is an essential part of patient care, including improving patient safety,

reducing medical errors, improving care coordination, and improving access to care. Barriers to implementing quality improvement initiatives include lack of funding, staff training, resources, management support, clinician buy-in, leadership, communication, resistance to change, and data systems (QualityGurus, n.d.). Mukwakungu and Mbohwa (2018) identified communication, management support, and adequate training as critical factors hindering awareness and understanding of quality at work. Abu A'aqoulah et al. (2016) suggested overcoming QMS obstacles through rewarding employees, providing good salaries and benefits, and recruiting qualified managers. Nolan (2016) described challenges in implementing QMS, such as differing opinions, the need for consultation and participation, leadership involvement, combating rumors, allocating resources, and ensuring processes are followed, emphasizing top management leadership and clear communication to employees. Median percentage of participants' knowledge and attitude scores regarding healthcare quality was 48% and 80% respectively, while perception toward hospital support and implementation were 54% and 50% respectively. The main barriers for quality standards implementation and practice were staff resistance followed by deficient knowledge, with knowledge showing a significant positive correlation with hospital application of quality standards (Alomari et al., 2015). Despite challenges, using evidence-based practice and collecting data on outcomes, along with tailored education and training, leadership commitment, and addressing barriers, remain critical to improving quality in healthcare.

RESEARCH METHODOLOGY

Design. This quantitative research made use of the descriptive, correlational, and comparative (non-causal) research design). The descriptive design was used in determining the personal characteristics, the knowledge, attitude, readiness on CQI, barriers or facilitators on involvement in CQI, and the barriers to CQI of the hospital employees including the barriers to involvement in CQI. The correlational design was used in assessing the interrelationship among knowledge, attitude, and readiness on CQI among hospital employees. The comparative design was used in comparing the difference in the knowledge, attitude, and readiness on CQI according to personal characteristics of the hospital employees.
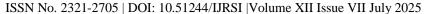
Environment. The study was conducted in Amai Pakpak Medical Center. Since its initial ISO certification in 2016, the hospital has reaped the benefits of being an ISO recognized organization. Currently, on February 4, 2022, TÜV Rheinland Philippines issued an ISO certification for the provision of Level III hospital and multidisciplinary services, which is valid until February 3, 2025.

Respondents. The research involved 300 regular hospital employees coming from the different departments.

Sampling Design. The study made use of the proportionate stratified simple random sampling.

Inclusion and Exclusion Criteria. Included in the study were regular employees of the hospital coming from the four different departments. They had to be of legal age, regardless of sex, marital status, economic status, religion, and position. They had to be at least employed in the hospital for at least 6 months. They should be able to read and write and be capacitated to give voluntary consent. Excluded from the study were those employees who are experiencing symptoms of COVID-19. Those who were also on leave during the data gathering were excluded and those who had filed their resignation and retirement were also excludeds.

Instrument. The study made use of the CQI questionnaire (CQIQ) developed by Hill et al. (2001), originally composed of 34 items divided into six sections, with some items moved to a separate section but without modification. Part one included 4 items on respondent profile (age, sex, years of service, department) and 4 items on experience with CQI initiatives such as workshops and projects. Part two referred to respondents' knowledge of the role of CQI (knowledge scale) with 6 items based on fundamental principles of CQI, rated using a 5-point Likert scale from not knowledgeable at all to very knowledgeable. Part three consisted of 5 CQI attitude questions rated on a 3-point Likert scale (agree, undecided, disagree). Part four pertained to the CQI Readiness Assessment Process and Tool by Dana (2004), a 25-item questionnaire rated on a 5-point Likert scale, composed of five dimensions: internal customer focus and use of team processes, understanding of process, use of data in decision-making, common understanding of quality and customers' wants and needs, and management's opportunity to lead CQI. Scoring included calculating weighted ratings and total agree percentages for each statement to identify opportunities for improvement, with weighted ratings computed by

assigning weights from 5 to 1 for strongly agree to strongly disagree. Part five included 8 items on potential barriers/facilitators to involvement in CQI projects rated from very unimportant to very important. Part six included 6 items on possible barriers to participation in CQI projects at the local setting pre-identified based on Hill et al. (2001). The instrument showed acceptable internal consistency with Cronbach's alpha exceeding .70 for all scales and Pearson's correlation coefficient for test-retest reliability at 0.85. Parametric score interpretations were also defined for knowledge, attitude, and readiness scales.

Data Gathering Procedures. Guided by the inclusion and exclusion criteria set for the study, recruitment began. A first respondent was identified based on table of random numbers from the list provided by the Human Resource Department according to departments. They were recruited using the face-to-face intercept. Recruited respondents were given a copy of the questionnaire placed inside a plastic envelope for easy sanitization before handing the instrument and upon retrieval of the completed questionnaire. Other measures such as wearing of masks and face shield, social distancing, and hand washing or sanitizing were strictly observed for every encounter with a new respondent. This was done until such time that the sample size was achieved. All gathered responses were tallied and treated with appropriate statistical treatments. Data were presented in tables together with the interpretations and implication as supported by literature and studies. All completed questionnaires were shredded at the end of the analysis and all soft copies of the data were deleted permanently.

Statistical Treatment of Data. Frequency distribution and percentage were used to determine the personal characteristics of hospital employees in terms of age, sex, years of service, department, attendance to any CQI workshop (if yes, last CQI-related workshop attended), participation in a CQI project in the last 3 years, and agreement on having a basic understanding of CQI principles, as well as barriers to CQI involvement. Ranking was used to rank different barriers to CQI. Mean score was used to determine the level of knowledge, attitude, readiness on CQI, and barriers or facilitators on CQI among hospital employees. Pearson r assessed the interrelationship among knowledge, attitude, and readiness on CQI. T test of independence assessed significant differences in knowledge, attitude, and readiness among hospital employees with two groups only, while ANOVA assessed significant differences among hospital employees with more than two groups.

Ethical Consideration. Ethical considerations are an essential component of any research study. The study was submitted for ethical approval prior to data gathering.

Presentation, Interpretation and Analysis of Data

Table 1 Personal Characteristics of the Hospital Employees

Profile	*f*	*%*
Age		
Young adult (19 – 40 years old)	233	77.70
Middle adult (41 – 65 years old)	67	22.30
Sex		
Male	73	24.30
Female	227	75.70
Years of Service		
Below 1 year	80	26.70
1 to 3 years	78	26.00

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4 – 6 years	50	16.70
6 years and above	92	30.70
Department		
Medical Department	44	14.70
Nursing Department	126	42.00
Administrative and Support	84	28.00
Ancillary Department	46	15.30
Attendance to CQI Workshop		
Yes	169	56.30
No	131	43.70
How long ago, attended the last CQI- related workshops		
None	169	56.30
Less than one year ago	121	40.30
One to two years ago	6	2.00
Over two years ago	4	1.30
Participated in a CQI Project		
Yes	204	68.00
No	96	32.00

Note: n=300.

The table shows that majority of the respondents were falling within the age category of 19 to 40 years old or the young adult group. The remaining almost a quarter were belonging to the middle adult age group. This means that the respondents are mostly at their productive years. Majority of the respondents were female comprising three fourths of the total population while the remaining one fourth are males. This is just a coincidence wherein females dominated the study and this was influenced by the sampling method used because there is an almost equal number of males and females in the hospital. In terms of years of service, one third of the respondents served the organization for 6 years and above while just above a quarter are still below one year. Also, just over a quarter had served for one to three years already while the remaining few had served four to six years. This is clear indication that most respondents are loyal to the hospital and it can be expected considering that the hospital is a government-owned hospital where most would really want to be connected with considering that benefits it offers to its employees as compared to working in a private institution.

In the study of Carillo-Garcia et al. (2013), women represented up to three fourths of the total participants (73.4% of the interviewees), while men represented 26.6 percent. Women and men were generally distributed across professions in a similar ratio. Our data showed that the majority of the respondents were middle aged (31 to 50 years old). Of the total number of participants, 15% were young professionals (20 to 30 years old)

and 18.3 percent were older than 50. The morning shift was the most frequently held shift, followed by a rotating shift. For affiliation level with the hospital, the largest group was the permanent staff, followed by temporary staff. Average seniority in the hospital was 8.3 years. For type of profession, the largest group was the nursing personnel, followed by nursing assistants, specialized physicians, resident physicians and professionals in administrative roles.Most of the respondents are belonging to the nursing department and this was followed by over a quarter belonging to the administrative and support. Few of them are belonging to the medical and the ancillary department. Supporting the findings, the biggest healthcare profession in the US is nursing, with around 4.2 being registered throughout the country. Of those that are licensed, 84.1 percent work in the nursing industry. The US government forecasts that over 200,000 registered nurse jobs will be needed every year from 2021 to 2031, showing a high demand for skilled nurses in every state. The biggest partition in the healthcare employee sector is registered nurses, with 80 percent representing the provider's patients and long-term care at hospitals (Zauderer, 2022). Just over half of the respondents had attended CQI workshop while almost half had no attendance to a CQI workshop. Over half of the respondents were unable to attend any CQI-related workshops while almost half of them were able to attend CQI0related workshop wherein very few were able to attend it one to two years ago and over two years ago. Majority of the respondents were able to participate in a CQI project while over one third of them did not participate in any CQI project. Although CQI was feasible and sustainable, demonstrating its effectiveness using administrative data was challenging suggesting the need to better align performance measurement systems with CQI efforts. Further, although the majority of staff were enthusiastic about utilizing this approach and reported provider and patient benefits, many noted that dedicated time was needed in order to implement and sustain it (Hunter et al., 2017).

Table 2 Knowledge on the Fundamental Principles of CQI among Hospital Employees

Items	Mean score	SD	Interpretation
1. In health care it is not important to reduce variation in clinical practice.	2.62	1.222	Neither agree nor disagree
2. Most problems originate because of poor performance by individual staff members.	3.45	0.989	Agree
3. It is important to use multidisciplinary teams as the mechanism for introducing improvement in health care processes.	4.07	0.968	Agree
4. It is desirable to build measurement and data collection in health care processes.	3.99	0.954	Agree
5. QI should focus on work processes rather than individual performance.	3.45	1.038	Agree
6. A successful health care organization maintains a clear focus on those it serves.	4.02	0.920	Agree
Grand mean	3.60	0.643	Knowledgeable

Note: *n=300.*

Legend: Parametric scores and interpretation for knowledge are as follows: 1.00-1.80 is not knowledgeable at all, 1.81-2.60 is having low knowledge; 2.61-3.40 is moderately knowledgeable, 3.41-4.20 is knowledgeable, and 4.21-5.00 is very knowledgeable.

Based on the table, respondents were knowledgeable about the fundamental principles on CQI. This is

supported by the fact that they provided agreement to the statements that most problems originate because of poor performance by individual staff members, that it is important to use multidisciplinary teams as the mechanism for introducing improvement in health care processes, that it is desirable to build measurement and data collection in health care processes, that QI should focus on work processes rather than individual performance, and that successful health care organization maintains a clear focus on those it serves. This implies that they have the sufficient knowledge to understand the principles of CQI and perhaps this is because the organization is already an ISO certified organization and that it had been implementing measures on CQI. However, they neither agree nor disagree to the statement that in health care it is not important to reduce variation in clinical practice. This means that they are unsure of this statement, and probably needs to be re-enforced regarding the importance of variation in clinical practice considering that this is really a fact in healthcare. The study of Alomari et al. (2015) revealed median percentage of participants' knowledge and attitude scores regarding healthcare quality was 48 percent and 80 percent respectively. Meanwhile, the median percentage of participants' perception toward hospital support and implementation of healthcare quality was 54 percent and 50 percent respectively.

The main barriers for quality standards implementation and practicing were; staff resistance followed by deficient knowledge. Also, results in the study of Magd and Curry (2003) indicated that organizations have a high level of understanding of the purpose of ISO certification. The main motivators behind the implementation of certified quality system were to improve the efficiency of the quality system, and to cope with pressures from competitors/foreign partners. The principal perceived benefits of ISO 9001 include improved documentation, improved efficiency of the quality system and more effective supplier selection. In the study of Hashish and Alsayed (2020), it was mentioned that implementing Evidence-Based Practice (EBP) and Quality Improvement (QI) were recognized as the core competencies that should be held by all healthcare professionals, especially nurses, as front-line healthcare providers. However, they perceived themselves to be lacking sufficient EBP knowledge and need to improve their QI skills. Nurses need educational support for enhancing their attitude, knowledge, and skills related to EBP and QI. To prepare for educational programs, hospitals and nursing administrators should consider the characteristics of nurses, work schedules, and obstacles in the use of EBP. Hospital managers should also implement effective strategies to resolve the barriers and boost facilitators to increase the use of EBP among Egyptian nurses and promote QI.

Table 3 Attitude on CQI among Hospital Employees

Items	Mean score	SD	Interpretation
1. In health care, CQI projects are a challenge to autonomy. *	2.26	0.780	Neutral
2. CQI is motivated by a desire to take patient preferences into consideration.	2.61	0.565	Agree
3. The primary goal of a hospital CQI project is to reduce health care costs.	2.45	0.650	Agree
4. CQI is a positive trend in health care.	2.74	0.579	Agree
5. CQI is of limited value to improving health care. *	2.00	0.898	Neutral
Grand mean	2.41	0.446	Positive attitude

Note: *n=300.* *Negative statements

Legend: Parametric scores and interpretation for attitude are as follows: 1.00-1.67 is negative attitude, 1.68-

2.34 is neither positive nor negative attitude, and 2.35-3.00 is positive attitude.
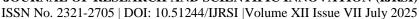
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CQI is motivated by a desire to take patient preferences into consideration, with the primary goal to reduce healthcare costs, and is viewed as a positive trend in healthcare, meaning respondents know its importance beyond being mandated, especially in an ISO-certified organization understanding its benefits. However, they were neutral on statements that CQI projects are a challenge to autonomy and of limited value to improving healthcare, showing uncertainty which could be addressed by management to develop positive attitudes. Though knowledgeable, they were only moderately knowledgeable, affecting their attitudes, suggesting reinforcing knowledge could improve attitudes. According to Geboers et al. (2001), implementation rates varied, participants were positive about usefulness but workload and delays were barriers, suggesting starting with small projects and addressing personal obstacles to strengthen CQI commitment. Thilakarathne and Chithrangani (2014) found positive attitudes toward ISO 9001 in certified and implementing organizations, with perceived benefits irrespective of sector, while Arnaud and Pierre-Antoine (2016) showed operational workers had mostly positive perceptions of ISO 9001, resulting in positive workplace attitudes and contributing to organizational control.

Table 4 Readiness on CQI among Hospital Employees

Items	Mean score	SD	Interpretation
Internal customer focus and use of team processes			
1. I know what is expected of me at work.	4.05	0.804	Agree
2. I have the materials and equipment I need to do my work well.	3.84	0.847	Agree
3. In the last seven days, I have received praise for doing good work.	3.28	0.948	Agree
4. Someone at work encourages me to develop my skills.	3.69	0.989	Agree
5. I receive the information I need to do my job well.	3.63	0.895	Agree
6. Our employees cooperate and work as a team.	3.88	0.798	Agree
7. We are encouraged to work with staff in other departments to solve problems.	3.86	0.837	Agree
8. My supervisor respects my opinion.	3.82	0.920	Agree
9. I have opportunities to learn new things that will help me improve my work.	3.94	0.785	Agree
10. Overall, the leaders in this facility care about me.	3.70	0.894	Agree
Factor mean	3.77	0.573	Somewhat ready
Understanding of process			

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11. When something goes wrong, we look at processes rather than blaming people.	3.70	0.924	Agree
12. The work assignments are well planned in my department.	3.80	0.822	Agree
13. We are encouraged to apply better methods for doing our work when we learn about them.	3.95	0.702	Agree
14. Overall, I am motivated to find ways to improve the way I do my work.	3.97	0.742	Agree
Factor mean	3.85	0.669	Somewhat ready
Use of data in decision-making			
15. I know how to measure the quality of my work.	3.86	0.693	Agree
16. I know how to analyze (review) the quality of my work to see if changes are needed.	3.92	0.657	Agree
17. We usually study the cause of problems before making a change.	3.79	0.797	Agree
Factor mean	3.86	0.598	Ready
Common understanding of quality and customers' wants and needs			
18. Overall, our use of information helps us improve the way we do our work.	3.96	0.678	Agree
19. Quality improvement is a sincere effort at this facility rather than just talk.	4.00	0.734	Agree
20. I am encouraged to solve problems brought to me by my customers (residents, families, or other employees).	3.97	0.703	Agree
21. Overall, meeting the expectations of our residents and families is a top priority here.	3.84	0.813	Agree
Factor mean	3.94	0.603	Somewhat ready
Management's opportunity to lead CQI			
22. Our leaders are just as concerned about the quality of services as they are about financial results. ‰	3.75	0.853	Agree
23. Our leaders are able to make their own decisions rather than depending on people outside of our facility.	3.80	0.775	Agree
24. We seldom have crisis situations at this facility. ‰ ‰ ‰	3.56	0.873	Agree

a

25. Overall, the facility managers have the ability to lead us to higher levels of quality performance.	3.93	0.700	Agree
Factor mean	3.76	0.631	Somewhat ready
Grand mean	3.84	0.538	Somewhat ready

Note: *n=300.*

Legend: Parametric scores and interpretation for readiness are as follows: 1.00-1.80 is not ready at all, 1.81-
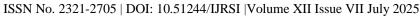
2.60 is low readiness; 2.61-3.40 is moderately ready, 3.41-4.20 is somewhat ready, and 4.21-5.00 is very

The table shows that respondents believed they were somewhat ready in internal customer focus and use of team processes, agreeing they know what is expected of them, have needed materials and equipment, receive praise, are encouraged to develop skills, receive needed information, cooperate as a team, are encouraged to work with other departments, are respected by supervisors, have opportunities to learn new things, and believe leaders care about them. For understanding of process, they agreed they look at processes rather than blame people, work assignments are well planned, are encouraged to apply better methods, and are motivated to improve their work. In use of data in decision-making, they agreed they know how to measure and analyze quality of work and study causes of problems before making changes. In common understanding of quality and customers' wants and needs, they agreed their use of information improves work, quality improvement is sincere, they are encouraged to solve customers' problems, and meeting customer expectations is a top priority. For management's opportunity to lead CQI, they agreed leaders care about quality as much as financial results, make decisions independently, seldom have crises, and facility managers can lead them to higher quality performance. Mokhtar et al. (2012) showed 83% CQI readiness, indicating organizational readiness. Vincent et al. (2019) found educational factors influenced quality of personnel and resources, years on the job influenced resources and services quality, and cadre influenced awareness and services quality. The successful application of CQI results from leadership, organizational culture, and teamwork creating a culture of excellence (Nadeem et al., 2013; Sollecito & Johnson, 2011), with customer focus, systems thinking, measurement, teamwork, communication, and feedback critical for CQI motivation (Candas et al., 2016). Tibeihaho et al. (2021) found district leadership supported CQI implementation but high staff turnover was detrimental. Leadership roles included institutionalizing CQI, monitoring results, mobilizing resources, and creating enabling environments. Overall, respondents felt ready for CQI, especially with the hospital's ISO certification status.

Table 5 Facilitators in Involvement in CQI

Items	Mean score	SD	Interpretation
1. CQI project relevant to my area of practice.	4.25	0.900	Very important
2. Availability of a CQI coordinator.	4.12	0.976	Somewhat important
3. Time commitment involved in undertaking CQI project.	4.11	0.921	Somewhat important
4. CQI project endorsed by respected colleague.	4.09	0.936	Somewhat important
6. CQI project directly impacts my practice.	4.08	0.906	Somewhat important
7. CQI project endorsed by hospital administration.	4.02	0.952	Somewhat important

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8. CQI project that introduces only minimal changes to current clinical practice.	3.74	1.054	Somewhat important
9. Incentives for physicians who participate in CQI projects.	3.72	1.054	Somewhat important
10.			

Note: *n=300.*

Legend: 1.00 – 1.79 is very unimportant, 1.80 – 2.59 is somewhat unimportant, 2.60 – 3.39 is neither important nor unimportant, 3.40 – 4.19 is somewhat important, and 4.20 – 5.00 is very important.

Based on the table, the respondents believed that CQI project relevant to their area of practice was the very important facilitator of CQI. This is because when it is relevant to practice, it is very useful and therefore CQI should be relevant to their practice such as the continuing quality improvement of getting customer feedback which is very relevant to all the hospital employees as it is a means of improving the services provided. Also, the respondents were able to point out that it was somewhat important for the availability of a CQI coordinator. As this person coordinates all the activities related to CQI and will have focus on the different CQI activities in the hospital. In the study of Candas et al. (2016), the most reported facilitators to CQI implementation are perception of feasibility, adoption of a formative approach, training and education, confidentiality, and assessing a limited number of quality indicators. Receptive attitudes, a sense of ownership and perceptions of positive impacts also facilitate the implementation. Finally, an organizational environment conducive to quality improvement has to be inclusive of all user groups, explicitly supportive, and provide appropriate resources. Also, they were able to point out that having time commitment involved in undertaking CQI project is somewhat an important facilitator of CQI along with the CQI project endorsed by respected colleague. Further, they also pointed out that CQI project directly impacts their practice and that CQI project endorsed by hospital administration were somewhat important facilitators as well.

Lastly, they pointed out that CQI project that introduces only minimal changes to current clinical practice and incentives for physicians who participate in CQI projects are somewhat important facilitator as well of CQI. All the items were considered to be somewhat important facilitators of CQI perhaps these were based on the experience of the respondents in their hospital considering that they are ISO certified. In the study of Sommerbakk et al. (2016), barriers and facilitators in the implementation of quality improvements were connected to (1) the innovation (e.g. credibility, advantage, accessibility, attractiveness); (2) the individual professional (e.g. motivation, PC expertise, confidence); (3) the patient (e.g. compliance); (4) the social context (e.g. leadership, culture of change, face-to-face contact); (5) the organizational context (e.g. resources, structures/facilities, expertise); (6) the political and economic context (e.g. policy, legislation, financial arrangements) and (7) the implementation strategy (e.g. educational, meetings, reminders).

Table 6 Barriers to CQI among Hospital Employees

Barriers	*f*	*%*	Rank
Time	218	72.67	1st
Lack of awareness of hospital CQI process	171	57.00	2nd
Lack of CQI knowledge	167	55.67	3rd
Lack of evidence of CQI success	107	35.67	4th

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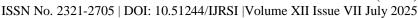| Lack of administrative support (resources)	97	32.33	5th
CQI is not a priority	79	26.33	6th
Hidden administrative agendas	76	25.33	7th

Note: *n=300.*

The table shows that the number one barrier to CQI was time, as hospitals are very busy and allocating time for CQI is difficult, but when CQI becomes part of hospital systems and procedures, this can be addressed. Another barrier identified was lack of awareness of hospital CQI process, and lack of CQI knowledge was also identified as a barrier, along with hidden administrative agendas. Questionnaire items were pre-identified, and although respondents could add barriers, responses were limited to pre-identified items. Quality improvement is essential in-patient care, including improving safety, reducing errors, improving coordination, and access to care, but barriers include lack of funding, training, resources, management support, clinician buy-in, leadership, communication, resistance to change, and data systems (QualityGurus, n.d.). Mukwakungu and Mbohwa (2018) identified communication, management support, and adequate training as critical factors hindering quality awareness, and Abu A'aqoulah et al. (2016) suggested overcoming QMS obstacles by rewarding talented employees, providing good salaries and benefits, and recruiting qualified managers.

Table 7 Interrelationship and Knowledge, Attitude and Readiness on CQI

Variables	r value	*p* value	Decision	Interpretation
Knowledge vs. Attitude	.122	.035	Reject Ho	Significant
Knowledge vs. Readiness				
Internal customer focus and use of team processes	.373	.000	Reject Ho	Significant
Understanding of process	.223	.000	Reject Ho	Significant
Use of data in decision-making	.322	.000	Reject Ho	Significant
Common understanding of quality and customers' wants and needs	.313	.000	Reject Ho	Significant
Management's opportunity to lead CQI	.264	.000	Reject Ho	Significant
Overall	.339	.000	Reject Ho	Significant
Attitude vs. Readiness				

a

Internal customer focus and use of team processes	.246	.000	Reject Ho	Significant
Understanding of process	.170	.003	Reject Ho	Significant
Use of data in decision-making	.274	.000	Reject Ho	Significant
Common understanding of quality and customers' wants and needs	.244	.000	Reject Ho	Significant
Management's opportunity to lead CQI	.233	.000	Reject Ho	Significant
Overall	.265	.000	Reject Ho	Significant

Legend: Significant if p value is $\leq$ .05. Pearson r interpretation: A value greater than .5 is strong (positive), between .3 and .5 is moderate (positive), between 0 and .3 is weak (positive), 0 is none, between 0 and –.3 is weak (negative), between –.3 and –.5 is moderate (negative), and less than –.5 is strong (negative).

The table shows that the p value for knowledge and attitude was less than 0.05, interpreted as significant, rejecting the null hypothesis, meaning a significant positive relationship exists between knowledge and attitude on CQI; increasing knowledge increases positive attitude, supported by the KAP Theory stating knowledge is the foundation of behavior change and attitudes drive behavior change (Fan et al., 2018). The p value for knowledge and all dimensions of readiness and overall readiness was also less than 0.05, meaning a significant positive relationship exists; increasing knowledge increases readiness, supported by the KAP Theory. Similarly, the p value for attitude and all dimensions of readiness and overall readiness was less than 0.05, meaning a significant positive relationship exists; more positive attitudes increase readiness, also explained by KAP Theory. Supporting this, ul Haq et al. (2012) found significant positive correlations between knowledge-attitude, knowledge-practice, and attitude-practice. Fabrigar et al. (2006) found complexity increased attitude-behavior consistency under low-behavioral relevance, with attitudes predicting behavior well under high-behavioral relevance regardless of complexity. Zhu and Xie (2015) indicated risk information had a greater, longer-lasting impact on attitude change, especially for participants with higher knowledge levels, highlighting the role of knowledge in attitude formation and change.

Table 8 Differences in Knowledge on CQI according to Age, Sex, and Participated in a CQI Project

Variables	Mean score	t	df	p value	Decision	Interpretation
Age						
Young adult	3.61	.528	298	.598	Failed to reject Ho	Not significant
Middle adult	3.56					
Sex						
Male	3.54	-.887	298	.376	Failed to reject Ho	Not significant
Female	3.62					

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Attendance to CQI						
Yes	3.66	1.744	298	.082	Failed to reject Ho	Not significant
No	3.53					
Participated in a CQI Project						
Yes	3.65	1.747	298	.082	Failed to reject Ho	Not significant
No	3.51					

The table shows that the p values for age, sex, and attendance to CQI, and participated in a CQI project were greater that the significant value of 0.05. These values were interpreted as not significant which led to the decision of failing to reject the null hypothesis. Thus, there was no significant difference in knowledge on CQI according to age, sex, and attendance to CQI, and participated in a CQI project. Perhaps this can be explained that the fact all members of the hospital are well-informed already about CQI that it does not matter what age or sex, or whether they had attendance to CQI or they participated in a CQI project or not. They all received an orientation of on CQI already as required of an ISO certified institution. Contrary to the findings on not having significant difference, the study of Fita et al. (2021), the significantly associated factors positively affected both the knowledge and the attitude of nurses.

Age greater than 30 years, experience greater than 5 years, being BSc degree holder and above, lived with older people, and nurses working in adult intensive care unit were significantly associated with knowledge.

Table 9 Differences in Knowledge on CQI according to Years of Service, Department, and Last Attendance to CQI

Variable		Sum of squares	df	Mean square	F	Sig.	Decision	Interpretation
Years of Service								
1 year below	Between Groups	.849	3	.283	.683	.563	Failed to reject Ho	Not significant
1 to 3 years	Within Groups	122.623	296	.414				
4 to 6 years								
Above 6 years								
Department								
Medical Department	Between Groups	.936	3	.312	.754	.521	Failed to reject Ho	Not significant
Nursing		122.536	296	.414				

a

Department								
Administration and Support Department	Within Groups							
Ancillary Department								
Attended the last CQI								
None	Between Groups	1.350	3	.450	1.091	.353	Failed to reject Ho	Not significant
Less than 1 year ago	Within Groups	122.122	296	.413				
One to two years ago								
Over two years								

Legend: Significant if *p* value is ≤ .05.

The table shows that the p values for years of service, department, and attended the last CQI were greater that the significant value of 0.05. These values were interpreted as not significant which led to the decision of failing to reject the null hypothesis. Thus, there was no significant difference in knowledge on CQI according to years of service, department, and attended the last CQI. Perhaps this can be explained that the fact all members of the hospital are well-informed already about CQI that it does not matter how long you have served the organization, which department one belongs, and as to when the person attended the last CQI. They all received an orientation of on CQI already as required of an ISO certified institution and it does not look into the profile of the respondents. Everyone has to be on board.

Contrary to the findings of having no significant difference, in a study the significantly associated factors positively affected both the knowledge and the attitude of nurses. Being female, being BSc degree holder and above, lived with older people, and care for older people were significantly associated with attitude (Fita et al., 2021).

Table 10 Differences in Attitude on CQI according to Age, Sex, and Participated in a CQI Project

Variables	Mean score	t	df	*p* value	Decision	Interpretation
Age						
Young adult	2.40	-1.084	298	.279	Failed to reject Ho	Not significant
Middle adult	2.46					
Sex						
Male	2.42	.248	298	.805	Failed to reject Ho	Not significant

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Female	2.41					
Attendance to CQI						
Yes	2.39	-.784	298	.434	Failed to reject Ho	Not significant
No	2.43					
Participated in a CQI Project						
Yes	2.38	-1.664	298	.097	Failed to reject Ho	Not significant
No	2.47					

Legend: Significant if *p* value is $\leq$ .05.

The table shows that the p values for age, sex, and attendance to CQI, and participated in a CQI project were greater that the significant value of 0.05. These values were interpreted as not significant which led to the decision of failing to reject the null hypothesis. Thus, there was no significant difference in attitude on CQI according to age, sex, and attendance to CQI, and participated in a CQI project. Perhaps this can be explained that the fact all members of the hospital are well-informed already about CQI that it does not matter what age or sex, or whether they had attendance to CQI or they participated in a CQI project or not. They all received an orientation and perhaps was able to embrace the concept of CQI and appreciated its importance and need as required of an ISO certified institution. Contrary to the findings, it revealed that the attitude of administrators, teaching personnel and administrative staff' towards ISO 9001 in terms of benefits, challenges, recommendations and standards did not differ significantly. Findings further revealed that the employees have mostly positive perceptions of ISO 9001, resulting in positive attitudes in the workplace (Sisno, 2017). Overall attitudes were supportive, with physicians more skeptical. There were different patterns of attitudes in the five Danish regions and between medical professions. A small group of physicians was extremely negative (Ehlers et al., 2017).

Table 11 Differences in Attitude on CQI according to Years of Service, Department, and Last Attendance to CQI

Variable		Sum of squares	df	Mean square	F	Sig.	Decision	Interpretation
Years of Service								
1 year below	Between Groups	.927	3	.309	1.565	.198	Failed to reject Ho	Not significant
1 to 3 years	Within Groups	58.479	296	.198				
4 to 6 years								
Above 6 years								
Department								
Medical	Between	1.562	3	.521	2.665	.048	Failed to	Not significant

Department	Groups						reject Ho	
Nursing Department		57.844	296	.195				
Administration and Support Department	Within Groups							
Ancillary Department								
Attended the last CQI								
None	Between Groups	.298	3	.099	.497	.685	Failed to reject Ho	Not significant
Less than 1 year ago	Within Groups	59.108	296	.200				
One to two years ago								
Over two years								

Legend: Significant if *p* value is ≤ .05.

The table shows that the p values for years of service, department, and attended the last CQI were greater that the significant value of 0.05. These values were interpreted as not significant which led to the decision of failing to reject the null hypothesis. Thus, there was no significant difference in attitude on CQI according to years of service, department, and attended the last CQI. Perhaps this can be explained that the fact all members of the hospital are well-informed already about CQI which therefore provided them with the positive attitude already that it does not matter how long you have served the organization, which department one belongs, and as to when the person attended the last CQI. They all received an orientation and therefore were able to develop positive attitude on CQI already as required of an ISO certified institution and it does not look into the profile of the respondents. Everyone has to be on board. Contrary to the findings, it revealed that the attitude of administrators, teaching personnel and administrative staff' towards ISO 9001 in terms of benefits, challenges, recommendations and standards did not differ significantly. Findings further revealed that the employees have mostly positive perceptions of ISO 9001, resulting in positive attitudes in the workplace (Sisno, 2017). Overall attitudes were supportive, with physicians more skeptical. There were different patterns of attitudes in the five Danish regions and between medical professions. A small group of physicians was extremely negative (Ehlers et al., 2017).

Table 12 Differences in Readiness on CQI according to Age, Sex, and Participated in a CQI Project

Variables	Mean score	t	df	*p* value	Decision	Interpretation
Age						
Young adult	3.83	-.176	298	.861	Failed to reject Ho	Not significant
Middle adult	3.85					

a

Sex						
Male	3.86	.390	298	.696	Failed to reject Ho	Not significant
Female	3.83					
Attendance to CQI						
Yes	3.79	-1.622	298	.106	Failed to reject Ho	Not significant
No	3.89					
Participated in a CQI Project						
Yes	3.83	-.496	298	.620	Failed to reject Ho	Not significant
No	3.86					

Legend: Significant if *p* value is $\leq$ .05.

he table shows that the p values for age, sex, and attendance to CQI, and participated in a CQI project were greater that the significant value of 0.05. These values were interpreted as not significant which led to the decision of failing to reject the null hypothesis. Thus, there was no significant difference in the readiness on CQI according to age, sex, and attendance to CQI, and participated in a CQI project. Perhaps this can be explained that the fact all members of the hospital had developed the complete and accurate knowledge along with the right attitude and therefore there is nothing left but to be ready for CQI. After all, the institutions is already ISO certified. Contrary to the findings, but more on practice, the findings of the study found that the practice of CQI in vocational colleges (VCs) was at a high level. However, there were significant differences based on demographic factors for the age group in the dimensions of customer focus and teamwork. This study could provide input to the Vocational Educational and Training Department (BPLTV) on the practice of CQI in VCs. With this input, actions and improvement measures can be planned and implemented to improve VCs. Therefore, it is hoped that this study could be a platform for improvement in VCs quality management (Latif & Nor, 2021). In the study of Abou Hashish and Alsayed (2020), the stepwise regression analysis, revealed that as for quality improvement (QI), the result showed that age and educational level were statistically important factors correlated with the QI ratings. Specifically, younger nurses had a lower perceived QI rating, while bachelor's nurses had a higher QI rating.

Table 13 Differences in readiness on CQI according to Years of Service, Department, and Last Attendance to CQI

Variable		Sum of squares	df	Mean square	F	Sig.	Decision	Interpretation
Years of Service								
1 year below	Between Groups	.332	3	.111	.380	.767	Failed to reject Ho	Not significant

a

1 to 3 years	Within Groups	86.203	296	.291				
4 to 6 years								
Above 6 years								
Department								
Medical Department	Between Groups							
Nursing Department		.102	3	.034	.117	.950	Failed to reject Ho	Not significant
Administration and Support Department	Within Groups	86.433	296	.292				
Ancillary Department								
Attended the last CQI								
None	Between Groups	.952	3	.317	1.097	.350	Failed to reject Ho	Not significant
Less than 1 year ago	Within Groups	85.583	296	.289				
One to two years ago								
Over two years								

Legend: Significant if *p* value is ≤ .05.

The table shows that the p values for years of service, department, and attended the last CQI were greater that the significant value of 0.05. These values were interpreted as not significant which led to the decision of failing to reject the null hypothesis. Thus, there was no significant difference in the readiness on CQI according to years of service, department, and attended the last CQI. Perhaps this can be explained that the fact all members of the hospital had developed the complete and accurate knowledge along with the right attitude and therefore there is nothing left but to be ready for CQI. After all, the institutions is already ISO certified. Contrary to the findings, but more on practice, the findings of the study found that the practice of CQI in vocational colleges (VCs) was at a high level. However, there were significant differences based on demographic factors for the age group in the dimensions of customer focus and teamwork. This study could provide input to the Vocational Educational and Training Department (BPLTV) on the practice of CQI in VCs. With this input, actions and improvement measures can be planned and implemented to improve VCs. Therefore, it is hoped that this study could be a platform for improvement in VCs quality management (Latif & Nor, 2021). In the study of Abou Hashish and Alsayed (2020), the stepwise regression analysis, revealed that

as for quality improvement (QI), the result showed that age and educational level were statistically important factors correlated with the QI ratings. Specifically, younger nurses had a lower perceived QI rating, while bachelor's nurses had a higher QI rating.

CONCLUSION AND RECOMMENDATIONS

Conclusion. In In conclusion, knowledge influences both attitude and readiness as attitude also influences readiness. When knowledge is increased this poses a positive attitude and increases readiness on CQI. Also, when attitude is made very positive this increases readiness on CQI. Also, there are no variations in the knowledge, attitude, and readiness according to the profile. No matter what the profile is, a high level of knowledge on CQI can still be gained, a very positive can still be achieved, and a high level of readiness on CQI can still be attained. The study findings affirmed the assumption of the Knowledge, Attitude, and Practice (KAP) Theory by Ross & Smith, 1969 as cited in Fan et al. (2018) wherein knowledge influences attitude and readiness. To address the findings of the study a CQI Readiness Plan was created.
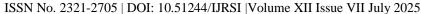
Recommendations. The results of this study guide the following suggestions are offered:

1. The CQI Readiness Plan will be suggested for use in the hospital where the study was conducted and a meeting shall be called for to discuss the findings of the study among hospital administrators and those who take major roles in the ISO certification of the hospital. Other hospitals may also gain insights about the study in terms of adopting the specific measures identified in the implementation of CQI in their respective hospitals.

2. The findings will allow to strengthen the policies by the Department of Health on establishing CQI activities and also it will help develop internal policies in the hospital about the conduct of CQI activities taking into consideration the knowledge aspect, the attitude component and the readiness factor s.

3. AThe findings can greatly contribute to providing reference in topics about Total Quality Management, Quality Management Systems, and ISO. The hospital can serve as a benchmarking institution in the implementation of CQI activities. The findings of the study can also serve as reference on discussing CQI activities along with discussing research concepts, ethics in research, and statistics.

4. Finally, the following topics are suggested for future research undertakings:

a. A multiple case study on the best performing hospitals using continuous quality improvement both private and public hospitals;

b. A phenomenological inquiry on the organization culture on CQI implementation among hospital employees;

c. Exploring the lived experiences on continuous quality improvement activities of hospital employees of a government hospital;

d. Validating the interrelationship of knowledge, attitude, and readiness on CQI activities among hospital employees;

e. Implementation of CQI activities as perceived by hospital employees in a government hospital.

CQI Readiness Sustenance Plan

Rationale

Continuous Quality Improvement (also known as CQI) refers to the gradual and ongoing enhancement of procedures, as well as patient care and safety. CQI may have as its purpose the enhancement of operations, results, and system processes; the betterment of the working environment; or the achievement of regulatory compliance. The nature of the process improvement could be described as "gradual" or "breakthrough." The development of a CQI project often consists of describing the problem, performing benchmarking, determining

a goal, and then engaging in iterative quality improvement projects. Improvements are made using the iterative process, the effect of the improvements is measured, and then the process is repeated until the intended output is reached. Continuous Quality Improvement is essential for a number of reasons, including the fact that it enables the delivery of high- quality service to the customer, high performance by improving the efficiency of processes, the development of a cohesive team, a reduction in non-value-added activity and waste, a decrease in costs, and an increase in the level of safety in the workplace. Continuous Quality Improvement helps develop organizational clarity, which in turn results in a high level of service quality for clients. Findings of the study revealed that respondents were knowledgeable about the fundamental principles on CQI. The respondents had a positive attitude towards CQI. Overall, the respondents were ready on CQI. The respondents believed that CQI project relevant to their area of practice was the very important facilitator of CQI. There was a significant interrelationship among knowledge, attitude, and readiness on CQI. The top three barriers to CQI were time, the lack of awareness of hospital CQI process, and the lack of CQI knowledge. With all these findings, thus this CQI readiness sustenance plan was created.

General Objectives

The primary purpose of this plan is sustaining the high level of knowledge, positive attitude, and high level of readiness on CQI while addressing the different barriers among hospital employees.

Specific Objectives

This plan aims to achieve the following specific objectives:

a) To sustain the high level of knowledge on CQI;

b) To sustain the positive attitude on CQI;

c) To sustain the high level of readiness on CQI;

d) To make sure that all CQIs are relevant to the practice of the hospital employees;

e) To allocate time for CQI implementation;

f) To raise awareness on hospital CQI process; and

g) To increase the knowledge on CQI.

Concern	Specific Objectives	Activities	Persons Responsible	Resources	Time Frame	Success Indicators
The need to sustain t he high level of knowledge on CQI	To sustain the high level of knowledge on CQI.	**Personally-initiated activities:** Read articles and view videos about continuous quality improvement. Attend free or paid webinars on CQI and ISO. **Hospital-initiated**	Hospital employees. Hospital Administrato rs Department Heads Quality Assurance Department	Internet connectivi ty Desktop, laptop, tablets, or android phones Budget for the webinar (Php 5,000.00 /	Second quarter of 2023 onward s	Saved articles and videos Certificates of attendance on the webinars Minutes of meetings Orientation attendance Training Needs Assessment

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		activities: Re-conduct ISO Awareness especially Conduct webinar adopted by the hospital.		webinar) Training Needs Assessme nt Tool. Instrument to assess knowledge on CQI		Results. Sustained high level of knowledge on CQI.
The need to sustain the positive attitude on CQI	To sustain the positive attitude on CQI.	**Personally-initiated activities:** Read articles and view videos about continuous quality improvement. Attend free or paid webinars on CQI and ISO. **Hospital-initiated activities:** Conduct a webinar on the Benefits of CQI and ISO Certification. Conduct periodic meetings. Re-assess the attitude on CQI six months following the implementation of this plan	Hospital employees. Hospital Administrato rs Department Heads Quality Assurance Department	Internet connectivi ty Desktop, laptop, tablets, or android phones Budget for the webinar (Php 5,000.00 / webinar) Instrument to assess attitude on CQI	Second quarter of 2023 onward s	Saved articles and videos Certificates of attendance on the webinars Minutes of meetings Orientation attendance Sustained positive attitude on CQI.
The need to sustain the high level of somewhat ready on a	To sustain the high level of readiness on CQI.	**Personally-initiated activities:** Read articles and view videos about continuous quality	Hospital employees Hospital Administrato rs Department Heads	Internet connectivi ty Desktop, laptop, tablets, or android phones	Second quarter of 2023 onward s	Saved articles and videos Certificates of attendance on the webinars Answered

| CQI | | improvement. Attend free or paid webinars on CQI and ISO. **Hospital-initiated activities:** Institute measures on customer feedback such as providing a suggestion box, and answering feedbacks from the official Facebook account | Quality Assurance Department | Budget for the webinar (Php 5,000.00 / webinar) Official website and Facebook account Strategic, Operational and Staff Development Plans SOPPs Budget for the suggestion box. Internal audit instruments | | complaints or feedbacks from the official Facebook account and official website. Installed suggestion box. Revised Strategic, Operational, and Staff Development Plans. Revised SOPPs |

		CQI six months following the implementation of this plan				
CQI project relevant	To make sure that all CQIs are relevant to the practice of the hospital employees.	**Personally-initiated activities:** Read articles and view videos about continuous quality improvement. Attend free or paid webinars on CQI and ISO.	Hospital employees. Hospital Administrators Department Heads Quality Assurance Department	Internet connectivity Desktop, laptop, tablets, or android phones TNA Tool Staff Development Plan Budget for the webinar	Second quarter of 2023 onwards	Saved articles and videos Certificates of attendance on the webinars TNA Results Update Staff Development Plan Minutes of Meetings.

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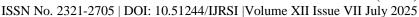|		**Hospital-initiated activities:** Conduct Training Needs Assessment among all employees Develop a staff development plan based on the TNA results.		(Php 5,000.00 / webinar) Instrument to assess facilitators on CQI		CQI project relevant to their area of practice as the very important facilitator
Top three barriers of time, the lack of awareness of hospital CQI process, and the lack of CQI knowledge	To allocate time for implementation. To raise awareness on hospital To increase the knowledge on CQI.	**Personally-initiated activities:** Read articles and view videos about continuous quality improvement. Attend free or paid webinars on CQI and ISO. **Hospital-initiated activities:** Conduct webinar Conduct an orientation on the need to do CQI as part of the certification process. Re-assess the barriers on CQI six months following the implementation of this plan.	Hospital employees. Hospital Administrators Department Heads Quality Assurance Department	Internet connectivity Desktop, laptop, tablets, or android phones Budget for the webinar (Php 5,000.00 / webinar) Instrument to assess barriers on CQI	Second quarter of 2023 onwards	Saved articles and videos Certificates of attendance on the webinars Orientation attendance Time, the lack of awareness of hospital CQI process, and the lack of CQI knowledge are no longer barriers to CQI. All those mentioned in the success indicators of sustaining a high level of knowledge.

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