

# **Integrating Quality Management Principles into the Accreditation of Graduate Medical Education Programs in the UAE: A Case Study of the NIHS Framework**

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# **1 Chapter 1: Introduction**

## **1.1 Context and Background**

At the Graduate Medical Education GME level, physicians gain the qualifications and experience they require to serve in the nation's health systems as they become more sophisticated. Graduate Medical Education GME programs around the world are closely supervised and accredited to ensure they reach top-quality, safety and education goals. By being accredited, educational programs prove their quality, guide clinical training, ensure safety for the public and help healthcare improve over time.

There are, for instance, the Accreditation Council for Graduate Medical Education (ACGME) in the United States, the General Medical Council (GMC) in the United Kingdom and the World Federation for Medical Education (WFME) that help decide and maintain standards for education around the world. The organizations that accredit medical schools organize requirements for course structure, teaching staff credentials, student evaluation, research projects, practical training, institutional equipment and services. Applying the same standards to all students guarantees they are ready, moral and skilled to care for patients in their own countries and internationally (Allen et al., 2022).

At the same time, many industries such as education and healthcare, have improved their quality assurance methods with ISO 9001 and the EFQM Excellence Model. ISO 9001:2015 underlines using processes, managing risks, meeting customer expectations and regularly improving, with these principles applying everywhere as the standard approach to quality assurance. The EFQM Excellence Model guides organizations by asking leaders to focus on strategy, the people involved, partnerships, results and self-assessment for ongoing improvement.

There is a rapid change happening in the GME in the UAE. NIHS is in charge of appraising and certifying the post graduate medical education in UAE basing on the best practices, incorporating international standards. There has been outstanding growth in the UAE's healthcare system, as well as major changes in medical education and policy during the past decades. Reinforced by its Vision 2031, the UAE hopes for advanced healthcare services and excellent employees in the field.

Although aspects of quality assurance such as self-assessment, site visits and consistent improvement, are present in the NIHS framework, no international QMS standards are yet adopted

in it. This might stand in the way of measuring, recording and comparing results to others. Seeing these issues, it becomes necessary to review how established QMS systems could be part of the NIHS accreditation procedure. As a result, the entire health and education process within the UAE will improve and support the country's plans for progress.

## **1.2 Problem Statement**

Accreditation standards developed by the NIHS are an important means for regulating GME in the UAE. But since there is no clear practice for using formal Quality Management Systems (QMS) such as ISO 9001:2015 and the EFQM Excellence Model, many challenges arise. Because of these difficulties, the effectiveness, transparency and responsiveness of accreditation processes deteriorate, negatively influencing both the quality of medical education and the level of care patients receive (Counselman et al., 2017). NIHS places importance on conforming to established standards and there are not always regular ways to watch for and solve issues beyond initial compliance. As a consequence, evaluations become mostly about meeting minimum standards, leaving little room for continuous advances in education. Unlike Standard Operating Procedures SOPs, QMS highlights focusing on maintaining high quality, reacting to risks and acting based on proven evidence. Continuing, the way stakeholders are approached and taken into account is not consistent for all programs. Getting accreditation done well depends on engagement by program directors, faculty, trainees, hospital management and regulatory bodies. When processes and technologies for engaging employees are unclear, the framework struggles to manage ongoing changes and challenges. Third, there are operational issues caused by pieces of the process not linking enough and a limited use of quality management systems. Such inefficiencies may push back the time for accreditation, add to the difficulty of collecting and analyzing information and result in the system not reacting well to shifting healthcare rules or trends.

The NIHS adopted ACGME competency framework while developing the accreditation system which is respected worldwide as one of the highest standard for training doctors in large-scale programs. NIHS's accreditation standards were developed based on international best practices and contextualized to UAE local needs. NIHS focuses on outcomes-based medical education, based on the six core ACGME competencies, so that our medical training are recognized globally and set to serve the needs of the future in healthcare. NIHS doesn't use Iso standards however they require JCI approval as mandatory for accrediting the training facilities. Such activities are self-

assessment, review by others, watching the program's results and acting on advice to maintain accountability and keep improving. Additionally, NIHS appreciates that medical education changes over time and is currently focusing on making accreditation more flexible to respond quickly to changes in health care, teaching and workforce. So, UAE's postgraduate medical education enjoys worldwide recognition while also helping doctors achieve local and global recognition.

### **1.3 Purpose of the Study**

The aim of this work is to show that the OHSAS 18001:2007 and ISO 9001:2015 Quality Management Systems can be included in the NIHS accreditation framework for Graduate Medical Education in the UAE. Thanks to the integration, transparency will increase, stakeholders will be more involved, performance will get better and there will be continuous improvement of quality as part of how accreditation works.

Using the NIHS framework and looking at international QMS models, this study is aiming to produce a unique hybrid quality-accreditation model best fit for the UAE. The model will suit postgraduate medical education and follow standard principles of quality management, so it will be easy to use and can be maintained. Additionally, the study will validate the hybrid model with interviews or questionnaires directed at NIHS accreditation officers, residency program directors, hospital quality managers and trainees. With their recommendations, the model will reflect what is important and practical and will bring new views on current difficulties found in accreditation.

The study aims to assist leaders in policy and institutions by giving them helpful recommendations for changing accreditation to be quality-focused and matching the UAE's wider national plans for healthcare.

### **1.4 Research Objectives and Questions**

For this purpose, the study uses the following research objectives as its foundation:

1. To review the way NIHS accreditation is done and spot what challenges and advantages there are for working QMS into the process.
2. Benchmarking the accreditation requirements and processes used by NIHS to accredit institutions and programs against ISO 9001 and EFQM.

3. To construct a hybrid accreditation model that brings together NIHS standards and these quality management programs.
4. Through the involvement of stakeholders like program directors, faculty, NIHS team and residents, the model was found to be valid.
5. To offer support for a strategy to develop a quality-centered accreditation system for postgraduate medical education in all parts of the UAE.

In parallel, the main questions that research aims to answer are listed below.

What are the pros and cons of the present NIHS accreditation process, if we evaluate them through a quality management system?

In what ways can the principles from ISO 9001 and EFQM systems best support postgraduate medical education accreditation in the UAE?

What specific things, methods and systems are needed to keep the quality of NIHS accreditation improving over time?

What changes can we expect in GME programs from applying these quality management ideas?

## **1.5 Significance of the Study**

The results of this study matter for reasons practical, theoretical and relevant to policy, making it an important contribution to the development of medical education accreditation in the UAE and GCC region.

This work highlights a way to update and upgrade the NIHS accreditation system by including internationally accepted standards for quality management. Choosing a hybrid model along with ISO 9001 and EFQM is expected to ensure consistency in accreditation practices, show greater transparency and make stakeholders more confident (Fonseca, 2015). As a result, medical educators and trainees can count on a reliable way to review and evaluate trainees that helps them to develop further instead of just fulfilling the minimum requirements.

Studies on this topic are still rare in the GCC and this research helps to fulfill this gap. The authors adapt recognized quality models to postgraduate medical education which will influence discussions and offer a base for future research in medical education.



The research findings agree with the UAE's Vision 2031 plan, as it stresses that healthcare excellence, growing the workforce and international connection are very important. Developing the system of accreditation puts the nation's priority for growing the health sector into action by ensuring medical practitioners. Results of this study, in the form of policy advice and a roadmap, will assist NIHS and other stakeholders in planning where to use their resources which helps improve the quality of education at medical institutions continuously.

Also, the results could spread to other GCC countries, giving them a useful blueprint for improving their postgraduate medical education accreditation using quality management.

## **1.6 Structure of the thesis**

Six comprehensive chapters are used in this thesis, so readers can easily move through the research study step by step:

In the first chapter, a general introduction to our subject is mentioned. Covers information about the context, issue being researched, objectives and questions, the importance of the study and a general outline of how the thesis is structured.

In second chapter, reviewed the relevant literature. Surveys several sources on Quality Management Systems, shared accreditation rules around the world and in local areas and examples of QMS being used in education and healthcare. In Chapter 3, the methods and analytical tools used to interpret findings. Outlines how data was collected, how the participants were chosen which methods were used for analysis and how actions were taken to ensure ethical research. Chapter 4 presents the key findings and outcomes of the research. Describes what was found through document analysis, interviews with stakeholders and the application and testing of the hybrid quality-accreditation model. In Chapter 5, Makes sense of the findings, follows up with answers to the main questions and reviews what can be used in reading and the academic community. In this chapter, we summarize our findings and present some recommendations. Provides a summary of what was accomplished in the study, gives responses to the research questions, shares useful advice for NIHS and policymakers and suggests further topics for future research.

This provides the basis for discussing how quality management can be included in the accreditation of Graduate Medical Education programs in the UAE, confronting main problems and making sure national efforts match international standards.

## **2 Chapter 2: Literature review**

### **2.1 Quality Management Systems (QMS): ISO 9001 and EFQM Principles**

#### **2.1.1 Overview of Quality Management Systems**

QMS are established structures that guide organizations to keep meeting the needs of customers and limits imposed by rules, while increasing how the organization performs. At first, QMS began in manufacturing industries in the early 20th century and then shifted to guarantee quality through standard procedures. According to Frenk et al. (2020) In recent decades, the philosophies covered service sectors, schools and health services and these concepts became key to outstanding performance in companies. Thanks to QMS, processes can be taken over with structure, risks can be minimized and quality is always improved (Stratton, 2019). Firms using QMS experience better trust from customers, higher performance levels, stronger regulation compliance and better competitive posture (Hamdy et al., 2010). Modern QMS models pay attention to a comprehensive way by making leadership, streamlining operations, including others and relying on data main aspects (Ibrahim et al., 2015). The market is mainly led by two top QMS systems recognized internationally: ISO 9001:2015 and the EFQM Excellence Model. Although Balanced Scorecard and KPIs let organizations check and fix their performance, they differ in structure, focus and application (Svitlana Zaiets, 2023).

#### **2.1.2 Detailed Exploration of ISO 9001:2015**

##### **History and Global Adoption**

The late 1970s saw ISO 9001 come to life as a result of the International Organization for Standardization (ISO) creating it for standardized quality management. Starting from 1987, when it was first printed, the standard has been revised multiple times and the current version was issued in 2015. It is an important development that stresses dealing with risks, processes and fitting different types of industries better (Kaddoura, 2011). There are over one million companies around the world certified in ISO 9001, the most used quality management standard on a global scale. This approach is useful for organizations large and small, working in manufacturing, services, healthcare, education and public administration (Szkiel, 2016).

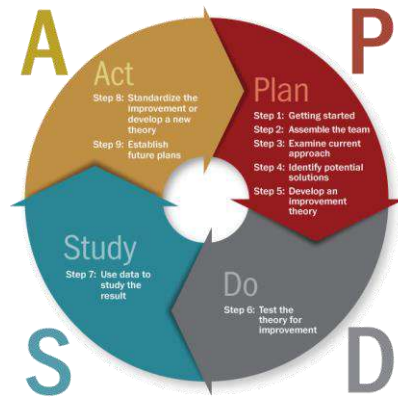
##### **Key Principles of ISO 9001:2015**

There are seven quality management principles (QMPs) set by ISO 9001:2015 to direct organizations in how to handle quality management.

**Table 1: Quality Management Principles**

<b>Principle</b>	<b>Description</b>
Customer Focus	Understanding and meeting customer needs to enhance satisfaction.
Leadership	Establishing unity of purpose and direction to create conditions for engagement.
Engagement of People	Ensuring competent, empowered, and engaged individuals at all organizational levels.
Process Approach	Managing activities as interrelated processes to achieve efficient results.
Improvement	Continual focus on improving overall organizational performance.
Evidence-Based Decision Making	Basing decisions on analysis and evaluation of data and information.
Relationship Management	Managing relationships with interested parties to optimize performance.

Figure 1 below illustrates the **process approach** model central to ISO 9001:2015, which emphasizes Plan Do Study and Act (PDSA) cycles for continuous improvement.



*Figure 2.1: PDSA Cycle Diagram*

Source: (Breckner et al., 2017)

### **Application Domains and Benefits**

ISO 9001:2015 was built to be process-centered and places importance on managing risks. Thanks to this, organizations can easily adapt their Quality Management System to their circumstances. According to this standard, businesses should outline and figure out how to control their main business processes. Besides, organizations need to spot risks and potential benefits that are part of their processes and act early on them (Tarmo & Kimaro, 2021). Regular observation and measurement of performance indicators tell us if the current processes are effective and efficient. When something goes off track, organizations are asked to take corrective action and work on enhancing quality (Akram et al., 2024). When applied in healthcare and education, ISO 9001 enhances the match between tasks and actions and what people expect and what is required by law and quality standards. When applying ISO 9001, organizations gain useful benefits such as clarified work processes, increased satisfaction from clients such as people who need care and education, more efficient management of resources and a decrease in faults (Tshai et al., 2014).

### **2.1.3 Detailed Exploration of the EFQM Excellence Model**

#### **Background and Development**

In 1991, the European Foundation for Quality Management (EFQM) introduced the EFQM Excellence Model, a framework made to assist organizations in being sustainable excellent over time. Kravchenko and Saienko (2020) determine that ISO 9001 specifies how to manage, EFQM only guides organizations to see which parts of excellence they already have or need to improve.

The model has changed over time and the newest version came out in 2020 (Al-Dhaafri & Alosani, 2021). People working in healthcare, education and public services around the world regularly use this as well.

### Framework Structure: Enablers and Results

The EFQM Model consists of nine criteria organized into Enablers and Results groups.

Table 2: Enablers and Results groups.

Enablers (What an organization does)	Results (What an organization achieves)
Leadership	Customer Results
Strategy	People Results
People	Society Results
Partnerships & Resources	Business Results
Processes, Products & Services	

Monitoring and checking results in order to support ongoing success.

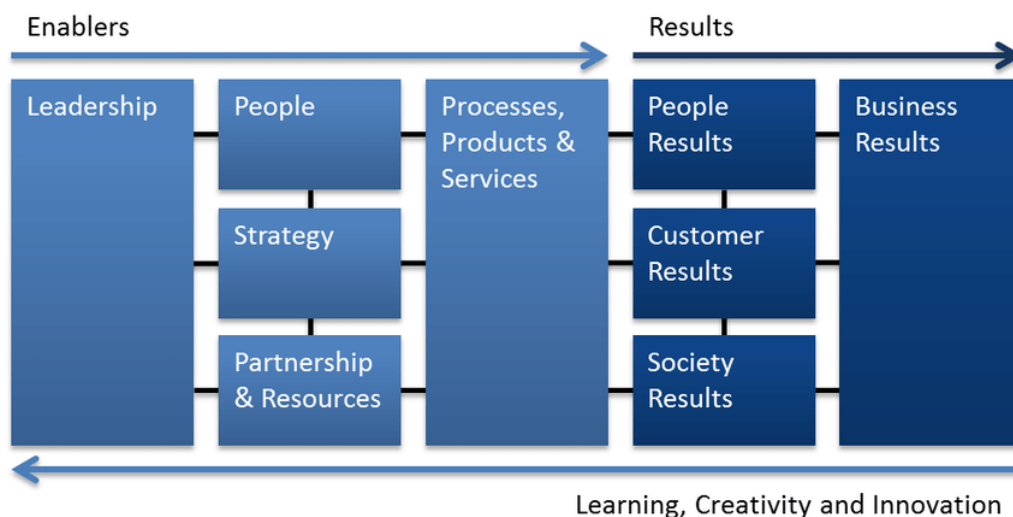


Figure 2.2: EFQM Model Diagram showing Enablers and Results criteria

### Role in Promoting Organizational Excellence and Continuous Assessment

By following the EFQM model, organizations promote ongoing improvement by checking themselves often, comparing with others and learning all the time (Aldiabat, 2022). It leads organizations to see quality management as connected to their strategy, what stakeholders need and their effect on society.

#### 2.1.4 Comparison of ISO 9001 and EFQM Models

Even though EFQM and ISO 9001 focus on making quality and performance better, they are designed differently and therefore complete each other when used together.

**Table 3: ISO 9001 Vs EFQM Models**

<b>Aspect</b>	<b>ISO 9001:2015</b>	<b>EFQM Excellence Model</b>
Approach	Prescriptive, requirements-based standard	Non-prescriptive, framework for self-assessment
Focus	Process management, risk-based thinking	Holistic organizational excellence, including leadership and strategy
Certification	Formal certification possible	No formal certification; assessment and awards based
Key Elements	Quality management principles, PDCA cycle	Enablers and results criteria
Scope	Quality management system for any organization	Comprehensive business excellence model
Use Cases	Widely used in operational process control	Used for strategic improvement and organizational transformation
Continuous Improvement	Integral through PDCA and risk management	Central through self-assessment and learning cycles

Many organizations use ISO 9001 to make their quality management processes formal but turn to EFQM to help them with wider development, innovation and excellence (van Schoten et al., 2016).


ISO 9001	EFQM-model
 Standard requirements for the quality management system	 Integral management model for social responsible & sustainable entrepreneurship
 Third party certification audit - conformity report with opportunities for improvement	 Recognition by external EFQM assessment - extensive feedback report with strengths and opportunities for improvement
 Focus on quality, limited ecosystem & limited set of stakeholders	 Focus on performance and capabilities, now and in the future - extensive ecosystem - leadership, culture change & transformation
 Compliance approach, less suitable to facilitate sustainable long term growth	 Excellence model for sustainable growth & long term success, based on the "why", "how" and "what" questions

Figure 2.3:comparison of ISO 9001 and EFQM

Two major QMS frameworks were discussed in this section—ISO 9001:2015 and the EFQM Excellence Model—that give sound ideas and tools for managing and improving quality in an organization. ISO 9001 deals with effective processes, risk handling and customer satisfaction using a set of standards, but EFQM encourages a complete self-evaluation process to achieve excellence (Kumar et al., 2018). Identifying the good points of each model allows you to combine them with accreditation guidelines for graduate medical education to preserve honesty, involvement and optimization.

## 2.2 Accreditation in Medical Education: Global Standards and Local Context

### 2.2.1 Overview of Medical Education Accreditation Globally

Medical education relies on accreditation to check that programs produce doctors who are trained well and are ready for patient treatment. Globally, groups that accredit institutions decide on criteria to support best practice in curriculum, the teaching staff, institution facilities, learning results and ongoing improvement (Winters et al., 2013). Accreditation is important because it ensures basic education quality, makes colleges and universities accountable, encourages innovations in education and allows medical graduates to easily work and study in other countries. Because healthcare keeps changing, accreditation systems should also change in order to include new skills such as teamwork among professionals, ways to ensure patient safety and digital support (Lepistö et al., 2022).



The main world organizations accrediting medical education are the World Federation for Medical Education (WFME), the Accreditation Council for Graduate Medical Education (ACGME) and in some regions, local groups such as the National Institute for Health Specialties in the UAE. They create systems that assist in making national and institutional accreditation policies worldwide (Wolniak, 2017).

### **2.2.2 Examination of WFME Standards**

#### **Mission, Scope, and Global Relevance**

WFME was established in 1972 to raise the standards of medical education all around the world. WFME works on global standards to support both medical schools and postgraduate programs in reaching excellence and promoting similarity in their training.

WFME standards are known all over the world and support accreditation, national initiatives and academies in 120 or more countries (Alharafsheh et al., 2022). The framework matches up closely to what the World Health Organization wants to achieve in developing the health workforce and security.

#### **Key Domains Covered by WFME**

WFME spreads their standards over the main education phases such as basic medical education, postgraduate medical education and continuing professional development. WFME standards for postgraduate medical education underline: How Outcomes for Success Are Fair: Every school has a strong mission in line with the needs of society. A curriculum structure, topics covered and the way they are taught aim to develop practical competencies. It is important to conduct solid formative and summative assessments of students (Manatos et al., 2018). Trainees, Recruitment, grooming and caring for residents. Teachers, what qualifications they have, how they develop their skills and what role they take in program governance. Students should learn with resources such as the necessary equipment and access to clinical duty. Leadership, rules and responsibility should be clearly visible. Each process in quality control should be updated and adjusted regularly with ongoing information and new strategies (Wolniak, 2017).

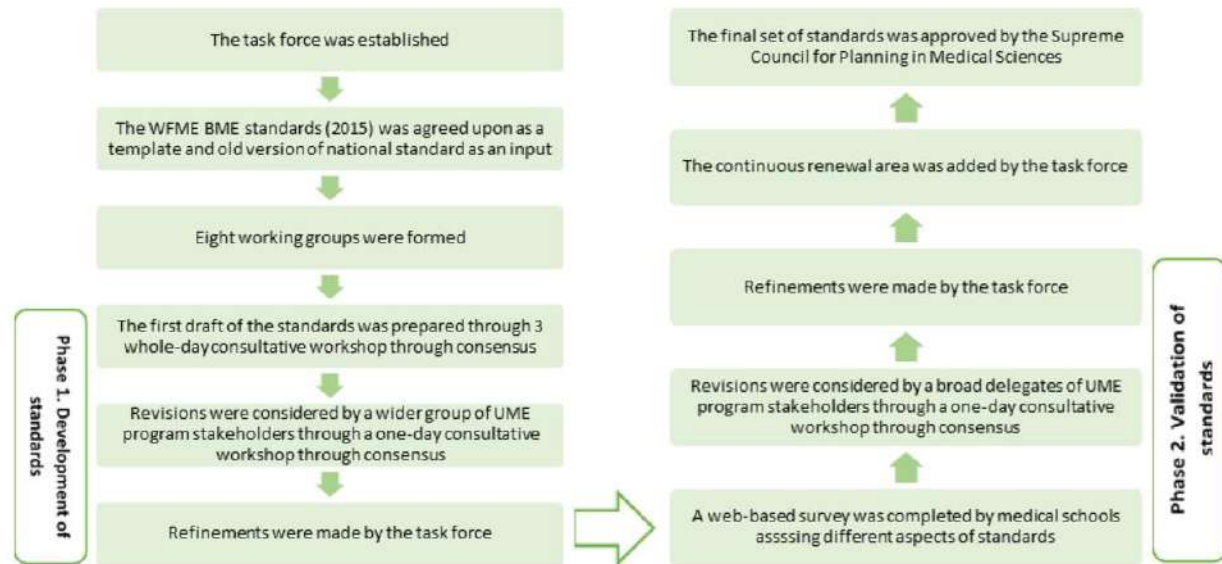


Figure 2.4: WFME Standards Structure

### 2.2.3 Analysis of ACGME Accreditation Framework

#### Competency-Based Medical Education (CBME)

The organization responsible for accrediting graduate medical programs primarily in the United States—and internationally—is the Accreditation Council for Graduate Medical Education (ACGME). It relies on CBME which means trainees have to show they possess the competencies required for practicing medicine alone (Alnadi & Shadi Altahat, 2024).

Among the ACGME's Core Competencies are One competency relates to providing care for patients., medical Facts, learning by Doing, skills in Interactions and Communication, professionalism, systems-Based Practice, with CBME, periods of training are replaced by demonstration of learned skills which helps improve and strengthen postgraduate courses.

#### Continuous Accreditation and CQI Emphasis

ACGME uses continuous accreditation, involves continuous collection of data, organizes routine program evaluations and carries out regular site visits. Because the process repeats, Continuous Quality Improvement (CQI) becomes its main feature (Nenadál et al., 2018). Programs should rely on outcome results, what stakeholders say and performance indicators to keep improving.

#### Opinions of stakeholders and monitoring results

Participation of stakeholders is very important in the ACGME model. Many influential people in residency programs give input by participating in surveys and different committees. Outcomes measured in this model are sophisticated such as getting board certified, getting a job after graduation and patient safety figures (Chaurasia, 2023).

*Table 4: Summary of ACGME Core Competencies and CQI Elements*

<b>ACGME Core Competency</b>	<b>Description</b>	<b>CQI Elements Linked to Competency</b>
<b>Patient Care</b>	Providing compassionate, appropriate, and effective care.	Monitoring patient outcomes, implementing care improvement plans
<b>Medical Knowledge</b>	Demonstrating knowledge about biomedical, clinical, and social sciences.	Using knowledge assessment results to update curricula
<b>Practice-Based Learning &amp; Improvement</b>	Ability to investigate and evaluate care practices and improve them.	Continuous self-assessment, incorporation of feedback loops
<b>Interpersonal &amp; Communication Skills</b>	Effective communication with patients, families, and colleagues.	Patient satisfaction surveys, team communication improvement
<b>Professionalism</b>	Commitment to professional responsibilities and ethical principles.	Monitoring adherence to ethical standards, addressing lapses
<b>Systems-Based Practice</b>	Awareness of and responsiveness to the larger healthcare system.	Process optimization, resource management, reducing errors

## 2.2.4 Overview of NIHS Accreditation Framework

### Historical Background and Development

The UAE government set up NIHS because it wanted to improve health and education services for its people. NIHS is responsible for the accreditation of residency and fellowship programs from many healthcare fields, ensuring everyone follows national policies and international guidelines. As there was rapid development of medical education institutions in the UAE and a need for quality standards, NIHS accreditation was created (De Blasio & Biunno, 2021). Over the years, the framework has been adjusted to address local needs and still use international best practices (Nunhes et al., 2019).

### **Current Standards and Processes**

The National Institute for Health Sciences (NIHS) has developed standards to make sure that all programs offered meet the required quality and effectiveness. The guidelines deal with key aspects such as these:

The framework outlines the needed criteria for shaping the program structure and describes the curriculum, what it is meant to accomplish and how trainees abilities should improve to satisfy set standards, both local and international. Emphasis is put on recruiting qualified faculty members and helping them develop further so that teaching and clinical training are always at a high standard. Trainees are expected to practice medical skills in real-world clinical settings, the guidelines make sure trainees experience varied cases to develop proper skills. Trainees must be assessed regularly with the help of a system that offers useful remarks and helps them keep improving. The way the institute is managed, has administrative structures and applies quality assurance should all follow best practices for proper supervision and good operations (Frenk et al., 2020). Institutions should strictly obey national laws, ethical norms and professional regulations within health education and practice. Acquiring accreditation involves an institution: reviewing its own work compared to NIHS standards, being examined by external peers, having its facilities visited, proving it meets the necessary requirements. Because of this process, accredited programs are able to give a high standard of education that prepares their graduates to meet modern healthcare needs.

### **Alignment and Gaps Compared to International Models**

Even though NIHS addresses main accreditation topics, there are some gaps when measured against the WFME and ACGME standards:

Table 5: Comparison of NIHS with WFME and ACGME standards

Area	NIHS Current Status	International Best Practice (WFME/ACGME)	Gap
Continuous Quality Improvement (CQI)	CQI practices exist but lack formal integration and consistent real-time feedback mechanisms	Fully embedded CQI processes with continuous, real-time outcome monitoring and feedback loops	Need to formalize CQI processes and enhance real-time outcome measurement
Competency-Based Framework	NIHS implemented EPAs in some specialities but not fully integrated	Comprehensive competency-based medical education (CBME) with milestone assessments and entrustable professional activities (EPAs)	Greater integration and consistent application of CBME and milestones across programs needed
Stakeholder Engagement	Engagement primarily limited to faculty and program directors	Inclusive engagement encompassing trainees, patients, families, and external stakeholders	Expand stakeholder involvement to include all relevant parties for holistic feedback
Risk-Based and Outcome Focus	Emphasis mainly on compliance and outcome reporting	Strong focus on proactive risk management combined with outcome-based evaluation	Shift towards integrating risk management with outcome focus throughout processes

### 2.2.5 Challenges and Opportunities

Accreditation in medical education is confronted by similar problems worldwide. It is difficult for accreditation to keep up given how quickly healthcare needs develop and change. In addition, many partnerships involving patients and community groups have yet to be fully established (Petrič & Gomišček, 2011). How well medical schools are recognized internationally—and if their graduates can work elsewhere—relies heavily on accreditation systems meeting global standards which encourages countries to align their accreditation processes (Hashem, 2022).

Still, these issues create new opportunities. When a Quality Management System (QMS) is put into place, businesses may find their transparency improves, they can better address risks and support stronger continuous improvement. By placing CBME in accreditation frameworks, we help ensure that programs stay current and achieve desired outcomes. headers than the last.

Ensuring that accreditation works with international standards allows doctors to be recognized and move anywhere (Pohle et al., 2018).

*Table 6: Comparative Analysis of NIHS, WFME, and ACGME*

<b>Key Area</b>	<b>NIHS (UAE)</b>	<b>WFME (Global)</b>	<b>ACGME (USA)</b>
Accreditation Framework Focus	Primarily process-based, with focus on regulatory compliance	Focus on educational quality, outcomes, and standards	Competency-based education with continuous evaluation
Core Competencies	NIHS Adopted ACGME six Core competencies	Emphasizes competence, curriculum, and outcome measurement	Detailed focus on six core competencies (patient care, medical knowledge, professionalism, etc.)
Stakeholder Engagement	Primarily involves program directors, faculty, and NIHS staff	Involves medical schools, faculty, students, and stakeholders	Extensive involvement of trainees, program directors, faculty, and patients
Continuous Quality Improvement (CQI)	Limited formal CQI Embedded assessment and regular feedback	Emphasizes continuous quality improvement in all domains	Embedded CQI mechanisms with ongoing assessment and feedback
Competency-Based Education (CBE)	Limited implementation of CBE principles	Emphasizes competency but lacks a formal CBE framework	Fully integrated, focusing on outcomes and milestone tracking
Risk-Based Thinking	Not explicitly embedded in the framework	Does not explicitly focus on risk management	Incorporates risk management, particularly in program review

Curriculum Flexibility	Standardized curriculum guidelines, less room for adaptation	Allows flexibility to adapt programs to local context	Focuses on program outcomes, allowing flexibility in implementation
Accreditation Cycle	Periodic reviews and renewals	Periodic self-assessment and external reviews	Ongoing evaluation with frequent feedback and site visits
Outcome Measurement	Focus on regulatory compliance and basic program outcomes	Strong focus on educational and societal outcomes	Measures outcomes through performance evaluations, patient care quality, and academic achievements
International Recognition	Primarily recognized within the UAE and GCC	Globally recognized, aligning with international standards	Well-established internationally, especially in North America

## 2.3 Integration of QMS in Education and Healthcare

### 2.3.1 Review of Successful QMS Implementation in Education

Recently, universities internationally have introduced ISO 9001 Quality Management Systems (QMS) to help improve student learning and uphold quality in administrative matters. As a result, the University of Cambridge introduced ISO 9001 to make sure all processes are the same within the university and that quality is improved in all its departments. Accordingly, the University of Pretoria in South Africa adopted ISO 9001 within an effort to improve the quality of its teaching and learning (Hussein et al., 2022). The purpose was to make processes standard, raise staff engagement and ensure students were satisfied.

The use of these strategies improved how transparent the processes are, boosted student satisfaction and greatly reduced mistakes during operation. Colleges and universities using ISO 9001 have found that their internal work runs more smoothly, course management is organized

and what students are taught reflects what they achieve. In fact, better teachers' skills and revised course material were tied to an increase in how well students did and in how satisfied they were with the school.

But some problems were encountered when trying to apply ISO 9001 to colleges and universities. Most of the difficulties came from faculty members who did not understand the requirements of established QMS standards from the manufacturing field. It was also difficult to match the unique and flexible material in academic subjects with standardized ways of doing things and building the system from the ground required another investment at the start.

### **2.3.2 Case Studies in Healthcare Institutions**

#### **UK NHS Trusts' Use of EFQM to Improve Patient Care and Organizational Performance**

Trusts under the UK's National Health Service have introduced the EFQM Excellence Model to boost the quality of their services and improve their results. The framework from EFQM was implemented by Guy's and St Thomas' NHS Foundation Trust to look at their ability to treat patients well. During self-assessments, the trust found ways leaders could be involved, how different departments should collaborate and the importance of focusing on patient care. The results benefited patients, made operations more efficient and improved staff morale which proved the model was effective for healthcare (Kamusoko, 2020).

#### **European Hospitals' QMS Adoption and Accreditation Outcomes**

ISO 9001 has been set up at the Karolinska University Hospital in Sweden which is a hospital in Europe, to organize healthcare processes and increase the quality of care. They say collaboration between departments has improved, safety measures for patients have been updated and medical errors have decreased. By applying a QMS, these hospitals followed international standards and increased their competitiveness around the world (Kamusoko, 2020).

Organizations in healthcare setting that use QMS systems have been able to improve their accreditation results, resulting in some gaining Joint Commission International (JCI) recognition, thus reinforcing their quality commitment.



### **2.3.3 Lessons Learned from Integration Efforts**

Both education and healthcare have shown us important lessons from trying to integrate. For QMS to be implemented well, leaders must be fully committed. It was clear from healthcare and educational fields that good leadership is essential for making the cultural switch to quality management processes. In addition, making sure the QMS is adjusted for each institution is very important. Sticking only to ISO 9001 doesn't ensure a good result; customizing it for academic or clinical standards is necessary (López-Lemus, 2021). Stakeholders should be regularly involved to help sustain management systems initiatives. Participation from everyone involved—teachers, support staff, patients and students—was necessary to help develop quality improvement processes.

### **Transferability of These Models to Postgraduate Medical Education Accreditation**

The adoption of QMS models in schools and hospitals supplies essential knowledge to the system of postgraduate medical education accreditation. Because ISO 9001 is adaptable and EFQM provides a whole approach, both methods work well for PGME accreditation with its many complex processes. Willar et al. (2015) determine that when a QMS is used, it can help medical education programs develop uniform procedures, improve patient care because of proper training and encourage regular quality reviews in the work environment (Mutter Atti Samir, 2023). Besides other conditions, PGME accreditation also takes into account medical education's distinct elements such as experiencing clinical work and working with various healthcare experts and overseers.

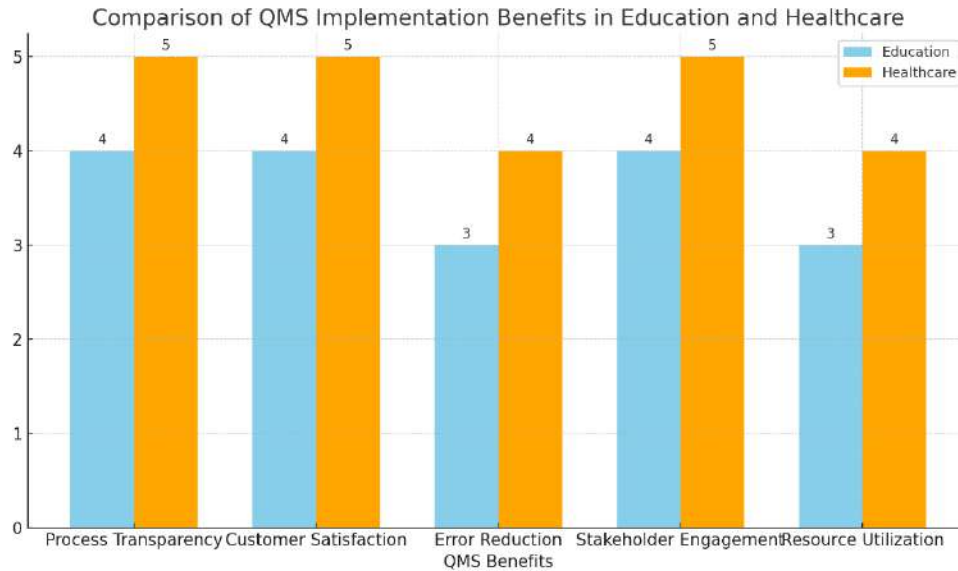


Figure 2.5: Case Study Summary — Comparison of QMS Implementation in Education and Healthcare

Source (Vermeersch et al., 2021)

## 2.4 Theoretical Frameworks: ISO 9001:2015 and EFQM

### Theoretical Rationale for Using ISO 9001 in Accreditation

By using ISO 9001:2015, medical education accreditation follows a process-centered system and helps achieve ongoing improvements. Using ISO 9001 as the basis for accreditation allows accredited programs to create locks for the way their curriculum is taught, how they assess it and the administrative processes they use, so everything meets standards needed by education and by law. Moreover, risk-based thinking introduced by ISO 9001 makes it easier to stop and address potential risks observed in training for medical staff. Adjusting and monitoring performance using a system fits well with the fast-changing nature of healthcare education that calls for easy-to-manage quality strategies (Wilson & Campbell, 2018).

### EFQM's Holistic Approach Supporting Organizational Learning and CQI

EFQM Excellence Model pays attention to both what enables actions and what the results are, creating a fuller method for accreditation that brings in leadership, planning, staff, partnerships and processes to support greater excellence. The whole framework plays a big role in helping organizations learn, as it advises them to review their actions, better understand their strengths and increase efficiency (Santos et al., 2021). Having a focus on continuous quality improvement (CQI) is especially important for medical education, allowing institutions to respond to new trends in

healthcare, receive and address opinions from multiple stakeholders and change their training methods as needed. By using EFQM, medical educational institutions can help develop a culture that supports creativity, educational growth and flexibility.

### **Application of These Frameworks to Accreditation Processes**

Connecting ISO 9001 and EFQM with accreditation gives programs a way to judge themselves by using the same defined procedures. Both use stakeholder involvement to guarantee regular feedback from students, teachers, patients and healthcare organizations is taken into account during accreditation (Singhal & Gulati, 2022). In addition, using risk-based thinking and doing regular evaluations according to ISO 9001 and EFQM supports monitoring, obtaining feedback and evaluating results which help improve medical education programs on a continual basis.

Thanks to these models, the research team can select tried-and-true methods that support excellent and reliable outcomes in postgraduate medical accreditation in the UAE.

## **2.5 Gap Analysis in Literature**

Evidence from the literature suggests that integrating Quality Management Systems (QMS) with GME accreditation is not yet widely studied in the UAE and GCC countries. Although there is research on using QMS in health and education, very little focuses on how it works for postgraduate medical education accreditation. The gap in research regarding the practical effects of using QMS principles with existing accreditation schemes such as the NIHS's is big (Eriksson et al., 2016).

### **Lack of Hybrid Models Combining QMS and Accreditation Frameworks**

An important opening in the literature is the lack of hybrid systems that join QMS and accreditation standards in medical education. Generally, current research deals with QMS and accreditation as distinct areas, so the potential for harmonization that would make GME programs better and more open is seldom explored. Having such a hybrid model developed can give valuable directions to organizations that want more flexibility and better results in the accreditation of their programs (Xuan & Trung, 2020).

### **Insufficient Stakeholder-Focused Validation**

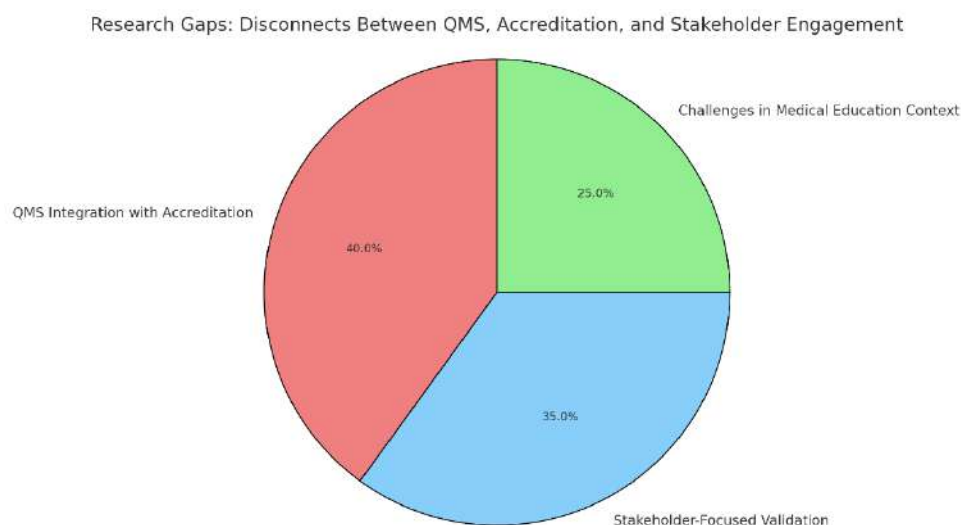
A further concern is that not enough people from various groups—trainees, program directors, healthcare field workers and regulatory bodies—confirm the effectiveness of accreditation models. Research in this area generally looks only at systemic changes, missing the detailed problems that students, teachers and healthcare professionals experience. Because there is little involvement from many interested parties, proposals cannot be effectively used in practice (Frenk et al., 2020).

### **Identification of Specific Challenges in Aligning QMS Principles with the Unique Context of Medical Education**

Published literature mainly doesn't explore what problems come up when medical education tries to follow QMS guidelines (Mutter Atti Samir, 2023). The need for learners to train in hospitals, providing both academic freedom and process consistency and including healthcare professionals in accreditation discussions are rarely explained in depth.

### **How This Research Aims to Fill These Gaps**

With this research, we intend to close these gaps by recommending a hybrid accreditation model that connects quality management system ideas from ISO 9001 and EFQM to the current standards for accrediting postgraduate medical education in the UAE (Hussein et al., 2022). We also plan to review the model with major stakeholders to help confirm it can be used in practice and meets the goals of adopting a broad, stakeholder-based approach to GME accreditation.



*Figure 2.6: Research Gap Diagram*

Source: (Ján Zavadský et al., 2023)

It closely examines case studies, different frameworks and what is lacking in present research, preparing for the design of a single model for medical education accreditation.

### **3 Chapter 3: Methodology**

#### **3.1 Research Design**

In this study, a combined approach of both quantitative and qualitative methods is used to reach the research objectives and answer the research questions stated in Chapter 1. Mixed-methods research joins qualitative and quantitative techniques, giving a wide view of the study problem (Kamusoko, 2020). Here, research looks into blending Quality Management Systems (QMS), for example, ISO 9001:2015 and the EFQM Excellence Model, with the National Institute for Health Specialties' (NIHS) accreditation for Graduate Medical Education (GME) in the UAE.

A mixed-methods strategy was used to collect subjective information from participants and also collect the facts necessary to make my hybrid accreditation model reliable. The purpose of the qualitative study is to examine what accreditation officers, program directors and trainees think about the current system and their opinions on including QMS in it. Surveys supplied us with data that we can use to estimate the model's potential and practicality. When using both approaches, there is a clearer awareness of how QMS standards could fit into the NIHS accreditation rules and if they would help enhance transparency, involve more stakeholders and improve CQI (Abugabah et al., 2022).

#### **3.2 Data Collection Methods**

The authors completed data collection for the study in these order: examination of documents, talks with stakeholders and checking the model using survey questions (López-Lemus, 2021). Every stage concentrates on specific goals and serves to aid in the growth of the hybrid accreditation model.

##### **3.2.1 Document Analysis**

Reviewing documents allows the researchers to comprehend the current NIHS accreditation framework and see how it is similar to ISO 9001 and the EFQM Excellence Model (Mutter Atti Samir, 2023). The process requires reviewing all the official documents, guidelines and policies from NIHS in order to highlight spots where QMS can be added.

### 3.2.2 Process of Document Analysis:

At the start of document review, you needed to carefully review the NIHS accreditation documents and standards. They lay out the guidelines for accreditation which deals with competency-based education, the program structure and outcomes (Ahmed et al., 2014). Next, the framework is measured against internationally known quality management systems such as ISO 9001:2015 and the EFQM Excellence Model (Santos, Alpan & Hoffmann, 2021). The analysis concentrated on process management, stakeholder interaction, ongoing effort to improve and risk-based thinking. We made a table that points out the similarities, misses and places where these models could be included in the NIHS framework.

**Table 7: Comparison Table**

<b>Component</b>	<b>NIHS Accreditation</b>	<b>ISO 9001:2015</b>	<b>EFQM Excellence Model</b>
<b>Focus</b>	Compliance-based	Process and Risk-based	Holistic Excellence
<b>Continuous Improvement</b>	Limited integration	Central to the model	Core aspect of the model
<b>Stakeholder Engagement</b>	Primarily Involvement at all levels	Involvement at all levels	Inclusive engagement
<b>Outcome Measurement</b>	Reporting results	Focus on performance	Emphasis on results
<b>Flexibility</b>	Structured approach	Adaptable to various sectors	Promotes innovation and improvement

### 3.2.3 Stakeholder Engagement

The second step in data collection focuses on getting insights from stakeholders by organizing interviews, focus groups and surveys (Singhal & Gulati, 2022). Stakeholders are central figures in the overall accreditation process and what they say about the framework gave us key facts about its strengths and weaknesses and how QMS integration is working.

**Semi-Structured Interviews and Focus Groups:** In such interviews and groups, we plan to include people important to the accreditation process from diverse areas.

**NIHS Accreditation Officers:** Their role is to share their views on the use of QMS in the current process, the issues they face in putting it into effect and some advantages of using QMS.

**Residency Program Directors:** They discussed the operational aspects of accreditation such as how current ways work impact program standards and the chances of their programs using QMS concepts (Akinyemi & Abiddin, 2013).

**Hospital Quality Managers:** These professionals can describe current quality measures in the hospitals and discuss ways in which they are in line with the requirements for medical education accreditation.

**Residents:** By listening to trainees, we can find out the effects of accreditation on their education and discover what steps can help achieve better outcomes. Semi-structured interviews make it flexible to gather unstructured data, but topics of significance are always discussed during the interviews (Xuan & Trung, 2020). These discussion sessions helped to gather more insights into key matters relating to accreditation and QMS integration (Arbour et al., 2015).

**Participant Selection:** Individuals take part in the study after being chosen from purposive sampling, as they have worked with the NIHS accreditation itself (Counselman et al., 2017). The group made up of different people, for example, administrators, teachers and students, so that a variety of ideas can be heard.

### **3.2.4 Surveys**

Validating the hybrid model means using surveys to check if it is useful, relevant and accepted by stakeholders (Frenk et al., 2020). Both types of questions in the survey, letting us view results as numbers and also giving people a place to provide extra thoughts (Barirohmah & Subiyantoro, 2021).

#### **Survey Design:**

The goals of the survey are to measure the followings:

Is it widely thought that the inclusion of ISO 9001 and EFQM in the NIHS accreditation system is possible and realistic?



Is there a proper match between the QMS principles and the requirements of accreditation in the UAE GME sector?

How willing are the stakeholders to back the adoption of the hybrid approach and how ready are they to accept it?

### **Sample Size and Their Distribution**

Next, the health systems leadership team will distribute the survey to program directors, faculty members, hospital quality managers and trainees to reflect the input of many people (Kravchenko & Saienko, 2020). It is important to aim for 100 or more participants since a sample this size allows for statistically valid results.

### **Quantitative Data Analysis**

Responses to closed-ended questions looked at using statistics like frequencies and percentages. By doing so, the researcher found out if the model is thought to be easy to use and fit for use (Kumar, Maiti & Gunasekaran, 2018). To answer open-ended questions, thematic analysis was carried out to find the main themes and patterns in what participants shared.

## **3.3 Data Analysis**

Both qualitative and quantitative analyses were used on the different data sets to thoroughly understand the results of the research.

### **3.3.1 Qualitative Data Analysis**

Using the interviews and focus groups, thematic analysis was used as our main approach. Transcribing all interviews and focus groups is the first part of analysis in qualitative data. The transcriptions were accurate and unchanged so that the participants' thoughts are fully expressed (Lepistö, Saunila & Ukko, 2022). When the transcription is done, NVivo helps researchers identify common themes, patterns and points from the data that help study the research questions.

The researcher then found the main themes in the coded data. Among these, the issues that might be discussed are stakeholder involvement, possible issues in merging Quality Management Systems ideas with the NIHS framework and the possible benefits of using a combination approach to accreditation. Coding and theme identification ensure the researcher can sort the data so it becomes easier to examine (Blouin & Tekian, 2018). When the themes are established, the data

was interpreted. Its goal is to find the best way for QMS to become part of NIHS accreditation, considering what the stakeholders think and experience. The interpretation assisted in spotting both the weaknesses and strengths associated with QMS integration which are necessary for developing the hybrid approach (Bondarenko, 2020).

### **3.3.2 Quantitative Data Analysis**

The numbers and statistics collected from the surveys were processed with different analytical tools. First, you need to put the survey answers into a statistical software package such as SPSS or Excel. When the data is entered, descriptive statistics was used to highlight the main features of the responses. This required looking at the numbers of responses, means and percentages to illustrate the views of the participants on the possibility, appropriate ness and acceptability of the hybrid accreditation model (Boyle et al., 2012). Chi-square tests or t-tests can be used to look for any large differences between the groups in the data. As an illustration, we can check if faculty and trainees' views on the hybrid model are any different by analyzing their responses (Manatos, Rosa & Sarrico, 2018). Depending on the results of the test such as when a significant relationship or difference is found, the data may need more examination (Busireddy et al., 2017). With the completion of the statistics calculations, the collected data is now interpreted. The interpretation looked at the overall agreement among people on the hybrid accreditation model and notice any differences in their opinions about its viability, significance and success. It helped determine how well accepted the hybrid approach is and what opportunities exist for its implementation in the NIHS accreditation process (Cunningham et al., 2016).

### **3.4 Ethical Considerations**

It is very important to consider ethics when performing research. All participants in the study are treated fairly and their rights are always protected, following the highest ethical regulations.

**Informed Consent:** All the participants were given a form explaining the objective of the study, the methods included and the possible risks. They knew that taking part is their choice and they can choose to stop whenever they prefer with no consequences (Nenadál, Vykydal & Waloszek, 2018). By using the informed consent form, researchers told participants how their information was processed and promise to keep it safe (Etter et al., 2016).

**Confidentiality:** Your privacy was safeguarded from beginning to end of the project. Everyone's identity will be protected and the data will be safely kept. All personal identifiers were excluded from the texts of interviews and focus group notes as well as survey results (Eaton, 2016).

**Ethical Approval:** Before starting, the study will get approval from the ethics committee or the IRB to confirm that it follows the required ethical guidelines. To sum up, the chapter presents a detailed approach for studying how QMS principles can be integrated into the NIHS accreditation system. Looking at this situation by studying documents, talking with different groups and analyzing survey results gives a clearer view of the integration's challenges and options (Pohle, Blind & Neustroev, 2018). Both types of data analysis make sure that the research findings are strong, correct and significant. At all times throughout the study, ethical concerns are taken care of to ensure participants' safety and the validity of the process.

## 4 Chapter 4: Findings and Results

### 4.1 Introduction

In this chapter, we provide the results that were gathered by means of document analysis, interviews with key people, and focus groups, as well as through surveys. The results are necessary for getting an accurate idea of the NIHS accreditation framework and finding ways to use it with established Quality Management Systems (QMS). The outcome of this chapter will be important for discussing how QMS guidelines can be added to the NIHS accreditation rules for Graduate Medical Education (GME) programs in the UAE (Wilson & Campbell, 2018). It will look into the weaknesses in the present framework, find out what stakeholders feel about QMS integration, and consider whether a combination of models could work for accreditation.

### 4.2 Comparison of NIHS with ISO 9001:2015 and EFQM

Begin the analysis of the findings by reviewing and comparing the main elements found in NIHS accreditation with ISO 9001:2015 and EFQM Excellence Model (Akram, Mhaibes & Flayyih, 2024). It concentrates on many vital aspects such as upholding quality, making improvements all the time, engaging different stakeholders, and using risk management in the process.

Table 8: Key Areas of Comparison

Component	NIHS Accreditation	ISO 9001:2015	EFQM Excellence Model
Focus	Regulatory compliance and standardization of medical education programs	Risk-based process management and customer satisfaction	Holistic excellence, with an emphasis on continuous self-assessment and innovation
Continuous Improvement	Limited formal integration of CQI processes	Central to the model, with focus on PDCA cycles	Emphasized through regular self-assessments, learning, and external benchmarking

<b>Stakeholder Engagement</b>	Limited to program directors, faculty, and administrative staff	Involves all stakeholders at every level for consistent feedback	Inclusive, with a broader involvement including students, faculty, and patients
<b>Outcome Measurement</b>	Emphasis on compliance and minimum outcomes	Focus on performance metrics and customer satisfaction	A comprehensive results-driven approach that measures societal, customer, and employee outcomes
<b>Flexibility</b>	Standardized curriculum and processes	Adaptable to different industries and contexts	Allows flexibility, promoting innovation and adaptation to local needs

### 4.3 Gaps in the Current NIHS Framework

While NIHS accreditation guidelines match some of the best practices globally, there are still several differences when it comes to ISO 9001:2015 and EFQM. Even though NIHS has internal evaluations, there is no formal method for constant improvement, specifically in the use of real-time feedback and outcome reviews as needed by ISO 9001 and EFQM. Faculty and program directors currently make the most important contributions in the accreditation process, according to the current guidelines. One crucial difference is that it does not actively involve many stakeholders such as trainees, patients, and people from other companies, which is required by ISO 9001 and the EFQM (Al-Dhaafri & Alosani, 2021). Compliance with standards and regulations is the main goal the NIHS framework prioritizes, yet it places less significance on being on the lookout for risks and targeting improvement based on performance indices. Both standards point out the need to watch over and enhance the outcomes of the organization, covering quality in education and care for patients. Having a common approach may cause the framework to miss out on opportunities for advances. Innovation and adapting to new situations are more important according to EFQM's guidelines, but NIHS gives less emphasis to this (Fuller et al., 2012).

#### **4.4 Stakeholder Insights**

Involving stakeholders was key to this study, as it let us know their views on the accreditation framework of the NIHS and how including QMS principles could bring improvement (Aldiat, 2022). By conducting interviews and focus groups with people from the NIHS and residency programs, important themes were identified.

##### **4.4.1 Key Themes from Stakeholder Interviews and Focus Groups**

They indicated that the system of accreditation is working well for them, although it lacks room to support continuous improvement. A number of experts pointed out that the system should react faster when it comes to new issues in medical education and healthcare. Those in charge of programs indicated that accreditation makes sure all the necessary rules are met but does not always check how good the teaching is (HARBUSIUK, 2024). They highlighted that accreditation should measure important things such as competencies and career achievements. According to the trainees, there was at times a mismatch between the accreditation and their regular learning. They stated that a fairer system should use their opinions and keep improving the environment for training (Alnadi & Altahat, 2024). They noted that joining medical education accreditation and healthcare quality control is very important. According to their beliefs, using both ISO 9001 and EFQM principles would enhance how clear, accountable, and effective medical education programs can be.

##### **4.4.2 Stakeholder Support for QMS Integration**

A lot of stakeholders backed the adoption of ISO 9001 in areas such as process management, taking a risk-based approach, and improving processes. They thought these principles would improve and organize the accreditation process (Chaurasia, 2023). People in the organization expressed that they approve of the EFQM Excellence Model for its suggestion of whole organizational excellence and role for stakeholders. They thought that using self-assessment, learning, and innovation from EFQM would help them advance medical education constantly (Karami et al., 2021).



Figure 4.1: Word Cloud of Stakeholder Insights:

#### 4.5 Survey Results

Both program directors, faculty, quality managers in hospitals, and trainees were included in when the survey was distributed (Frenk et al., 2020). The goal was to review if the new model is possible, relevant, and accepted for use by all participants. The survey had questions of different types, covering these areas: Can the guidelines from ISO 9001 and EFQM be merged into the structure of the NIHS? How QMS ideas can make the accreditation process better. If the hybrid model is accepted by all of the stakeholders (Logan-Athmer, 2022).

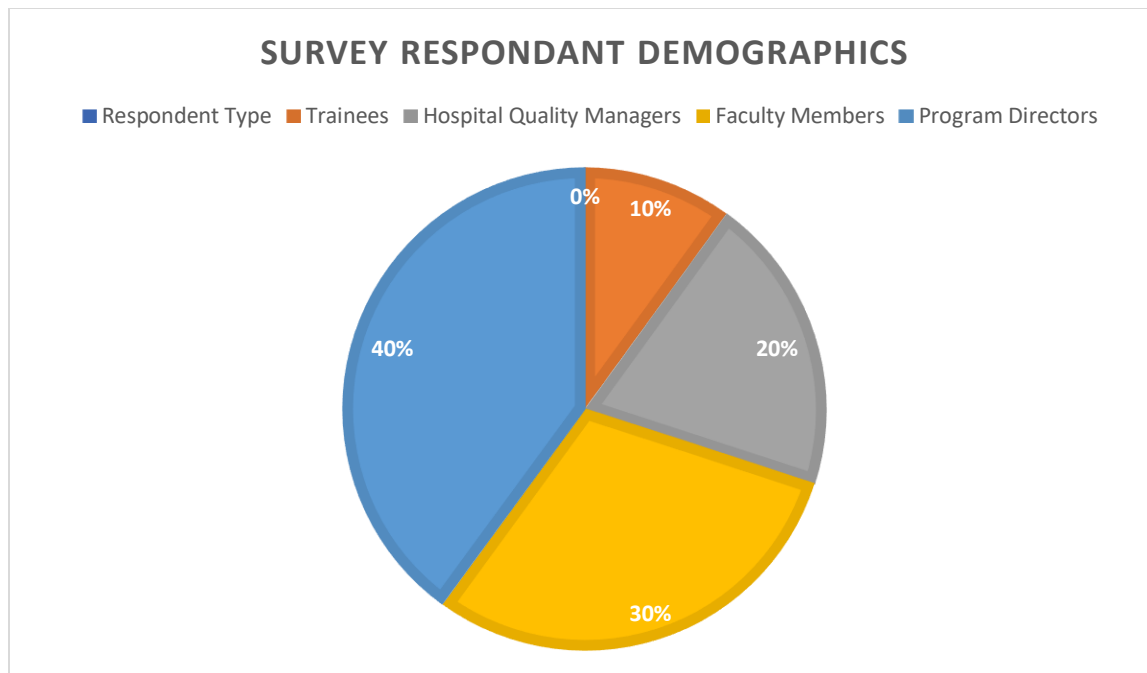
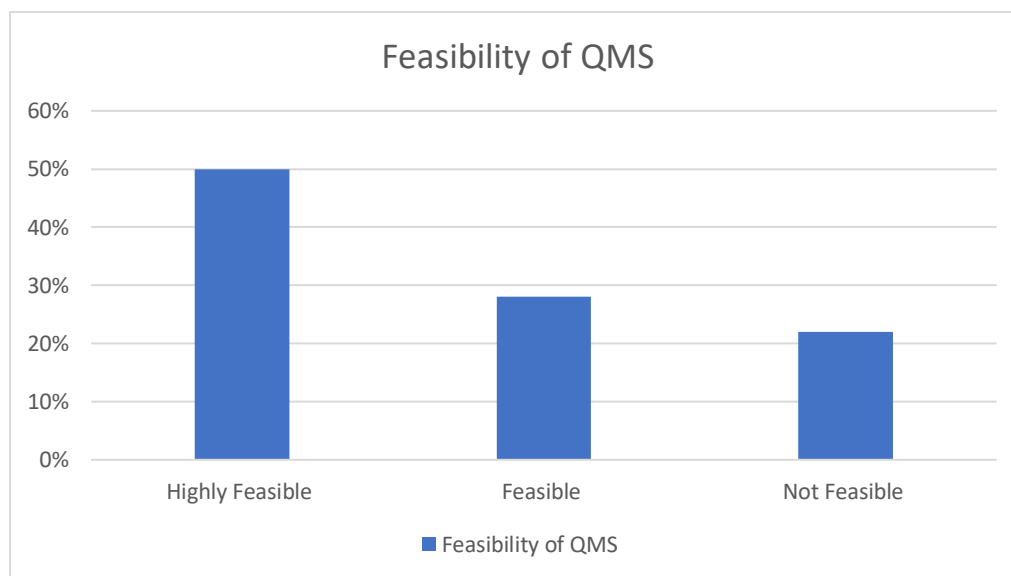


Figure 4.2: Survey Respondent Demographics

### ***Feasibility of QMS Integration***

The survey reveals that the essential stakeholders agree that QMS ideas can be part of the NIHS accreditation process. The majority of respondents also mentioned that it is not very difficult to combine ISO 9001 with the EFQM model. People who filled out the survey mostly think that both approaches can be useful and benefit the organization's actions. Most participants agreed on what makes the system difficult to put into practice, saying it's mainly due to its high initial fees and extensive training needed by staff (Hashem, 2022). It appears that both limited financial support and readiness among employees are important reasons why quality management initiatives find it difficult to continue for a long time (Mehall, 2019).

Bar charts allow for the comparison of respondents' views on the feasibility of integration by illustrating how many responded highly feasible, how many responded feasible, and likewise the number of responses that said the integration is not feasible (Kamusoko, 2020). This way of visualizing data makes it possible to see the general mood in the articles and spot major trends easily. Should the majority pick "feasible," that area stands higher, making it obvious what most people think. Using such a type of chart clarifies information, and it improves understanding by making reports and research easier to interpret.



*Figure 4.3: Feasibility of QMS Integration*



#### 4.5.1 Relevance of QMS Principles

On being asked how ISO 9001 and EFQM methods help with accreditation, most people said they are important (REPOSEUR, 2015). Most people (85%) who took part in the survey view Quality Management System (QMS) principles as being very important for accreditation. It was thought by many stakeholders that the adoption of these principles would greatly boost how transparent, engaged, and efficient the activities of the company would be. A high degree of confidence exists in QMS's ability to carry out positive changes throughout the institution's operations. In addition, participants pointed out some important advantages of introducing QMS. As a result, people were more involved in making decisions, the business followed rules from around the world, and processes for regular improvement were put in place (López-Lemus, 2021). All in all, these advantages show that QMS supports an organization in reaching its quality and development goals through accreditation (Robbins, 2014). Chart represents how many people either agreed or disagreed that QMS principles are needed for medical education accreditation. With this method, it's simple to tell how the group stands as a whole and how strongly they support or oppose the movement (Rodriguez et al., 2018).

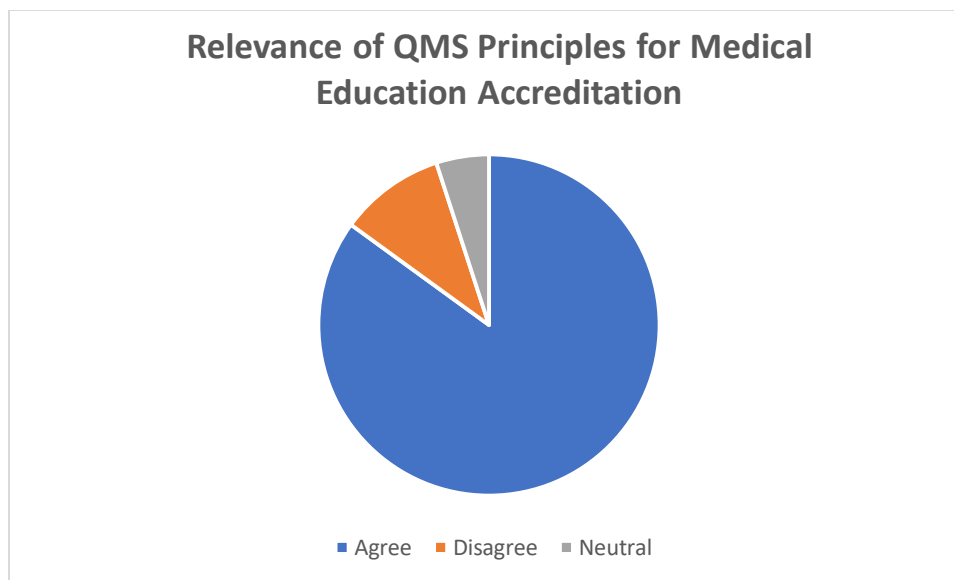
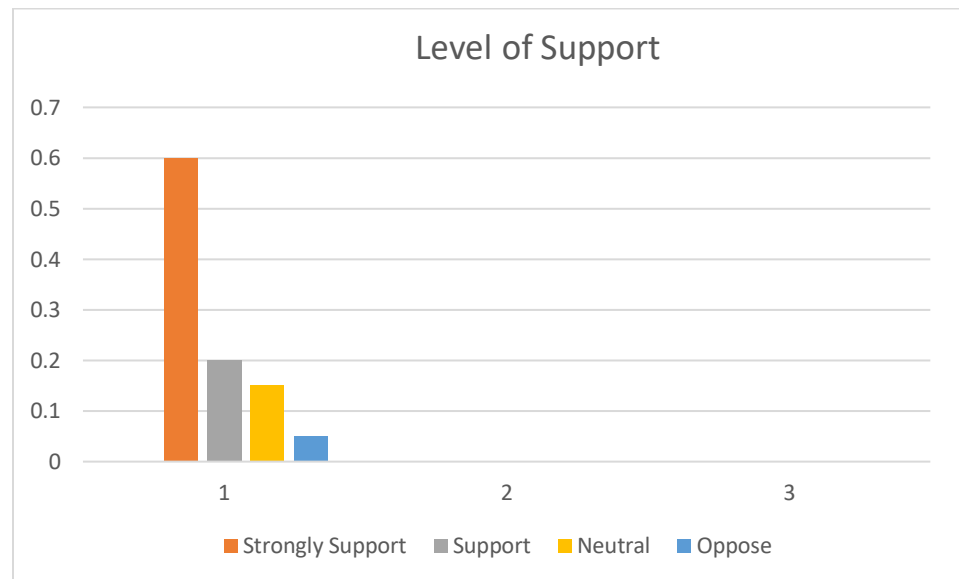


Figure 4.4: Relevance of QMS Principles

#### 4.5.2 Acceptability of the Hybrid Model

Participants of the discussion were asked about their acceptance of the hybrid model that uses aspects from both ISO 9001 and EFQM. Most respondents, measuring at 80%, showed great

support for the introduction of the hybrid model. Sixty percent of those surveyed indicated strong willingness to accept this new way of achievement, as they said they are “very likely” to support it. This indicates that people are willing to accept and join in with the program. Still, people were concerned about several issues during the survey (Mutter Atti Samir, 2023). More than a quarter of the respondents stated that having to meet both frameworks could cause them extra work. In addition, 21% pointed out that changes and continuous assessment are required for effectiveness over a longer period. These points prove the need for careful planning and make sure all needed resources are ready while implementing a project (Rodriguez, 2022). With the use of this chart, it is obvious whether people agree or disagree with the hybrid model. Representing opinions graphically helps to understand how stakeholders feel, which makes reading recent changes and deciding on certain strategies easier for managers (S et al., 2024).



*Figure 4.5: Stacked Bar Chart: Support for Hybrid Model*

#### **4.6 Validation of the Hybrid Model**

The model of combining ISO 9001 and the EFQM framework was witnessed in the survey, the interviews, and focus groups. According to the outcomes, stakeholders generally welcome the model and value how much it might improve the openness, smoothness, and speed of the whole process.

#### **4.6.1 Stakeholder Alignment with Model Components**

The involved parties thoroughly supported ISO 9001 because of its main principles of process management and handling risks. A common remark from the respondents was that the approaches in ISO 9001 ensured quality assurance in a well-structured way, especially for medical education accreditation (Santos, Alpan & Hoffmann, 2021). It was obvious to them that the idea of constant improvement was necessary to make sure that institutions adapt to changes and keep getting better. It was also mentioned by participants that ISO 9001 makes it simpler for institutions to be responsible, consistent, and honest in what they do. The EFQM model also received strong backing from those involved for being balanced and well planned. People taking part in the survey said that EFQM's attention to excellence and working together with stakeholders is vital for the sustainable improvement of medical education. The fact that the model focuses on new ideas, leaders, and self-analysis was considered important for the UAE, whose institutions are working to achieve international standards while keeping their roots in the local way of life. It was considered by stakeholders that using EFQM principles would help build a spirit of excellence and teamwork, making institutions concentrate on outcomes that last over time rather than just meeting rules. People considered that, working together, ISO 9001 and EFQM would help improve accreditation standards (Saminu, 2019).

#### **4.6.2 Model Feasibility and Implementation**

It appears that the model can be put in place after training staff and developing a detailed plan that meets local circumstances. Since the hybrid model brings everyone in, especially trainees, it is in line with the major goals of better learning and continuous growth.

#### **4.7 Conclusion**

The research, stakeholder input, and the survey's results prove that including ISO 9001 and EFQM in the NIHS accreditation process is a good idea (Singhal & Gulati, 2022). Everyone involved, grouped as accreditation officers, program directors, hospital quality managers, and trainees, stated that the suggested hybrid model could work well, make sense, and be accepted. High transparency, better engagement with stakeholders, and a more adaptable and speedy accreditation process are the main benefits stated.

## **5 Chapter 5: Discussion**

### **5.1 Introduction**

The results from Chapter 4 are closely assessed in Chapter 5, considering what was outlined in Chapter 2 regarding the theoretical background and other literature. The main focus is on how the findings compare to what was found in previous works, the implications of applying this model, and on outlining the study's limitations (Allen et al., 2022). The desire is to discuss research outcomes in relation to academic debates and clarify how Quality Management Systems (QMS) can be included in the accreditation of Graduate Medical Education (GME) in the UAE, stressing integration of both ISO 9001:2015 and the EFQM Excellence Model. This part talks about the similarities and differences between the results here and prior work on how ISO 9001 and EFQM are applied in accreditation systems (Counselman et al., 2017). This study widens current knowledge by pointing out similarities and new ideas.

### **5.2 Alignment with Previous Studies**

These findings are consistent with a lot of research that favors adopting QMS systems in schools, mainly in medical education. The work done by Tsinidou et al. (2010) and Eriksson et al. (2016) indicates that enforcing quality management principles in education plays a key role in improving the system and ensuring its efficiency at accreditation. A lot of international organizations often mention that ISO 9001 and EFQM support ongoing improvement in quality, encourage stakeholders to be involved, and make sure schools respond well to demands from within and outside of their communities. Such studies reflect the current study's attention on the same topics as they are applied to the NIHS accreditation process.

The same is found in studies by Kamusoko (2020) and Frenk et al. (2020) where using ISO 9001 has been shown to improve transparency and accountability through careful process, risk, and quality management in organizations. This matches what the study says, which is that including ISO 9001 and EFQM into the NIHS system will boost openness and involve more stakeholders, both of which were highlighted by literature and participants in this study as being significant.

Also, research conducted by Padley et al. (2019) and Akram et al. (2024) points out that stakeholders should play a key role in deciding on educational accreditation. The endorsement of QMS integration by stakeholders in the recent research agrees with what was reported earlier in

earlier studies. Believe it or not, individuals responsible for medical education in all positions (officers, directors, teachers, and trainees) recognized the advantage of using the hybrid model to ensure an effective and balanced accreditation process.

### **5.3 New Insights from the Findings**

Although many parts of this study match what is already understood, it also brings new concepts that improve understanding of QMS integration in accreditation.

The study adds a new idea about putting more weight on flexibility in accreditation rules. According to the stakeholders, the accreditation experience must be flexible and flexible to meet new trends in medical education. According to ISO 9001, a quality management system should mainly use standardized processes, not talk much about flexibility. The approach in this study combines the QMS structure with flexibility to solve a problem noted in the literature.

It seems that there is a difference between fulfilling the rules and aiming for better educational results in accreditation (Kravchenko & Saienko, 2020). While the NIHS accreditation promotes following minimum requirements, it does not greatly help schools reach goals such as innovation, gaining competences, and growing professionally. This problem is resolved by the hybrid model, which merges QMS practices and gives priority to expertise over simple compliance to emphasize medical education that is recognized globally.

### **5.4 Theoretical Implications**

This study has significant theoretical impact by offering useful insights and matching existing models and QMS frameworks. Adopting ISO 9001:2015 and the EFQM Excellence Model in the NIHS accreditation process brings a new proposed model for reviewing medical education.

#### **5.4.1 Alignment with ISO 9001 and EFQM**

In this research, the hybrid model relies greatly on the theories included in ISO 9001 and EFQM. Both models put a strong focus on always improving and keeping processes optimal, as the main points of the hybrid accreditation model. Because ISO 9001 looks at processes, risk assessment, and customer happiness, it gives the framework more emphasis on both the efficiency and clarity of accreditation. These principles being part of NIHS ensure that medical programs can be ready for risks, involve relevant parties, and repeat reviews for continuous improvement.

EFQM's strategy for organizational excellence matches the ISO 9001 format by emphasizing tested results and the combined effort from a company's overall strategy, leadership, workers, and collaborations (Kumar, Maiti & Gunasekaran, 2018). The approach of asking for feedback from stakeholders in the EFQM model is consistent with the study's view that the NIHS framework needs to be adapted to receive more feedback. If the hybrid model puts great emphasis on improvement and leadership, it can ensure NIHS meets global standards and becomes an excellent institution for many years.

#### **5.4.2 Contribution to the Literature on QMS in Medical Education**

It adds greatly to our understanding of QMS integration in medical education by suggesting a hybrid way of introducing accreditation that fits the special requirements of UAE healthcare. The previous studies mainly focus on how QMS is put into practice in education at large, whereas this one adopts and uses the ISO 9001 and EFQM methods for medical education in the UAE.

The research confirms that including QMS in the NIHS accreditation helps elevate the quality of medical education by making it more flexible, responsive, and brings in all necessary participants. Because the GCC region is currently undergoing many changes, the model could act as a guide for these countries (Lepistö, Saunila & Ukko, 2022). That's why the study contribute useful information to the ongoing efforts of improving accreditation in medical education, especially in parts of the world dealing with particular issues.

### **5.5 Practical Implications**

Using the hybrid approach greatly impacts how medical education in the UAE is approved. The updated system will make the NIHS accreditation process better and increase the quality and usefulness of medical education in the country.

#### **5.5.1 Impact on NIHS Accreditation Process**

If ISO 9001 and EFQM are part of the NIHS framework, it would change the accreditation method from a compliance-only approach to one that helps institutions always improve. With this new hybrid approach, greater attention is given to making the process run more efficiently and involve everyone while keeping it fully transparent (Manatos, Rosa & Sarrico, 2018). Embedding constant improvement helps NIHS to make sure accredited programs quickly adapt to recent changes in healthcare and medical training.

Too, application of risk management policies in the model will assist NIHS in identifying and preventing issues in medical education programs from turning serious. Working this way ensures UAE's medical education follows leading global examples, making it more competitive and well known internationally.

### **5.5.2 Benefits for Stakeholders**

The hybrid model provides many benefits to all parties who are involved in accreditation. The model helps medical institutions use a structured method that is still flexible, so programs are always updated to meet new requirements in education and healthcare. They will no longer need to only address important documents; they can now rely on clear information, spend more time improving the program and less on checking policies and procedures.

Thanks to the model, faculty members can easily evaluate their programs and find ways to develop professionally (Nenadál, Vykydal & Waloszek, 2018). Most importantly, the model makes sure that trainees do not only accept what is given but also play a role in the accreditation process. Such a system will help trainees because it uses their feedback and ensures they learn in accordance with modern medicine and training techniques.

### **5.5.3 Regional and International Implications**

Using this hybrid model can increase the access and quality of medical education in other countries in the GCC. Other GCC countries with similar problems in medical education can follow the UAE's lead because it is a leader in those areas. Incorporating international QMS standards will improve how the medical programs in the region operate and match up with top international standards (Nunhes, Bernardo & Oliveira, 2019). By using this proposal, it would be possible for different countries to learn and share information about accreditation and quality management in medicine. It helps medical education systems that wish to improve their accreditation and give their graduates a better understanding of what's needed in the healthcare industry.

## **5.6 Limitations of the Study**

Though the study provides valuable findings, we should appreciate its limitations as well. Recognizing the limits of the study helps interpret the outcomes and recommends new ways to look into the subject.

### **5.6.1 Scope of Stakeholder Engagement**

It is important to note that the study's limit is in how many stakeholders were involved. However, the study did not look at patients' or healthcare providers' opinions since the study participants were primarily from within the healthcare organization (Pohle, Blind & Neustroev, 2018). The opinions from participants could have increased the depth of understanding about how accreditation affects the results of healthcare and the trust of people in medical programs.

### **5.6.2 Potential Bias in Data Collection**

It is possible that the data can be unreliable due to biased methods of collecting it. All the research methods used in this project were carried out with stakeholders directly involved in accreditation, so this study might support adjustments that include QMS principles. Because of people's earlier experiences with accreditation, the answers might not give a fair evaluation of the NIHS framework (Wilson & Campbell, 2018).

### **5.6.3 Generalizability of the Findings**

Since other countries may have different healthcare and schooling, it is unlikely that the findings apply there. Even though the hybrid model is versatile, it might be necessary to study its potential in countries that have different ways of educating future doctors.

It has looked at the study's results and how they could affect medical education accreditation in the UAE and the region as a whole. NHS accreditation improved because of ISO 9001 and EFQM, as it improved continuous quality management, boosted stakeholder participation, and enhanced the way accreditation is handled. Even though the study has some restrictions, the results offer useful ideas for improving accreditation of medical education in different regions facing similar challenges.



## **6 Chapter 6: Conclusion and Recommendations**

Here, the key findings are summarized, their effects on the UAE's medical education system are explained, and appropriate suggestions for improvements are made. This chapter reviews the knowledge shared on how to combine Quality Management Systems with accreditation and suggests more areas to be explored in the future. The goal of this chapter is to put together what we have discovered and offer realistic tips for improving the medical education accreditation system in the UAE.

### **6.1 Summary of Key Findings**

This study aimed to study how to use ISO 9001:2015 and the EFQM Excellence Model as Quality Management Systems in the accreditation system for Graduate Medical Education (GME) at the National Institute for Health Specialties (NIHS). The research examined ways in which using these globally accepted methods might improve the process's transparency, audience involvement, how things are done, and the ongoing improvement of quality.

### **6.2 Key Findings from the Document Analysis**

After examining the document, a few shortcomings in the current NIHS accreditation process were found. Although this framework maintains basic quality standards, it does not use a specific way to encourage continuous quality, worker participation, or consider risks as much as the ISO 9001 or EFQM do. Based on the analysis, bringing in both ISO 9001's concepts and EFQM's ideas of overall excellence and testing capabilities would solve these issues and lead to a better accreditation process.

### **6.3 Stakeholder Insights**

The responses we obtained through both semi-structured interviews and focus groups showed that things are currently done by meeting compliance requirements and not by adjusting to new issues in healthcare and medical education. Stakeholders in the project, including people responsible for accreditation, school directors, teachers, and trainees, expressed approval for including QMS concepts about continuous development, listening to all parties' views, and establishing outcome standards. Those involved acknowledged that a flexible and agile accreditation system would meet the progress in medical education and healthcare in the UAE.

When the survey was sent to a larger group (consisting of program directors, faculty, hospital quality managers, and trainees), they provided useful statistical evidence proving that the hybrid model could be used in their setting. Almost 8 out of 10 people thought that integrating QMS principles into the NIHS framework was either very doable or still doable. In addition, 85% of the respondents think that applying QMS guidelines would greatly enhance transparency, involvement of stakeholders, and the overall efficiency of the accreditation process. Most individuals who participated showed their support for adopting the hybrid model, with 80% giving positive feedback. Stakeholder opinions proved that the hybrid model would help the NIHS accreditation process. Using ISO 9001 together with EFQM principles in the proposed model was found to match the expectations of stakeholders and was also beneficial for the UAE's medical educational system. Experts thought the model's goals of always aiming higher, working with all stakeholders, and measuring for results were very helpful in dealing with the weaknesses of the current accreditation system. This study increases the academic knowledge related to how QMS join educational accreditation, especially for medical programs. The model proposed by the study is new in the field since it unites ISO 9001:2015 and the EFQM Excellence Model for the UAE's GME programs.

While more studies are looking at uses of ISO 9001 and EFQM in schools and hospitals, not many have looked at their role in accrediting medical education programs. The study shares helpful points on how QMS standards could be used for the accreditation of medical education programs, mainly in areas like the UAE that must quickly respond to new healthcare habits. It also points out the need to engage every relevant party in accreditation and apply continuous quality improvement (CQI) to enhance medical education continuously. In this study, a hybrid accreditation model is suggested, and it helps the field with a reliable and adaptable way of accreditation. Process management, an approach based on risks, and continuous quality gains from ISO 9001 are merged in this model with the overall excellence and stakeholder values promoted by EFQM. Because of this combination, accreditation supports both following the rules and ensuring that the medical education system keeps improving. By applying these overseas ideas to the UAE, the study shows others how they can improve their accreditation systems. The study also adds value to the study of how stakeholders are involved in the accreditation process. This shows that involving various groups, like trainees, educators, those responsible for healthcare, and regulatory organizations, is valuable in accreditation. Doing it this way makes sure the framework addresses the expectations

and requirements of the students and staff. Concentrating on including different stakeholders in the process can boost how transparent, accountable, and effective accreditation processes become in medical education.

## **7 Chapter 7: Recommendations**

The research highlights a series of suggestions that can be used to upgrade the NIHS accreditation and bring further improvement to medical education in the UAE. The recommendations go to the NIHS, policymakers, and all relevant people involved in accreditation. To make the accreditation framework better and meet international expectations as well as local demands, NIHS should follow some key steps that are used worldwide.

First of all, NIHS needs to create a hybrid model with ISO 9001:2015 and the EFQM Excellence Model. As a result, accreditation would:

- Highlight constantly improving systems,
- Create more value for stakeholders
- Ensure better management of risks.

The ISO 9001 framework makes sure everything is well organized and based on processes, while EFQM centers on overall innovation and continuous growth. Having all these frameworks allows for the formation of an even and effective accreditation system.

Secondly, NIHS ought to organize CQI by including ways to collect feedback and conduct evaluations on a regular basis. It requires leaders to:

- Check their progress regularly,
- Have independent evaluations
- Monitor performance indicators.

They will make it possible for NIHS to identify trends, spot weaknesses early, and back accredited schools as they strive to improve constantly.

Moreover, getting stakeholders involved is now very important. NIHS ought to involve a bigger range of stakeholders by including medical trainees, patients, and various healthcare organizations as well as program directors and faculty. Taking everyone into account during the accreditation process results in increased transparency. This makes sure the review truly reflects the needs of patients and healthcare workers. It is also very important to use risk management methods from ISO 9001. NIHS should take action to find, assess, and handle possible threats that might affect

the quality of education or safety of patients. When risk-based thinking is used in accreditation, it helps the organization remain strong and still act wisely.

Lastly, NIHS needs to remain flexible in its system of accreditation to suit the latest developments in medical education. Because of fast changes in instruction technology, simulations for learning, and new curriculum standards, flexibility is necessary. Having flexibility makes it possible to find new solutions for education, ensuring quality remains unchanged and staying relevant in healthcare.

If NIHS carries out these five suggestions, it will make its accreditation more credible, useful, and lasting, helping it become a recognized leader in medical education quality assurance within the region. Effective medical education in the UAE is greatly influenced by policymakers who help set up accreditation arrangements that match global standards and local healthcare goals. In the first place, governments should endorse the key principles from ISO 9001 and the EFQM Excellence Model to their national schemes of accreditation. Efforts should focus on designing policies that make it necessary or desirable for institutions to use QMS and also make sure they get the money and training necessary for a proper roll-out. If these frameworks are incentivized, medical education institutions will see a rise in quality, take more responsibility, and constantly try to improve.

It is also important to make sure that stakeholder engagement has top priority when designing policies. Empowering all interested stakeholders and achieving inclusivity should be central in the development of education policies. Organizations should set up ways for regular discussions with training recipients, teachers, medical providers, and patients. Using this approach guarantees that the requirements set for accreditation change with the demands found in the healthcare field. Also, it is necessary for discoveries to suit the goals set out in UAE Vision 2031. When QMS rules are included in accreditation processes, medical education benefits from having graduates capable of meeting the greatest healthcare demands in the country.

## **7.1 Future Research Directions**

Even though this study explored how to apply QMS guidelines in accrediting medical education, it identified several points that still need more study. Researchers can

- Investigate the models to apply QMS concepts in accreditation of medical education in different cultures and regions
- To show advantages and disadvantages, analyze the implementation of the ISO 9001 and EFQM in the UAE and other states
- Track the impact that the implementation of QMS has on the quality of medical education as it changes with time
- Investigate ways through which the stakeholders can be involved more in the accrediting process

One can look into whether using QMS principles brings about enduring improvement in student achievement, stakeholder experiences, and the success of the accreditation program. Future work might involve studying how to increase involvement of stakeholders during the medical education accrediting process. For this, it is important to try the most useful strategies for involving all sorts of stakeholders, such as trainees, faculty, doctors, and patients. The study has given useful information on integrating Quality Management Systems (QMS) into accrediting Graduate Medical Education (GME) programs in the UAE. According to the hybrid model that unites ISO 9001 and EFQM, the NIHS accreditation process can be greatly improved. These findings show that enhancing quality, getting patient and stakeholder opinions, and adapting the accreditation framework are important. If the NIHS carries out these recommendations, its accreditation system will become more effective, transparent, and ready to change, which will help develop a strong and respected medical education system in the UAE.

## 8 References

- Abugabah, A., Sanzogni, L., Houghton, L., Ali AlZubi, A., & Abuqabbah, A. (2022). RFID Adaption in Healthcare Organizations: An Integrative Framework. *Computers, Materials & Continua*, 70(1), 1335–1348. <https://doi.org/10.32604/cmc.2022.019097>
- Ahmed, N., Devitt, K. S., Keshet, I., Spicer, J., Imrie, K., Feldman, L., Cools-Lartigue, J., Kayssi, A., Lipsman, N., Elmi, M., Kulkarni, A. V., Parshuram, C., Mainprize, T., Warren, R. J., Fata, P., Gorman, M. S., Feinberg, S., & Rutka, J. (2014). A Systematic Review of the Effects of Resident Duty Hour Restrictions in Surgery. *Annals of Surgery*, 259(6), 1041–1053. <https://doi.org/10.1097/sla.0000000000000595>
- Akinyemi, G. M., & Abiddin, N. Z. (2013). Quality Administration and Management in Higher Education in Nigeria: Implications for Human Resource Development. *International Education Studies*, 6(4). <https://doi.org/10.5539/ies.v6n4p225>
- Akram, Abdulkareem, A., Hussam Ali Mhaibes, & Hakeem Hammood Flayyih. (2024). The role of strategic agility in promoting organizational excellence: A descriptive analytical study. *Corporate and Business Strategy Review*, 5(2), 129–138. <https://doi.org/10.22495/cbsrv5i2art11>
- Al-Dhaafri, H., & Alosani, M. S. (2021). Role of leadership, strategic planning and entrepreneurial organizational culture towards achieving organizational excellence: evidence from public sector using SEM. *Measuring Business Excellence*, 26(3). <https://doi.org/10.1108/mbe-02-2021-0021>
- Aldiabat, B. (2022). The mediating role of strategic intelligence in the relationship between organizational agility and organizational excellence in Jordanian telecommunications companies. *Problems and Perspectives in Management*, 20(4), 496–506. [https://doi.org/10.21511/ppm.20\(4\).2022.37](https://doi.org/10.21511/ppm.20(4).2022.37)
- Alharafsheh, M., Albloush, A., Hanandeh, R., Alsafadi, M., & Ahmad Khwllidh, A. (2022). Impact of intelligence leadership on organizational excellence: Mediating role of organizational culture. *Problems and Perspectives in Management*, 20(3), 362–373. [https://doi.org/10.21511/ppm.20\(3\).2022.29](https://doi.org/10.21511/ppm.20(3).2022.29)

- Allen, S. K., Baalawi, Z. S., Al Shoaibi, A., Gomma, H. W., & Rock, J. A. (2022). Applying North American medical education accreditation standards internationally in the United Arab Emirates. *Medical Education Online*, 27(1). <https://doi.org/10.1080/10872981.2022.2057790>
- Alnadi, M., & Shadi Altahat. (2024). Artificial intelligence applications for enhancing organizational excellence: Modifying role of supply chain agility. *Problems and Perspectives in Management*, 22(2), 339–351. [https://doi.org/10.21511/ppm.22\(2\).2024.26](https://doi.org/10.21511/ppm.22(2).2024.26)
- Arbour, M., Yoshikawa, H., Atwood, S., Duran, F. R., Godoy, F., Trevino, E., & Snow, C. E. (2015). QUASI-EXPERIMENTAL STUDY OF A LEARNING COLLABORATIVE TO IMPROVE PUBLIC PRESCHOOL QUALITY AND CHILDREN'S LANGUAGE OUTCOMES IN CHILE. *BMJ Quality & Safety*, 24(11), 727.1-727. <https://doi.org/10.1136/bmjqs-2015-ihabstracts.11>
- Barirohmah, B., & Subiyantoro, S. (2021). ISO 9001:2008 Quality Management System In Education. *Nazhruna: Jurnal Pendidikan Islam*, 4(2), 353–361. <https://doi.org/10.31538/nzh.v4i2.1485>
- Breckner, G., Walker, J., Hanley, K., & Butki, N. (2017). Utilizing PDSA Cycle in Implementing a Chest Pain Accelerated Diagnostic Protocol. *Spartan Medical Research Journal*. <https://doi.org/10.51894/001c.6436>
- Blouin, D., & Tekian, A. (2018). Accreditation of Medical Education Programs. *Academic Medicine*, 93(3), 377–383. <https://doi.org/10.1097/acm.0000000000001835>
- Bondarenko, S. (2020). THE SPECIFICS OF USING OF THE EFQM 2020 MODEL IN THE MANAGEMENT OF ORGANIZATIONS. *Investytsiyi: Praktyka Ta Dosvid*, 13-14, 34. <https://doi.org/10.32702/2306-6814.2020.13-14.34>
- Boyle, T. A., Ho, C., MacKinnon, N. J., Mahaffey, T., & Taylor, J. M. (2012). Safety Implications of Standardized Continuous Quality Improvement Programs in Community Pharmacy. *Journal of Pharmacy Practice*, 26(3), 228–236. <https://doi.org/10.1177/0897190012452312>
- Busireddy, K. R., Miller, J. A., Ellison, K., Ren, V., Qayyum, R., & Panda, M. (2017). Efficacy of Interventions to Reduce Resident Physician Burnout: A Systematic Review. *Journal of Graduate Medical Education*, 9(3), 294–301. <https://doi.org/10.4300/jgme-d-16-00372.1>



Chaurasia, S. (2023). The Role of Organizational Culture in Promoting Work-Life Balance: An Empirical Review. *International Journal of Research Publication and Reviews*, 4(7), 2834–2837. <https://doi.org/10.55248/gengpi.4.723.28342837>

Counselman, F. L., Babu, K., Edens, M. A., Gorgas, D. L., Hobgood, C., Marco, C. A., Katz, E., Rodgers, K., Stallings, L. A., Wadman, M. C., Beeson, M. S., & Keehbauch, J. N. (2017).

Cunningham, J., Key, E., & Capron, R. (2016). An evaluation of competency-based education programs: A study of the development process of competency-Based programs. *The Journal of Competency-Based Education*, 1(3), 130–139. <https://doi.org/10.1002/cbe2.1025>

De Blasio, P., & Biunno, I. (2021). New Challenges for Biobanks: Accreditation to the New ISO 20387:2018 Standard Specific for Biobanks. *BioTech*, 10(3), 13. <https://doi.org/10.3390/biotech10030013>

Eaton, J. S. (2016). Accreditation and competency-based education. *The Journal of Competency-Based Education*, 1(1), 12–16. <https://doi.org/10.1002/cbe2.1006>

Etter, M., Colleoni, E., Illia, L., Meggiorin, K., & D'Eugenio, A. (2016). Measuring Organizational Legitimacy in Social Media: Assessing Citizens' Judgments With Sentiment Analysis. *Business & Society*, 57(1), 60–97. <https://doi.org/10.1177/0007650316683926>

Frenk, J., Chen, L., Bhutta, Z. A., Cohen, J., Crisp, N., Evans, T., Fineberg, H., Garcia, P., Ke, Y., Kelley, P., Kistnasamy, B., Meleis, A., Naylor, D., Pablos-Mendez, A., Reddy, S., Scrimshaw, S., Sepulveda, J., Serwadda, D., & Zurayk, H. (2020). Health Professionals for a New century: Transforming Education to Strengthen Health Systems in an Interdependent World. *The Lancet*, 376(9756), 1923–1958.

Fuller, N. R., Colagiuri, S., Schofield, D., Olson, A. D., Shrestha, R., Holzapfel, C., Wolfenstetter, S. B., Holle, R., Ahern, A. L., Hauner, H., Jebb, S. A., & Caterson, I. D. (2012). A within-trial cost-effectiveness analysis of primary care referral to a commercial provider for weight loss treatment, relative to standard care—an international randomised controlled trial. *International Journal of Obesity*, 37(6), 828–834. <https://doi.org/10.1038/ijo.2012.139>

HARBUSIUK, V. (2024). Using the EFQM excellence model in the analysis of safety-oriented management in healthcare facilities. *Innovation and Sustainability*, 4, 126–138. <https://doi.org/10.31649/ins.2024.4.126.138>

Hashem, T. N. (2022). Marketing Logistics in Reaching Organizational Excellence: Mediating Role of the European Foundation for Quality Management Excellence Model. *Journal of Hunan University Natural Sciences*, 49(4), 137–150. <https://doi.org/10.55463/issn.1674-2974.49.4.14>

Hussein, Dr. A. M., Al-Jubori, I. A. M., & Mahdi, Dr. A. A. K. (2022). The Mediating Role of Organizational Reputation in Promoting the impact of Employee Value Proposition on Organizational Commitment. *Webology*, 19(1), 832–853. <https://doi.org/10.14704/web/v19i1/web19058>

Kamusoko, R. (2020). Critical Analysis of the Applicability of the ISO 9001 Standard in Higher Education Institutions. *International Journal of African Higher Education*, 6(1), 97–120. <https://doi.org/10.6017/ijahe.v6i1.10671>

Karami, A., Shirouyehzad, H., & Asadpour, M. (2021). A DEA-Based Decision Support Framework for Organizations' Performance Evaluation considering TQM and Knowledge Management. *Journal of Healthcare Engineering*, 2021, 1–13. <https://doi.org/10.1155/2021/6654600>

Kravchenko, T., & Saienko, I. (2020). WORLD EXPERIENCE OF PROCESS QUALITY MANAGEMENT OF TEACHER TRAINING IN HEI. *Baltic Journal of Economic Studies*, 6(4), 90–97. <https://doi.org/10.30525/2256-0742/2020-6-4-90-97>

Kumar, P., Maiti, J., & Gunasekaran, A. (2018). Impact of quality management systems on firm performance. *International Journal of Quality & Reliability Management*, 35(5), 1034–1059. <https://doi.org/10.1108/ijqrm-02-2017-0030>

Lepistö, K., Saunila, M., & Ukko, J. (2022). Enhancing customer satisfaction, personnel satisfaction and company reputation with total quality management: combining traditional and new views. *Benchmarking: An International Journal*, 31(1), 75–97. <https://doi.org/10.1108/bij-12-2021-0749>

Logan-Athmer, A. L. (2022). The necessary leadership skillsets for the high-reliability organization framework adoption within acute healthcare organizations. *Journal of Healthcare Risk Management*, 42(1). <https://doi.org/10.1002/jhrm.21500>

López-Lemus, J. A. (2021). ISO 9001 and the public service: an investigation of the effect of the QMS on the quality of public service organizations. *International Journal of Organizational Analysis*. <https://doi.org/10.1108/ijoa-05-2021-2753>

Manatos, M. J., Rosa, M. J., & Sarrico, C. S. (2018). Quality management in universities: towards an integrated approach? *International Journal of Quality & Reliability Management*, 35(1), 126–144. <https://doi.org/10.1108/ijqrm-04-2016-0046>

Mehall, S. (2019). How online competency-based education can enable greater access to higher education. *The Journal of Competency-Based Education*, 4(4). <https://doi.org/10.1002/cbe2.1201>

Mutter Atti Samir, L. (2023). The Role of Strategic Leadership in Improving Organizational Excellence. *International Journal of Science and Research (IJSR)*, 12(3), 1441–1445. <https://doi.org/10.21275/sr23319160146>

Nenadál, J., Vykydal, D., & Waloszek, D. (2018). Organizational Excellence: Approaches, Models and Their Use at Czech Organizations. *Quality Innovation Prosperity*, 22(2), 47. <https://doi.org/10.12776/qip.v22i2.1129>

Nunhes, T. V., Bernardo, M., & Oliveira, O. J. (2019). Guiding principles of integrated management systems: Towards unifying a starting point for researchers and practitioners. *Journal of Cleaner Production*, 210, 977–993. <https://doi.org/10.1016/j.jclepro.2018.11.066>

o’g’li, H. Y. M. (2025). Improving the quality of education by implementing the iso 9001 quality management system in technical higher education institutions. *International Journal of Pedagogics*, 5(2), 39–41. <https://doi.org/10.37547/ijp/volume05issue02-12>

Pohle, A., Blind, K., & Neustroev, D. (2018). The Impact of International Management Standards on Academic Research. *Sustainability*, 10(12), 4656. <https://doi.org/10.3390/su10124656>

REPOSEUR, P. (2015). Comparaison ISO 9001 versus ISO/CEI 17025. *Qualité et Sécurité Au Laboratoire*. <https://doi.org/10.51257/f-1470>

Robbins, S. P. (2014). From the Editor—Accreditation, Competency-Based Education, and EPAS Revisions. *Journal of Social Work Education*, 50(4), 581–586. <https://doi.org/10.1080/10437797.2014.947893>

Rodriguez, J., Valenzuela, M., & Ayuyao, N. (2018). TQM paradigm for higher education in the Philippines. *Quality Assurance in Education*, 26(1), 101–114. <https://doi.org/10.1108/qae-12-2015-0048>

Rodriguez, R. L. (2022). An Assessment of the Practices on Continuous Quality Improvement (CQI) among Teacher Education Institutions in Basilan, Philippines. *Open Journal of Social Sciences*, 10(05), 241–264. <https://doi.org/10.4236/jss.2022.105017>

S, S. A., B, R. N., Abdullahi, H. I., Dhakar, R., & S, B. A. (2024). Response of Broiler Chickens to Three Different Energy Source Feedstuffs. *International Journal of Innovative Science and Research Technology (IJISRT)*, 541–546. <https://doi.org/10.38124/ijisrt/ijisrt24jul049>

Saminu, A. (2019). A FRAMEWORK FOR EFFECTIVE INFORMATION SYSTEM SECURITY MANAGEMENT IN KATSINA STATE HEALTHCARE ORGANIZATIONS. *International Journal of Engineering Applied Sciences and Technology*, 04(07), 88–94. <https://doi.org/10.33564/ijeast.2019.v04i07.013>

Santos, A. F., Alpan, O., & Hoffmann, H. (2021). Basophil activation test: Mechanisms and considerations for use in clinical trials and clinical practice. *Allergy*, 76(8). <https://doi.org/10.1111/all.14747>

Singhal, M., & Gulati, N. (2022). WOMEN IN SCIENCE AS ROLE MODELS FOR PROMOTING GENDER EQUALITY. *Towards Excellence*, 537–543. <https://doi.org/10.37867/te140151>

Stratton, T. D. (2019). Legitimizing Continuous Quality Improvement (CQI): Navigating Rationality in Undergraduate Medical Education. *Journal of General Internal Medicine*, 34(5), 758–761. <https://doi.org/10.1007/s11606-019-04875-1>

Svitlana Zaiets. (2023). QUALITY CERTIFICATION IN EDUCATION: APPLICATION OF ISO 9001 AND ISO 21001. *Osvitnâ Analitika Ukraïni*, 5, 5–20. <https://doi.org/10.32987/2617-8532-2023-5-5-20>

Szkiel, A. (2016). Customer Focus in the Requirements of ISO 9001:2015 Standard. *Marketing I Zarządzanie*, 44, 83–93. <https://doi.org/10.18276/miz.2016.44-07>

Tarmo, A., & Kimaro, A. (2021). The teacher education curriculum and its competency-based education attributes. *The Journal of Competency-Based Education*. <https://doi.org/10.1002/cbe2.1255>

Tshai, K. Y., Ho, J.-H. ., Yap, E. H., & Ng, H. K. (2014). Outcome-based Education – The Assessment of Programme Educational Objectives for an Engineering Undergraduate Degree. *Engineering Education*, 9(1), 74–85. <https://doi.org/10.11120/ened.2014.00020>

van Schoten, S., de Blok, C., Spreeuwenberg, P., Groenewegen, P., & Wagner, C. (2016). The EFQM Model as a framework for total quality management in healthcare. *International Journal of Operations & Production Management*, 36(8), 901–922. <https://doi.org/10.1108/ijopm-03-2015-0139>

Wilson, J. P., & Campbell, L. (2018). ISO 9001:2015: the evolution and convergence of quality management and knowledge management for competitive advantage. *Total Quality Management & Business Excellence*, 31(7-8), 1–16. <https://doi.org/10.1080/14783363.2018.1445965>

Winters, B. D., Weaver, S. J., Pfoh, E. R., Yang, T., Pham, J. C., & Dy, S. M. (2013). Rapid-Response Systems as a Patient Safety Strategy. *Annals of Internal Medicine*, 158(5\_Part\_2), 417. <https://doi.org/10.7326/0003-4819-158-5-201303051-00009>

Wolniak, R. (2017). Analysis of relationship between using certificates ISO 9001 vs ISO 14001 and ISO 9001 vs ISO/ TS 16949. *Scientific Papers of Silesian University of Technology. Organization and Management Series*, 2017(108), 421–430. <https://doi.org/10.29119/1641-3466.2017.108.38>

Xuan, V. N., & Trung, N. T. (2020). Factors affecting quality management in business: Evidence in Vietnam manufacturing and technology enterprises. *Management Science Letters*, 2099–2106. <https://doi.org/10.5267/j.msl.2020.2.001>