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**The Effect of Standardized Healthcare processes on
Patient Safety and Healthcare Outcomes: A Mixed-
Methods Analysis**

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**Effect of Standardization of Healthcare Services on
Patient Safety and Healthcare Outcomes: A Mixed-
Methods Study**

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Dissertation Approval

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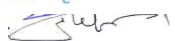
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Dedication

To my beloved family, whose unwavering support, patience, and love have been my greatest source of strength.

And to the healthcare professionals who work tirelessly under difficult circumstances to provide care and protect lives—may this work contribute, even in a small way, to improving patient safety, health outcomes, and strengthening health systems.

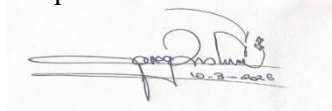
With deepest love, this work is dedicated to all of you
Tareq Rumhi

Declaration

I, the undersigned, submit the thesis titled: “Effect of Standardization of Healthcare Services on Patient Safety and Healthcare Outcomes: A Mixed-Methods Study”, I acknowledge that this thesis was submitted to Al-Quds University to obtain the degree of Doctor of (Philosophy in Public Health), and that what it contains is the product of my own effort, except for what has been indicated wherever mentioned, and that this thesis as a whole or any part of it has not been previously submitted to obtain a degree. Or a scientific or research title at any other educational or research institution.

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The signature :

A handwritten signature in black ink, appearing to read 'Tareq Rumhi', is written over a horizontal line. The signature is stylized with a large, looped 'R'.

Date: 26/4/2026

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Impact of Standardization of Healthcare Services on Patient Safety and Healthcare Outcomes: A Mixed-Methods Study

Abstract

Background: Patient safety is a global healthcare priority, however, the healthcare system in Palestine continues to encounter structural, resource, and organizational challenges that hinder the standardization of health services. Although accreditation initiatives internationally play a significant role in enhancing patient safety and quality of care, limited evidence exists regarding their effectiveness within Palestinian hospitals.

Aim: This study aimed to assess the effects of healthcare standardizations on patient-safety indicators and clinical outcomes in two Palestinian hospitals and to explore healthcare providers' and patients' perceptions regarding the implementation of standardization of health services.

Methods: An **explanatory sequential mixed-methods design** was employed. In the first phase, quantitative data were retrospectively extracted from electronic medical records and health records before and after the implementation of standardized clinical protocols at Al-Istishari Arab Hospital and Ibn Sina Hospital. Indicators involved medication errors, Catheter-Associated Urinary Tract Infection, Central Line-Associated Bloodstream Infection, patient falls, 30-day readmissions, length of stay, patient satisfaction, and safety culture perceptions among staff. Quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 26.

In the second phase, we collected qualitative data collected through 19 semi-structured interviews with healthcare providers and 40 discharged patients. We employed thematic analysis to systematically identify key patterns and themes concerning the importance of protocols, feasibility of implementation, perceived impact, and barriers to adoption.

Results: Post-accreditation standardization revealed varying effects between the two hospitals. At Al-Istishari Arab Hospital (IAH), medication errors decreased by 17.9%, along with modest improvements in patient satisfaction and safety culture. However, patient fall rates surged by 64.3%, and infection-related indicators, such as CAUTI and CLABSI, showed no statistically significant changes. In contrast, Ibn Sina Hospital (ISH) achieved more significant improvements, with reductions in medication errors (60%), patient falls (58.5%), and length of stay (45.47%), as well as greater enhancements in patient satisfaction. Nevertheless, infection-related indicators and 30-day readmission rates exhibited limited improvement, with no statistically significant changes noted. Overall, infection-related outcomes displayed inconsistent patterns across both hospitals, indicating sensitivity to contextual and operational factors. Qualitative findings underscored the importance of leadership support, communication quality, staff workload, and ongoing training in ensuring adherence to standardized protocols and perceived effectiveness. These results emphasize that sustained time, organizational commitment, and adequate resource allocation are crucial for fully integrating standardization into routine clinical practice.

Conclusions: The standardization of healthcare enhances specific patient safety indicators and healthcare outcomes. However, its effectiveness relies on organizational readiness and commitment, leadership involvement, and resource availability. Cultivating a safety culture, providing continuous training, and improving monitoring practices are crucial for maximizing the benefits of standardization and accreditation.

Keywords: Standardized Healthcare, processes, Patient Safety, Healthcare Outcomes

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List of Abbreviations

Abbreviation	Full Term
ACLS	Advanced Cardiovascular Life Support
AHRQ	Agency for Healthcare Research and Quality
ALOS	Average Length of Stay
APSIC	Asia Pacific Society of Infection Control
BCMA	Barcode Medication Administration
BLS	Basic Life Support
CAUTI	Catheter-Associated Urinary Tract Infection
CDC	Centers for Disease Control and Prevention
CDSS	Clinical Decision Support Systems
CLABSI	Central Line-Associated Bloodstream Infection
CPOE	Computerized Physician Order Entry
CUSP	Comprehensive Unit-based Safety Program
EMR	Electronic Medical Records
ERAS	Enhanced Recovery After Surgery
GPS	Guide to Patient Safety
HAI	Healthcare-Associated Infection
HCP	Healthcare Providers
IAH	Al-Istishari Arab Hospital
ICU	Intensive Care Unit
IPC	infection prevention and control
ISH	Ibn Sina Hospital
JCI	Joint Commission International
LHS	Learning Health Systems
LOS	Length of Stay
MOH	Ministry of Health
MRSA	Methicillin-Resistant Staphylococcus Aureus

List of Abbreviations

PCBS	Palestinian Central Bureau of Statistics
PDSA	Plan-Do-Study-Act
PSFHI	Patient Safety and Healthcare Facility Improvement
RED	Re-Engineered Discharge
SCCM	Society of Critical Care Medicine
SOPs	Standard Operating Procedures
SPSS	Statistical Package for the Social Sciences
UK	United Kingdom
WHO	World Health Organization

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Chapter One

Introduction

1.1 Background

Hospitals across the globe are still struggling with major issues in improving access to healthcare, quality, and cost reduction (Zabin, 2024). In this regard, accreditation initiatives have emerged as critical instruments in promoting improvements in hospital infrastructure, healthcare processes, and patient health outcomes, particularly concerning patient safety. Despite progress in healthcare delivery, adverse events during hospitalization are still a significant source of preventable harm. The influential Institute of Medicine report *To Err is Human* (1999) : Building a Safer Health System-estimated that medical errors contribute to between 44,000 and 98,000 deaths yearly in U.S. hospitals, alongside over one million-injuries (Pierre et al., 2022; World Health Organization (WHO), 2021). This alarming issue highlights the urgent need for strong safety protocols to alleviate avoidable harm.

In response to this global attention, the WHO released the Global-Patient Safety Action Plan 2021–2030, highlighting the elimination of preventable harm and the cultivation of a culture of safety, mainly in light of the disturbances caused by the COVID-19 pandemic (WHO, 2021).

Healthcare systems in the Middle East, including in Palestine, face exclusive structural and operational challenges that complicate efforts to improve patient safety. These challenges involve rapid population growth, restricted economic and human resources, and developing healthcare needs, all of which stress healthcare systems and impact the quality-of-care delivery (Al-Surimi et al., 2022).

Regional studies reveal that safety practices are usually inconsistently applied, with common issues involving suboptimal communication and insufficient staffing (WHO, 2021).

In Palestinian hospitals, these challenges are further exaggerated through a fragmented healthcare infrastructure and a shortage of resources. Evidence indicates that one in seven patients in Palestinian hospitals experiences harm during-hospitalization (Najjar et al., 2018; Zabin, 2023). Despite this, there are limited research studies examining the effectiveness of the implementation of standardized healthcare protocols in the Palestinian context.

This study seeks to address this knowledge gap through evaluating the impact of applying a standardized healthcare approach using protocols as a part of accreditation processes on key safety indicators, namely medical errors, healthcare related infections, and patient falls in two Palestinian hospitals through-exploring how standardized protocols decrease variability in clinical-setting practices, this research study tries to explore afford-actionable insights in improving healthcare-quality and safety in limited-resources' environments. Optimally, the research findings may inform and reform policy decisions and strengthen the development of contextually suitable safety strategies for healthcare systems experiencing similar circumstances.

Despite global efforts to improve healthcare quality and patient safety through accreditation and standardized healthcare protocols, preventable adverse events as medication errors, healthcare-associated infections, and patient falls remain crucial challenges in hospital settings worldwide (WHO, 2021; Pierre et al., 2022). In Palestine, limited empirical evidence exists toward the effectiveness of standardized healthcare services and accreditation processes on patient safety and healthcare outcomes, mainly in comparisons between governmental and private hospitals.

This knowledge gap limits the capability of healthcare leaders and policymakers to make evidence-based quality improvement strategies. Therefore, the current study aims to assess the effect of standardized healthcare services on patient safety indicators and healthcare outcomes in two Palestinian hospitals and explore healthcare providers' and patients' perceptions regarding the implementation of standardized protocols.

1.2 Problem Statement

Healthcare quality, as defined by the World Health Organization, requires the proper performance of safe, effective, and evidence-based interventions delivered in accordance with established standards and capable of improving key health outcomes, including mortality, morbidity, and disability (WHO, 2021). However, the issue of variability in clinical practices, both among healthcare providers and within the same healthcare institution over time, still poses a challenge in most health systems. This variability undermine the consistency of healthcare delivery, patient safety, and reduce the efficiency of healthcare services, particularly in resource-limited settings (Soósová et al., 2021).

Standardization and accreditation have been widely adopted globally to address this problem by promoting adherence to evidence-based practices, reducing variability, and strengthening patient safety culture through structured frameworks, and process (Dzau et al., 2024). Empirical evidence from both developed and developing countries suggests that accreditation and standardization can lead to improvement in medication safety, a

reduction in adverse events, and enhance trust in healthcare system (Upshaw-Owens, 2019).

In recent years, Palestine has introduced hospital accreditation as part of national efforts to align healthcare services with international quality standards. While accreditation programs and standardized clinical protocols are being increasingly implemented, there is a lack of empirical evidence evaluating their actual impact on patient safety indicators and clinical outcomes in the Palestinian healthcare context.

The absence of context-specific evidence highlights a substantial gap in both knowledge and practice. It is uncertain whether accreditation-driven standardization genuinely enhances healthcare outcomes or if its effects are shaped by factors such as organizational readiness, resource availability, and implementation capacity. This lack of evidence carries significant practical consequences, restricting policymakers, healthcare leaders, and practitioners from making well-informed decisions about the design, implementation, and sustainability of quality improvement initiatives. In the absence of clear evidence of effectiveness, there is a risk of inefficient resource allocation, inconsistent application of standards, and minimal advancements in patient safety outcomes.

This study aims to fill the existing gap by assessing the impact of standardized healthcare services, implemented through accreditation, on patient safety indicators and clinical outcomes in Palestinian hospitals. The findings are anticipated to offer evidence that will guide policy and practice, especially in resource-limited healthcare environments (Hamdan & Saleem, 2018; Dzau et al., 2024).

1.3 Research Aim and Objectives

Aim: To ascertain the impact of standardizing healthcare services through accreditations on patient safety and healthcare outcomes in specialized hospitals in Palestine. This study aims to examine the impact of the standardization of healthcare services, as operationalized through accreditation processes, on patient safety and healthcare outcomes in specialized hospitals in Palestine. It specifically investigates how standardization may reduce variability in clinical practice, improve the consistency of care delivery, and contribute to improvements in patient safety metrics and overall healthcare quality.

1.3.1 Objectives:

1. To analyze the impact of standardized healthcare services on patient-safety metrics, particularly the incidence of medication errors, Catheter-Associated Urinary Tract Infections (CAUTI), Central Line-Associated Bloodstream Infections (CLABSI), and patient falls, in both hospitals.
2. To measure the effect of implementing standardizations on healthcare outcomes, including readmission rates, length of stay (LOS), and patient satisfaction

3. To explore healthcare professionals' and patients' perceptions regarding the implementation, effectiveness, quality, and safety of standardized healthcare services in the two hospitals.
4. To evaluate healthcare providers' perceptions of the organizational patient safety culture and its relationship with the implementation of standardized healthcare services. Additionally, it aims to compare patient safety outcomes and safety culture between government and privately accredited hospitals.

1.4 Study Justification

This research fills a gap in the literature related to the efficiency of standardized healthcare protocols in specialized departments within Palestinian hospitals, where complex and high-risk healthcare is often practiced (Zabin, 2024).

Although there have been efforts around the world to improve the standardization of healthcare practices, the protocols in the Palestinian healthcare environment are still very limited. This highlights the need for research to determine the feasibility, efficiency, and importance of standardized protocols in optimizing healthcare delivery and patient safety in Palestine, environments of limited resources.

The justification of this study derived from the limited empirical evidence toward the effectiveness of standardized healthcare services and accreditation programs within Palestinian hospitals. Although accreditation initiatives have recently expanded throughout healthcare-institutions in Palestine, few studies have comprehensively assessed their effect on patient safety indicators and healthcare outcomes utilizing a mixed-methods approach. Furthermore, limited research has compared the implementation and effectiveness of standardization practices among governmental and private hospitals in limited-resource healthcare settings.

Therefore, this study contributes to bridge the knowledge gap through examining how standardized healthcare services affect patient safety, clinical outcomes, organizational safety culture, and stakeholder perceptions within two Palestinian hospitals. The findings may support healthcare policymakers, hospital administrators, and accreditation organizations in developing evidence-based strategies to support healthcare quality and patient safety practices in Palestine.

The findings of this study have significant implications for practice. For the administrators and planners of hospitals, the findings of this study provide significant evidence for future planning on initiatives for quality improvement, to concentrate on effective strategies for safety, and to extend the efforts of standardization beyond the two hospitals that were the focus of this study. Regarding healthcare professionals, the results of this study highlight the significance of organizational issues, such as leadership support, communication quality, workload management, and training, in relation to the level of compliance with standardized procedures and patient safety outcomes. For policymakers, the evidence that

can be generated may inform decision-making on national quality policies, allocation of resources, and further refinement of accreditation frameworks to suit local system capacities and needs.

In addition to its immediate relevance to the institution and policy agendas, this research contributes to the general body of knowledge on the topic of healthcare quality and patient safety in low- and middle-income countries. By integrating outcome information with insights into the process of implementation, this research helps to build knowledge on how standardization is implemented in a manner that yields safety and performance benefits. The results provide lessons that can be transferred to accreditation bodies and researchers on how accreditation programs can be made more effective, and also provide a methodological and conceptual framework for future studies on the evaluation of quality improvement interventions in similar contexts. Finally, this study argues for the production of context-specific evidence that may help improve the provision of safe and high-quality healthcare services, as well as the resilience of the Palestinian healthcare system in responding to the present and future healthcare challenges.

1.5 Context of the study

1.5.1 The Palestinian Healthcare System

The Palestinian healthcare system is currently functioning in a highly complex socio-political and economic environment that is directly affecting the organization, quality, and sustainability of healthcare services. According to the Palestinian Central Bureau of Statistics (PCBS), the estimated number of Palestinians in 2024 was 14.9 million, of whom 5.6 million are in the West Bank and Gaza Strip (PCBS, 2024). A major proportion of the population is below the age of 15 years, which is increasingly exerting pressure on maternal, child, and preventive healthcare services, as well as the existing healthcare infrastructure and human resources.

The provision of healthcare services in Palestine is done through a pluralistic system that includes the Palestinian Ministry of Health (MOH), the United Nations Relief and Works Agency for Palestine Refugees in the Near East, the Palestinian Red Crescent Society, and other organizations. Although this diversity has contributed to the availability of services, it has also led to a lack of coordination and standardization of clinical practices among the providers, resulting in variations in the delivery of care that go against the universally accepted standards of quality and safety in healthcare (PCBS, 2024).

The healthcare infrastructure consists of around 93 hospitals in the West Bank and Gaza Strip, including governmental, nongovernmental, UNRWA, and private hospitals (MOH, 2023). In 2023, the total number of hospital beds in Palestine was estimated at 4,378 beds, including 1,984 governmental beds, 1,591 NGO beds, 781 private-sector beds, and 58 UNRWA beds (MOH, 2023). Despite this, the healthcare system continues to experience shortages in specialized services, human resources, technology, and hospital capacity, particularly in light of the ongoing war situation in Gaza, which has placed additional pressure on healthcare infrastructure and service delivery. According to the Palestinian MOH (2024), the Gaza Strip alone included 1,967 inpatient beds by the end of 2024,

reflecting the continued pressure on healthcare infrastructure and hospital capacity in Palestine.

Although the referrals for specialized care outside of Palestine constitute a small proportion of the total use of services, they are still an important indicator of the gaps and discontinuity in the care process. These structural barriers highlight the need for standardized healthcare services to reduce practice variation and improve patient safety outcomes (WHO, 2021).

1.5.2 Al-Istishari Arab Hospital (IAH)

Al-Istishari Arab Hospital (IAH) is a private, non-governmental, for-profit tertiary healthcare institution, established in 2013 in Ramallah, located in the central West Bank. The hospital provides a comprehensive range of inpatient and outpatient services, including emergency services, specialized diagnostic and treatment services, as well as specialized programs in cardiology, oncology, pediatrics, internal medicine, and surgery. The hospital is equipped with modern diagnostic facilities and has a multidisciplinary team of healthcare professionals who are trained to provide specialized and high-level care with capacity reaching 330 beds, reflecting its major role in delivering specialized healthcare services in Palestine (MOH, 2023).

Al-Istishari Arab Hospital is one of the earliest hospitals in Palestine to attain hospital JCI accreditation in 2021. This is a clear indication of the commitment of the organization to quality and better health services. The implementation of hospital accreditation requires the application of standardized clinical practices, monitoring systems, training programs, and patient safety programs. The hospital was selected for the study due to its early adoption of the accreditation process, its highly advanced level of service delivery, and the fact that it is a referral hospital, making it an ideal setting to study the impact of standardized health services on patient safety and outcomes (MOH, 2023).

1.5.3 Ibn Sina Specialized Hospital (ISH)

Ibn Sina Specialized Hospital (ISH) is a private, non-governmental tertiary healthcare facility situated in Jenin, serving the northern region of the West Bank. The hospital offers a comprehensive range of inpatient and outpatient services, including internal medicine, general and specialized surgery, pediatrics, and emergency care. It is backed by a multidisciplinary team of healthcare professionals and provides essential diagnostic and therapeutic services to address diverse patient needs. With a capacity of approximately 55 inpatient beds, ISH is pivotal in delivering secondary and tertiary healthcare services in northern Palestine (MOH, 2023).

The hospital received JCI accreditation in 2024, which symbolizes a relatively newer phase of implementation of standardized healthcare, as compared to IAH. The process of accreditation at ISH aimed at improving clinical governance, implementing standardized protocols, improving documentation systems, and optimizing patient safety practices. The hospital was chosen for this research to allow comparison between the institutions at

different levels of maturity in the accreditation process, providing important insight into the impact of timing and readiness on the effectiveness of standardization.

Both hospitals function within the larger Palestinian healthcare system and receive referred patients from government hospitals through an official purchasing mechanism established by the Palestinian Ministry of Health (MOH). This system allows the MOH to contract private healthcare providers for specialized diagnostic and therapeutic services that may not be available in government facilities or to alleviate capacity constraints. As a result, patients can access timely and advanced care in private hospitals while benefiting from financial coverage through public funding. Therefore, both Al-Istishari Arab Hospital and Ibn Sina Specialized Hospital play a vital role in supporting the public healthcare sector by offering specialized services to referred patients within a regulated purchasing framework (MOH, 2023).

1.5.4 Rationale for Site Selection

Both hospitals are strategic cases for assessing the effect of standardized healthcare services in Palestine. Although both hospitals are private non-governmental institutions, they receive patients' referrals from governmental hospitals. This referral mechanism enhances their comparability within the broader national healthcare context. Differences in organizational capacity, accreditation timing, service complexity, and implementation processes make the two hospitals appropriate settings for evaluating the effect of standardized healthcare services on patient safety outcomes, healthcare performance, and stakeholders' perceptions (Obaidi, 2024).

1.6 Definition of Terms and Operational Definitions

1.6.1 Patient Safety Indicators: Patient safety indicators are standardized measures used to assess the occurrence of adverse events and preventable harm related to healthcare delivery (Rosen & Rivard, 2025). In the present study, patient safety indicators were operationally defined and measured as follows:

1.6.1.1 Medical Errors: Medical errors are preventable events that may lead to inappropriate healthcare delivery or patient harm, including errors in medication prescribing, administration, or documentation (Pierre et al., 2022). **Operationally**, medical errors were measured as the number of reported medication-related incidents recorded in hospital incident reporting and quality management systems during the pre- and post-standardization periods (WHO, 2021).

1.6.1.2 Catheter-Associated Urinary Tract Infection (CAUTI): Catheter-Associated Urinary Tract Infection refers to a urinary tract infection occurring in a patient with an indwelling urinary catheter (Centers for Disease Control and Prevention [CDC], 2020). **Operationally**, CAUTI rates were calculated using infection control surveillance data, expressed as the number of CAUTI cases per 1,000 urinary catheter days, based on hospital infection prevention records (CDC, 2020).

1.6.1.3 Central Line-Associated Bloodstream Infection (CLABSI): Central Line-Associated Bloodstream Infection is a laboratory-confirmed bloodstream infection

occurring in patients with a central venous catheter (CDC, 2020). **Operationally**, CLABSI was measured as the number of confirmed CLABSI cases per 1,000 central line days, extracted from standardized hospital infection surveillance and quality reports.

1.6.1.4 Patient Falls: Patient falls are defined as unplanned descents to the floor occurring within the hospital setting and represent a key indicator of patient safety and nursing surveillance (Salari et al., 2022). **Operationally**, patient falls were measured as the number of inpatient fall incidents per 1,000 patient days, as documented in hospital safety incident reporting systems.

1.6.2 Health Outcome Indicators: Reflect the quality and effectiveness of healthcare delivery as demonstrated by patient outcomes (Ndife, 2024). In this study, the following indicators were operationally defined:

1.6.2.1 30-Day Hospital Readmission Rate: Thirty-day hospital readmission is defined as the unplanned admission of a patient to the same hospital within 30 days of discharge (Anderson et al., 2022). Readmission rates were **operationally** defined as the proportion of patients who were readmitted to the hospital within 30 days, based on hospital administrative and electronic medical records (EMR) data.

1.6.2.2 Length of Hospital Stay (LOS): LOS in the hospital is the measure of the duration of a single episode of hospitalization and is used as an indicator of the efficiency of the healthcare system and the severity of the disease (Liu et al., 2021). The LOS was **operationally** defined as the number of days between the admission and discharge dates, and the ALOS was calculated for both pre- and post-standardization periods.

Chapter Two

Literature Review

2.1 Introduction

This chapter reviews the existing literature on healthcare accreditation, the standardization of healthcare services, patient safety, organizational culture, and clinical outcomes in hospital settings. The purpose of this review is to establish a theoretical and empirical foundation for assessing the effects of accreditation-based standardization on healthcare quality and safety outcomes, particularly in specialized hospitals (Creswell, 2018; Saunders et al., 2019).

Globally, healthcare systems have increasingly adopted accreditation programs as systematic tools to enhance quality, improve patient safety, strengthen governance, and promote continuous organizational development. Accreditation standards generally emphasize evidence-based practices, risk management, leadership accountability, workforce competency, and performance measurement. Research from different countries has produced mixed results regarding the extent to which accreditation leads to measurable improvements in patient outcomes, suggesting that its effects are often shaped by contextual, organizational, and implementation factors (World Health Organization, 2021; Braithwaite et al., 2017; Greenfield et al., 2020).

Patient safety is a crucial element of healthcare quality. Preventable adverse events, such as healthcare-associated infections, medication errors, patient falls, prolonged hospital stays, and unnecessary readmissions, place significant burdens on both patients and healthcare systems worldwide. Standardized protocols and accreditation frameworks aim to reduce unwarranted variations in care processes and improve consistency in service delivery, ultimately resulting in safer and more effective care (To Err Is Human, 2000; World Health Organization, 2021).

In Palestine, healthcare organizations function in a challenging environment marked by resource constraints, workforce challenges, fragmented services, and an increasing demand for high-quality specialized care. While accreditation has been progressively embraced as a reform strategy, there is a lack of substantial evidence regarding its true impact on patient safety outcomes, organizational culture, and healthcare performance in Palestinian hospitals, especially when employing mixed-methods approaches. This highlights a significant knowledge gap that the current study aims to fill (World Bank, 2022; World Health Organization, 2023).

This literature review thoroughly examines international, regional, and local evidence related to accreditation and standardization. It investigates theoretical perspectives on organizational change and quality improvement, alongside empirical studies assessing their impact on safety culture and clinical outcomes. Furthermore, the review emphasizes current knowledge gaps that highlight the importance of this research (Creswell, 2018; Greenfield et al., 2020).

This study is guided by a conceptual framework that explains how the standardization of healthcare services, achieved through hospital accreditation, impacts patient safety and healthcare outcomes in a hospital environment. This framework is built on established theoretical models, empirical evidence from the literature, and the features of the Palestinian healthcare system. It allows the researcher to systematically analyze the relationships between organizational inputs and patient outcomes.

The conceptual framework that guides this study is based on an explanation of how the standardization of healthcare services, achieved by hospital accreditation, affects patient safety and healthcare outcomes in a hospital setting (Donabedian, 1988; Braithwaite et al., 2017). The conceptual framework was constructed from existing theoretical models, empirical evidence from the literature, and the characteristics of the Palestinian healthcare system. The conceptual framework enables the researcher to examine the relationships between organizational inputs and patient outcomes in a systematic way (Reason, 2000; Singer et al., 2009).

The conceptual framework believes that the quality and safety of healthcare are not isolated events but the outcome of dynamic interactions between structural capacity, clinical processes, and organizational culture. In this study, standardization is viewed as a system-level intervention that aims to minimize unwarranted variation in clinical practice, improve compliance with evidence-based care, and build a shared culture of safety among healthcare providers (Weaver et al., 2013; Greenfield et al., 2020).

A comprehensive literature search was conducted using PubMed, Scopus, ScienceDirect, CINAHL, Google Scholar, and Web of Science to identify studies related to standardized healthcare services, accreditation, patient safety, medical errors, healthcare-associated infections, and organizational safety culture. Articles published before 2024 in English were included. Keywords such as “hospital accreditation,” “patient safety,” “medical

errors,” and “quality improvement” were used with Boolean operators. Official reports from the WHO and Palestinian MOH were also reviewed.

1.7 Conceptual Framework

2.2.1 Theoretical Foundation of the Conceptual Framework

The conceptual framework of the research is anchored on two theoretical frameworks: the Structure-Process-Outcome Model, which was conceptualized by Donabedian, and the Safety Culture Theory. These two theories complement each other and provide a complete explanation of the significance of standardized healthcare services in the development of patient safety and outcomes.

2.2.1.1 Donabedian’s Structure–Process–Outcome Model

.Based on the Donabedian model, quality of healthcare can be evaluated by focusing on three distinct dimensions: structure, process, and outcome (Donabedian, 1988). It developed by Avedis Donabedian in 1966. The Donabedian model is very helpful in evaluating the effects of accreditation and standardization interventions because the interventions are aimed at overcoming structural problems and processes of care to improve outcomes.

Structure

In this study, structure refers to the organizational and system-level conditions that support healthcare delivery. These include:

- Availability of standardized clinical protocols and policies
- Human resources (staffing levels, skill mix, and training)
- Physical infrastructure, equipment, and information systems
- Quality and patient safety governance structures
- Accreditation-related requirements and monitoring systems

The standardization of healthcare services is conceptualized as a structural intervention that enhances these aspects by implementing common policies, documentation, and accountability in the hospital departments.

Process

Process refers to how healthcare is actually delivered in clinical practice. In the present study, the process includes:

- Healthcare providers’ adherence to standardized clinical protocols
- Medication management practices
- Infection prevention and control procedures
- Communication and teamwork among healthcare staff
- Incident reporting and learning from errors

The framework assumes that improved structures enable more consistent and reliable care processes. Through standardization, clinical practice becomes less dependent on individual discretion and more aligned with evidence-based guidelines.

Healthcare Outcome

Healthcare Outcome reflects the results of healthcare delivery on patients and the health system. In this study, healthcare outcomes are operationalized through:

- Patient safety indicators (medical errors, CAUTI, CLABSI, patient falls)
- Clinical outcome indicators (readmission rates, length of stay)
- Patient satisfaction
- Staff perceptions of organizational safety culture

The Donabedian model indicates that enhancing healthcare structures and processes leads to better patient safety and improved clinical outcomes.

2.2.1.2 Safety Culture Theory

Safety Culture Theory (1997): This theory gives credibility to the Donabedian model because it recognizes the importance of shared values, beliefs, and practices in influencing patient safety outcomes. A positive safety culture promotes open communication, non-punitive reporting of errors, teamwork, and learning from errors.

Within this framework, standardization of healthcare services is assumed to reinforce safety culture by:

- Clarifying expectations and responsibilities
- Reducing ambiguity in clinical decision-making
- Supporting transparency and accountability
- Promoting learning-oriented responses to adverse events

As highlighted in the literature, reducing unwarranted variation in clinical processes is a key mechanism for improving patient safety, particularly in high-risk hospital environments such as emergency units, intensive care units, and surgical departments (Panny et al., 2018). The conceptual framework of this study is presented in Figure 2.1. The conceptual framework shows the proposed relationships between standardized healthcare services and patient safety and healthcare outcomes.

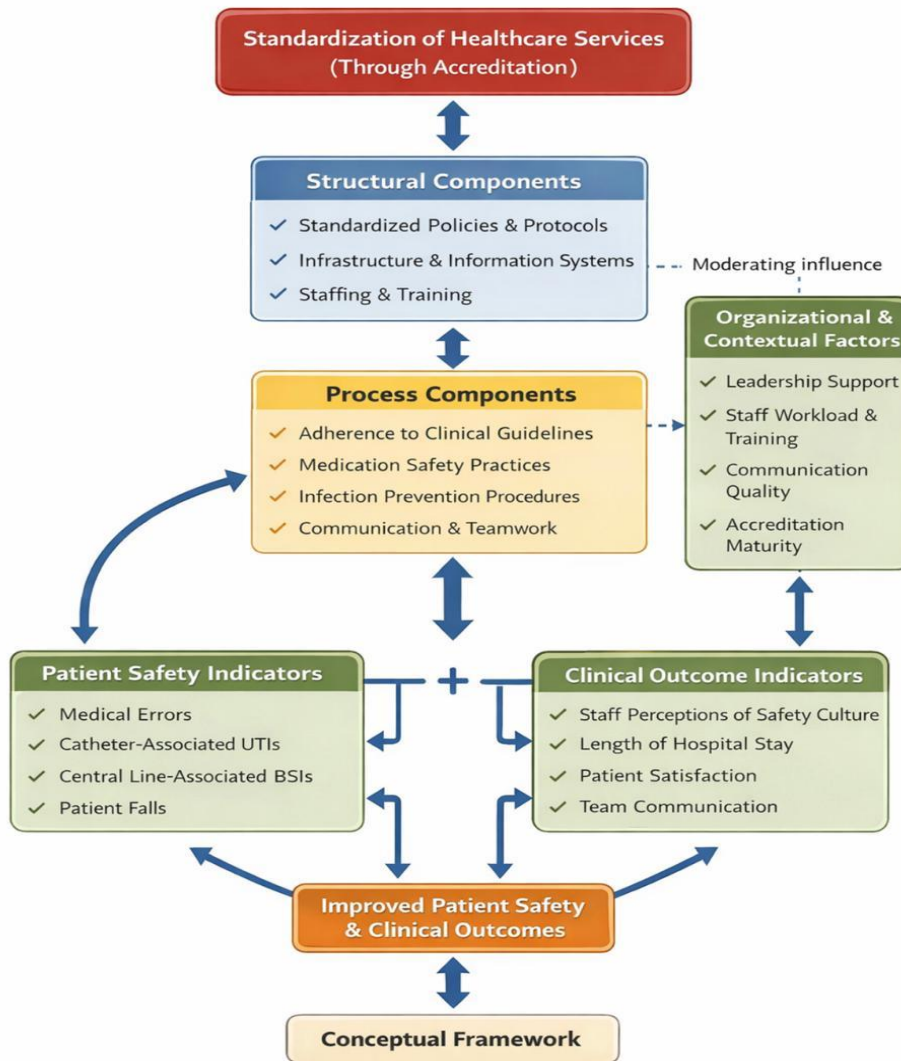


Figure 2.1. Conceptual Framework of the Study

Note. The conceptual framework illustrates the relationship between accreditation-driven standardization processes and healthcare quality and patient safety outcomes in Palestinian hospitals, including organizational, clinical, and patient-centered dimensions.

2.2.3 Study Variables and Their Relationships

The independent variable include standardization of healthcare services that operationalized through hospital accreditation and the implementation of standardized clinical protocols and safety procedures.

The dependent variables include patient safety indicators, medical errors, catheter-associated urinary tract infection, central line-associated bloodstream infection, patient falls, clinical outcome indicators, 30-day readmission rates, length of hospital stay, patient satisfaction, organizational outcome, staff perceptions of organizational safety culture.

Mediating and contextual factors acknowledge that the relationship between standardization and outcomes is influenced by contextual and organizational factors,

including: leadership support, communication quality, staff workload, continuous training, organizational readiness and accreditation maturity. These factors may strengthen or weaken the effectiveness of standardization efforts and help explain variations in outcomes between hospitals.

According to this paradigm, the current study examines the effect of standardization on patient safety and outcomes in two Palestinian hospitals with different accreditation dates. The criteria employed in this study to measure the changes that occurred in relation to patient safety and outcomes were quantitative, whereas the data employed in this study to examine the perceptions of healthcare providers and patients regarding the implementation and effect of standardized care were qualitative.

With the integration of the structural, process, and outcome measures, the framework allows for a holistic assessment of standardization as a quality improvement strategy, taking into consideration the contextual issues that may affect the effectiveness of standardization in resource-limited settings of healthcare.

This conceptual framework provides a logical and theoretically valid foundation for carrying out the study. It is compatible with international models of quality of care, open to mixed-methods research, and offers a clear organizational framework for connecting standardization from accreditation to patient safety and outcomes. In particular, it enables the study to move from descriptive analysis to explanatory knowledge of the processes and mechanisms by which standardization is or is not successful in enhancing the quality of healthcare.

2.3 Literature Review

Standardized healthcare practices are systematically identified as consistent established protocols, clinical guidelines, and pathways that have emerged as essential tools in improving patient safety and clinical health outcomes across several health systems (Al-Alawy et al., 2021).

2.3.1 Standardized Healthcare Services

Standardized healthcare services have become an essential strategy in recent healthcare systems, designed to decrease clinical variation, enhance patient safety, and improve overall quality of healthcare (Arzahan et al., 2022). These services involve the application of structured protocols of evidence-based methods that confirm the standard delivery of healthcare. In an increasingly multifaceted and dynamic healthcare environment, standardization functions as a critical mechanism to deliver safe, reliable, and cost-effective healthcare (Panny et al., 2018; Al-Sayedahmed et al., 2021).

Healthcare systems in the Middle East have experienced extensive reforms over the past decades, with several countries seeking to align with global standards of quality and safety. Specialized hospitals, mainly those concentrating on cardiology, oncology, maternity, and

surgical healthcare, have been at the top of applying standardized healthcare services, merging evidence-based clinical methods, protocols, and quality enhancements frameworks into clinical-practices (Al-Sayedahmed et al., 2021)

In low-resource situations such as Palestine, where healthcare systems experience significant political, financial, and infrastructural challenges, the performance of standardized protocols is particularly critical in achieving equity, consistency, and enhanced patient health outcomes. Current literature has highlighted the importance of standardizing healthcare services, perceiving that uniform processes in healthcare systems are vital for decreasing variability in treatment and encouraging a consistent approach to healthcare delivery (Panny et al., 2018; Al-Sayedahmed et al., 2021; Arzahan, Ismail, Yasin, 2022).

Beyond optimizing patient safety and healthcare quality, method standardization provides practical advantages, involving improved operational effectiveness and increased patient satisfaction. A study by Leotta and Ruggeri (2017) confirmed that standardizing treatment processes conducted in a general hospital environment reinforced departmental collaboration and explained the differences between standard, routine, and non-routine healthcare, thus improving-workflow effectiveness (Leotta & Ruggeri, 2017).

Moreover, the standardization of hospital layout and operational procedures has a significant role in enhancing patient health outcomes, safety, and further healthcare system effectiveness through strengthening effective workflows, decreasing safety risks, and confirming-constancy in the safety protocols implementation and clarifying roles within healthcare teams to decrease health-related complications. Koprivnik et al. (2020) recognized fifteen usually misinterpreted terms associated with pharmacists' patient healthcare services, representing that-terminology variations create confusion in healthcare teams. The authors advocate for fostering the standardized language systems, similar to those used in nursing, to boost communication, adaptive interdisciplinary teamwork, and enhance patient health outcomes.

In the health informatics context, the standardization of healthcare data is significant for attaining interoperability through various healthcare systems. Zeller (2022) discusses that without standardized data performance, patient information becomes fragmented, causing inadequacies and errors in healthcare delivery. They underline that the adoption of global clinical data standards strengthens the smooth health-information exchange, promotes patient safety, and ease the-incorporation of technologies such as electronic health records and telemedicine, eventually leading to enhanced healthcare outcomes.

Standardization of practices in the medical field is also significant in the area of patient identification. According to Kayser, et al (2022), the lack of standardized patient identifiers is a challenge that impacts healthcare quality and patient safety, and they recommend adopting unique identification methods to enhance the accuracy of data

management, reduce medical errors, and facilitate increased interaction within the healthcare setting.

However, it is crucial to distinguish the potential limitations of healthcare standardization. Desveaux et al. (2017) used a Foucauldian theoretical framework, which addresses the effect of healthcare-standardization on knowledge and practice among nursing, and found that while standardization may improve operational effectiveness, it risks restricting the dynamic and developing nature of nursing healthcare through weakening nurses' professional self-autonomy and restrictive, individualized, critical thinking-based methods to patient management.

Park and Kim (2018) discovered the connection between healthcare standardization and the increasing role of information and communication technologies (ICT). Their study addresses how ICT incorporation supports the development of standardized healthcare methods, promotes service delivery, enhances operational workflows, and eventually promotes patient health outcomes. They also recognize the challenges related to confirming that healthcare systems are concurrently standardized and technologically combined.

In a wider context, Gupta (2020) inspects the effect of globalization on healthcare delivery, mainly in connection with outsourcing and the fostering of international-quality standards that positively contribute to establishing high-quality and cost-effective healthcare services in some developing countries which further the attraction for international-patients, a trend that is expected to extend alongside the global proliferation of health quality-standards and accreditation-methods (Gupta, 2020). On the other hand, this globalization is reflected in the medical curricula, adaptation in certain countries to comply with North American and Western-European educational standards.

Nevertheless, Gupta (2020) raises ethical concerns related to globalization, mainly toward the migration of healthcare professionals from limited resources to richer countries, a phenomenon that aggravates workforce deficiencies in vulnerable health systems. Furthermore, the increase of medical tourism where patients strive for particular treatments overseas because of cost-variances, demonstrates the multifaceted economic dimensions of global-healthcare, with countries such as India and Tunisia providing particular healthcare at lower prices than in Western countries.

While the internationalization of healthcare standards eases such attitudes, the researchers caution that healthcare must be admitted as a universal human right instead of merely an applicable commodity, highlighting the ethical and cultural complications rooted in healthcare provision through varied settings (Gupta, 2020).

A study conducted in Indonesia by Avia and Hariyati (2019) found that hospital accreditation contributed to improving patient safety practices, communication, teamwork, and organizational culture among healthcare professionals. The study also emphasized the

role of accreditation in promoting continuous quality improvement and strengthening healthcare workers' commitment to patient safety. (Avia & Hariyati, 2019).

2.3.2 Factors Influencing Accreditation

Employee Characteristics and Performance

Healthcare professionals generally have a positive outlook on accreditation, particularly when they observe enhancements in their work and patient health outcomes. They recognize that accreditation establishes a clear framework outlining expectations, fosters communication among various professionals, and minimizes ambiguity in their processes. This is particularly evident among nurses and pharmacists, who report increased confidence in their ability to identify and prevent medication errors following the implementation of accreditation standards (Ali et al., 2021).

According to Abukhalil et al. (2022), healthcare professionals in Palestine acknowledge the importance of structured error reporting and training in medication safety as crucial components in fostering a safe working environment. Initially, some staff may perceive accreditation as a burden, particularly during evaluation and preparation phases; however, the consensus is that accreditation leads to robust support systems, greater engagement in safety initiatives, and an enhanced safety culture (Abukhalil et al., 2022).

Employee characteristics and performance significantly impact accreditation health outcomes. Aljabari and Kadhim (2021) revealed that indicators such as gender and performance form staff understanding and participation in accreditation, signifying that professional development can enhance hospital accreditation success. Supporting this, Zapata-Vanegas and Saturno-Hernández (2020) recognized leadership adherence, a constant enhancement culture, and staff participation as critical factors for sustaining and realizing accreditation in Colombian hospitals.

Staff compliance with medication safety protocols significantly improves after hospital accreditation. This improvement is motivated by several mechanisms included within accreditation standards, containing regular competency evaluation, staff education programs, policy enforcement, and organized audits (Abdel-Qader et al., 2021). Accreditation needs healthcare-organizations to establish clear roles, responsibilities, and procedures connected to medication use, all of which increase staff accountability (Avia & Hariyati, 2019).

Before and after studies constantly indicate that quality accreditation can significantly enhance patient safety through improved medication management practices in improvement areas as reduction in medication errors, strengthening documentation, and better compliance with standardized protocols. However, long-term success needs ongoing training, leadership commitment, and incorporation of accreditation in wider-safety cultures (Alhawajreh et al., 2023)

The success of accreditation in decreasing medication errors is closely related to the degree of staff engagement and the overall organizational safety culture. Research proposes that when HCPs perceive accreditation as a developing and learning opportunity rather than a disciplinary audit, they are more likely to adopt and bear safer practices (Azyabi et al., 2021). Training, leadership support, and communication channels are crucial in the application of accreditation standards to improve patient care (Choi et al., 2017).

Accreditation also encourages multidisciplinary teamwork and accountability, especially in medication reconciliation and administration. Findings from the research showed that audits, feedback, and professional development activities are significant in the reduction of medication errors (Bennett, 2023).

A study conducted across various hospitals in Jordan revealed a significant improvement in staff compliance with critical medication safety practices, including double-checking high-alert medications, accurately documenting dispensed medications, and adhering to medication administration rights after accreditation (Abdel-Qader et al., 2021). Prior to the accreditation process, many staff members acknowledged omitting certain steps due to a lack of awareness and time constraints. However, post-accreditation, the implementation of stricter control measures led to increased compliance (Mun, 2018; Rhoden et al., 2021).

Additionally, the formation of multidisciplinary teams enhances communication and teamwork, which contributes to better adherence to established safety standards (Abdel-Qader et al., 2021). In Palestine, where quality accreditation is not as rigorously enforced, research continues to indicate that training programs, even in the absence of accreditation, have led to improved staff knowledge and practices regarding medication safety (Abukhalil et al., 2022). Thus, accreditation serves not only as a means of ensuring compliance but also as a catalyst for behavioral change (Choi et al., 2017).

In summary, the literature indicates that accreditation is an important strategy for improving healthcare quality, patient safety, and organizational performance (Araujo et al., 2020; Ibrahim et al., 2022). However, evidence regarding its impact on clinical outcomes remains inconsistent, with variations largely attributed to differences in implementation, organizational context, and staff engagement (Hussein et al., 2021; Belfonte, 2025).

While accreditation contributes to improved safety practices, communication, and medication management, its long-term effectiveness may be limited by sustainability challenges, resource constraints, and a tendency toward compliance-focused approaches rather than genuine quality improvement (Kyriakeli et al., 2025; Desveaux et al., 2017). These mixed findings highlight the need to examine how accreditation-driven standardization influences patient safety and outcomes within specific healthcare contexts, particularly in resource-limited settings such as Palestine.

Management Support and Staff Empowerment

Management support and staff empowerment are essential for the successful implementation of standardized healthcare services and accreditation standards. The literature consistently highlights that leadership engagement and workforce empowerment are vital for integrating accreditation requirements into everyday clinical practice (Pizzolato & Dierickx, 2021). Strong management support fosters a work environment that prioritizes patient safety, enhances staff engagement, and encourages continuous quality improvement.

Staff empowerment goes beyond financial incentives; it includes accessible leadership, involvement in decision-making, and opportunities for professional development. Evidence indicates that when healthcare leaders actively back standardization initiatives and maintain clear communication, healthcare professionals are more inclined to follow clinical guidelines and engage in practices that enhance patient safety outcomes (Permadi et al., 2018). In summary, the literature highlights that management support and staff empowerment play a central role in translating accreditation standards into effective clinical practice (Pizzolato & Dierickx, 2021).

Leadership commitment, open communication, and staff involvement in decision-making enhance adherence to standardized protocols and promote a culture of safety (Permadi et al., 2018). However, the effectiveness of these factors depends on the consistency of leadership engagement and the extent to which empowerment is meaningfully implemented rather than symbolically adopted. This suggests that organizational leadership and staff participation are essential determinants of successful accreditation implementation and its impact on patient safety outcomes.

2.4 Accreditation in Healthcare: A Comprehensive Overview

Accreditation is a significant mechanism for confirming safety, quality, and ongoing enhancements in healthcare organizations. Unlike certification, accreditation includes independent external evaluations and peer reviews, providing a more comprehensive assessment of healthcare quality. Although usually voluntary, accreditation is occasionally assigned for repayment or quality assurance goals, as perceived when hospital accreditation became required in some regions in 2014 to improve patient safety and enhance medical tourism (Al-Alawy et al., 2021).

Accreditation enhances healthcare quality, mainly patient safety and clinical health outcomes, although the scope of enhancement relies on an organization's adherence to implementing standards, and while accreditation adopts a culture of persistent quality enhancement, its direct effect on patient health outcomes as mortality and recovery rates, is still inconclusive, necessitating more longitudinal research studies (Belfonte, 2025)

Hussein et al. (2021) reviewed experimental studies on accreditation standards, discovering that although accreditation enhances organizational effectiveness and staff satisfaction, guides about clinical-quality enhancements are mixed, with few studies investigating the evolving and implementation methods of these standards, and encourages

a culture of quality enhancement, but sustainable advantages need to assimilate standards into daily clinical practice and ensure full staff participation.

Araujo and colleagues (2020) in their systematic review stress that accreditation has a positive effect on patient safety, clinical health outcomes, and operational effectiveness; efficiency varies depending on the organizational structure and staff compliance. In general, accreditation, made possible through international organizations such as Joint Commission International (JCI) and Care Quality Commission in the UK, is a clear indication that the healthcare organization adheres to strict standards, which in turn helps to shape the patient safety culture and improvements in quality (Al-Alawy et al., 2021).

Quality accreditation in the healthcare industry is a formal process by which organizations are evaluated for their adherence to best practices and improvements in health, to improve the safety, effectiveness, and efficiency of healthcare delivery (Tomblin, 2021).

The process of ensuring compliance with the standards of the major accrediting bodies, including JCI, Accreditation Canada, and national accreditation bodies, entails a series of internal and external evaluations and the application of evidence-based practices in various organizational units to promote a safety culture where adverse events are considered learning experiences rather than assessing individual blame. This also entails the development of patients' safety programs, including incident reporting systems and staff competency assessment (Ibrahim et al., 2022; Kyriakeli et al., 2025).

Experiential research indicated divergent health outcomes regarding the efficacy of accreditation in enhancing patients' safety, while some studies suggested substantial improvement post-accreditation in terms of adherence to patients' safety protocols, reduced rates of medication errors, and staff awareness (Abukhalil et al., 2022).

Some studies have found that there is a positive correlation between accreditation and the enhancement of medication management, as seen in the hospitals undergoing the process of accreditation, which has been verified to show higher compliance with medication management standards, primarily in prescribing and documentation (Alkhurayji et al., 2025). Likewise, Mansour et al. (2021) found a reduction in adverse incidents of medications and improvements in medication reconciliation processes after the adaptation of the accreditation standards in Eastern Mediterranean hospitals (Mansour et al., 2021). In another research, Hussein et al. (2021) declared that there were improvements in the performance of the hospital as an institution, including safe medication practices, as a direct result of the accreditation process (Hussein et al., 2021).

Kozel (2020) also discovered that accreditation improved multidisciplinary communication, specifically in the areas of medical staff, pharmacy, and nursing, which consequently reduced prescribing errors (Kozel, 2020). Moreover, a study in Saudi Arabia revealed that there was a substantial reduction in medication-dispensing errors and an improvement in adherence to medication protocols after JCI accreditation (Alyami et al.,

2022), which improvements are generally attributed to the strict adherence to medication reconciliation processes, storage, labeling, and visible documentation policies as outlined in the accreditation process (Tomblin, 2021).

However, other studies underscore limitations and assume accreditation's effect may be short, and hospitals returning to pre-accreditation practices once the assessment and evaluation-period ends. Additionally, hospitals may adopt a "checklist mentality," concentrating on meeting documentation and procedural necessities rather than making meaningful variations in clinical-performance. Moreover, the cost and administrative burden related to accreditation may reduce its sustainability in limited-resources settings (Kyriakeli et al., 2025)

Furthermore, accreditation has demonstrated its ability to foster open communication about errors, facilitating a transition from a blame-focused culture to a learning-focused culture. A study by Avia and Hariyati (2019) in accredited hospitals in Indonesia revealed that healthcare professionals exhibited a greater willingness to report errors and near misses, as well as an enhanced perception of patient safety culture post-accreditation. This transformation correlated with improved staff morale and increased engagement in learning from adverse events. These findings indicate that staff perceptions not only mirror enhancements in safety practices but also underscore the transformative impact of accreditation on organizational mindsets. (Avia & Hariyati, 2019).

2.4.1 Employee characteristics and performance

The perceptions of healthcare professionals regarding accreditation are mostly positive, especially after they notice improvements in their work and the health outcomes of patients. Healthcare professionals realize that accreditation provides a clear framework that explains expectations, improves communication between different professionals, and reduces ambiguity in their work processes, especially nurses and pharmacists' reported increased confidence in their ability to identify and prevent medication errors after the implementation of accreditation standards (Ali et al., 2021).

As stated by Abukhalil et al. (2022), healthcare professionals in Palestine have noticed the efforts in terms of structured error reporting and training in relation to medication safety as essential players in creating a safe working environment. At first, some employees may view accreditation as a burden, especially in the evaluation and preparation stages; however, most agree that accreditation results in stronger organizational support systems, greater participation in safety programs, and improved safety culture (Abukhalil et al., 2022).

Employee characteristics and performance significantly impact accreditation health outcomes. Aljabari and Kadhim (2021) revealed that indicators such as gender and performance form staff understanding and participation in accreditation, signifying that professional development can enhance hospital accreditation success. Supporting this, Zapata-Vanegas and Saturno-Hernández (2020) recognized leadership adherence, a

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Before and after studies constantly indicate that quality accreditation can significantly enhance patient safety through improved medication management practices in improvement areas as reduction in medication errors, strengthening documentation, and better compliance with standardized protocols. However, long-term success needs ongoing training, leadership commitment, and incorporation of accreditation in wider-safety cultures (Alhawajreh et al., 2023)

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Accreditation also encourages multidisciplinary teamwork and accountability, especially in medication reconciliation and administration. Findings from the research showed that audits, feedback, and professional development activities are significant in the reduction of medication errors (Bennett, 2023).

In a study carried out in various hospitals in Jordan, the level of staff compliance with critical medication safety practices such as double-checking high-alert medications, accurate documentation of dispensed medications, and following medication administration rights after accreditation showed a significant improvement (Abdel-Qader et al., 2021). Before the accreditation process, many staff members reported that some steps were omitted because of a lack of awareness and time constraints; however, after accreditation, stricter control measures increased compliance (Mun, 2018; Rhoden et al., 2021).

Furthermore, the establishment of multidisciplinary teams improves communication and teamwork, resulting in improved compliance with established safety standards (Abdel-Qader et al., 2021). In Palestine, where the quality accreditation is not as strictly enforced, research still continues to show that training programs, even without accreditation, resulted in improved staff knowledge and practices regarding medication safety (Abukhalil et al.,

2022). Therefore, accreditation serves as both a mechanism for ensuring compliance and a driver of behavioral change (Choi, Hwang, & Kim, 2017).

2.5 Management Support and Staff Empowerment

The role of management support and staff empowerment is very important in the successful implementation of standardized healthcare services and accreditation standards. Management support and staff empowerment have been recognized as important facilitators in the integration of accreditation standards into the daily practice of healthcare delivery (Pizzolato & Dierickx, 2021). Supportive management is important in staff engagement, management of standardized care, and the work environment that focuses on patient safety and quality improvement.

In this regard, empowerment may be viewed in relation to leadership accessibility, staff involvement in decision-making, and staff development, as opposed to financial incentives. There is evidence to suggest that if healthcare leaders are actively involved in standardization and communication, then healthcare providers are more likely to comply with clinical guidelines and make efforts towards improving patient safety outcomes (Permadi et al., 2018).

2.6 Standardized Healthcare Services and Patient Safety

Patient safety is a basic dimension of the quality of healthcare and a prominent area of standardization in the provision of healthcare services. Standardization of policies, procedures, and monitoring processes is aimed at reducing undesired variation and preventable adverse events. There is empirical evidence to support the reduction of medication errors, healthcare-associated infections, and patient falls, as well as enhanced clinical competency with the implementation of evidence-based practices and safety procedures (Fox et al., 2021).

In a hospital environment, standardization can ensure a standardized approach to the management of medications, infection control, and communication between the multidisciplinary team. This is particularly important in resource-limited health facilities where inconsistencies in practice can negatively affect patient safety. Accordingly, the present study examines the impact of standardized healthcare services on key patient safety indicators to evaluate whether accreditation-driven standardization translates into measurable safety improvements within Palestinian hospitals (WHO, 2021; Dzau et al., 2024)

An efficient patient safety culture is essential for the improvement of healthcare quality, characterized by efficient communication, teamwork, and non-punitive error reporting. Arzahan et al. (2022) emphasized that an efficient safety culture is directly related to improved patient safety and satisfaction. Nevertheless, Okafor et al. (2018) indicated that even though the diagnostic departments achieved high levels of patient satisfaction, the safety culture did not always correlate with the levels of satisfaction, indicating that multiple factors influence the overall patient experience beyond safety culture.

Standardization, particularly through the use of structured safety protocols and checklists, can also help to reduce the inconsistencies of practice and mitigate risks (Fox et al., 2021). These tools are particularly useful in a hospital environment, where complications, high volume, and acuity create a setting that is susceptible to adverse events such as medication errors, catheter-associated urinary tract infections (CAUTIs), central line-associated bloodstream infections (CLABSIs), and inpatient falls, which can impact health outcomes in extended hospital stays, increase healthcare costs, and morbidity and mortality rates.

Hospitals have increasingly accredited standardized healthcare services as clinical decision support instruments and combined healthcare interventions to improve commitment to best evidence-based practices and encourage patient safety measurements. In limited resource settings like Palestine, the impact of fostering standardized protocols has been mainly influential. Hamdan and Saleem (2018) found that structured safety initiatives have made a significant impact in improving patient safety culture over time, thus overcoming chronic resource constraints and infrastructural difficulties.

Patient engagement is also an important factor in perceived satisfaction and safety. Kagan et al. (2019) concluded that language and cultural variations impact patients' perceptions of safety, highlighting the importance of culturally sensitive communication strategies. The above findings are largely related to healthcare settings that cater to a broad spectrum of patients, thereby emphasizing the need for patient engagement interactions to create a culture of safety.

Moreover, staff engagement is another crucial factor in the safety culture. Elsous et al. (2017) reported that nurse job satisfaction, communication, and teamwork had a positive association with the development of patient safety culture. Likewise, Aljabari and Kadhim (2021) asserted that a higher level of staff engagement is linked to a safe patient healthcare environment, but they explained that further research is needed to determine the specific association between staff engagement and the development of safety.

Interventions in the educational environment for healthcare professionals are also necessary. Stomski et al. (2018) found that training nursing students in situational awareness did not have a direct positive impact on confidence but highlighted the importance of non-technical skills in patient safety. Early introduction to patient safety education, especially in resource-poor environments, is required. Alser et al. (2020) found that the integration of patient safety ideas into medical education could help the implementation of a better safety culture in future healthcare professionals.

Standardization of healthcare practices and the development of a positive patient safety culture through structured protocols, employee engagement, continuous training and education, and culturally sensitive practices are important for promoting patient safety and satisfaction. The evidence emphasizes the importance of a complex, framework-sensitive approach to patient safety improvement, particularly in diverse and resource-constrained healthcare settings.

Permadi et al. (2018) analyzed the work performance of staff working in accrediting bodies and proposed an outline for work satisfaction measurement and emphasized that work environment and staff motivation are important factors for work satisfaction, which affects the effectiveness of accreditation methods. By presenting the context, they developed a structured approach for improving agency practices and ultimately improving the overall outcomes of healthcare accreditation.

Likewise, the function of performance measurement systems (PMSs) in public healthcare organizations points towards Iran's National Accreditation Program for Healthcare Organizations (NAPH). The results of the study revealed that hospital adherence to accreditation standards was frequently enhanced more by financial incentives than by the actual adherence to quality improvement. This indicates a grave limitation in which accreditation could be considered only as a regulatory commitment rather than a quality improvement motivator, particularly in resource-limited settings (Gharibi et al., 2023).

The effects of hospital accreditation programs on organizational culture, work satisfaction, financial practices, and patient safety in elderly hospitals, it was found that accreditation had a positive effect on internal hospital practices, especially on organizational culture and employee satisfaction in the healthcare sector. In addition, accredited hospitals reported improvements in financial practices and patient safety health outcomes, reflecting the broader institutional benefits associated with efficient accreditation programs (Bakerjian, 2023).

A study conducted by Hamed (2023) in Palestine examined job satisfaction and performance among nurses at a Joint Commission International (JCI)-accredited hospital compared to a non-accredited hospital. It evaluated various factors, including working conditions, managerial support, opportunities for professional development, and perceived performance outcomes. The results revealed no statistically significant differences in overall job satisfaction or performance between the two hospitals, although minor variations were noted in specific sub-dimensions. Additionally, the study indicated that organizational factors such as managerial support, access to continuous professional development, and working conditions had a more significant impact on nurses' job satisfaction and performance than accreditation status alone. (Hamed, 2023)

The impact of hospital accreditation on the daily activities of the healthcare staff revealed that although the approaches to accreditation result in improvements in the function and performance of the healthcare system, they also impose rising pressures on the employees, including changes in workflow, administrative responsibilities, and standards. Despite these challenges, the study stated positive organizational changes as improved communication and raised patient healthcare standards, highlighting the need for comprehensive employee support through accreditation shifts (Martin et al., 2018).

Standardized healthcare services showed significantly optimized patient safety health outcomes across several settings. For instance, Chong et al. (2021) described that a hospital-wide hand hygiene workshop, supported through consistent education and monitoring protocols, led to a sustained decrease in healthcare-related infections in Geneva hospitals. Similarly, Tully et al. (2021) confirmed the global effect of standardized safety checklists, finding that their application in eight hospitals associated with a 36% reduction in complications and a 47% reduced in mortality rates.

In the context of medication safety, well-documented standardization, strategies, and systematic guidelines have a significant role; Zheng et al. (2021) detected that the introduction of a closed-loop electronic prescribing system, depend on standardized procedures, decreased prescribing errors by approximately 50%. This system confirms precise medication-administration, removes inconsistency in dosage and timing, and significantly decreases the potential risk for medication errors.

In the Middle Eastern framework, numerous studies have underscored the efficiency of standardized healthcare services in enhancing patient safety. For example, a study in Saudi Arabia indicated that the application of computerized physician order entry (CPOE) systems, associated with standardized drug libraries, significantly decreased prescribing errors in specialist-pediatric hospitals (Mogharbel et al., 2021). In Bahrain, the standardized infection prevention packages led to a 47% decrease in catheter-associated urinary tract infections (CAUTIs) and a 38% decrease in central line-associated bloodstream infections (CLABSIs) in a specialist surgical unit (Alkhawaja et al., 2020).

Similarly, a study performed in Egypt hospital, where the usage of fall-risk evaluation tools and consistent fall-prevention tracks resulted in a 30% decrease in fall rates during one year, highlights the efficiency of standardized protocols in alleviating patient safety potential risks, as they are sufficiently imposed and supported by training and leadership (El-Adham, 2022).

One of the most outcomes of healthcare standardization is the measurable enhancement in patient safety metrics, hospitals engagements in the Patient Safety and Healthcare Facility Improvement (PSFHI) initiative knowledgeable declines in hospital-acquired infections, medication related errors and adverse events as a result of the implementation of structured safety activities, particularly strong-commitment to standardized-protocols for infection control-packages which had reduce rates of reported safety events and further team functioning scores for (CLABSI) and (CAUTI) leading to greater adherence, enhancing safety health outcomes and strengthening the importance of structured methods to patient healthcare (Hamdan & Saleem, 2018).

2.6.1 Mechanisms of Impact and Interdisciplinary Coordination

The ways through which the standardization of healthcare services improves patient safety are complex and mainly involve the reduction of unwarranted variability in clinical decision-making. The application of standardized guidelines, which are evidence-based, helps in the early detection of deviations from best practices and ensures consistency in the

delivery of care among different disciplines (Fox et al., 2021). In addition, standardized documentation systems, clinical checklists, and electronic alerts facilitate effective communication and coordination of multidisciplinary healthcare teams by developing a shared mental model that minimizes the risk of omission, duplication, and communication errors (Tully et al., 2021).

Standardization also plays a role in enhancing the safety culture within organizations. For instance, the use of standardized surgical safety checklists and time-outs for the surgical team has been known to promote collective accountability and vigilance among healthcare providers (Tully et al., 2021). In addition, the use of standardized infection prevention practices led by nurses has been known to empower nurses and improve ownership of patient safety outcomes (Permadi et al., 2018).

Flexible healthcare interventions are usually adaptable to different settings. However, the effectiveness of healthcare interventions is highly dependent on the safety culture in the healthcare organization. In the Middle Eastern healthcare systems, the hierarchical system and fear of blame have been considered as factors that have limited the reporting of incidents. However, in hospitals that have a non-punitive reporting culture, especially those that are accredited by Joint Commission International standards, there is a higher rate of error reporting and improvements in patient safety practices (Hamdan & Saleem, 2018; Pizzolato & Dierickx, 2021).

2.7 Standardization of Healthcare and Adverse Events

Medical errors and adverse incidents are two important terms in patient safety, but they have exclusive definitions and consequences in healthcare. Medical errors are raised to prevent mistakes made across healthcare delivery as miscommunication, misdiagnosis, and incorrect medication administration, which can harm patients. In contrast, adverse incidents are events that cause unintentional harm to a patient across treatment, regardless of whether they were preventable. Not all adverse incidents result from medical errors; some may happen because of unexpected complications or the natural advances of a patient's situation (Tabatabaee et al., 2022).

A study in 11 hospitals in Massachusetts, which discovered that 23.6% of hospital admissions included at least one adverse event. Of these, 22.7% were considered preventable; adverse drug events are the most common preventable events (39.0%), followed by surgical or procedural errors (30.4%) and healthcare-related infections (11.9%). These results underscore the difficulty of distinguishing between adverse incidents and medical errors, highlighting the necessity for strong patient safety measures to reduce preventable events, which may include errors and systemic problems (Bates et al., 2023).

The patient perspective on adverse-events influenced by the emotional and psychological outcomes of persons who encounter harm, whether because of medical errors or unpreventable problems. Patients frequently experience significant distress, worsened by

poor communication or the absence of transparency from healthcare professionals. Participating patients in the safety method, involving error reporting and organizational responses, can significantly help strengthen a safety culture and transparency in healthcare facilities (Small et al., 2021).

A study performed in Brazilian hospitals discuss the incidence of medical errors and adverse events and found that systemic-problems as a deficiency of reporting and analysis, contributed to the recurrent-incidence of medication errors, surgical problems and healthcare-related infections through promoting a culture of accountability and error reporting, and also continuous enhancement in patient safety systems is required to identify the full scope of adverse events, not only resulting from medical errors (Zanetti et al., 2021).

Classen et al. (2021) assessed the enhancements in hospital care safety by checking-preventable adverse event rates across several years. It indicated a 45% decrease in preventable adverse incidents, underscoring the success of directed safety initiatives in enhancing hospital healthcare. While the overall-rate of adverse incidents is still the same, a substantial decrease in preventable-events was detected, mainly in older patients and those experiencing surgical-procedures. This result highlights the efficiency of systematic interventions heading for decreasing medical errors and optimizing patient care.

Understanding framework for medical errors in surgical practice, highlighting the role of miscommunication, system-malfunction and gaps in judgment as contributing factors to medical errors that can lead to adverse events. Their work confirms the necessity for clear definitions of medical errors to provide effective reporting and analysis, which in turn can identify origin causes and direct the development of intended-interventions to prevent preventable harm (Tabatabaee et al., 2022).

Alhossan et al. (2023) explored medication errors in a tertiary care hospital and recognized key factors contributing to these errors, involving the staff engaged, the conditions under which the errors happened, and the types of medications most often involved. Their results confirm the importance of targeted interventions to promote medication safety and decrease the potential risk of patient harm through strengthening medication safety protocols. Healthcare institutions can alleviate the incidence of medical errors and related adverse events, enhancing patient health outcomes (Alhossan et al., 2023).

Medication errors, one of the most common preventable triggers of harm in hospitals, have perceived decreases with the adoption of standardization strategies, e.g., the application of CPOE, barcode medication administration (BCMA), and medication reconciliation protocols has demonstrated efficiency in decreasing these errors. Zheng et al. (2021) confirmed that the usage of a closed-loop electronic prescribing system in teaching hospitals led to a 50% decrease in prescribing errors and enhanced the correctness of medication administration. Similarly, Küng et al. (2021) showed that BCMA systems decreased medication administration errors by about 41% and potential adverse drug incidents by about 51%.

Standardized medication-reconciliation protocols through shifts in healthcare have also revealed significant advantages. Moges et al. (2022) reported that a structured medication-reconciliation protocol decreased medication inconsistencies at hospital admission and discharge, highlighting the significance of a standardization method in alleviating risks related to fragmented care.

These results highlight that medication safety optimizes significantly when hospitals depend on standardized, system-extensive protocols that remove confusion and decrease dependence on informal communication. In Saudi hospitals, accreditation-associated standardization as clear documentation standards, pharmacist-led medication-reconciliation, and commitment to the five rights of medication administration, has contributed to decreases in medication errors (Al-Surimi et al., 2021; Albalawi et al., 2022).

Medication errors are still a major safety concern. A cross-sectional study in Palestine, including 394 healthcare-professionals found that only 51.5% of participants showed sufficient awareness of medication errors, whereas 66% unsuccessful in notifying patients when errors happened. The study recognized barriers to error notifying and reporting, involving fear of legal consequences, absence of institutional support, and inadequate training on standardized practices (Al-Ahmad & Al-Jabi, 2022).

In neonatal intensive care units (NICUs), medication errors through the preparation and administration phases were often reported, frequently due to improper calculations, misunderstanding of dosages, and aberrations from protocol. These errors underscore the urgent-requirement for standardized training and documentation actions to decrease risks in this high-risks' environments (Abu-El-Noor et al., 2017).

2.8 Standardization of Healthcare and Infections

Healthcare professionals play a critical role in preventing healthcare-associated infections (HAIs), and whereas patient non-modifiable risk factors as advanced age and underlying diseases, commitment to evidence-based practices as hand-hygiene and aseptic methods, can significantly decrease infection transmission. In this context, the importance of nurses, such as Florence Nightingale, whose devotion to nursing practices helped decrease mortality rates. Hughes advocates for the sustained adherence of healthcare professionals to best evidence-based practices and ethical standards, strengthening public trust in the healthcare system (Nedelcu et al., 2022)

The challenges raised by HAIs, connecting them to further patient morbidity, mortality, and financial burden on healthcare systems, the increasing prevalence of HAIs, mainly those developed by antimicrobial-resistant organisms, advocate for the application of inclusive programs of infection control. These programs, which frequently include multidisciplinary association among trained infection control professionals and microbiology laboratories, have been confirmed to be effective in decreasing the incidence of HAIs like methicillin-resistant *Staphylococcus aureus* (MRSA) and (CLABSIs). The

commitment to hand hygiene protocols and infection prevention practices is important in alleviating these infections (Stewart et al., 2021).

Infection control strategies have advanced significantly over time and are endorsed by the Centers for Disease Control and Prevention (CDC) and other health bodies, these strategies extended the bloodborne pathogens to include an extensive-range of infectious risks, incorporation universal precautions and standard precautions about body substance isolation practices which still essential in acute and nonacute healthcare settings to prevent-infection transmission (Bahegwa et al., 2022)

The economic burden of HAIs is large.

Calderwood et al. (2023) assess that the overall annual cost of HAIs in 28 community hospitals is beyond \$26 million, whereas the average budget assigned for infection control is just \$129,000. The inconsistency between the cost of HAIs and infection control budgets underscores the need for heightened funding and efficient interventions. It also proposes that a 25% decrease in HAIs could offer each hospital an average of \$148,667, highlighting the importance of cost-effective infection-control approaches.

The strategies for preventing catheter-associated infections, established by an interdisciplinary group led by the Society of Critical Care Medicine (SCCM), highlight evidence-based practices for infection control. These strategies involve inclusive education and training for healthcare professionals, the usage of best sterile barrier precautions throughout catheter insertion, and the implementation of antiseptic-solutions as 2% chlorhexidine, for skin asepsis. Chow et al. (2023) suggest the usage of antibiotic-impregnated catheters in high-risk situations and advocate for observing adherence with performance indicators to improve patient safety.

2.8.1 Catheter-Associated Urinary Tract Infections (CAUTIs)

Catheter-associated urinary tract infections (CAUTIs) are a predominant model of HAIs and are mainly caused by the usage of indwelling-urinary catheters. Bizuayehu et al. (2022) describe that biofilm creation on catheter surfaces is an important factor in the development of CAUTIs, with the risk increasing over time. While only a small proportion of patients with bacteriuria evolve symptomatic infections, CAUTIs are still a significant healthcare burden, particularly in acute and extended healthcare settings. Preventing CAUTIs needs reducing catheter utilization, early removal, and rigorous infection control practices to surveillance catheter indications and control potential complications.

Wijaya (2018) highlights that CAUTIs contribute significantly to patient morbidity and mortality. The excessive use of antibiotics in dealing with these infections has also contributed to the increase in antibiotic-resistant bacteria. The study findings underline that a comprehensive-method, involving time removal of catheter, commitment to infection-control protocols, and the creation of biofilm-resistant catheter materials, is important in alleviating the incidence and effect of CAUTIs. Programs of infection prevention must integrate antibiotic supervision to decrease the occurrence of resistance.

Werneburg (2022) stated that HAIs, involving CAUTIs, impact about 1 in 25 hospitalized patients in the United States. Although evidence strengthens infection prevention practices, the application of best practices remains inconsistent in hospitals. The study findings underscore the success of tools such as the automated Guide to Patient Safety (GPS) that offer hospitals with designed responses to help self-diagnose and perform solutions to decrease infections and optimize patient safety. Those initiatives show the potential of standardized practices in decreasing infection rates.

The Comprehensive Unit-based Safety Program (CUSP), established by the Agency for Healthcare Research and Quality (AHRQ), is an example of a successful infection-prevention model.

CUSP implementation in hospitals resulted in a 32% decrease in CAUTI rates, according to Werneburg and Bizuayehu et al. (2022). This strategy involves training, use of a catheter entry checklist, daily need assessment, and maintenance bundles, with a focus on the importance of systematic methods in decreasing CAUTI rates.

A meta-analysis was performed by Gambrill et al. (2024) to show that CAUTI prevention programs using standardized protocols as reminders for the removal of catheters in notes, nurse-led suspension protocols, and catheter care lists led to significant decreases in infection rates. These programs enhance staff dedication to evidence-based practices and help develop a collective mental model for appropriate catheter practices by encouraging the use of standardization in the optimization of infection control practices.

In the Middle East, the infection prevention packages have been effective in reducing CAUTI and CLABSI rates. and Al-Surimi et al. (2021) and Alsheddi et al. (2023) acknowledge that the implementation of the WHO-recommended infection prevention and control (IPC) packages in Saudi Arabia and Jordan hospitals led to a decrease in the incidence of CAUTIs and CLABSIs post-accreditation. The above points emphasize the significance of infection prevention packages in enhancing patient safety in healthcare facilities.

In a multi-center study, Karkar (2018) states that the rates of CAUTI were reduced by more than 30% following the implementation of a standardized urinary catheter protocol combined with employee education initiatives. This highlights the important role of organized practice in reducing the risk of device-related infection.

In the Palestinian critical care units, Abu-El-Noor et al (2017) considered extended catheterization, immune suppression, and non-adherence with hygiene practices as important risk-related factors for CAUTIs. They emphasize that the implementation of standardized catheter insertion and maintenance practices in terms of on-time removal and adherence to aseptic practices is crucial in the regulation of infection rates. The use of catheter care-packages in the health setting led to significant improvements in the

reduction of CAUTIs, consistent with the global evidence that standardization is essential in the promotion of infection control health outcomes.

These results collectively emphasize the need for standardization in infection prevention and the important role it plays in reducing the rates of CAUTIs and improving patient safety.

2.8.2 Central Line-Associated Bloodstream Infections (CLABSI)

Central line-associated bloodstream infections (CLABSI) are serious infections that happen when pathogens access the bloodstream through a central venous catheter. According to Manjula (2022), preventive actions involve choosing low-risk veins for catheter insertion, maintaining strict hygiene, wearing protective materials, and carefully cleaning the insertion site. Furthermore, regular evaluations to assess the need for the catheter and its immediate removal when no longer required are important in minimizing the risk of CLABSI. These actions contribute significantly to improve patient-safety and healthcare quality (Manjula, 2022).

The Asia Pacific Society of Infection Control (APSIC) mentor for the prevention of CLABSI advocates for evidence-based approaches to decrease CLABSI rates. These approaches involve standardized insertion and maintenance protocols, ongoing quality enhancement initiatives, and the application of the Plan-Do-Study-Act (PDSA) approach for continuing-evaluation (Ling et al., 2022). Moreover, surveillance programs are suggested to screen CLABSI rates and implement targeted interventions for more enhancement.

Al-Sayedahmed et al. (2021) assessed the efficiency of the “On the CUSP: Stop BSI” program, which intended to decrease CLABSI rates in adult ICUs in the U.S. Their study reported a 43% decrease in infection rates, demonstrating the efficiency of standardized infection-prevention actions in attaining significant decreases in CLABSI rates (Al-Sayedahmed et al., 2021). Similarly, Elonen et al. (2022) confirmed the positive effect of an interdisciplinary method in minimizing CLABSI rates at Stony Brook University Hospital. Although there were early challenges, the application of a standardized central line insertion program and a maintenance protocol to confirm sterile practices caused a 59% decrease in CLABSI rates in five years, highlighting the importance of constant infection control practices.

CLABSI is associated with high rates of mortality, prolonged hospital stay, and increased healthcare costs. Standardized interventions, including care packages and sterile insertion lists, have proven to be effective tools in reducing CLABSI. The landmark study by Al-Sayedahmed et al. (2021) in the Michigan ICUs department provided a five-step list for central line insertion and management. Within 18 months, rates of CLABSI were reduced by 66%, and ongoing improvements were noted in a period-exceeded three years. This study is frequently cited as a model of how relatively simple standardized interventions can make a big difference in patient safety and health outcomes.

The CDC strategies recommend standardized central line insertion packages that involve hand hygiene, best barrier precautions, chlorhexidine skin antisepsis, best site-selection, and everyday reviews of the line's requirement. Burke et al. (2021) reported that hospitals following CDC-recommended standardized protocols had significantly lower CLABSI rates compared to those with partial-application. These interventions encourage adherence to technical and behavioral best-evidence-practices, confirming that optimal care is constantly provided by all healthcare professionals.

Although information regarding the rate of CLABSI in Palestinian hospitals is not common, evidence suggests that the implementation of global central line insertion tool kits might be a reason for improvements in patient safety. In Palestinian hospitals, challenges such as the lack of a distinct observation tool and a lack of commitment to protocols have been identified (Hamdan & Saleem, 2018). Implementation of standardized practices, which include sterile barrier precautions, routine line evaluations, and documented dates of insertion documentation, is crucial in reducing the incidence of CLABSI in such facilities. Best practices worldwide have always shown a reduction in CLABSI rates with the implementation of evidence-based practices, a model that Palestinian hospitals could follow (Najjar et al., 2018).

2. 9 Inpatient Falls

In the article "Preventing Patient Falls," Morse describes a list of approaches and interventions that need to be implemented in order to prevent patient falls. Due to the high level of risk associated with patient falls, it is evident that an active strategy needs to be adopted that includes risk assessment, environmental modification, and employee education. The use of standardized instruments in fall risk screening is important in recognizing patients who are at a high risk, which enables healthcare providers to modify fall prevention practices. Additionally, Morse emphasizes the importance of teamwork in fall prevention to enhance the culture of safety, which seeks to prevent falls by monitoring patients. Fall prevention has become an important aspect of quality healthcare because it assists in enhancing patient safety and outcomes (Mozingo, 2023).

Mikos et al. (2021) emphasize the relevance of having efficient models of prediction in the prevention of falls, checking factors such as the limitation of mobility, cognitive impairment, and the influence of medication. Mikos proposes the use of evidence-based instruments for the evaluation of risk of falls in the clinical environment, enabling nursing staff to evaluate patients and provide preventive measures. By employing these strategies, healthcare professionals can guarantee patient safety and prevent falls. The article confirms the need for an active strategy and staff training, and it again emphasizes the significance of a culture of patient safety and quality healthcare.

Mozingo (2023) emphasizes the significance of inclusive policies in reducing the occurrence of falls in hospitalized patients, which is a common issue linked to patient safety as a consequence of hospitalization. Morse-summarizes many interventions, such as procedures for assessing the risk of falls. The article further emphasizes the need for an

interdisciplinary approach, where healthcare professionals come together to identify high-risk patients and take preventive measures. By developing a culture of safety and alertness, healthcare facilities can prevent falls effectively, thus ensuring better patient healthcare.

The application of standardized tools in the measurement of fall risk and autonomy was discovered by Doležalová et al. (2021). They evaluate standardized tools such as the Timed Up and Go test and the Berg Balance Scale, as well as non-standardized tools that could give valuable information on patient needs. The authors suggest a hybrid approach for the assessment of fall risk, integrating standardized and non-standardized methods to enhance the accuracy of the assessment and improve patient care. The authors emphasize the importance of healthcare professionals using evidence-based practices that capture the complex nature of patient health, ultimately optimizing patient autonomy (Doležalová et al., 2021).

Falls are a leading cause of injury in hospitalized patients, mainly among aged adults. Standardized fall-prevention programs integrating risk evaluation tools, hourly rounding protocols, and environmental alterations have shown measurable advantages. Ueda et al. (2022) established the Fall TIPS instruments, which involve standardized fall risk evaluations and patient-targeted intervention plans. A multicenter study reported a 25% decrease in patient falls in units utilizing the toolkit, with a significant decrease in serious fall-associated injuries.

Lolange (2023) conducted a systematic review and concluded that the fall rates were significantly reduced in hospitals that implemented standardized multi-module fall prevention policies compared to those that provided usual health care. An effective program included patient education, bed alarms, non-slip footwear, and environmental risk assessments, all of which were governed by standardized protocols. By incorporating these modules into the usual nursing healthcare and making them a part of the organizational culture, standardization helps in active risk determination and prevention of injuries.

Falls are common and frequently preventable adverse incidents in hospitals. Numerous hospitals in Jordan and the Gulf region merged fall risk-assessment tools as the Morse Fall Scale, into daily nursing routines. These tools, a section of hospital extensive-fall prevention-programs, led to statistically significant decreases in fall-rates after intervention (Al Tehewy et al., 2022). A study performed in a tertiary-care hospital in Riyadh found a 40% decrease in inpatient falls after the introduction of a standardized fall-prevention protocol that involved patient risk-stratification, visual signals for high-risk patients, and environmental-safety reviews (Al-Surimi et al., 2021).

While complete data on falls in Palestinian hospitals is absent, poor safety culture-signs and indicators as low non-disciplinary responses to errors (17%) and poor communication-clarity (36%), suggest that fall events may be unaddressed or underreported (Hamdan & Saleem, 2018). Standardized fall prevention protocols, involving regular fall risk evaluations, bed-alarms and employee training, can significantly decrease fall-associated

injuries. Hospitals with robust safety cultures and standardized reporting mechanisms have confirmed lower fall rates and earlier response times to events (Hamdan & Saleem, 2018).

2.10 Challenges and Considerations of Accreditation and Standardization

However, despite the proven benefits of standardization through accreditation, the literature recognizes that the standardization of the healthcare delivery is not without its challenges and limitations. One of the most important considerations is the risk of over-standardization and the potential loss of flexibility in the delivery of healthcare, particularly when presented with unusual cases (Armeni et al., 2022). Over-standardization, if not carefully considered, can lead to a lack of adaptive decision-making skills among healthcare professionals.

The effective implementation of standardized healthcare services necessitates strong organisational support and ongoing monitoring mechanisms. The standardized interventions should be adapted to suit the local settings in order to ensure their continued effectiveness. For example, the infection control and catheter care bundles should be modified based on the patient case mix, type of unit, and resources. The audit and feedback systems are important in ensuring that there is compliance and that there are no gaps in the implementation process of the accreditation standards.

Evidence from the international and regional level has shown that standardized healthcare services have been associated with significant improvements in patient safety outcomes, including a reduction in the rate of medication errors, catheter-associated urinary tract infections, central line-associated bloodstream infections, and inpatient falls (Fox et al., 2021). These improvements have been largely attributed to enhanced compliance with evidence-based practices, enhanced interdisciplinary communication, and reduced unwarranted clinical variation. Nevertheless, sustainability, staff engagement, and adaptability are key considerations in the application of accreditation standards to patient safety outcomes.

In the Middle Eastern healthcare environment, accreditation and standardization activities have resulted in measurable improvements in the key patient safety indicators following the adoption of standardized protocols and international accreditation standards. However, the process has been hampered by factors such as resistance to change, hierarchical structures in the organizations, and resource constraints. Despite the challenges, standardization by accreditation has been shown to improve safety culture and healthcare outcomes through leadership engagement and capacity building (Hamdan & Saleem, 2018).

In the context of the Palestinian healthcare system, the provision of standardized healthcare services is a key strategy in improving patient safety and the quality of healthcare. Despite the fact that there are still challenges in the Palestinian healthcare system, such as structural and systemic challenges, the promotion of protocol compliance and the development of a culture of patient safety is a key strategy in order to ensure long-

term improvements in patient safety outcomes. This is especially important when accreditation standards are considered in Palestinian hospitals.

2.11 Reducing Variability in Clinical Practice

Unwarranted variability in clinical practice, if not justified by patient-specific factors, is generally acknowledged as a contributor to unsafe care and suboptimal health outcomes. Variability in clinical practice may be attributed to differences in clinical decision-making based on individual preferences, fragmented organizational structures, or the lack of standardized care processes. Evidence from developed environments shows that large disparities in healthcare practice continue to exist despite similar needs, and this highlights the importance of standardized practices to ensure equity and quality in healthcare delivery (Knickman & Elbel, 2023).

An increasing amount of empirical evidence has supported the effectiveness of standardization in minimizing preventable harm by reducing unwarranted clinical variation. The use of structured checklists and clinical pathways has been linked to a substantial reduction in healthcare-associated infections, medication errors, and inpatient complications. For instance, standardized protocols for central line insertion have led to a significant reduction in catheter-related bloodstream infections, thus illustrating how evidence-based standardization can be implemented in standard practices for improving patient safety (Al-Sayedahmed et al., 2021). Additionally, systematic reviews have demonstrated that clinical pathways are effective in enhancing the quality of documentation, shortening hospital stays, and reducing healthcare costs without affecting patient outcomes (Van Herck et al., 2004).

Variability in clinical practice needs to be minimized, and this is especially important in Middle Eastern healthcare systems, where diversity in the workforce and resources may add to variability in clinical practice. Research studies from the Middle East have found that standardization through accreditation has helped in minimizing variability in the implementation of infection prevention and patient safety practices, particularly in high-risk hospital units (Mansour et al., 2021). In the Palestinian context, national and international efforts towards safety have focused on the use of standardized protocols as a strategy for lessening dependence on clinical judgment and improving safer and more reliable care processes (Hamdan & Saleem, 2018). Taken together, the evidence supports standardization as a strategy for reducing unwarranted clinical variability and improving patient safety.

2.12 Improving Consistency and Continuity of Care

Consistency in the delivery of healthcare is essential for the attainment of foreseeable and high-quality results. Standardized services play a crucial role in ensuring that clinical interventions are delivered in a consistent manner among various healthcare professionals. The integration of standardization in digital health instruments has also enhanced this aspect. For instance, Sheikh et al. (2021) established that the application of clinical decision support systems (CDSS) coupled with electronic health records (EHRs)

encouraged practitioners to adhere to best evidence practices and enhanced clinical practice by directing practitioners to standardized decision-making. In addition, Hak et al. (2022) suggested that 68% of CDSS interventions were effective in enhancing practitioner performance, particularly when these systems were integrated into care procedures. These findings highlight the growing adoption of health information technology to enhance clinical standardization.

In high-risk settings like surgery and emergency care, SOPs have been employed to standardize clinical procedures. The most prestigious example of this is the WHO Surgical Safety Checklist, which has been recognized to ensure the consistency and safety of surgical procedures. Dryver et al. (2021) proved that simulation-based implementation of crisis checklists in operating rooms led to a significant decrease in serious problems, emphasizing the importance of systematic approaches to ensure the optimization of healthcare continuity and teamwork in emergencies. Protocol-based care proves that clinical interventions are constantly used depending on the best available evidence, which is primarily essential in specialized healthcare environments where accuracy and timeliness are critical.

The relevance of standardized care protocols is further highlighted by research examining the impact of these protocols in multiple healthcare settings. For instance, in Jordan, Abu-Humaidan et al. (2021) found the implementation of standardized sepsis protocols in a university hospital. The study found that adherence to early goal-targeted therapy protocols reduced ICU length of stay and improved survival rates. Increased staff compliance boost due to strategies and training, supporting the claim that protocols can integrate constant behaviors into healthcare practices. Likewise, Al-Shammari et al. (2019) assessed the impact of standard chemotherapy administration protocols in a specialized oncology center in Kuwait. The results revealed a reduction in medication errors, encouraged documentation and high patient satisfaction rates, and a reduction of 37% in nurse-administered chemotherapy errors.

In the Palestinian hospitals, Hamdan & Saleem (2018) identified that the standardization process through the Palestinian Standardization and Framework for Healthcare Improvement (PSFHI) resulted in a substantial improvement in the healthcare consistency, particularly in the aspects of patient transfer, documentation, and medication reconciliation processes. The training of the hospital staff on evidence-based practices proved that patients received consistent healthcare regardless of the department and time of visit. In addition, the nursing staff working in hospitals aiming for JCI accreditation reported that standardization enhanced role definition, communication, and multidisciplinary teamwork, ultimately resulting in more trusted healthcare delivery (Zabin & Hamdan, 2024).

2.13 Healthcare Outcomes Before and After Implementation of Standardized Protocols

Optimizing healthcare outcomes is a central objective of hospital performance and patient-centered care. Commonly reported outcome indicators include hospital readmission rates, length of stay (LOS), and patient satisfaction scores, which collectively reflect the effectiveness, efficiency, and quality of healthcare delivery (Ndife, 2024). High readmission rates can be a sign of gaps in discharge processes, whereas high LOS can be an indicator of inefficiencies, delays, or complications during the hospital stay (Liu et al., 2021). Patient satisfaction has been identified as a fundamental measure of healthcare quality, which is strongly associated with communication, safety, trust, and overall patient experience (Dottino et al., 2019).

A great deal of evidence has shown that standardized healthcare services have positive and meaningful effects on these outcomes. Standardized clinical pathways, care bundles, and discharge planning tools help in reducing unnecessary variations in clinical practice. Large-scale quality improvement initiatives, including the Institute for Healthcare Improvement's 100,000 Lives Campaign, have proved that the implementation of standardized care bundles led to a substantial decrease in the rate of preventable mortality by ensuring that best practices were implemented in healthcare institutions (Panny et al., 2018).

Regarding the management of chronic diseases and transitional care, the application of standardized protocols has been very effective. Standardized discharge planning and follow-up programs were found to be significantly associated with a reduction in 30-day readmission rates and functional outcomes in older adults (Kvæl et al., 2022). Similarly, standardized approaches to diabetes care coordination that included protocol-based follow-up and patient education resulted in improved glycemic outcomes and reduced complications from the disease (Sheng et al., 2024).

The quality improvement projects that are highly reliant on standardization, such as Lean and Six Sigma, also support the above findings.

Quality improvement projects have been shown to reduce waste, improve efficiency, reduce LOS, and improve patient satisfaction without compromising safety by standardizing processes of monitoring and feedback (Lobo-Prat et al., 2025). Evidence from regional healthcare environments supports these results; for instance, the introduction of standardized nursing documentation and care plans in maternity and cardiac environments resulted in the earlier identification of complications, decreased emergency transfers, and decreased rates of readmission (Abuidhail et al., 2021; Mohamed et al., 2021).

Standardization through accreditation has also been linked to system-level quality improvements in the healthcare sector. Hospitals that took part in national and international accreditation schemes for quality indicators showed systematic improvements in LOS, care coordination, clinical audit results, and patient satisfaction ratings (Zabin & Hamdan,

2024). These have been attributed to better clinical workflows, improved governance structures, and better accountability frameworks put in place during the accreditation process.

However, the literature suggests that while the overall impact of standardization and accreditation on the outcomes of healthcare is positive and statistically significant, it is not necessarily automatic or guaranteed, as resource limitations, resistance to change, and the administrative process of accreditation may limit the degree to which the benefits are realized (Laatikainen et al., 2022). In addition, there is evidence of the possibility of superficial compliance, in which there is an improvement in the documentation but not in the practice. This is an important observation that highlights the importance of monitoring and the integration of standardized practices into the work to ensure that the improvements in the outcomes are sustained.

In general, the evidence available suggests that standardized healthcare services and accreditation schemes have a positive, non-trivial effect on major healthcare outcomes, such as decreased rates of readmission, reduced hospital stays, and increased patient satisfaction. When used adaptively, standardization is a potent approach for improving the effectiveness, efficiency, and patient focus of hospital care.

2.14 Standardization of healthcare and health care outcomes

Akman et al. (2022) performed a study evaluating the efficiency of practice-based-interventions to improve interprofessional collaboration (IPC) among healthcare professionals. Concentrating on outcomes like patient health and clinical effectiveness, the review compared IPC interventions to common care or alternative approaches. A search of multiple databases recognized nine randomized trials with 6,540 participants from high-income countries. The findings propose that externally-eased IPC actions may enhance functional status in stroke patients and resource use, evidence confirmed was low, and it also highlights the necessity for further rigorous research to fully discover IPC's effect on clinical-practice

Alkhawaldeh et al. (2023) conducted a systematic review on the efficiency of items in the chronic-care form in enhancing healthcare practices and outcomes in primary healthcare settings. The most review's studies demonstrate enhancements in health outcomes for patients with chronic diseases. Key items as self-management support and delivery system design, were often used, although significant variability in their application made it challenging to detect the perfect integration. The study underscores the importance of leadership support and efficient communication in chronic disease management and highlights the need for an accurate understanding of the model's elements.

Forsetlund et al. (2021) reorganized a Cochrane Review to assess the impacts of educational meetings on professional practice and healthcare outcomes. Analyzing 215 studies including 28,167 healthcare providers, the review found that educational meetings likely lead to minor enhancements in adherence with requested practices and patient health

outcomes. Particularly, adherence showed an adjusted risk difference of 6.79%, whereas patient health outcomes showed a 3.30% enhancement. The findings propose that educational meetings, mainly as part of a complicated method, can improve healthcare practices with modest evidence supporting their efficiency (Forsetlund et al., 2021).

Enticott et al. (2021) performed a systematic review to inspect the effect of Learning Health Systems (LHS) on healthcare enhancement through electronic health records (EHR). The review addressed 43 studies across 23 LHS environments, mainly in the US, Canada, the UK, Sweden, and Australia. Findings show that LHS can produce significant effects on healthcare outcomes, with evidence from peer-reviewed studies showing moderate to high levels of consistency. The review highlights the potential of data-driven forms to improve healthcare delivery and calls for more assessment of LHS frameworks to optimize their effect (Enticott et al., 2021).

Standardisation of healthcare is considered an important strategy for enhancing healthcare outcomes and confirming consistency in clinical healthcare practice. Evidence-based protocols and standardized care pathways help reduce variations in care, improve patient safety, enhance healthcare quality, and support better clinical outcomes and continuity of care (WHO, 2023; JCI, 2022).

2.14.1 Impact on Hospital Readmission Rates

Teo et al. (2023) examine approaches and policies for reducing hospital readmissions, particularly through discharge planning, communication enhancement, and patient education. Although some approaches have been proven effective, there is still a lack of understanding of the factors related to hospital readmissions. They highlight the crucial role of a holistic approach that would identify the determining factors of health and call for more advanced research on transitional healthcare models to improve post-discharge health outcomes.

Cram et al. (2022) critically assess the use of readmission rates as a quality health indicator, highlighting the difficulties in understanding the use of these rates due to variables such as patient demographics, comorbidities, and social determinants of health. The authors go on to discuss the broader perspective that encompasses a variety of quality health indicators, as the sole use of readmission rates may reduce the complexity of understanding healthcare quality and patient health outcomes.

Cui et al. (2025) investigated the impact of the Hospital-to-Home (H2H) initiative, a combined and standardized discharge and transitional care protocol in 100 U.S. hospitals. The study reported a 10-15% reduction in 30-day readmission rates, primarily when activities such as medication reconciliation, patient education, and follow-up visits were performed pre-discharge.

Kvæl et al. (2022) assessed a standardized transitional healthcare model for aged-adults, finding a significant decrease in 30-day readmission rates (12.8% vs. 20.3%) compared to

routine healthcare. The enhancement was credited to structured, organized communication and continuity of healthcare after discharge.

Fashola (2023) applied the Project RED protocol for heart-failure patients, which involved a discharge advocate and after discharge follow-up-care. The study stated a 30% decrease in readmissions, underscoring the efficiency of standardized discharge actions in chronic-healthcare management.

In Jordan, Al-Ahmad and Al-Jabi (2022) reported that 29% of internal medicine patients were re-admitted in a year, with 44% of re-admissions being possibly-avoidable. Factors such as insufficient discharge planning and non-adherence to treatment therapy contributed to these readmissions. Evidence-based practices identifying modifiable behavioral risk factors were highly recommended to decrease readmission rates.

In Saudi Arabia, El Alotaibi et al. (2022) found that commitment to American Diabetes Association strategies for inpatient healthcare and discharge planning significantly decreases 28-day readmission rates among patients with diabetes, highlighting the worth of standardized protocols in managing chronic situations.

Al-Azzam et al. (2017) performed a study in Jordan that showed a decrease in probably avoidable readmissions by evidence-based practices, identifying modifiable behavioral-potential risk factors. Whereas data from Palestinian hospitals are restricted, these findings recommend that similar strategies could decrease readmission rates in Palestine.

2.14.2 Impact on Length of Stay (LOS)

Han et al. (2022) checked the complications of hospital length of stay (LOS), highlighting the necessity to balance operational effectiveness with quality patient healthcare. They discuss that though shorter stays may enhance effectiveness, they can breach patient safety and healthcare, particularly for those with multifaceted medical situations. The study findings advocate for a patient-centered method to defining LOS, designed to individual health requirements rather than standardized criteria.

Ba-Aoum et al. (2023) discuss variables that affect the LOS in the emergency department, emphasizing variables like patient demographics, the severity of medical conditions, and hospital operations. They confirm the importance of recognizing these variables to enhance patient flow and alleviate congestion, thereby improving patient outcomes.

Liu et al. (2022) establish the relationship between nutritional status and hospital LOS. The authors state that malnourished patients are likely to experience longer hospital stays because of difficulties in the recovery process. The findings of the study indicate the importance of nutritional evaluation and intervention in patient care to perhaps shorten LOS and ensure optimal recovery outcomes.

Alam et al. (2022) examine the inconsistencies in the LOS of hospitals, specifically on whether doctors adjust discharge decisions based on organizational norms. The findings

suggest that doctors should align their behavior with hospital norms, resulting in variations in the LOS of hospitals. This highlights the influence of organizational culture on healthcare practices in the clinical field, which may affect the healthcare effectiveness of patients.

Reducing LOS without compromising healthcare quality is a very important aim of clinical standardization. Trimarchi et al. (2021) found that standardized clinical pathways reduced LOS by 0.5 to 2.5 days in cases such as colorectal surgery, stroke, and myocardial infarction. Standardization improved the coordination of healthcare, reduced unnecessary discrepancies, and accelerated diagnostics. Similarly, Kuhlenschmidt et al. (2021) found that better recovery post-surgery practices resulted in a 20-50% reduction in LOS, with better recovery and fewer complications. Sawhney and his team (2021) declared that 1.8-day reduction in LOS for elective orthopedic surgeries through standardized preoperative education and discharge practices, without affecting readmission rates.

At King Abdullah Specialized Children's Hospital, Riyadh, the average LOS was decreased from 2.80 to 2.63 days without increasing readmissions by adopting the Clinical Teaching Unit (CTU) model (Al-Mutairi et al., 2023). Quality improvement project in a tertiary healthcare center, Riyadh, using FOCUS-PDSA approach, decreased mean LOS from 9.16 to 7.47 days in 2016-2018, with low readmission and mortality rates (Alghamdi et al., 2022).

In the Palestinian Medical Complex, an antimicrobial stewardship program (ASP) led to a significant decrease in ICU LOS, from 11 to 7 days (Zayyad et al., 2017). This underscores the efficiency of standardized protocols in enhancing patient healthcare and resource usage while maintaining healthcare quality.

2.14.3 Impact on Patient Satisfaction Scores

Prakash and Srivastava (2019) highlight the importance of patient satisfaction in the healthcare industry, stating that patient satisfaction is a reflection of the quality of healthcare. The article confirms that patient satisfaction is an important tool that can be utilized by the healthcare industry to measure the quality of their services and improve them. The authors suggest that patient satisfaction should be measured to ensure that the delivery of healthcare is in line with patient needs.

Lehrich et al. (2021) analyze the essential predictors of patient satisfaction, addressing communication with healthcare professionals, responsiveness, and the physical environment of healthcare facilities as significant indicators. The authors state that it is essential to address these predictors to maximize patient experiences and satisfaction scores.

Friedel et al. (2023) investigate methodologies for accurately measuring patient satisfaction, focusing on the need for valid tools. The authors strongly recommend incorporating patient satisfaction standards in health quality improvement initiatives to better focus preferred outcomes on a patient-centered healthcare environment.

Evidence supports the positive impact of standardized protocols on patient satisfaction. For instance, Kashyap et al. (2021) implemented hourly rounding protocols in hospitals, leading to improved satisfaction scores in communication with nurses, responsiveness, and pain control. Likewise, Fu et al. (2023) demonstrated improvements in patient satisfaction following the implementation of standardized bedside care shift reports, discharge instructions, and pain management protocols in 30 hospitals. Jang et al. (2024) demonstrated that standardized patient education in ERAS protocols improved patient satisfaction, increased trust in professionals, and improved emotional well-being.

The addition of standardized protocols enhances transparency, improves patient engagement, and verifies timely interventions, all of which enhance optimized satisfaction and improved commitment to treatment plans. These aspects also reduce the risk of lawsuits. In the Middle East, research suggests positive directions in patient satisfaction following the implementation of standardized protocols. For example, Thacker (2018) illustrated that Enhanced Recovery Protocols (ERPs) in colorectal surgery optimized satisfaction, reducing the length of stay and complications.

A scoping review by Khan et al. (2022) on hospital accreditation in Middle Eastern countries revealed that accreditation had a positive effect on patient satisfaction, although the findings were based on the perceptions of healthcare professionals, which are crucial for patient-centered studies. A comparative study by Dasan (2017) in Palestinian hospitals found high levels of satisfaction in JCI-accredited and non-accredited hospitals, where patients reported high levels of satisfaction in non-accredited hospitals. This suggests that accreditation alone is not a decisive factor in patient satisfaction.

Research in Hebron government hospitals (Qabaja, 2022) emphasized that service health-quality dimensions as tangibility, reliability, responsiveness, assurance, and empathy, are positively associated with patient-satisfaction, underscoring the efficiency of standardized service-health quality protocols in optimizing patient-experiences.

The literature highlights the importance of healthcare standardization in enhancing patient-health outcomes, improving operational-effectiveness and optimizing overall healthcare quality. Standardization helps decrease care discrepancies, enhance patient safety, and identify issues such as hospital readmissions and LOS. Patient satisfaction is a vital indicator of healthcare quality, with standardized protocols revealed to improve communication, expectations, and patient involvement. However, a successful application needs an accurate understanding of patient requirements and institutional frameworks. Future research should focus on refining interventions and discovering creative healthcare models.

2.14.4 Impact on Staff Perceptions of Organizational Safety Culture

Organizational safety culture in the healthcare sector refers to the general attitude, values, and practices of healthcare professionals that define how patient safety is given priority, communicated, and acted upon (Azyabi et al. 2021). It is widely recognized as a fundamental component of clinical healthcare outcomes and a critical factor in sustaining quality improvement initiatives (Al-Surimi et al. 2021). Employee perceptions of safety culture provide important insight into how policies, leadership responsibility, and teamwork are perceived on the frontlines of healthcare delivery.

A positive safety culture is featured by mutual trust, open communication, shared responsibility for safety, and a non-punitive method to error-reporting (Al-Surimi et al. 2021). Studies have constantly revealed that when staff perceive a strong culture of safety, there is increased commitment to clinical protocols, more reporting rates of near misses, and greater participation in patient safety programs (Azyabiet al. 2021). Conversely, negative-perceptions as fear of blame, hierarchical communication barriers, and restricted leadership support, are related to underreporting of incidents, inconsistent safety practices, and decreased organizational learning (Al-Surimi et al. 2021).

Comparative studies in hospitals have confirmed that differences in staff perceptions of safety culture can be affected through organizational history, leadership style, and the degree of standardization in clinical-methods (Abu-El-Noor et al. 2017). For example, hospitals that had accreditation experience usually show stronger scores in dimensions such as teamwork climate, safety climate, and management support (Arzahan et al. 2022). This is mainly relevant for the two hospitals in this study, where variations in exposure to accreditation methods, managerial participation, and resource allocation may form how standardized healthcare protocols are taken and maintained.

2.14.5 Mechanisms of Improvement Through Standardization

Standardization improves healthcare performance through a set of interrelated mechanisms that influence how clinical care is delivered, coordinated, and evaluated within hospital settings. One of the key ways in which this is achieved is through the reduction of unwarranted clinical variability. Through the reduction of unwarranted clinical variability and the promotion of evidence-based procedures, standardized protocols help to eliminate delays, errors, and improve consistency in the delivery of care, especially in high-risk clinical settings (Martin et al., 2021). This enables healthcare professionals to concentrate on patient-specific complexities as opposed to variability that may arise from fragmented practices.

Another key mechanism is the optimization of communication between multidisciplinary teams and between healthcare providers and patients. Structured tools such as handoff tools, clinical checklists, and discharge planning tools enable effective communication and minimize errors. Optimized communication enabled by standardization has been linked to

enhanced coordination of care among healthcare teams and reduced errors during transitions between care settings (Al-Sayedahmed et al., 2021).

Standardization also improves patient engagement by incorporating structured patient education and decision-making activities into the healthcare delivery system. When patients are given standardized information regarding their condition, treatment, and post-discharge plans, they are more likely to comprehend the expectations and become active participants in the healthcare process. This synchronization between the care process and patient expectations improves treatment compliance and helps to enhance patient experiences and outcomes (Dutton, 2021).

Moreover, standardized protocols make it easier to manage risks proactively, which can be done by early identification and prevention of complications. These protocols include early mobilization strategies and delirium assessment tools that help healthcare providers manage potential risks and prevent deterioration. Proactive strategies have been linked to a reduction in complication rates, shorter hospital stays, and overall improved clinical outcomes, particularly among high-risk patients. These findings indicate that standardization is not only a set of rules but also a strategy that aims to enhance safety, efficiency, and patient-centered care when appropriately implemented.

2.14.6 Challenges and Limitations

However, despite the benefits of standardization, several challenges hinder the complete implementation of standardization. Resistance from healthcare providers, most of which is a result of the perceived loss of autonomy, is one of the major challenges (Armeni et al., 2022). Over-reliance on standardized protocols may undermine professional judgment in complex cases, hence the need for protocols to enhance, rather than undermine, professional judgment. Additionally, infrastructure constraints, especially in resource-constrained settings, make implementing standardized practices more difficult (Strokosch & Roy, 2025).

Moreover, over-standardization can pose the risk of neglecting individualized healthcare, as “one-size-fits-all” approaches might not consider patient preferences or exceptional clinical situations. Effective standardization requires finding an appropriate balance between consistency and adaptability. In the Middle East, factors such as cultural resistance, a lack of leadership, and varying levels of training experience contribute to the further delay of the adoption of standardized protocols in the unified “Middle East region” (Mansour et al., 2021). Hospitals in the Eastern Mediterranean and Iraq, for instance, faced difficulties in sustaining commitment to protocols because of inadequate health quality infrastructure.

Moreover, the lack of resources and administrative issues remain significant barriers, although not as important as they were before (Zabin & Hamdan, 2024). Despite these issues, most healthcare professionals in the region understand that standardization improves the quality of healthcare. Nevertheless, the effectiveness of accreditation schemes, which are often associated with standardization, varies depending on factors such

as resource availability and commitment from the administration (Alhawajreh et al., 2023). These accreditations are often unsuccessful unless they are properly integrated into practice, as explained by Normalization Process Theory.

Studies also underscore the importance of ongoing training, feedback episodes, and robust clinical governance to evade superficial adherence with accreditation standards (Al-Surimi et al., 2021).

In Jordan, political support and ongoing funding have led to more successful accreditation compared to other countries as Egypt and Lebanon, where unstable political and financial limitations delayed sustainability (Mansour et al., 2021). Challenges associated with adapting international-accreditation standards to local frameworks are mainly obvious in Iran, where resource restrictions and staff resistance were significant barriers (Ghazanfari et al., 2021).

In conclusion, based on the literature, there is strong evidence to support the belief that standardized healthcare protocols lead to better patient safety, reduced clinical variability, and improved consistency of care, and that these protocols, ranging from infection control checklists to computerized prescribing systems, enable healthcare systems to deliver high-quality health care. However, their successful implementation requires a profound adaptation to the clinical environment, leadership, and involvement of healthcare professionals.

In the Middle East, the application of standardized healthcare services is revolutionary, with a substantial decrease in clinical variability, enhancing patient safety standards, including medication errors and hospital-acquired infections (HAIs). The standardized healthcare services have also led to a decrease in the length of stay (LOS) and increased patient trust. However, to ensure long-term success, it is important to understand the challenges of leadership, education, and adaptability. With the development of the healthcare system in the Middle East, the concept of evidence-based standardization and contextualization will be an important factor in improving health quality and safety.

The existing protocols for standardized testing, which Palestinian hospitals use, demonstrate that their implementation leads to increased operational efficiency, better patient care delivery, and improved safety performance. The evidence demonstrates that standardized initiatives should be expanded to enhance healthcare quality, despite existing infrastructure and personnel limitations, which restrict current operations.

Similarly, studies conducted among Middle Eastern countries showed that standardized care processes and discharge processes can help reduce readmission rates, LOS, and patient satisfaction. This is because of better healthcare coordination, best practices, and patient engagement. Thus, the implementation potential of standardized protocols to improve the quality and effectiveness of healthcare is immense, provided they are implemented effectively.

2.15 Healthcare Professionals' Perceptions of Standardized Healthcare Services and Protocols

The worldwide healthcare system should adopt standardized clinical protocols, which include clinical strategies and checklists, and healthcare packages and order sets, because these protocols will improve healthcare quality while reducing clinical differences and enhancing patient safety. The execution of a project needs healthcare providers to believe in the new system while they actively use the operational procedures. Their insights help the team identify which obstacles and resources help them achieve their unified goal of executing the plan in regular healthcare operations. The Middle Eastern healthcare system needs to overcome its unique cultural and infrastructure and resource challenges to implement its required changes.

2.15.1 Perceived Effectiveness of Standardized Protocols

The ability of the healthcare professionals to adapt to the standardized practices is affected by a range of psychological, emotional, cognitive, motivational, and experiential factors. According to Tsandila-Kalakou, Wiig, and Aase (2023), the factors of professional identity, risk management, and personal relationships are an important part of adapting to the standardized practices. Moreover, the factors of leadership support, culture, and workload burden are a strong influence on adaptability. The hospitals should emphasize educational and motivational support to improve compliance.

In Nigeria, Harrison et al. (2023) emphasized the importance of standardized qualifications and professional norms in ensuring professionalism and optimizing health care quality. Weiss et al. (2023) and Berghout et al. (2017) emphasized the importance of professional development and teamwork in improving communication and collaboration, which are essential in improving patient health care and safety.

Regarding accreditation, Hussein et al. (2021) demonstrated that healthcare providers are motivated by the chance to improve the quality of healthcare, professional, and organizational development. On the other hand, standardized protocols, especially in high-risk scenarios, improve the effectiveness of decision-making and the commitment to best practices, reduce errors, and improve communication among healthcare teams.

2.15.2 Healthcare Professionals' Perceptions of Standardized Healthcare Protocols

Healthcare providers' perceptions of standardized protocols significantly affect their commitment and the success of application. Studies showed that healthcare professionals' practices in standardized practices are more likely to follow protocols, leading to better patient health outcomes (Al-Sayedahmed et al., 2021). Active engagement in the development of these protocols can improve their adherence and compliance, as healthcare professionals are more likely to rely on practices that align with evidence-based-standards (Wade et al., 2022).

Perceptions of standardization may differ depending on providers' roles and clinical settings. Nurses tend to appreciate protocols that explain prospects, while physicians may see them as restraints on diagnostic resilience (Guerra-Farfan et al., 2023). In high-risk-environments as critical care, employees usually express more appropriate views of safety

checklists (Al-Sayedahmed et al., 2021), whereas main healthcare settings may realize rigid pathways as less applicable due to the variety of cases.

In the Middle East, studies show a general acknowledgment of the advantages of standardized protocols. In Saudi Arabia, healthcare providers stated that clinical strategies decreased medical errors and enhanced healthcare consistency (Al-Dossary & Al-Yami, 2020). Similarly, in the UAE, infection control protocols were reported to decrease hospital-acquired infections (Mahmood, Gillani & Abdulla Alzaabi, 2021). In Bahrain, nurses found that standardized protocols promoted communication and teamwork (Al-Bassam et al., 2022), while in Palestinian hospitals, protocols such as ACLS and BLS eased timely interventions in critical-conditions (Abu-El-Noor et al., 2017).

Despite these positive perceptions, concerns regard rigid-protocols remain. In Jordan, healthcare providers stated that standardized protocols occasionally delay clinical decisions, mainly in multifaceted cases (Al-Qudah et al., 2019). In Egypt, some physicians stated unwillingness to adhere to protocols that they felt were too general and did not account for the region's complicated diseases as metabolic illnesses (Hassan et al., 2020).

In conclusion, while healthcare providers in the Middle East distinguish the advantages of standardized protocols for enhancing healthcare consistency and patient safety, concerns about resilience and applicability in various-clinical settings persist. Designing and establishing protocols to identify these concerns and including professionals in their development can improve their efficiency and incorporation into clinical-practice.

2.15.3 Challenges and Barriers to Implementation

Global Challenges and Barriers

Despite the advantages, healthcare providers report numerous challenges in applying standardized health services, involving cultural resistance and workflow conflicts.

One of the major concerns is that the rigid protocol may have a weakening effect on clinical autonomy, hampering the flexibility to tailor the care according to the needs of the patients. Ratnani et al. (2023) emphasized that the doctors were concerned that over-standardization might restrict the flexibility of diagnosis and improve “cookbook-medicine.” This is largely seen in cases involving multimorbidity or abnormal presentations (Armeni et al., 2022).

Standardized documentation and checklists are usually perceived as time-consuming and disruptive. Parmasad et al. (2023) stated that ICU nurses reported further cognitive workload and solutions to adherence with new protocols. Strokosch and Roy (2025) similarly addressed that poorly incorporated protocols led to bypassing steps considered extra or ineffective.

Successful protocol-adoption needs structured training, leadership involvement, and continued technical support. In limited resources environments, protocols may be presented as motivated but impractical due to employment shortages and restricted supplies; moreover, resistance is often established when protocols are top-down applications that eliminate-frontline employee from the development-process (Beasley et al., 2021).

Incorporation of standardized protocols into (EHR) systems usually faces challenges, involving alert-fatigue and imbalance with real-time clinical-situations (Jia et al., 2021). Inconsistent HER-designs in departments can worsen errors and delay protocol adoption.

2.15.4 Challenges and Barriers in the Middle East

In the Middle East, while healthcare professionals recognize the benefits of standardized protocols, numerous region-specific barriers obstruct their broad adoption.

Cultural attitudes about healthcare authority and hierarchy offer significant challenges. In countries such as Saudi Arabia and the UAE, healthcare providers may resist and struggle with standardized protocols if perceived as outside enforcement or challenging their professional autonomy (El-Kot & Abd El-Salam, 2018). Furthermore, organizational-barriers as poor communication and inadequate training, worsen these challenges. In Qatar, a study by Al-Binali et al. (2018) reported that failure to include staff in protocol development led to poor commitment.

A main barrier to protocol implementation in the Middle East is inadequate resources and infrastructure. In Lebanon, the absence of electronic-health-records and restricted access to ongoing education for healthcare employees were addressed as significant obstacles (Jaber & Mansour, 2020). In conflict-affected districts such as Syria and Yemen, the absence of fundamental supplies and employees' shortage further delays protocol adherence (El-Masri & Obeid, 2021).

Healthcare providers in Palestine, particularly in underdeveloped areas, stated that while standardized protocols are beneficial, their application is usually delayed by inadequate equipment, old technology, and insufficient staffing (Hamdan & Saleem, 2018). Al-Ahmad and Al-Jabi (2022) highlighted that basic supplies as sterile gloves and syringes, are usually unavailable, decreasing the efficiency of standardized protocols.

Resistance to adopting new protocols is still a significant barrier. In Palestine, healthcare providers expressed unwillingness to adopt protocols that needed changes to long-established practices. This resistance was partially due to knowledge of previous practices, insufficient training, and concerns about increased workload (Al-Ahmad & Al-Jabi, 2022). Hamdan and Saleem (2018) reported that insufficient training and the absence of continuous professional development were the main obstacles to effective protocol application in Palestinian hospitals. Many healthcare professionals needed the knowledge and confidence to implement new standards, and training programs were irregular and inadequate.

Cultural and organizational factors as a lack of organizational support and hierarchical communication structures, also delay protocol application. In Palestinian hospitals, management usually failed to offer adequate motivation or resources for employees to adopt new protocols, which delayed their success (Abu-El-Noor et al., 2017; Hamdan & Saleem, 2018).

Strategies for Overcoming Barriers

Several strategies have been suggested to overcome these challenges and enhance the effective implementation of standardized protocols:

- Involving healthcare professionals in the development and customization of protocols can further adherence and significance (Abu-El-Noor et al., 2017). This method confirms

that protocols reflect local practices and meet the unique requirements of patient populations.

- Visible support from hospital leadership and regular feedback on protocol performance are vital for strengthening the value of standardization (Panny et al., 2018).
- Allowing some clinician decision in adapting protocols to local-settings helps balance standardization with individualized-healthcare (Armeni et al., 2022).
- Continuous training, simulations, and role-based education can help strengthen protocol application in real-world-backgrounds (Hussein et al., 2021).

In the Arab world and Palestine, further strategies include:

- Ongoing education and training on updated clinical strategies and evidence-based practices enhance compliance and patient health outcomes (Hassan et al., 2020). Healthcare organizations can benefit from establishing strong training programs designed to meet local healthcare requirements.
- The incorporation of EHR and decision support systems can enhance adherence to standardized protocols. In Saudi Arabia, the implementation of EHR systems in numerous hospitals has been linked with better health outcomes and decreased errors (Al-Kahtani et al., 2018).
- Hamdan and Saleem (2018) recommend promoted resource distribution, involving investments in infrastructure, medical supplies, and technology, to ease protocol implementation. Government funding and global aid could identify resource shortages.
- To overcome resistance to change, it is important to create a culture of change in healthcare organizations. Involvement of healthcare professionals in decision-making, offering incentives, and confirming robust leadership support for protocol application can strengthen acceptance (Al-Ahmad & Al-Jabi, 2022).
- Promoting communication channels and teamwork among healthcare professionals and between management and employees is critical for overcoming-organizational barriers. Hamdan and Saleem (2018) propose investing in team-building and leadership-development programs to improve collaboration and ease the standardized protocols adoption.

In conclusion, while healthcare professionals distinguish the benefits of standardized healthcare services, their implementation is delayed by problems related to clinical autonomy, workflow incorporation, and interprofessional integration. Implementation success through appropriate training, leadership support, and clinician engagement in the development of protocols. In the Middle East, challenges such as cultural barriers, resource constraints, and resistance to change remain important, but clinician engagement, education, technology, and resource allocation can enhance protocol implementation. It is important to identify these challenges to improve patient safety and healthcare quality in the Middle East.

2.16 Patients' Perspectives on Quality and Safety Post-Standardization in Hospitals

In modern healthcare systems, patients are increasingly known as active participants whose feedback is important for assessing healthcare quality and safety. With the extensive-adoption of standardized protocols as clinical strategies, care packages, and safety checklists, patient perceptions offer valuable insights into how these initiatives effect perceived-healthcare quality. Healthcare quality and safety are still priorities for Palestinian hospitals, many of which face significant political, economic, and infrastructural challenges. In response, initiatives such as hospital accreditation programs, clinical protocols, and infection control strategies have been introduced to improve healthcare consistency.

Care protocols have been associated with perceptions of safety and professionalism. Case et al. (2021) found that patient knowledge of protocols such as hand-hygiene practices, surgical site marking, and double-checking of medications was linked to increased patient trust and reassurance in healthcare teams. Chegini et al. (2021) argued that patients perceived safety procedures such as barcode scanning of medications and pre-operative timeouts as effective indicators of high safety standards, thus reducing patient anxiety related to medical errors.

In a broader perspective, A'aqoulah et al. (2022) argued that standardization-enhanced patient confidence in receiving constant and error-decreased healthcare by different professionals. In Saudi Arabia, Algahtani et al. (2020) found that 73% of patients surveyed believed that hospital environments were safer due to the nationwide implementation of standardized safety programs, including patient ID verification and fall prevention policies.

In the Eastern Mediterranean, improvements in drug labeling, infection control, and emergency response teams following standardization were associated with enhanced views of clinical competence and reduced anxiety regarding hospitalization (Mansour et al., 2021). In a similar study conducted in Palestine, Abu-El-Noor et al (2017) found that patients in neonatal intensive care units associated consistent hand hygiene practices, hygiene audits, and healthcare routines with reduced potential risks of infection and medical errors.

National surveys in Palestine also verify these results. Hamdan and Saleem (2018) identified that patients who are informed about hospital safety initiatives and are capable of witnessing their application reported greater feelings of safety during hospitalization. Structured commitment to clinical strategies, primarily in high-risk situations such as surgical and intensive care units, was identified as a key factor in reducing patient anxiety.

Standardization has also positively impacted communication through enhancing structured-interactions as bedside handoffs and discharge planning protocols. O'Hara et al. (2018) indicated that standardized communication practices, involving bedside rounding and "teach-back" approaches, optimized patient-understanding of diagnoses, treatment

plans, and discharge instructions, thus improving inclusion and trust in the healthcare process.

However, when standardization was applied, patients perceived interactions as impersonal or hastened. Armstrong et al. (2022) stated that checklist-guided communications, when lacking honest participation, reduced the perceived quality of interpersonal healthcare, particularly in high-demand hospital units.

In Qatar, Al-Balushi et al. (2021) found that the implementation of person-centered-healthcare frameworks related to accreditation standards greatly improved patients' understanding of their health situation and discharge instructions, strengthening perceptions of respect and dignity. However, in Iraq, a tendency towards standardization resulted in time pressures that adversely impacted patient-provider interactions, restraining perceived empathy and personalized care (Al-Haidary et al., 2019). Likewise, Qabaja (2022) argued that the application of organized healthcare strategies in Palestine improved patient comprehension of healthcare plans and discharge information, thus promoting patient engagement in decision-making.

Nevertheless, Dasan (2017) emphasized that although accredited hospitals demonstrated higher levels of consistency, some patients were more accustomed to the less formalized and personalized interactions common in non-accredited facilities, indicating that too much standardization can undermine patient-centered healthcare. This paradox highlights the need for achieving a balance between standardized protocols and cultural considerations in communication, particularly within the Palestinian settings, where the involvement of family members and emotional support are important factors in patient satisfaction. Standardization has been linked to better health outcomes, as perceived by patients, through shorter hospital stays, fewer complications, and better healthcare transitions.

Newland et al. (2021) proposed that patients who were discharged following standardized after-operative care protocols experienced quicker recovery and other positive experiences at the hospital. Friedel et al. (2023) also found a positive correlation between patient-reported experiences and hospitals that were dedicated to standardized health quality improvement programs, especially in terms of cleanliness, responsiveness of hospital staff, and pain management.

In the Middle East, there have been comparable improvements through standardization activities, especially through hospital accreditation. In Jordan, patients showed improved professionalism, communication, and cleanliness following the implementation of evidence-based practices and accreditation standards (Alkhaffaf et al., 2020). Likewise, in Palestinian hospitals, patients perceived increased trust and satisfaction regarding organized health service delivery, although some non-accredited hospitals maintained better individual communication (Dasan, 2017).

The experiences of patients with standardized healthcare vary based on geographical and demographic considerations. In Yemen, while hospitals in urban areas encouraged safety

and quality of health services through protocol implementation, hospitals in rural areas defaulted, thus creating a perception of disparities in access to healthcare and healthcare infrastructure (Qirbi & Ismail, 2017). Age was also a consideration-perceptions of older people valued standardized protocols as a sign of attentiveness, while younger patients valued resilience and personalized healthcare (Hussein et al., 2021).

In Palestine, accreditation projects-optimized perceptions of health service-organization, employee responsiveness, and admission-procedures, primarily in JCI-accredited-hospitals (Dasan, 2017). Patients also appreciated expected health service pathways, reduced waiting times, and improved communication in emergency and outpatient conditions (Qabaja, 2022). Nevertheless, inconsistencies remained in limited resources facilities, where employment shortages and inadequate protocol-supervision impeded perceived healthcare quality.

Language barriers also contributed to the formation of patient experiences. According to Squires et al. (2022), patients with non-ideal English proficiency experienced more confusion and anxiety in standardized communication when an appropriate interpretation of suitable communication was required. This highlighted the importance of appropriate healthcare for culturally and linguistically diverse patients despite standardization.

2.16 Concerns and Limitations from Patients' Perspectives

Although standardization in general improved safety and service quality, there were certain concerns regarding rigidity and lack of personal touch. Some patients were apprehensive that a rigid adherence to protocols might neglect personal needs, especially in domains such as pain control (World Health Organization, 2021). In the psychiatric and geriatric settings, standardized written communication could be viewed as childish or emotionally unresponsive (Beauchamp et al., 2017).

Moreover, according to Hamdan & Saleem (2018), despite the improvement in the clinical health quality indicators, the development of mechanisms for patient feedback remained underdeveloped, hindering patient participation in the continuous quality improvement process. Inconsistencies between city hospitals and refugee camps further highlighted the differences in the implementation of protocols, undermining the equity and efficiency of standardization efforts.

2.17 Engagement in Co-Design and Shared Decision-Making

Active participation from patients in the design and development of standardized clinical protocols significantly enhances their relevance, acceptability, and appropriateness in clinical practice. Evidence from hospitals utilizing experience-based co-design approaches shows improved patient satisfaction and quicker adoption of standardized protocols (Bates et al., 2023).

Additionally, Gualandi et al. (2021) emphasize that incorporating patient input ensures essential priorities like dignity, privacy, and emotional support are adequately addressed, priorities that are often overlooked in clinically driven standardization models. From the patient's perspective, standardization is typically linked to enhanced perceptions of safety,

consistency, and transparency in healthcare delivery. These positive outcomes are particularly noticeable when standardized protocols are implemented alongside effective communication, empathy, and responsiveness to individual patient needs. However, challenges persist, including feelings of impersonality, reduced flexibility, and limited patient involvement in decision-making processes.

In the Middle Eastern context, especially in Palestine, healthcare standardization initiatives have led to improvements in patient trust, service quality, and communication between patients and healthcare providers. However, gaps still exist in areas such as equity, cultural sensitivity, and meaningful patient engagement, particularly in resource-limited settings. Addressing these gaps necessitates not only the consistent application of protocols but also the integration of patient feedback mechanisms and culturally responsive approaches to quality improvement (Hamdan & Saleem 2018).

The literature clearly shows that patient engagement in co-design and shared decision-making enhances the effectiveness of standardized healthcare services by boosting satisfaction, trust, and perceived quality of care. Nevertheless, the complete advantages of standardization are realized only when clinical protocols are harmonized with patient-centered approaches that foster communication, cultural sensitivity, and active patient participation in healthcare decisions.

Chapter Three

Methodology

This chapter describes in detail the methodological procedures that have been followed in the current study. The chapter describes the research design, population of the study, criteria of eligibility for participation in the study, the period of conducting the study, sampling method, procedures of data collection, instruments of the study, analysis of data, and ethical issues. The piloting phase and the changes that have been made based on the results of piloting are also explained. This chapter ends with a discussion of the limitations of the study.

3.1 Study Design

This study utilized an explanatory sequential mixed-methods design, comprising two distinct phases. In the first phase, quantitative data were gathered and analyzed to assess differences in patient safety indicators and healthcare outcomes before and after the implementation of standardized healthcare services via hospital accreditation. The aim of this phase was to identify measurable changes in key indicators such as safety outcomes and healthcare performance.

In the second phase, qualitative data were collected from healthcare professionals and patients to further investigate and clarify the quantitative findings. This phase offered in-depth insights into participants' experiences and perceptions regarding the implementation of standardized clinical protocols. This design was chosen because it allows for the interpretation of quantitative results through qualitative explanations, thereby providing a more comprehensive understanding of the impact of standardized healthcare services on patient safety outcomes and clinical practice.

3.2 Study Setting

This study was conducted in two tertiary-level hospitals in the West Bank, Palestine: IAH in Ramallah and Ibn Sina Hospital (ISH) in Jenin. The two hospitals were chosen to offer diversity in terms of the management of the healthcare system, year of accreditation, and

resource availability in the Palestinian healthcare system. It is important to assess the potential influence of healthcare practices and interventions in converging settings.

IAH is a major private, for-profit tertiary hospital that provides high-level medical and surgical care to a broad category of patients coming from the Ramallah area and beyond. The hospital officially started the accreditation process in early 2021 and has since then adopted standardized healthcare practices in preparation for international accreditation. The hospital has completely implemented all standardized practices by the end of 2021. IAH has developed clinical pathways and medication management systems, infection control practices, electronic documentation systems, and patient safety reporting systems as part of its implementation efforts. The main goal of these interventions was to decrease clinical variations while enhancing patient safety and maintaining patient care delivery according to international quality standards.

ISH, which serves as a private hospital in Jenin and the northern West Bank districts. The hospital began its standardization process for healthcare service delivery and safety protocols through its 2024 implementation of infection control bundles, standardized clinical documentation systems, medication safety procedures, and patient safety monitoring systems. The implementation of these programs started with the goal of achieving accreditation standards while maintaining consistent patient healthcare and safety in public healthcare facilities that operate with limited resources.

3.3 Study Population

The target population was divided into two groups. The first group included the inpatient medical records of adults from the two selected hospitals who met the eligibility criteria during the specified study periods. The second group included healthcare professionals and adult discharged patients who participated in the qualitative interviews.

3.4 Eligibility Criteria

3.4.1 Inclusion Criteria

For the quantitative component, medical records were included if they met the following criteria:

- Adult patients aged 18 years or older
- Admission to medical or surgical wards
- Length of hospital stay of at least 24 hours
- Availability of complete data on patient safety and healthcare outcome indicators

For the qualitative study, the HCPs were eligible if they were directly involved in patient care or protocol implementation and had at least one year of professional experience. The discharged patients were eligible if they were adults, clinically stable, and able to provide informed consent.

3.4.2 Exclusion Criteria

Exclusion criteria for medical records included pediatric patients, day-case procedures, and incomplete records. Patients and personnel who were unwilling or unable to take part in interviews were excluded from the qualitative study.

3.5 Study Period

The study was conducted within the stipulated pre- and post-accreditation periods for the respective hospitals. At IAH, the pre-accreditation period was from May 2021 to October 2021, and the post-accreditation period was from November 2021 to April 2022. At ISH, the pre-accreditation time was from March 2024 to August 2024, followed by the post-accreditation time from September 2024 to February 2025.

The collection of qualitative data occurred after the completion of the quantitative analysis so that the questions in the interviews could be shaped by trends that were observed in patient safety and healthcare outcomes (See appendix 5, 6).

3.6 Sample and Sampling

For the quantitative component, the study employed a non-probability sampling approach using a predefined fixed sample size. A total of 1,200 inpatient medical records were included in the analysis. At each hospital, 600 records were reviewed, comprising 300 records from the pre-accreditation period and 300 records from the post-accreditation period. Eligible records were selected consecutively within each study period until the required sample size was achieved, ensuring consistency and comparability across the study phases.

For the qualitative component, a purposive sampling strategy was used to ensure inclusion of participants with diverse roles and experiences. Approximately 15–20 HCPs and 30–40 discharged patients were invited to participate. Data collection continued until thematic saturation was achieved, whereby no new themes emerged from additional interviews. In the qualitative phase of the study, a total of 59 participants were included, comprising 19 healthcare workers (9 from IAH and 10 from ISH) and 40 patients (20 from each hospital). This sample was selected to ensure representation from both institutions, provide diverse perspectives, and support an in-depth explanation of the quantitative findings.

3.7 Study Instruments

The quantitative data were collected through a standardized data extraction form that was developed by the researcher using international definitions and indicators. The form was used to extract data from hospital records, EMR, infection control records, incident reporting systems, and administrative databases. The extracted indicators were: Medical errors, CAUTIs, CLABSI, Patient falls, Length of hospital stay, 30-day readmission rates, Patient satisfaction scores, and Staff perceptions of organizational safety culture (See Appendix 4).

For the qualitative component, two semi-structured interview guides were developed: one for HCPs and one for discharged patients.

Healthcare Providers: This category included nurses, doctors, infection control personnel, and administrative staff who were actively involved in patient care and the implementation

of clinical protocols. The interviews focused on their views regarding the relevance, feasibility, effectiveness, and challenges associated with protocol implementation in resource-constrained settings.

Discharged Patients: This category included discharged adult patients who were invited to describe their experiences and perceptions of healthcare quality, communication, responsiveness of care, and safety practices during hospitalization. They were also asked to reflect on observable aspects of standardized care processes, such as consistency of procedures, staff communication, timeliness of services, and overall satisfaction, in order to help contextualize the quantitative findings. The guides were informed by the literature review and expert consultation and were designed to allow flexibility while ensuring alignment with study objectives (See appendix 5, 6)

The HCPs' guide is structured around key themes, including:

- Background and Role in Patient-Care
- Protocol implementation-experiences
- Understanding and Perceptions of Protocols
- Operational and Implementation-Challenges
- Patient Safety and healthcare-Outcomes
- Monitoring, Evaluation, and Recommendations

The discharged patients' guide is structured around key themes, including:

- Background and Hospital Experience
- Communication and Involvement in Care
- Perceptions of Safety and Standardized-Practices
- Trust and Standardized-Care
- Recommendations and Closing-Reflections

Each interview guide included a set of open-ended questions, along with follow-up prompts to explore emerging issues in greater depth. Interviews were audio-recorded and documented with participants' consent. All interview guides were pilot-tested with a small sample to assess clarity and contextual appropriateness, and revisions were made as necessary.

3.8 Pilot Study

A pilot study was conducted before data collection at IAH. The pilot involved ten discharged patients and five HCPs who met the study eligibility criteria. The pilot aimed to assess the clarity, relevance, and feasibility of the interview guides, as well as the logistical aspects of recruitment and data collection.

The pilot study was conducted only at IAH because of its prior accreditation experience, established organizational readiness, and the availability of accessible administrative systems that supported preliminary testing of the study instruments. This environment was ideal for testing the feasibility, clarity, and applicability of the study instruments. The pilot study was not aimed at comparing institutions; hence, carrying out the pilot study at one institution was deemed sufficient.

On the basis of feedback received from the pilot, some questions were clarified, redundant items were eliminated, and the flow of the guides was improved. The pilot participants were not included in the main study to avoid bias.

3.9 Data Collection Procedures

3.9.1 Quantitative Data Collection

Each patient safety and clinical outcome indicator was calculated in accordance with internationally accepted standards and validated sources. The quantitative data were retrospectively extracted from hospital records, electronic health information systems, and administrative databases at both hospitals. A standardized extraction process was followed to ensure consistency and accuracy.

A total of 1,200 eligible inpatient medical records were reviewed. At IAH, 300 records were extracted from the pre-accreditation period and 300 from the post-accreditation period. Similarly, at ISH, 300 records were extracted from each period.

3.9.2 Qualitative Data Collection

Qualitative data were collected through individual semi-structured interviews conducted in Arabic in private settings within the hospitals. Interviews were conducted after obtaining participants' consent, audio-recorded or documented through detailed notes as appropriate, transcribed verbatim in the original language, and anonymized. Data analysis was undertaken using the original Arabic transcripts to preserve meaning and contextual accuracy. Selected participant quotations were translated into English only for reporting and presentation purposes.

For the qualitative component, healthcare professionals and discharged patients were purposively recruited to participate in semi-structured interviews. All invited healthcare professionals completed the interviews, and all discharged patients who were invited agreed to participate fully, with no refusals or withdrawals during the data collection process. Accordingly, the response rate for the qualitative component was 100%, and data saturation was achieved within the targeted sample.

Table 3.1 shows the summary of demographic and professional characteristics of interviewed staff from IAH and ISH, including their roles, gender, and years of experience.

Variable	Category	Frequency (n)	Percentage (%)
Hospital	IAH	9	47.4
	ISH	10	52.6
Gender	Female	11	57.9
	Male	8	42.1
Professional Role	Nurses (Staff / Supervisor / Educator)	8	42.1
	Physicians	6	31.6
	Administrative / Managerial Positions	5	26.3
Years of Experience	1–10 years	6	31.6
	11–20 years	9	47.4
	More than 20 years	4	21.0
Total		19	100

Note. Values are presented as frequencies and percentages. Percentages may not total exactly 100% due to rounding.

Table 3.2 shows the demographic profile of participants in ISH and IAH, including age, gender distribution, and common health conditions.

Hospital	Number of Participants (n)	Age Range (years)	Gender Distribution (Female/Male)	Common Conditions
ISH	20	25–72	12 / 8	Diabetes, Cardiac, Surgical
IAH	20	30–75	13 / 7	Respiratory, Orthopedic, Chronic Illness

Note. Values are presented as counts and ranges. Gender distribution is reported as number of female and male participants. Common conditions represent the most frequently reported clinical conditions among participants at each hospital.

3.10 Reliability and Validity

The rigor of this study was ensured through careful consideration of reliability and validity across both quantitative and qualitative components. Given the mixed-methods nature of the study, different strategies were applied to establish trustworthiness in accordance with the source and type of data.

3.10.1 Quantitative Component

For the quantitative component, all patient safety and clinical outcome indicators, including medical errors, CAUTI, CLABSI, patient falls, 30-day readmission rates, length of hospital stay, patient satisfaction scores, and staff perceptions of organizational safety culture were obtained from existing hospital quality records, electronic medical systems, and administrative databases at Istishari Arab Hospital and Ibn Sina Hospital. These indicators were gathered using standardized definitions within the institution, as well as international criteria, following the recommendations of authoritative sources such as the CDC and hospital accreditation requirements. Since the data was already being collected and tracked by the quality and infection control departments of the hospitals, there was consistency in the procedures of measurement, which helped ensure data reliability.

Moreover, data extraction was carried out using a structured data extraction form designed by the researcher to ensure consistency, completeness, and accuracy of data extraction for both hospitals and study periods. Cross-checking of the extracted data with original records was carried out to reduce the likelihood of transcription errors. In this study, as the quantitative data were abstracted from validated institutional systems as opposed to researcher-designed instruments, traditional internal consistency estimates such as Cronbach's alpha were not applicable to the quantitative indicators.

3.10.2 Qualitative Component

For the qualitative study trustworthiness were addressed by using accepted criteria for qualitative rigor, such as credibility, dependability, confirmability, and transferability. Semi-structured interview schedules for healthcare professionals and for patients discharged from care were designed following an in-depth literature review and expert input to ensure relevance and clarity of content. A pilot study was also undertaken before embarking on full data gathering, resulting in some slight modifications to wording and ordering of questions to improve understanding and relevance. Furthermore, qualitative data were independently analyzed and reviewed by two researchers to enhance credibility, trustworthiness, dependability, and inter-coder reliability, which decrease individual researcher bias, ensures findings accurately reflect the data, increases the range of conceptual interpretations, and enhances the overall dependability of the results.

Credibility was ensured by prolonged involvement with the research participants, the use of probing techniques, and the verbatim transcription of the tape recorded. Dependability was ensured by the maintenance of a clear audit trail of the procedures followed in data collection and analysis. Confirmability was ensured by the use of direct quotations from the research participants to support the interpretations and the maintenance of reflexive notes to eliminate bias on the part of the researcher. Transferability was ensured by the provision of detailed descriptions of the research context.

In general, the complementarity of using standardized secondary quantitative data and primary qualitative data ensured a high level of methodological reliability and validity, which contributed to the robustness of the findings of this study.

3.11 Data Analysis

3.11.1 Quantitative Analysis

The quantitative data were analyzed using the Statistical Package for Social Sciences (SPSS), version 24. Descriptive statistics were employed to describe patient safety and clinical outcome indicators. Inferential statistical tests were employed to test for differences before and after accreditation.

Paired t-tests were employed to compare pre- and post-accreditation data in the same hospital, while independent t-tests were employed to compare data between the two hospitals. The assumption of normality was tested using the Shapiro-Wilk test, which showed that the data were normally distributed. The level of significance was set at $p < 0.05$.

3.11.2 Qualitative Analysis

Qualitative data were analyzed using thematic analysis, following a structured six-phase approach: familiarization, coding, generating themes, reviewing themes, defining and naming themes, and producing the final report. Initially, all interview transcripts were read

multiple times to achieve data familiarization and to gain a comprehensive understanding of the participants' experiences. During this phase, initial ideas and reflections were documented to enhance the analytical process. Subsequently, open coding was performed manually to identify significant segments of text related to the participants' experiences and perceptions. Codes were generated inductively from the data, encompassing areas such as protocol understanding, implementation experiences, barriers to adherence, perceived impact on patient outcomes, and recommendations for improvement. Similar codes were then consolidated to form preliminary categories

In the next phase, categories were systematically compared and refined to uncover broader patterns, which were subsequently organized into potential themes. These themes underwent thorough review and refinement to ensure they were consistent with the coded data and the complete dataset, guaranteeing internal coherence and clear distinctions between themes. Final themes were distinctly defined and named to accurately reflect the essence of the participants' experiences. The analysis concentrated on capturing both similarities and differences among participants from various professional roles and hospital settings. To enhance rigor, the analysis process upheld consistency through systematic coding procedures and iterative theme reviews, ensuring credibility and accuracy in representing the participants' perspectives.

3.12 Ethical and administrative approvals

This research was carried out in line with the international ethical standards for research involving human participants, such as the Declaration of Helsinki. Before the data was collected, ethical approval was sought from the Institutional Review Board (IRB) of Al-Quds University to ensure that the research met the ethical requirements in relation to the protection of participants, confidentiality, and scientific validity (appendix 1).

Apart from the ethical approval, administrative approvals were sought from the management and quality departments of the two hospitals participating in the study, namely IAH and ISH. The administrative approvals allowed access to the medical records of patients in the hospitals, quality data in the hospitals, and institutional patient safety indicators. Additionally, the approvals allowed conducting interviews with healthcare providers and patients who had been discharged from the hospitals. The data access was restricted to the variables necessary for the study and was supervised by the hospital authorities.

For the quantitative part, data was collected retrospectively from electronic medical records and administrative databases. There was no need to have direct patient contact at this stage. All the data that was extracted was anonymized at the time of collection by removing any personal identifiers such as names, identification numbers, and contact details. Every file was given a unique study code to maintain confidentiality and prevent tracing back to patients.

For the qualitative study, all participants, including healthcare providers and discharged patients, were fully informed about the purpose, procedures, potential risks, and benefits of the study before they took part. Written informed consent was sought from all participants in the interview using consent forms (appendix 2 & 3). The participants were informed that

their participation in the study was voluntary, that they had the right to withdraw from the study at any time without any consequences, and that they could refuse to answer any question that they felt uncomfortable with.

To ensure confidentiality of the participants, the interview transcripts were anonymized by removing any names, titles, or other identifiable information.

The audio files were stored in a secure manner and were only accessible to the principal investigator. Once the transcription process was completed, the audio files were archived securely and will be destroyed in accordance with the participating hospitals policies, namely Istishari Arab Hospital and Ibn Sina Hospital

All research data, both quantitative and qualitative, were recorded on encrypted computer files that could only be accessed by the researcher. Hard copies of documents, such as consent forms, were stored in locked file cabinets. Data will be archived for the period required by university policy and then properly destroyed.

There were no financial incentives provided. The study contained minimal risk, which was primarily related to possible mild discomfort during the interview process when discussing issues at work or healthcare experiences. Appropriate precautions were taken to minimize any discomfort that could be caused during the interview process.

In general, the research study was conducted under strict ethical standards in all phases to ensure that the participants' autonomy, privacy, and dignity were respected, while at the same time, the scientific integrity of the research was upheld.

3.13 Study Limitations

Although this study was designed in a way that would give a comprehensive assessment of the effect of standardized healthcare services and protocols on patient safety and healthcare outcomes, there are some limitations that should be taken into consideration when analyzing the results. First, the study was carried out in only two hospitals in the West Bank, namely Istishari Arab Hospital in Ramallah and ISH in Jenin. Although these hospitals were purposively selected because they are major private accredited institutions with differences in organizational structure, service capacity, administrative context, and timing of accreditation, the findings may not be fully generalizable to all Palestinian healthcare facilities or to health systems in other countries with different organizational, policy, and resource environments.

In addition, differences in institutional characteristics between the two hospitals, including infrastructure, staffing, patient case-mix, and existing quality improvement initiatives, may have affected the implementation and effectiveness of standardization. Such factors may work as confounding variables, making it difficult to attribute the changes in patient safety indicators and healthcare outcomes to the implementation of standardization and accreditation initiatives.

Moreover, the results of the qualitative study were based on self-reported data collected from interviews with healthcare professionals and patients who had been discharged. This type of data could be prone to recall bias, social desirability bias, or reluctance to share negative experiences, especially in a hierarchical organizational environment or in a culturally sensitive setting. While measures were taken to maintain confidentiality and

provide a safe setting for open discussion, these considerations could have affected the responses.

Practical limitations such as resource constraints and the operational workload of healthcare personnel presented challenges during data collection. These factors affected the scheduling, timing, and duration of some qualitative interviews and may have influenced the depth of information obtained from certain participants. In addition, the post-implementation follow-up period may have been relatively short to capture the full long-term effects of standardization on patient safety and healthcare outcomes. Some improvements associated with accreditation and standardized practices may require a longer period to become fully embedded in routine clinical practice and to produce measurable outcome changes.

Despite these limitations, the use of a mixed-methods design, the inclusion of multiple patient safety and healthcare outcome indicators, and the triangulation of results from both quantitative and qualitative data sources add to the credibility and relevance of the findings of the study. These limitations can therefore be seen as contextual factors that shed light on the interpretation of the findings, rather than as limitations that detract from the overall contribution of the study.

Chapter Four

Results

This chapter outlines the findings of a study that investigates the effects of healthcare standardization on patient safety indicators and clinical outcomes at Al-Istishari Arab Hospital (IAH) in Ramallah and Ibn Sina Specialized Hospital (ISH) in Jenin. The results focus on the changes in key patient safety and quality indicators following the implementation of standardized healthcare services through accreditation. The findings are organized into three main sections. First, the quantitative results are detailed, including statistical analyses of the changes in patient safety indicators and clinical outcomes before and after accreditation. Second, the qualitative findings are discussed, emphasizing the experiences and perceptions of healthcare providers and patients regarding standardized healthcare services. Finally, an integrated interpretation of both quantitative and qualitative findings is presented, revealing areas of convergence and divergence between the two hospitals.

4.1 Quantitative data results

The study quantified the indicators that together denote patient safety, healthcare quality, and efficiency of the institutions. The indicators were computed on the basis of international standards and credible sources. The indicators comprised incidence of medical errors, (CAUTI), (CLABSI), and patient falls, while the healthcare outcome indicators comprised 30-day hospital readmission rates, hospital stay, and patient satisfaction scores data had been extracted and compiled from hospital records, electronic health systems, and administrative databases at (IAH) and (ISH) retrospectively from 1200 eligible inpatient medical records over pre- and post-accreditation periods

.The statistical tests were carried out using the Statistical Package for the Social Sciences (SPSS), version 24. The descriptive statistics were employed to describe the data, while the inferential tests (Shapiro-Wilk test, paired t-tests, and independent t-tests) were used to investigate the differences before and after the accreditation. It is appropriate to use the

paired t-test to compare pre-post differences for the same hospital, whereas it is appropriate to use the independent t-test to compare the two hospitals.

The results of the Shapiro-Wilk test revealed that the data were normally distributed since the p-values for all the variables were greater than 0.05.

4.1.1 Catheter-Associated Urinary Tract Infections (CAUTI)

The rate of CAUTI, the rate of urinary infections due to the presence of an indwelling catheter (CDC, 2024), is determined by dividing the number of CAUTI events by the number of catheter days and then multiplying by 1000.

At Al-Istishari Arab Hospital (IAH), the overall rate of catheter-associated urinary tract infections (CAUTI) before accreditation was 5.83 per 1,000 catheter days (SD = 2.04). The data revealed significant monthly variations during the pre-accreditation phase, highlighting inconsistencies in infection control performance. The highest CAUTI rate occurred in June 2021, at 8.9 per 1,000 catheter days, while the lowest rate was recorded in September 2021, at 3.3 per 1,000 catheter days, demonstrating fluctuations in infection rates over time. It is crucial to acknowledge that differences in the study periods among hospitals may affect the direct comparability of pre-accreditation CAUTI trends.

Following accreditation, the overall CAUTI rate declined to 4.96 per 1,000 catheter-days, with a relatively low regard to monthly variability. In the post-accreditation period, the highest monthly CAUTI rate occurred in November 2021 (6.2), whereas the lowest rate was documented in January 2022 (3.5). This represents an overall 15% reduction in CAUTI rates over the six-month post-accreditation period (November 2021–April 2022). Monthly CAUTI trends at IAH demonstrated a general downward pattern following accreditation, as illustrated in Figures 4.1 and 4.2.

A paired t-test was performed to assess differences between pre- and post-accreditation CAUTI rates at IAH. Although post-accreditation rates were lower than pre-accreditation rates, the difference did not reach statistical significance ($t(5) = 1.01$, $p = 0.35$).

At ISH, the overall pre-accreditation CAUTI rate was 1.07 per 1,000 catheter-days (SD = 0.66). Following accreditation, the overall CAUTI rate increased to 3.18 per 1,000 catheter-days (SD = 1.74).

Paired t-test analysis revealed a statistically significant increase in CAUTI rates after accreditation ($t(5) = 3.21$, $p = 0.01$). Monthly analysis showed marked fluctuations, with the highest CAUTI rate reported in October 2024 (5.7) and the lowest rate recorded as 0.0 in May 2024. Monthly trends for ISH before and after accreditation are presented in Figures 4.3 and 4.4.

As indicated in Table 4.1 and Figure 4.1, the CAUTI trends after accreditation were quite different between the two hospitals. Although IAH showed a decrease in CAUTI rates after accreditation (5.83 to 4.96 per 1,000 catheter-days), ISH showed an increase in CAUTI rates after accreditation (1.07 to 3.18 per 1,000 catheter-days).

Participants from Istishari Arab Hospital described several practices that may help explain the observed reduction in CAUTI rates, including strict adherence to clinical protocols, close monitoring, and regular refresher training. Healthcare professionals also emphasized the importance of continuous supervision and accountability in promoting compliance with established procedures.

On the other hand, participants from Ibn Sina Hospital identified challenges related to delayed training initiatives and transitional periods. Some participants believed that, despite the implementation of standardized protocols, refresher training had not yet been fully standardized. As one healthcare professional stated:

“Sometimes protocols are updated, but refresher trainings do not happen promptly, which affects how consistently they are applied in daily practice.”

(Health Provider, ISH)

These results can be used to support the quantitative results by showing how the differences in the level of implementation fidelity, staff training continuity, and operational follow-through may potentially affect patient safety outcomes after accreditation.

The IAH participants identified the importance of incorporating catheter care practices into the daily operations following the accreditation process through continuous reminders and close monitoring by infection control personnel. The nurses showed better knowledge about when to insert, maintain, and remove catheters.

One respondent stated:

“After accreditation, catheter care became more organized. We follow clear steps, and infection control checks our practice regularly.”

(Nurse, IAH)

Another participant mentioned the importance of monitoring and accountability:

“There is continuous follow-up now. If something is missed, it is discussed immediately, which helps prevent repeated mistakes.”

(Nurse, IAH)

The healthcare professionals who work at ISH recorded that their capacity to implement the standardized protocols was impacted by both work-related factors and their training sessions, which were held at unpredictable times. The participants mentioned that while the protocols were in place, there was a lack of guidance sometimes in practice, particularly in the initial stages after accreditation.

As one respondent explained:

“We received the protocols, but applying them correctly was difficult at first because training was delayed and staff were overloaded.”

(Nurse, ISH)

Another participant added:

“During busy shifts, especially with staff shortages, it is hard to strictly follow every step unless there is close supervision.”

(Nurse, ISH)

Taken together, these findings showed that hospitals need to continue staff education and staff retraining programs as their primary method for achieving successful infection control because they require accreditation to improve their operational procedures.

As shows table 4.2 the quantitative findings indicate a decrease in CAUTI rates at IAH and a notable increase at ISH. These opposing trends can be understood through the qualitative findings. At IAH, healthcare professionals reported consistent adherence to protocols, continuous monitoring, and regular refresher training, which likely contributed to the observed decline in infection rates. Conversely, participants at ISH pointed out delays in

training, high staff workloads, and challenges in early implementation, which may account for the rise in CAUTI rates despite having standardized protocols in place.

Overall, these findings demonstrate that the effectiveness of accreditation in enhancing infection control outcomes is significantly influenced by the fidelity of implementation, the continuity of staff training, and the level of organizational support, rather than the accreditation process itself.

Table 4.1. Comparison of CAUTI Rates Between IAH and ISH

Hospital	Pre-Accreditation Mean $\pm$ SD (per 1,000 catheter days)	Post-Accreditation Mean $\pm$ SD (per 1,000 catheter days)	t (df)	p-value	Statistical Significance	Change Interpretation
IAH	5.83 $\pm$ 2.04	4.96 $\pm$ 0.98	1.01 (5)	0.35	Not Significant	↓ Improved
ISH	1.07 $\pm$ 0.66	3.18 $\pm$ 1.74	-3.21 (5)	0.01	Significant	↑ Worsened

Note. Values are presented as mean $\pm$ standard deviation (SD). Paired t-tests were conducted to compare pre- and post-accreditation CAUTI rates within each hospital. Statistical significance was set at $p < 0.05$.

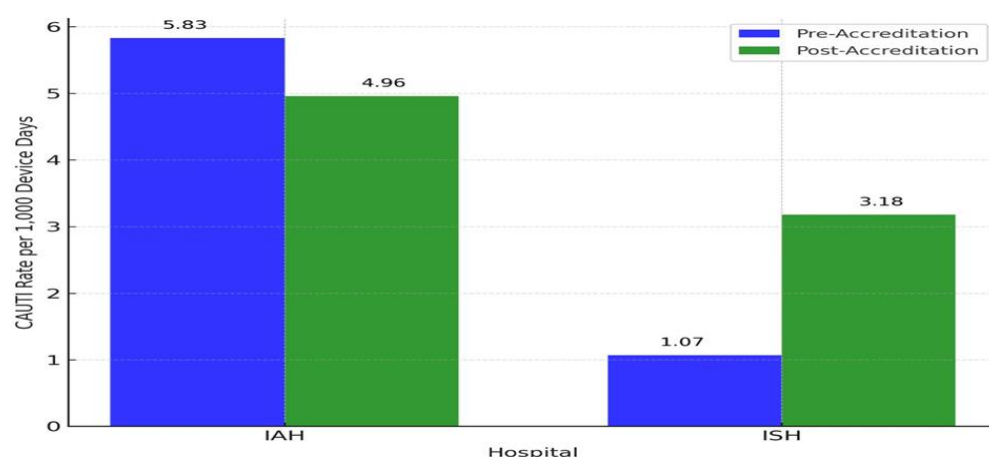


Figure 4.1: Comparison of Overall CAUTI Rates Between IAH and ISH Before and After Accreditation

Note. The figure presents the overall CAUTI rates per 1,000 catheter days in IAH and ISH before and after accreditation. A decrease in CAUTI rates indicates improvement in infection prevention and patient safety performance. IAH = Istishari Arab Hospital; ISH = Ibn Sina Hospital.

Table 4.2. Independent t-test Comparison of Post-Accreditation CAUTI Rates Between IAH and ISH

Hospital	Mean $\pm$ SD (per 1,000 catheter days)	t (df)	p-value	Statistical Significance	Interpretation
IAH	4.96 $\pm$ 0.98				
ISH	3.18 $\pm$ 1.74	2.33 (10)	0.042	Significant	Higher in IAH

Note. Values are presented as mean $\pm$ standard deviation (SD). An independent samples t-test was conducted to compare post-accreditation CAUTI rates between IAH and ISH

using monthly aggregated data ($n = 6$ per hospital). The degrees of freedom (df) equal 10. Statistical significance was set at $p < 0.05$. A statistically significant result indicates a meaningful difference in CAUTI rates between the two hospitals following accreditation.

4.1.2 Central Line-Associated Bloodstream Infections (CLABSI)

The rates of Central Line–Associated Bloodstream Infection (CLABSI) were calculated by the number of laboratory-confirmed CLABSI events divided by the total number of central line days, multiplied by 1,000, as per global surveillance definitions (CDC, 2024).

As showed table 4.3, the pre-accreditation rate of CLABSI at IAH was 5.67 per 1,000 central line days ($SD = 3.02$), with large monthly variation. The highest monthly CLABSI rate was reported in June 2021 (8.7 per 1,000 device days), whereas no CLABSI events were recorded in July 2021, indicating substantial fluctuations during the pre-accreditation period.

Following accreditation, the overall CLABSI rate declined to 4.94 per 1,000 central line days ($SD = 1.58$), representing an approximate 13% reduction over the six-month post-accreditation period (November 2021–April 2022). Monthly trends during the post-accreditation phase demonstrated reduced variability and a generally lower range of infection rates compared with the pre-accreditation period.

A paired t-test was conducted to examine differences in CLABSI rates before and after accreditation at IAH. Although a reduction in the mean CLABSI rate was observed following accreditation, the difference did not reach statistical significance ($t(5) = 0.55$, $p = 0.60$), indicating that the observed improvement was not statistically significant within the study period.

CLABSI trends at ISH showed a different pattern. The overall pre-accreditation CLABSI rate was 1.95 per 1,000 central line days ($SD = 1.56$). Post-accreditation, the overall rate increased to 5.29 per 1,000 central line days ($SD = 4.10$).

Monthly analysis revealed marked fluctuations following accreditation, with peak CLABSI rates reaching 8.8 per 1,000 device days in October and November 2024, while zero-infection months were observed intermittently, suggesting inconsistent adherence to central line care practices during the post-accreditation phase.

Paired t-test analysis indicated that the increase in CLABSI rates at ISH after accreditation was not statistically significant ($t(5) = -1.50$, $p = 0.165$), reflecting high variability in monthly rates and the influence of extreme values.

As shown in Table 4.4 and Figure 4.2, the post-accreditation CLABSI rate trends showed considerable differences between the two hospitals. IAH showed a slight decrease in CLABSI rates after accreditation (5.67 to 4.94 per 1,000 device days), while ISH showed an increase (1.95 to 5.29 per 1,000 device days). An independent t-test performed to compare the post-accreditation CLABSI rates between the two hospitals did not show a statistically significant difference; however, the contradictory directional changes indicate differences in implementation fidelity, capacity, and consistency of infection control practices between the two institutions.

The results were further supported by the findings of the qualitative study. The participants identified the lack of staff and workload as important factors that impede the implementation of CLABSI prevention protocols. A respondent from IAH explained that it

is difficult to implement the protocols when the unit is short-staffed. She said, *“We try to apply the central line protocol, but when the unit is short-staffed, it’s difficult.”* (Nurse, IAH).

One respondent nurse who spoke about work demands explained how the infection control procedures should be implemented during their work. She said that hospitals face difficulties in maintaining central line bundle standards because their staff needs to provide urgent care during peak patient intake times (Nurse, IAH). From the management side, a respondent confirmed that infection control practices are being implemented, but it is important to continue to stress the importance of these practices by saying, *“Accreditation has helped standardize procedures, but without follow-through and enough staff, compliance is spotty at best”*. (supervisor, IAH).

ISH participants mentioned other contextual issues associated with transitional periods after accreditation. A respondent from ISH said, *“New protocols were rolled out after accreditation, but staff training did not necessarily happen at the same time for all shifts.”* (Nurse, ISH). Another participant mentioned the issue of monitoring gaps when they said, *“There is auditing, but it is not always regular, and feedback is sometimes delayed.”* (Healthcare provider, ISH).

Taken together, these qualitative findings support the quantitative results and suggest that accreditation alone may not be sufficient in realizing sustained reductions in CLABSI rates without sufficient staffing and mechanisms for adapting to the context. Improving structures of supervision, providing equal training opportunities across shifts, and sustaining competency reinforcement were identified as critical needs for sustaining infection control gains post-accreditation.

In general, the CLABSI outcomes show that although there was a small decrease in the rate of infections at IAH, the effect of accreditation was short-term and not consistent at ISH. These results highlight the need for continuous training of staff, adequate staffing, and ongoing monitoring to ensure that standardized procedures are translated into sustained improvements in infection prevention outcomes.

The quantitative findings revealed a slight decrease in CLABSI rates at IAH and an increase at ISH, though neither change was statistically significant. These differing trends can be better understood through the qualitative findings. At IAH, participants noted partial adherence to infection control protocols, citing staffing shortages and workload pressures as barriers to consistent implementation. At ISH, participants pointed out delays in staff training, irregular monitoring, and deficiencies in feedback mechanisms, especially during the post-accreditation transition.

Collectively, these findings indicate that while accreditation may aid in standardizing infection control practices, its success in reducing CLABSI rates relies heavily on consistent implementation, adequate staffing, and ongoing supervision. The variability observed across both hospitals underscores that without continuous training, regular monitoring, and robust organizational support, progress in infection prevention may remain inconsistent and challenging to maintain over time.

Table 4.3. Pre- and Post-Accreditation CLABSI Rates at IAH and ISH

Hospital	Pre-Accreditation Mean $\pm$ SD (per 1,000 device days)	Post-Accreditation Mean $\pm$ SD (per 1,000 device days)	Change Direction	p-value	Statistical Significance
IAH	5.67 $\pm$ 3.02	4.94 $\pm$ 1.58	Decrease $\downarrow$	0.60	Not Significant
ISH	1.95 $\pm$ 1.56	5.29 $\pm$ 4.10	Increase $\uparrow$	0.165	Not Significant

Note. Values are presented as mean $\pm$ standard deviation (SD) and expressed per 1,000 central line (device) days. Paired t-tests were conducted to compare pre- and post-accreditation CLABSI rates within each hospital. Statistical significance was set at $p < 0.05$. Arrows indicate the direction of change ($\downarrow$ decrease; $\uparrow$ increase).

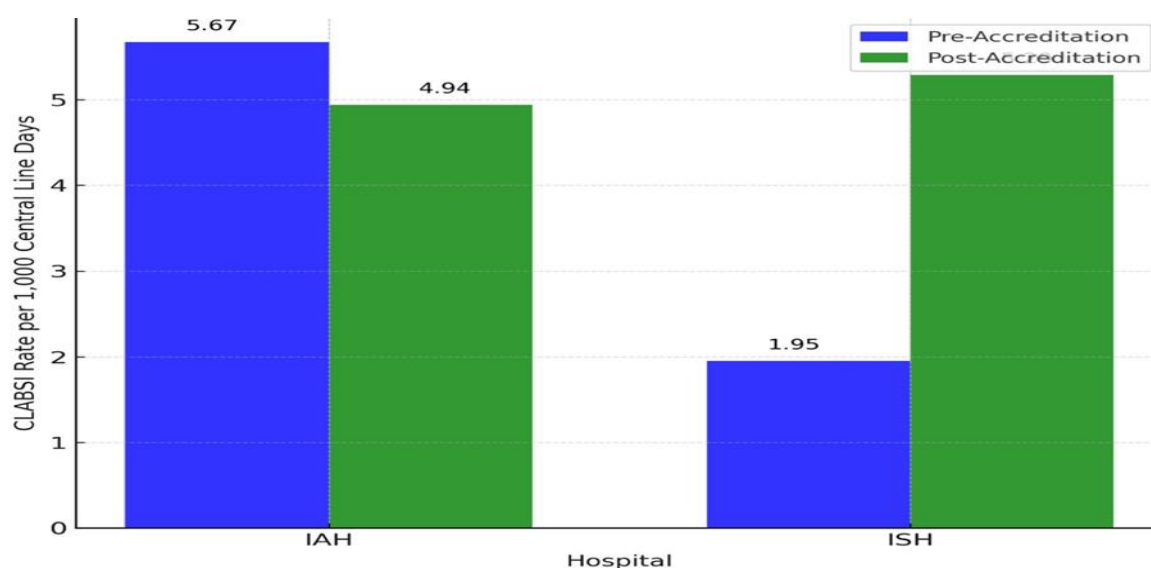


Figure 4.2. Comparison of Pre- and Post-Accreditation CLABSI Rates at IAH and ISH

Note. The figure illustrates the CLABSI rates per 1,000 central line days in IAH and ISH before and after accreditation. Lower CLABSI rates indicate improved adherence to infection prevention and patient safety practices. CLABSI = Central Line-Associated Bloodstream Infection; IAH = Istishari Arab Hospital; ISH = Ibn Sina Hospital

Table 4.4. Independent t-test Comparison of Post-Accreditation CLABSI Rates Between IAH and ISH

Hospital	Post-Accreditation Mean $\pm$ SD (per 1,000 device days)	t (df)	p-value	Statistical Significance	Interpretation
IAH	4.94 $\pm$ 1.58				
ISH	5.29 $\pm$ 4.10	0.19 (10)	0.85	Not Significant	No difference

Note Values are expressed as mean $\pm$ standard deviation (SD) of CLABSI rates per 1,000 device days. An independent samples t-test was conducted to compare post-accreditation CLABSI rates between IAH and ISH using monthly aggregated data ($n = 6$ per hospital; df

= 10). Statistical significance was set at $p < 0.05$. The non-significant result indicates that there is no statistically meaningful difference in CLABSI rates between the two hospitals following accreditation.

4.1.3 Medication Error Incident Rates

Medication errors refer to preventable mistakes occurring during any phase of medication management that have the potential to cause patient harm or inappropriate medication use (WHO, 2023). Medication error rates were determined by calculating the number of reported medication errors in relation to the total medication orders and were expressed per 1,000 orders to enable standardized comparisons.

At IAH, medication error rates showed a clear improvement following accreditation. During the pre-accreditation period, the overall medication error rate averaged 7.80 per 1,000 medication orders (SD = 1.05), with monthly values demonstrating an increasing trend in the months preceding accreditation.

Following accreditation, the overall medication error rate decreased to 6.40 per 1,000 medication orders (SD = 1.18), representing a 17.9% reduction over the six-month post-accreditation period. Monthly analysis indicated a consistent downward trend after accreditation, with reduced variability compared to the pre-accreditation phase.

A paired samples t-test was performed using six matched monthly observations to compare medication error rates before and after accreditation at IAH. The results revealed a statistically significant reduction in medication error rates after accreditation ($t(5) = 2.17$, $p = 0.04$), indicating that post-accreditation rates were significantly lower than those before accreditation. This indicates that the implementation of standardized protocols through accreditation positively impacted medication safety practices at IAH during the study period.

Medication error rates at ISH were already minimal prior to accreditation. The pre-accreditation mean rate was 0.05 per 1,000 medication orders (SD = 0.04), which further declined to 0.02 per 1,000 medication orders (SD = 0.03) following accreditation, reflecting a 60% relative reduction.

As indicated in table 4.5, paired t-test analysis showed that this reduction did not reach statistical significance ($t(5) = 1.49$, $p = 0.17$), likely due to the very low baseline error rates and limited variability, which constrained the detection of statistically meaningful change.

As illustrated in table 4.6 and figure 4.3 Comparison between the two hospitals showed that there were differences in the effects of accreditation. Although ISH showed low medication error rates in both periods, IAH showed a statistically significant reduction in medication errors after accreditation. This trend indicates that the standardization effect of accreditation could have a greater measurable effect on hospitals that have higher levels of medication errors, while hospitals that have already established a medication safety system could show smaller, non-significant changes while maintaining high levels of safety.

The qualitative results allowed for a better understanding of the processes that underlay the trends that emerged in the quantitative data, specifically with respect to medication errors. The respondents were able to maintain their belief in the fact that accreditation acted as a catalyst that improved their processes and accountability, as well as their understanding of

patient safety practices. The respondents understood that staffing, training, and implementation by management were important in maintaining these processes.

The respondents at IAH found that the accreditation process was a “turning point” that helped improve the following areas: “compliance with standardized procedures, particularly in the areas of medication and infection control.” The nurses and pharmacists found that there was a “better definition of roles, increased use of computer technology, and increased monitoring procedures” after accreditation. One respondent said:

“Medicine administration is more organized since accreditation. There are checks, electronic verification, and less room for guessing.” (Nurse, IAH)

Participants from ISH highlighted the challenges faced in relation to delayed training, human resources, and workload constraints that affected the implementation of standardized protocols following accreditation. Some of the HCPs argued that despite the implementation of standardized protocols, some challenges affected the application of the protocols. A respondent said:

“Sometimes protocols are updated, but refresher trainings don’t happen promptly, especially when staff are overloaded.” (Nurse, ISH)

The analysis of qualitative evidence shows that, despite its significance, the regulatory accreditation process fails to ensure that it will enhance patient safety results. Rather, accreditation needs to be complemented by education, staffing, leadership, and monitoring to translate standardized guidelines into clinical practice. These qualitative findings help explain the observed variability in the hospitals and re-emphasize the importance of organizational factors in influencing patient safety performance.

Table 4.5. Pre- and Post-Accreditation Medication Error Rates and Statistical Comparison at IAH and ISH

Hospital	Pre-Accreditation Mean $\pm$ SD (per 1,000 medication orders)	Post-Accreditation Mean $\pm$ SD (per 1,000 medication orders)	t (df = 5)	p-value	Statistical Significance	Change Direction
IAH	7.80 $\pm$ 1.05	6.40 $\pm$ 1.18	2.17	0.04	Significant	↓ Decrease
ISH	0.05 $\pm$ 0.04	0.02 $\pm$ 0.03	1.49	0.17	Not Significant	↓ Decrease

Note. Values are presented as mean $\pm$ standard deviation (SD) and expressed per 1,000 medication orders. Paired t-tests were conducted to compare pre- and post-accreditation medication error rates within each hospital. Statistical significance was set at $p < 0.05$. Arrows indicate the direction of change (↓ decrease).

Table 4.6. Independent t-test Comparison of Post-Accreditation Medication Error Rates Between IAH and ISH

Hospital	Post-Accreditation Mean $\pm$ SD (per 1,000 medication orders)	t (df)	p-value	Statistical Significance	Interpretation
IAH	6.40 $\pm$ 1.18				
ISH	0.02 $\pm$ 0.03	13.25 (10)	<0.001	Significant	Much higher in IAH

Note Values are expressed as mean $\pm$ standard deviation (SD) of medication error rates per 1,000 medication orders. An independent samples t-test was conducted to compare post-accreditation rates between IAH and ISH using monthly aggregated data (n = 6 per hospital; df = 10). Statistical significance was set at $p < 0.05$. The statistically significant result indicates a substantial difference in medication error rates between the two hospitals following accreditation.

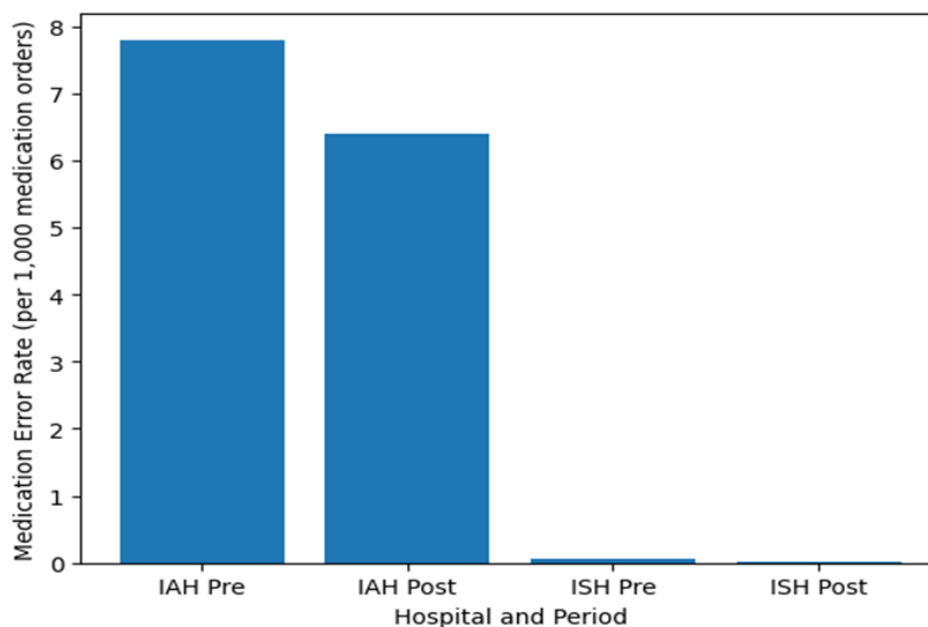


Figure 4.3. Comparison of Pre- and Post-Accreditation Medication Error Rates at IAH and ISH

Note. The figure presents medication error rates in IAH and ISH before and after accreditation. Lower medication error rates reflect improved medication safety practices and adherence to standardized clinical procedures. IAH = Istishari Arab Hospital; ISH = Ibn Sina Hospital.

4.1.4 Patient Falls

Patient falls are considered to be any unplanned movement of a patient to the floor, ground, or lower level that occurs in a healthcare facility, regardless of whether the patient is injured. The rate of falls was determined by the number of reported falls divided by the

total patient days and multiplied by 1,000, as recommended by the Agency for Healthcare Research and Quality (AHRQ, 2024).

At IAH, the rate of patient falls rose after accreditation. The overall rate of patient falls before accreditation was 4.2 per 1,000 patient days (SD = 2.61), compared with 6.9 per 1,000 patient days (SD = 4.89) after accreditation, a rise of 64.3%. A paired t-test revealed that this was not statistically significant, $t(5) = -1.19$, $p = .26$. Monthly trend analysis revealed that there was more variation in the rate of patient falls after accreditation compared with the pre-accreditation period as mentioned in table 4.7

ISH demonstrated a significant reduction in patient fall rates following accreditation. The pre-accreditation mean fall rate was 0.82 per 1,000 patient days (SD = 0.29), which decreased to 0.34 per 1,000 patient days (SD = 0.22) post-accreditation, corresponding to a 58.5% reduction. This decrease was statistically significant ($t(5) = 3.21$, $p = .004$). Monthly data showed consistently low fall rates throughout the post-accreditation period, with several months reporting zero falls

As indicated in table 4.8 and figure 4.5, an independent t-test was performed to determine the difference in patient fall rates post-accreditation between IAH and ISH. The results of the analysis revealed a statistically significant difference in patient fall rates between the two hospitals, with IAH having a higher rate of patient falls post-accreditation compared to ISH ($p < .05$).

The two hospitals showed different trends in their post-accreditation fall rates. While IAH showed a non-significant increase in fall rates, ISH showed a statistically significant decrease. This indicates the differences in the implementation of fall prevention practices post-accreditation. An independent t-test was conducted to compare the fall rates of IAH and ISH post-accreditation. The result showed a statistically significant difference, $t(10) = 3.42$, $p < .01$, with higher fall rates at IAH.

The qualitative findings provided deeper insight into the variations identified between the two hospitals regarding patient falls. Leadership engagement, appropriate supervision, and accountability mechanisms were important factors supporting the maintenance of fall prevention strategies.

At ISH, a respondent reported a culture of compliance with fall prevention strategies after accreditation. A nother respondent reported:

“After accreditation, fall risk assessment was included in every shift handover, and supervisors checked continuously.” (Respondent, ISH)

Also, a nothe reported that monitoring strategies ensured staff compliance with fall prevention:

“We have checklists in place, and management reviews fall incidents regularly, so everyone is more careful.” (Respondent, ISH)

IAH representatives pointed out the difficulties in monitoring and workload, which could be a factor in the rise in fall rates following accreditation. A staff nurse said:

“Fall guidelines are in place, but when the unit is full, the guidelines are not always strictly adhered to.” (staff nurse, IAH)

Another participant highlighted the differences between units:

“Some units are very strict with fall precautions, but others are less consistent, especially during night shifts.” (Physician, IAH)

The results of the research show that the accreditation process creates structural frameworks for the prevention of falls, but it requires continuous support in management, staffing, and following the guidelines. Those hospitals that integrated fall prevention strategies into their operations and accountability systems demonstrated a higher level of success in patient safety outcomes.

The accreditation process initiates patient safety development yet its successful implementation requires persistent leadership presence, staff participation, and ongoing responsibility assessment. Ongoing improvement in fall prevention requires ongoing education and monitoring beyond the accreditation milestone.

Table 4.7. Pre- and Post-Accreditation Patient Fall Rates and Statistical Comparison at IAH and ISH

Hospital	Pre-Accreditation Mean $\pm$ SD (per 1,000 patient days)	Post-Accreditation Mean $\pm$ SD (per 1,000 patient days)	Change Direction (%)	t (df = 5)	p-value	Statistical Significance
IAH	4.2 $\pm$ 2.61	6.9 $\pm$ 4.89	↑ Increase (64.3%)	-1.19	0.26	Not Significant
ISH	0.82 $\pm$ 0.29	0.34 $\pm$ 0.22	↓ Decrease (58.5%)	3.21	0.004	Significant

Note. Values are presented as mean $\pm$ standard deviation (SD) and expressed per 1,000 patient days. Paired t-tests were conducted to compare pre- and post-accreditation patient fall rates within each hospital. Statistical significance was set at $p < 0.05$. Arrows indicate the direction of change (↑ increase; ↓ decrease).

Table 4.8. Independent t-test Comparison of Post-Accreditation Patient Fall Rates Between IAH and ISH

Hospital	Post-Accreditation Mean $\pm$ SD (per 1,000 patient days)	t (df)	p-value	Statistical Significance	Interpretation
IAH	6.9 $\pm$ 4.89				
ISH	0.34 $\pm$ 0.22	3.28 (10)	0.008	Significant	Higher in IAH

Note Values are expressed as mean $\pm$ standard deviation (SD) of patient fall rates per 1,000 patient days. An independent samples t-test was conducted to compare post-accreditation fall rates between IAH and ISH using monthly aggregated data ($n = 6$ per hospital; $df = 10$). Statistical significance was set at $p < 0.05$. The statistically significant result indicates that patient fall rates were significantly higher in IAH compared to ISH following accreditation.

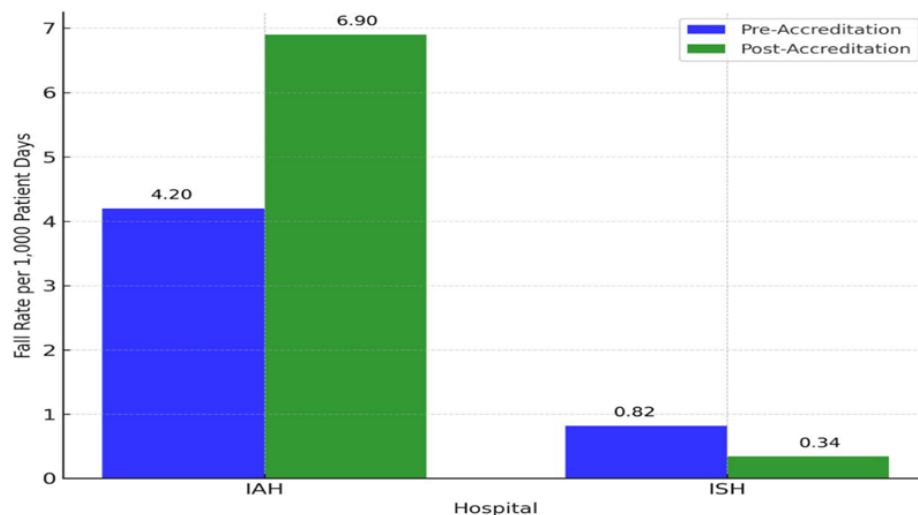


Figure 4.5: Comparison of patient fall rates between IAH and ISH before and after accreditation.

4.1.5 Readmissions Rates

Hospital readmission rate is a widely used indicator of continuity and quality of care, reflecting the effectiveness of discharge planning, patient education, and post-discharge follow-up. Higher readmission rates are often associated with gaps in care coordination, inadequate discharge instructions, or poor patient engagement after hospital discharge (AHRQ, 2023).

IAH demonstrated a slight reduction in readmission rates following accreditation. The mean pre-accreditation readmission rate was 0.67 per 1,000 discharges (SD = 0.44), compared with 0.62 per 1,000 discharges (SD = 0.48) in the post-accreditation period, representing a modest (43.3%) decrease.

As indicated in table 4.9, paired t-test analysis indicated in table 4.6 that this reduction was not statistically significant, $t(5) = 0.20$, $p = .85$. The trends for the pre-accreditation months revealed variability in the rates, with a peak of about 1.6 per 1,000 discharges, while the post-accreditation rates seemed more consistent, with a few months registering low or zero readmissions, especially in February 2022. Although the difference is not statistically significant, the fact that there is less variability indicates that the discharge process has become more consistent after accreditation.

ISH had an increase in readmission rates following accreditation. The average readmission rate increased from 0.61 per 1,000 discharges (SD = 0.39) in the pre-accreditation phase to 0.93 per 1,000 discharges (SD = 0.58) in the post-accreditation phase, which is a 9.1% rise.

The results of the paired t-test showed that this rise was not statistically significant, $t(5) = -0.71$, $p = 0.49$. The monthly data showed significant fluctuations in the post-accreditation period, with a peak of over 1.5 per 1,000 discharges, showing a lack of standardization in discharge and follow-up procedures during the initial stages of implementation.

Table 4.10 and figure 4.5 showed that independent t-test between the post-accreditation readmission rates of IAH and ISH showed that there was no statistically significant difference between the two hospitals ($p=0.35$). The results indicate that the differences in

readmission rates were more likely due to operational and transitional factors, and not structural differences between the hospitals.

However, the slight decrease and relative stability of IAH may indicate improvements in discharge coordination and continuity of care, while the increased variability of ISH may indicate challenges in adapting to workflow changes and integrating protocols in the early stages of post-accreditation.

The qualitative results supported and added context to the quantitative findings regarding the rates of hospital readmissions. Participants from both hospitals reflected that accreditation led to more organized discharge procedures, though its success depended on staff readiness, patient participation, and continuity of care arrangements.

At Istishari Arab Hospital, participants perceived that staff training, discharge planning, and coordination of post-discharge follow-up may have contributed to the reduction and stabilization of readmission rates. As one participant noted:

“The care coordinators were trained to ensure continuity of care, which helped reduce readmissions.” (Participant, IAH)

On the other hand, the participants from ISH also reported challenges that affected the efficiency of standardized discharge processes, particularly patient-related factors and organizational constraints. A staff nurse from ISH said:

“After accreditation, we emphasized discharge teaching more, but some patients do not comply with the teaching.” (Participant, ISH)

Further, a nother respondent at ISH identified the lack of consistency in follow-up after discharge, saying:

“We have improved documentation, but follow-up after discharge remains inconsistent, especially for high-risk patients.” (Participant, ISH)

In general, these results from the qualitative study indicate that while accreditation did make it easier to implement standardized discharge structures, there was a need for more effective patient education, follow-up, and coordination in order to decrease readmission rates. These results suggest that accreditation alone is not an effective strategy to improve readmission rates.

Taken together, these findings indicate that although accreditation per se did not lead to statistically significant reductions, IAH had early practical benefits, probably due to improved staff coordination, whereas ISH’s variability emphasizes the importance of improved patient follow-up mechanisms and workflow stabilization after accreditation.

Table 4.9. Pre- and Post-Accreditation Readmission Rates and Statistical Comparison at IAH and ISH

Hospital	Pre-Accreditation Mean $\pm$ SD (per 1,000 discharges)	Post-Accreditation Mean $\pm$ SD (per 1,000 discharges)	Change Direction (%)	t (df = 5)	p-value	Statistical Significance
IAH	0.67 $\pm$ 0.44	0.62 $\pm$ 0.48	↓ Decrease	0.20	0.85	Not Significant
ISH	0.61 $\pm$ 0.39	0.93 $\pm$ 0.58	↑ Increase	-0.71	0.49	Not Significant

Note. Values are presented as mean $\pm$ standard deviation (SD) and expressed per 1,000 discharges. Paired t-tests were conducted to compare pre- and post-accreditation

readmission rates within each hospital. Statistical significance was set at $p < 0.05$. Arrows indicate the direction of change (↓ decrease; ↑ increase).

Table 4.10. Independent t-test Comparison of Post-Accreditation Readmission Rates Between IAH and ISH

Hospital	Post-Accreditation Mean $\pm$ SD (per 1,000 discharges)	t (df)	p-value	Statistical Significance	Interpretation
IAH	0.62 $\pm$ 0.48				
ISH	0.93 $\pm$ 0.58	-1.01 (10)	0.34	Not Significant	No difference

Note Values are expressed as mean $\pm$ standard deviation (SD) of readmission rates per 1,000 discharges. An independent samples t-test was conducted to compare post-accreditation readmission rates between IAH and ISH using monthly aggregated data ($n = 6$ per hospital; $df = 10$). Statistical significance was set at $p < 0.05$. The non-significant result indicates that there is no statistically meaningful difference in readmission rates between the two hospitals following accreditation.

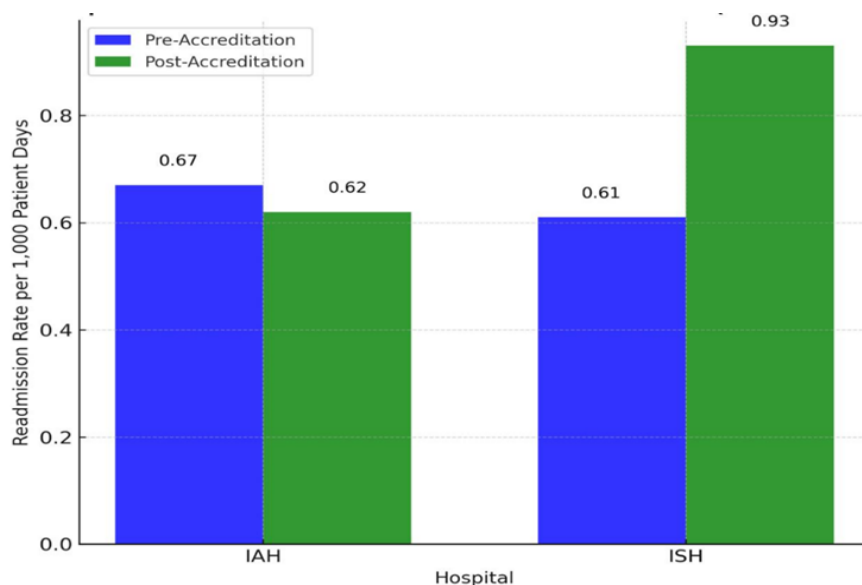


Figure 4.5. Comparison of Pre- and Post-Accreditation Readmission Rates at IAH and ISH

Note. The figure illustrates the readmission rates in IAH and ISH before and after accreditation. Lower readmission rates may indicate improvements in quality of care, discharge planning, and continuity of patient management.

4.1.6 Average Length of Stay (ALOS)

Average Length of Stay (ALOS) is a common hospital performance metric that measures the efficiency of inpatient care processes. ALOS is the average number of days that

patients stay in the hospital during an episode of care and is often used to measure the efficiency of inpatient care processes. Lower ALOS values are often associated with more efficient delivery of care processes, except when they are associated with higher rates of readmissions or poor outcomes (WHO, 2024).

As shown in table 4.11, a paired t-test revealed that ALOS in IAH remained stable after accreditation with a slight reduction from 3.21 days (SD = 0.19) to 3.13 days (SD = 0.13) ($p = .42$). The slight change with small variability indicates that the impact of accreditation on inpatient LOS at IAH was minimal in the short term. This could be due to the efficiency of the pre-existing system before accreditation, which had already optimized patient management and discharge processes.

Large and statistically significant decrease in ALOS at ISH, from 8.60 days (SD = 0.88) before accreditation to 4.69 days (SD = 2.55) post-accreditation ($p = .005$), a reduction of 45.5%. However, the higher variability observed in the post-accreditation period indicates fluctuations in length of stay between cases. This may reflect differences in case complexity, emergency admissions, and changing service demands, particularly given the location of Jenin and the hospital's role in receiving a considerable number of trauma and politically related injury cases during periods of instability. Such contextual pressures may influence hospitalization patterns despite overall improvements in average length of stay.

Comparison of the independent t-test between the hospitals (table 4.12 and figure 4.6) revealed divergent starting points and rates of improvement. ISH showed a larger reduction because of its extended initial ALOS, while the already small hospital stays of IAH restricted further reductions.

The qualitative results allowed for a rich understanding of the context in which the observed trends in ALOS occurred. The participants from both hospitals stressed that the impact of changes in ALOS was not solely the result of accreditation, but rather the level of leadership involvement and consistency in discharge planning practices.

At IAH, the participants considered accreditation as a reinforcing mechanism that improved existing systems rather than bringing about a significant change in the operational process. Some of the participants indicated that the discharge planning processes were already quite efficient before the accreditation process, and the accreditation process only improved the documentation and accountability. A respondent explained:

“Early discharge planning was already part of our practice, but accreditation made it more systematic and closely monitored.” (Participant, IAH)

Similarly, a respondent noted:

“Accreditation helped us standardize follow-up and ensure compliance, but it did not significantly change the LOS because our system was already efficient.” (Participant, IAH)

These stories correlate with the quantitative results, which indicate only a marginal, non-significant reduction in ALOS at IAH, suggesting that accreditation was more of a quality assurance and standardization process rather than a means of improving hospital stay duration.

ISH participants uniformly described accreditation as a stimulus for major process improvements that had a direct effect on patient flow and discharge processes. A participant illustrated the effect of multidisciplinary teamwork:

“Before accreditation, discharge decisions were often delayed. Following accreditation, multidisciplinary rounds were also institutionalized, which contributed to a decrease in unnecessary hospital days.” (physician, ISH)

A nother respondent also highlighted the changes in coordination and communication:

“Following accreditation, there was a great improvement in the coordination of nursing, physicians, and social services, making it possible for earlier and safer discharges.” (Respondent, ISH)

Although there were improvements, some of the participants recognized some of the difficulties that could have contributed to the variability in ALOS following accreditation in ISH. A ward respondent explained:

“Not all units implemented the new discharge process at the same rate. Some departments were quicker than others.” (Respondent, ISH)

Taken together, these qualitative findings suggest that the greatest reductions in ALOS occurred in those facilities where accreditation was coupled with a strong leadership commitment, interdisciplinary teamwork, and consistent enforcement of standardized discharge planning policies. On the other hand, in facilities with already efficient processes, accreditation mainly served to reinforce current practices and did not result in any significant numerical improvements.

Overall, the qualitative findings underscore that the impact of accreditation on ALOS is mediated not only by organizational readiness, staff engagement, and the extent to which standardized processes are embedded into routine clinical practice, but also by contextual and external factors. In the Palestinian setting, operational pressures, fluctuations in service demand, emergency admissions, and political conditions may also play an important role in determining length of stay, rather than accreditation status alone.

These findings indicate that while accreditation was associated with modest efficiency gains at Istishari Arab Hospital, it was linked to a statistically significant improvement at Ibn Sina Hospital, supported by enhanced coordination, stronger leadership engagement, and the institutionalization of structured discharge planning practices.

Table 4.11. Pre- and Post-Accreditation Average Length of Stay (ALOS) and Statistical Comparison at IAH and ISH

Hospital	Pre-Accreditation Mean $\pm$ SD (days)	Post-Accreditation Mean $\pm$ SD (days)	Change Direction (%)	p-value	Statistical Significance
IAH	3.21 $\pm$ 0.19	3.13 $\pm$ 0.13	↓ Decrease	0.42	Not Significant
ISH	8.60 $\pm$ 0.88	4.69 $\pm$ 2.55	↓ Decrease (45.5%)	0.005	Significant

Note. Values are presented as mean $\pm$ standard deviation (SD) in days. Paired t-tests were conducted to compare pre- and post-accreditation average length of stay (ALOS) within each hospital. Statistical significance was set at $p < 0.05$. Arrows indicate the direction of change ($\downarrow$ decrease)

Table 4.12. Independent t-test Comparison of Post-Accreditation Average Length of Stay (ALOS) Between IAH and ISH

Hospital	Post-Accreditation Mean $\pm$ SD (days)	t (df)	p-value	Statistical Significance	Interpretation
IAH	3.13 $\pm$ 0.13				
ISH	4.69 $\pm$ 2.55	-1.50 (10)	0.16	Not Significant	No difference

Note Values are expressed as mean $\pm$ standard deviation (SD) of average length of stay (ALOS) in days. An independent samples t-test was conducted to compare post-accreditation ALOS between IAH and ISH using monthly aggregated data ($n = 6$ per hospital; $df = 10$). Statistical significance was set at $p < 0.05$. The non-significant result indicates that there is no statistically meaningful difference in ALOS between the two hospitals following accreditation.

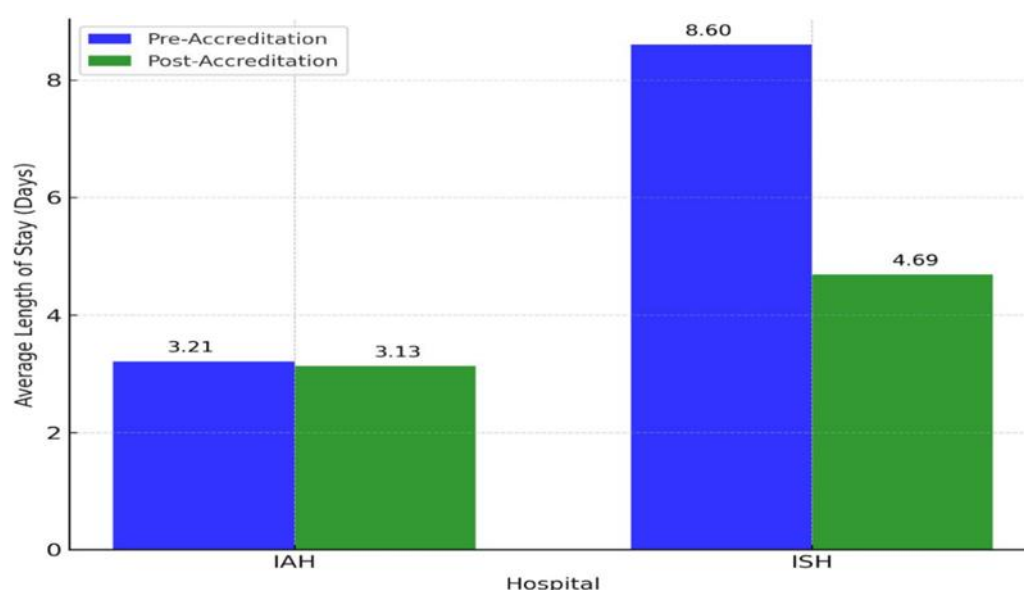


Figure 4.6. Comparison of Pre- and Post-Accreditation Average Length of Stay (ALOS) at IAH and ISH

Note. The figure presents the ALOS for patients in IAH and ISH before and after accreditation. Reduced ALOS may reflect improvements in clinical efficiency, patient management, and hospital operational performance.

4.1.7 Patient Satisfaction

Patient satisfaction was assessed using the mean scores of standardized patient satisfaction survey domains, routinely administered by the quality departments in both hospitals. The

survey covered six core domains: Reception, Nursing, Medical Care, Diagnostics & Pharmacy, Safety & Support Services, and Catering, consistent with internationally adopted hospital satisfaction frameworks (Press Ganey Associates, 2023).

All scores were analyzed as mean domain scores, allowing comparison of pre- and post-accreditation performance within and between hospitals.

Patient satisfaction scores demonstrated modest improvements in both hospitals following accreditation. However, the starting point for satisfaction levels was already high, which restricted the degree of possible post-accreditation change that could be measured. As showed in table 4.13, the average patient satisfaction score in IAH slightly increased from 85.6 to 86.7, which was a +1.1-point improvement (+1.28%). Analysis using the paired t-test revealed that this change was not statistically significant ($p > .05$).

Domain-level analysis revealed that the degree of improvement in different service areas was not uniform. The greatest improvements were found in the Catering domain (+4.6 points) and the Safety and Support Services domain (+3.9 points), followed by smaller improvements in the Reception domain (+1.7 points), Medical Care domain (+1.1 points), and Diagnostics and Pharmacy domain (+0.9 points). Improvement in the Nursing and medical domains was small, probably due to the high level of performance prior to accreditation.

These results indicate that the work related to accreditation at IAH was more visible in the non-clinical and support service areas, improving patient comfort, organization, and hospitality, rather than in the clinical interaction domains.

At ISH, the total mean satisfaction score rose from 85.6 to 87.8, which is a +2.2-point improvement (+2.57%). Although this is a numerically larger improvement than in IAH, it also failed to reach statistical significance ($p > .05$).

In contrast to IAH, the improvements in ISH were more balanced across all areas, although small in scale. The greatest improvements were seen in Catering (+3.4) and Reception (+3.0), followed by improvements in Medical Care (+1.9), Safety & Support (+1.7), and Diagnostics & Pharmacy (+1.1). The nursing services had a slight improvement of +1.1, which sustained the high level of performance of the hospital in this area.

In the context of already high baseline satisfaction levels, these results indicate that the effect of accreditation at ISH was to consolidate existing service standards rather than to effect major shifts in patient experience.

An independent comparison of satisfaction scores following accreditation revealed that both hospitals had improved, with a greater mean increase in ISH (+2.2 vs. +1.1), although there was no statistically significant difference between the hospitals ($p > .05$). (Table 4.14, table 4.15 and figure 4.7)

These findings suggest that the observed changes were incremental and operational, rather than structural, and related to ceiling effects due to high baseline satisfaction levels, rather than a lack of impact from accreditation.

The qualitative findings offered rich information regarding patients' and healthcare providers' experiences with satisfaction levels after the introduction of standardized healthcare services and accreditation processes. These findings were important in

understanding the modest changes that occurred in the quantitative data, as they offered insight into the experiences with accreditation, rather than just the numerical results.

Participants from both hospitals reported a noticeable improvement in organization, coordination, and clarity of care processes following accreditation. This was especially the case with admission processes, service flow, and interdepartmental coordination.

At IAH, some healthcare professionals observed that patients have slowly recognized the changes in the organization of the hospital and the provision of healthcare services. One physician stated:

“Patients have noticed the difference; they frequently refer to better organization and clearer procedures.” (Participant, IAH)

One nurse supervisor also observed that confusion and waiting times were reduced due to the accreditation process, which led to better organization of the hospital. The nurse supervisor stated:

“Everything became more organized after accreditation. Patients know where to go and what to do.” (Participant, IAH)

These findings are consistent with the positive changes seen in the categories of Reception, Catering, and Safety & Support, suggesting that patients' satisfaction was influenced by system-level changes rather than changes in direct care alone.

Communication was an emerging theme that was highlighted in the qualitative findings, and this was especially apparent at ISH. Healthcare professionals believed that accreditation had acted as a catalyst for improving communication between staff and patients, as well as communication regarding procedures and discharge information.

A physician at ISH stated:

“Accreditation motivated us to do better in communicating with patients and explaining their care.” (Participant, ISH)

This view was also reflected by the nursing staff, who highlighted the importance of standardized communication tools:

“We have a process in place to explain patients' care to them, particularly before discharge.” (Participant, ISH)

The patients benefited from increased knowledge and peace of mind as a result of the information provided to them, despite the fact that their medical outcomes did not change. The hospital's enhanced employee communication methods ensured a better working environment, which contributed to higher patient satisfaction, although the current levels of satisfaction were already set at high standards.

The participants noted that the effect of the results of the accreditation procedure on the domains of clinical interaction was less compared to organizational and communication development, which showed positive development. The results of the accreditation procedure showed their highest effect on the nursing care areas since these areas had already attained high performance standards before the accreditation procedure.

At IAH, a senior nurse stated:

“Patients' nursing care was already good before accreditation, so patients may not feel a big difference.” (Participant, IAH)

This is supported by the limited amount of change that occurred in the Nursing domain, which suggests a ceiling effect, where high levels of initial satisfaction prevent further improvement.

Both patients and providers reported that patients' expectations rose after accreditation, which may have influenced the degree of improvement in satisfaction. Some participants suggested that after accreditation, patients' expectations were for high performance in all areas.

A quality officer at ISH stated:

"When patients hear the hospital is accredited, their expectations become higher."
(Participant, ISH)

This finding also explains why satisfaction gain was not significant, despite the improvement in the operational performance.

Table 4.13. Pre- and Post-Accreditation Patient Satisfaction Scores and Comparison at IAH and ISH

Hospital	Pre-Accreditation Mean Score	Post-Accreditation Mean Score	Change (Points, %)	p-value	Statistical Significance
IAH	85.6	86.7	+1.1 (+1.28%)	> 0.05	Not Significant
ISH	85.6	87.8	+2.2 (+2.57%)	> 0.05	Not Significant

Note. Values represent mean patient satisfaction scores derived from standardized survey domains. Paired t-tests were conducted to compare pre- and post-accreditation scores within each hospital. Statistical significance was set at $p < 0.05$.

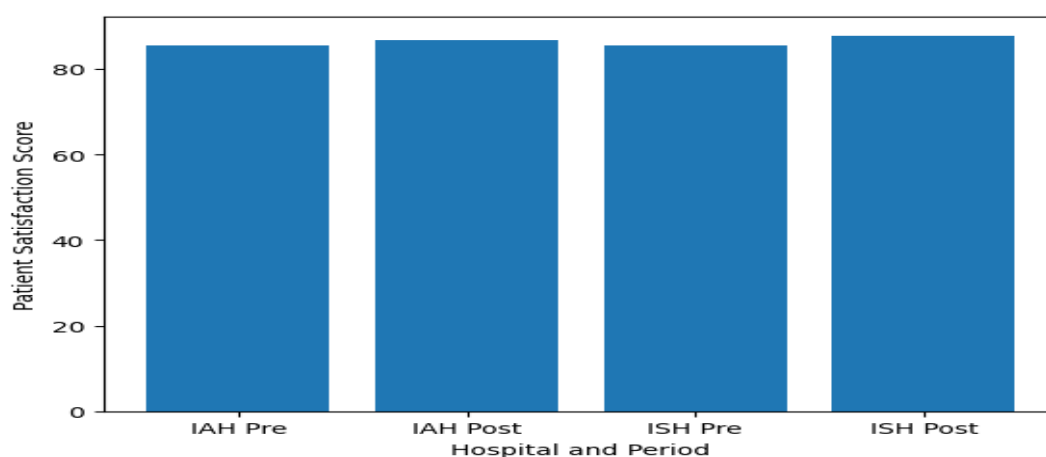


Figure 4.7. Comparison of Pre- and Post-Accreditation Patient Satisfaction Scores at IAH and ISH

Note. The figure illustrates patient satisfaction scores in IAH and ISH before and after accreditation. Higher scores indicate improved patient perceptions of healthcare quality, communication, safety, and overall hospital experience. IAH = Istishari Arab Hospital; ISH = Ibn Sina Hospital.

Table 4.14. Comparison of Pre- and Post-Accreditation Patient Satisfaction Domain Scores at IAH and ISH

Domain	IAH Pre	IAH Post	Δ IAH	p-value (IAH)	IAH Interpretation	ISH Pre	ISH Post	Δ ISH	p-value (ISH)	ISH Interpretation
Reception	85.4	87.1	+1.7	.17	Not Significant	84.5	87.5	+3.0	.07	Near Significant
Nursing	88.0	88.5	+0.5	.39	Not Significant	87.7	88.8	+1.1	.21	Not Significant
Medical Care	88.4	89.5	+1.1	.28	Not Significant	87.7	89.6	+1.9	.11	Trend
Diagnostics & Pharmacy	83.2	84.1	+0.9	.32	Not Significant	83.7	84.8	+1.1	.29	Not Significant
Safety & Support	82.5	86.4	+3.9	.12	Trend	84.4	86.1	+1.7	.20	Not Significant
Catering	81.1	85.7	+4.6	.09	Largest Improvement (NS)	82.3	85.7	+3.4	.08	Largest Improvement (NS)
Overall Satisfaction	85.6	86.7	+1.1	.18	Not Significant	85.6	87.8	+2.2	.06	Marginal

Table 4.15. Independent t-test Comparison of Post-Accreditation Patient Satisfaction Scores Between IAH and ISH

Hospital	Post-Accreditation Mean Score	t (df)	p-value	Statistical Significance	Interpretation
IAH	86.7				
ISH	87.8	-1.30 (10)	0.22	Not Significant	No difference

Note Values represent mean patient satisfaction scores based on standardized hospital survey instruments. An independent samples t-test was conducted to compare post-accreditation satisfaction scores between IAH and ISH using monthly aggregated data ($n = 6$ per hospital; $df = 10$). Statistical significance was set at $p < 0.05$. The non-significant result indicates that there is no statistically meaningful difference in patient satisfaction between the two hospitals following accreditation.

The results of the paired t-test showed some positive changes in all the domains of patient satisfaction at both hospitals after accreditation. At IAH, the greatest improvements were found in the domains of Catering and Safety & Support; however, none of the changes were statistically significant ($p > 0.05$). At ISH, improvements were found in all domains, with the greatest improvements found in the domains of Reception and Catering. Though the total satisfaction score at ISH was close to reaching statistical significance ($p = 0.06$), the change did not meet the threshold. Comparison of the change in satisfaction scores

between the hospitals using the independent t-test did not show a statistically significant difference, indicating that the gains made were incremental, not transformational.

4.1.8. Conclusion

The qualitative findings indicate that the effect of accreditation on patient satisfaction is more related to system-level changes, such as organizational, communication, and consistency changes, and not related to radical changes in the provider's behavior.

A hospital administrator summarized this view:

“Accreditation changed the system more than individuals. Patients feel the difference in how the hospital works as a whole.” (Participant,IAH)

Cumulatively, the findings from the qualitative study offer additional support to the results of the quantitative analysis in indicating that accreditation has had a positive, albeit small, effect on patient satisfaction in relation to improvements in organizational, communication, and support services. The absence of statistical significance in the quantitative findings is a reflection of high baseline satisfaction levels and increasing patient expectations, rather than a lack of effectiveness of accreditation.

Qualitative findings support that accreditation led to a more patient-centered environment, improved service coordination, and better communication practices, which could result in more significant satisfaction improvements over time.

The results suggest that accreditation was linked to small but important improvements in patient satisfaction, especially in terms of service organization, hospitality, and support. The lack of statistically significant results can be attributed to high levels of satisfaction before accreditation.

IAH's changes seemed more localized and service-focused, while ISH showed more system-wide support for patient-centered care. Qualitative findings supported that accreditation encouraged more attention to improvements at the organizational level and improved communication, which aided incremental change in patient experience.

4.1.8 Staff Perceptions of Organizational Safety Culture (IAH vs. ISH)

Perceptions of staff members regarding the organizational safety culture were measured by a standardized safety culture survey, which was adapted from the AHRQ Hospital Survey on Patient Safety Culture (HSOPSC, 2023).

The tool measures staff perceptions in a variety of domains, such as communication openness, leadership support, teamwork, incident reporting, non-punitive response to error, and overall patient safety climate.

The scores for each domain are mean composite scores (0-100 scale) calculated from staff responses, with higher scores reflecting more positive perceptions of safety culture. Composite domain scores and profession-specific averages were calculated separately for pre- and post-accreditation time periods in both hospitals.

As presented in Table 4.16, the post-accreditation data at IAH showed overall improvements in most domains of safety culture, reflecting a positive change in staff perceptions following the accreditation process.

The largest improvement occurred in the Communication category, which increased by 13.0 points, suggesting improvements in information sharing, cooperation between departments, and communication patterns. Large improvements were also seen in Physicians' perceptions (11.9 points), Nature of the department (9.2 points), and Allied Health Professionals (9.0 points), suggesting improvements in interdisciplinary integration and understanding of roles after accreditation.

Further improvement was seen in Direct Manager Support (+7.7) and Nursing perceptions (+7.4), reflecting greater commitment and empowerment of nursing staff.

The area of Incident Reporting has been seen to have a change of -10.1 points, which is the only negative change that has been noted at IAH. This is most likely due to an awareness of the reporting process or transition uncertainty during the early stages following accreditation. The domain of Assessment of Patient Safety has demonstrated a stable trend, suggesting that while communication and leadership have improved, staff perceptions of safety outcomes may take longer to change.

As illustrated in figure 4.8 and tables 4.17 and table 4.18. The scores of Physicians increased from 56-62 to 68-74, and the scores of Nurses increased from 79-88 to 90-92. Allied Health Professionals also showed continuous improvement (analysis based on profession also supported these findings). However, despite these improvements, physicians showed lower scores on safety culture compared to other professionals.

At ISH, the outcome of the post-accreditation assessment revealed a balanced level of improvement in most domains.

The largest improvement was identified in the Operations domain, which showed an improvement of 32.0 points, indicating significant improvements in the organization of workflow, logistics, and operations. Significant improvements were also identified in the Assessment of Patient Safety domain (7.2 points), Nature of Department (4.6 points), and Physicians' perceptions (4.3 points).

Moderate gains were made in Communication, Direct Manager Support, Allied Health Professionals, and Hospital Working Environment, with gains between +2.0 and +4.0 points, indicating a positive trend in leadership engagement and interprofessional collaboration.

Unlike IAH, the trend for Incident Reporting at ISH remained constant (change of -0.1), with a starting point that was already high (around 95), indicating a mature and established safety culture for reporting. The category of Nursing saw a slight decrease (-2.1 points), which could be attributed to the challenges faced in workload during the post-accreditation period.

Profession-based results showed that the most improvements occurred in the Operations staff and Physicians, whereas the Allied Health Professionals continued to achieve high scores. The scores of the Nurses slightly decreased but remained in the acceptable safety culture range.

IAH demonstrated more significant improvements in interpersonal issues, such as communication and integration of departments, whereas ISH demonstrated more significant improvements in structural issues, such as efficiency of workflow and system coordination.

The composite mean scores increased in both institutions, which shows a general improvement in the perceptions of the safety culture among the staff members after the accreditation process.

The qualitative data allowed for the examination of the themes in more depth, which added to the improvements identified among the staff perceptions of the organizational safety culture in both hospitals. The themes identified from the analysis of the interview transcripts included leadership involvement, communication styles, reporting of incidents, teamwork, and workload pressures, which were distinct in IAH and ISH.

The visibility of the leadership was mentioned by the participants from both hospitals as a result of the accreditation process. At IAH, some of the participants mentioned that there was a greater visibility of the managers in the institution, particularly during the follow-up activities that were related to the accreditation process. One of the quality officers mentioned:

“Leaders became more visible in the units and began to discuss safety issues openly with staff.” (Participant, IAH)

Similarly, a nurse supervisor reported that the leadership rounds and discussions about the feedback received had helped improve the expectations and accountability:

“After accreditation, managers started asking about safety indicators regularly, not only during audits.” (Participant, IAH)

In ISH, there was a perception that leadership engagement had become more organized and system-based. There was a perception of improvement in safety meetings and reporting systems, making it easier to implement safety projects:

“The new safety culture meetings raised awareness about risk prevention and made everyone feel responsible.” (Participant, ISH)

The above findings are in line with the positive changes seen in leadership areas and overall safety culture scores in both hospitals.

The themes of communication and teamwork were apparent in both environments. The staff at IAH often reported that there had been an improvement in teamwork as a result of the standardized communication tools that had been introduced as a result of the accreditation process. A doctor said:

“Communication between departments has improved; now we talk more about risks rather than pointing fingers at each other.” (Participant, IAH)

The nurses also felt that there had been an improvement in communication with the doctors and other allied health staff, making it easier to make safe decisions:

“We became more comfortable speaking up about patient safety issues.” (Participant, IAH)

At ISH, the participants felt that the changes in communication were more gradual and widespread. They also felt that there was better coordination between the clinical and operational staff, especially in high-risk areas:

“There is more coordination now between nursing, physicians, and operations when patient safety issues come up.” (Participant, ISH)

These stories help to validate the quantitative data that indicates improvements in communication-related areas and inter-professional working.

Incident reporting was one of the main themes that came out, particularly in relation to the discrepancies in the quantitative data for the two hospitals. In the case of IAH, some

members of staff were unclear about the reporting of incidents during the early post-accreditation period:

“We were encouraged to report, but some staff were still afraid of consequences.”
(Participant, IAH)

This impression may also explain the trend of a decrease in scores for incident reporting despite improvements in other dimensions.

The participants of ISH reported a more mature and non-punitive reporting culture that remained stable after accreditation:

“Reporting incidents here is normal practice; it was already part of our routine.”
(Participant, ISH)

This qualitative finding is consistent with the stable scores of incident reporting found quantitatively at ISH and indicates a higher level of maturity of safety reporting systems.

Workload pressure was a recurring theme, especially in the views of nurses and doctors, as a factor that influences perceptions of safety culture. Nurses in IAH reported an increase in paperwork as a consequence of accreditation:

“Accreditation improved safety, but paperwork increased, especially for nurses.”
(Participant, IAH)

Nurses in ISH also reported fatigue and workload pressure, which may explain the slight decrease found in the nursing dimension:

“After accreditation, expectations increased, but staffing levels stayed the same.”
(Participant, ISH)

Physicians in both hospitals acknowledged the safety improvement but stressed the importance of better integration of safety and accreditation standards:

“Safety improved, but sometimes accreditation feels more administrative than clinical.”
(Participant, IAH)

Generally, the results of the qualitative study were confirmed by the results of the quantitative study, which revealed that accreditation had a positive impact on the organizational safety culture. There were some discrepancies in the results between the two hospitals, which were context-dependent. IAH had better changes in interpersonal/communication dimensions, while ISH had better changes in system dimensions. The dimensions that had persistent challenges are workload, confidence in incident reporting, and professional role demands, which suggest the need for continuous support and reinforcement after the initial implementation of accreditation.

Taken together, these findings suggest that the process of accreditation has embraced a positive cultural transformation in both hospitals, improving transparency, teamwork, and shared accountability. However, to maintain these improvements, there is a need for ongoing leadership involvement, refresher training, and improvement of the non-punitive reporting environment to ensure that the staff believes in the collective responsibility for improving safety, rather than an obligation to adhere to safety.

Table 4.16. Pre- and Post-Accreditation Safety Culture Scores and Statistical Comparison at IAH and ISH

Hospital	Pre-Accreditation Mean Score (0–100)	Post-Accreditation Mean Score (0–100)	Change (Points, %)	Statistical Significance
IAH	66.3	78.0	+11.7 (+17.6%)	Significant ($p < 0.001$)
ISH	62.3	75.2	+12.9 (+20.7%)	Significant ($p < 0.001$)

Note. Values represent composite mean scores (0–100 scale) derived from the Hospital Survey on Patient Safety Culture (HSOPSC). Higher scores indicate more positive staff perceptions of organizational safety culture. Within-hospital comparisons were conducted using paired samples t-tests across matched observations. Statistical significance was set at $p < 0.05$.

Table 4.17. Independent t-test Comparison of Post-Accreditation Safety Culture Scores Between IAH and ISH

Hospital	Post-Accreditation Mean Score (0–100)	t (df)	p-value	Statistical Significance	Interpretation
IAH	78.0				
ISH	75.2	1.36 (10)	0.195	Not Significant	No difference

Note Values represent mean safety culture scores measured using the Hospital Survey on Patient Safety Culture (HSOPSC) or a comparable standardized instrument. An independent samples t-test was conducted to compare post-accreditation scores between IAH and ISH ($n = 6$ observations per hospital; $df = 10$). Statistical significance was set at $p < 0.05$. Although both hospitals demonstrated significant within-hospital improvements, the between-hospital difference in post-accreditation scores was not statistically significant.

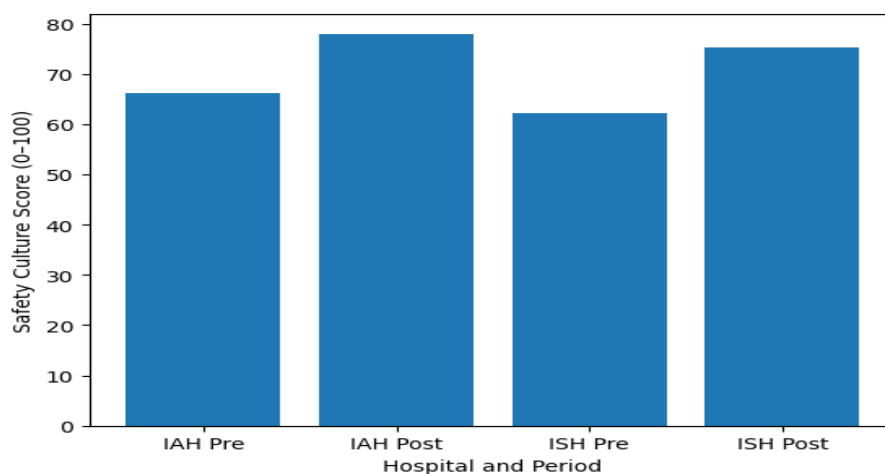


Figure 4.8. Comparison of Pre- and Post-Accreditation Safety Culture Scores at IAH and ISH

Note. The figure illustrates safety culture scores in IAH and ISH before and after accreditation. Higher scores indicate stronger perceptions of patient safety culture, teamwork, communication, and organizational commitment to patient safety. IAH = Istishari Arab Hospital; ISH = Ibn Sina Hospital.

Table 4.18. Comparison of Pre- and Post-Accreditation Patient Safety Culture Domain Scores at IAH and ISH

Domain	IAH Pre	IAH Post	Δ IAH	p-value (IAH)	IAH Sig.	ISH Pre	ISH Post	Δ ISH	p-value (ISH)	ISH Sig.
Nature of Department	75.8	85.0	+9.2	.003	✓	74.5	79.1	+4.6	.048	✓
Direct Manager	80.3	88.0	+7.7	.008	✓	82.0	84.0	+2.0	.322	✗
Communication	76.1	89.1	+13.0	< .001	✓	75.7	79.0	+3.3	.118	✗
Incident Reporting	96.3	86.2	-10.1	.021	✓	95.1	95.0	-0.1	.936	✗
Hospital Working	83.9	86.0	+2.1	.253	✗	83.6	85.6	+2.0	.286	✗
Evaluation of Patient Safety	82.5	81.5	-1.0							

Note. Values represent mean composite scores (0–100 scale) from the Hospital Survey on Patient Safety Culture (HSOPSC). Δ indicates mean difference (post–pre). Paired t-tests were conducted within each hospital. Statistical significance was set at $p < 0.05$. ✓ = statistically significant; ✗ = not significant.

4.2 Qualitative results

Two independent semi-structured interview guides were employed on 19 healthcare providers and 40 discharged patients in March–April 2024.

Thematic analysis revealed notable organizational differences between the two hospitals. Staff at Istishari Arab Hospital emphasized workload pressures, informal communication, and resource constraints, whereas staff at Ibn Sina Hospital emphasized structured protocols, stronger leadership support, and improved training. Patients at ISH valued communication and confidence in safety measures, while patients at IAH appreciated empathetic care but reported concerns regarding delays and some service gaps.

The findings suggest that differences in the implementation and perceived impact of accreditation between the two hospitals may be partly explained by variations in organizational culture, leadership engagement, communication systems, and resource conditions.

4.2.1 Healthcare Providers Interviews

A total of 19 healthcare providers from different departments of nurses, doctors, infection control staff, unit manager, and administrative staff of both hospitals (9 from IAH and 10 from ISH) were selected through purposive sampling to ensure that different perspectives on the implementation of the standardized protocol were included in the study to analyze their perspectives on the relevance, feasibility, impact of the protocol on safety outcomes, difficulties in the effective implementation of the protocol, and recommendations for improvement in the setting of limited resources. Their experience ranged from 5 to 25 years, including both administrative and clinical aspects.

4.2.2 Key Themes and Comparative Insights

The qualitative results provide rich information on the quantitative patient safety results and provide some explanation on the impact of organizational, leadership, and operational factors on the effectiveness of standardized protocols in the two hospitals. Five major themes were identified from the thematic analysis of the interviews with healthcare providers.

Theme 1: Understanding, Confidence, and Accessibility of Standardized Protocols

Most of the participants in the two hospitals demonstrated a good understanding of the standardized healthcare protocols and were confident in their application. This was largely attributed to the workshops, orientation, e-learning, and training that were incorporated during the accreditation process.

A nurse educator from IAH explained:

“At the beginning of accreditation, there were training sessions that helped us understand the protocols clearly.” (Participant, IAH)

Similarly, a physician from ISH stated:

“The protocols are clear, and most staff know what is expected from them during patient care.” (Participant, ISH)

However, the importance of having updates and ways of disseminating them was emphasized by the participants in order to make them accessible. There were differences among the hospitals in the way the protocols were disseminated. As shown in the Thematic Code Matrix (Table 4.17), the IAH staff commonly used informal communication channels.

A nurse educator from IAH noted:

“We get protocol updates mostly through WhatsApp or verbal communication, which is not always effective for everyone.” (Participant, IAH)

ISH staff described a more structured dissemination process. A department manager explained:

“New protocols are introduced during scheduled meetings and posted clearly in the wards.” (Participant, ISH)

This contrast helps to explain the small and non-significant decreases in rates of CAUTI and CLABSI at IAH, where inconsistent access to updated protocols may have impacted

long-term adherence. At ISH, organized dissemination allowed for consistent awareness, although delayed refresher training during the transition period likely affected temporary changes in infection rates post-accreditation.

Theme 2: Impact of Standardized Protocols on Patient Safety and Quality of Care

Each participant reported that the standardized protocols had a positive effect on patient safety and quality of care. Employees of both hospitals reported a reduction in medication errors, better infection control practices, and standardization of care delivery.

At IAH, participants emphasized improvements in emergency responsiveness. A head nurse stated:

“Using the sepsis protocol has definitely improved how fast we act with critical patients.”
(Participant, IAH)

At ISH, the emphasis was placed on consistency and standardization across departments. A physician explained:

“Protocols standardize care, and patients appreciate the consistency in how they are treated.” (Participant, ISH)

These perceptions are very much in line with the quantitative results. The statistically significant reduction in medication errors at IAH corresponds to the staff's perceptions of improved workflows and standardized medication practices. At the same time, the low starting point of medication errors at ISH and the lack of significance in the quantitative results indicate a mature safety culture rather than a lack of impact of accreditation.

In general, although both hospitals felt that there was a safety improvement, there was greater system-wide consistency in ISH, while the improvements in IAH tended to be more localized, especially in the high-acuity and emergency areas.

Theme 3: Operational Challenges, Resistance, and Implementation Barriers

The factors that hindered the implementation of the protocol were identified by the participants as staff shortages, workload, rigidity of the protocol, and lack of resources.

The operational constraints of the IAH facility were revealed. A staff nurse said:

“We want to follow the protocols, but when the unit is understaffed, it becomes very difficult.” (Participant, IAH)

A hospital administrator also said:

“The workload sometimes makes it hard to apply every step as written.” (Participant, IAH)

At ISH, the barriers were more structural. An infection control nurse said:

“Sometimes protocols are updated, but refresher training doesn't happen promptly.”
(Participant, ISH)

The monthly changes in CAUTI and CLABSI rates for both hospitals demonstrate a direct relationship to these variables. At IAH, staff shortages and workload pressures result in changes to infection rates and patient falls, which do not achieve statistical significance. At ISH, the postponement of refresher training during the post-accreditation phase has resulted in two outcomes, which include varying levels of compliance and a temporary increase in infection rates.

Theme 4: Leadership Engagement and Support for Protocol Implementation

Support from leadership was also identified as one of the elements that ensures the successful implementation of protocols. The role of leadership presence, monitoring, and feedback was recognized to play a significant role in staff motivation and compliance.

The role of leadership involvement in the implementation of protocols at IAH was not uniform in all units. A nurse supervisor said:

“Our supervisor is actively monitoring compliance, and this motivates us, but not all units have the same level of follow-up.” (Participant, IAH)

In ISH, the role of leadership was more organized. The hospital director stated:

“Management is emphasizing protocols and giving feedback regularly to ensure compliance.” (Participant, ISH)

The differences in leadership are also shown in the findings. The statistically significant reduction in patient falls and ALOS in ISH shows the effective monitoring and accountability of the leadership. The lack of involvement of leadership in IAH shows the mixed findings, including the increase in patient falls despite the improvement in other indicators.

Theme 5: Flexibility, Clinical Judgment, and Recommendations for Improvement

The healthcare professionals in both hospitals believed that while protocols are necessary, flexibility and professional judgment are also needed to cater to the needs of the patients.

One physician at IAH said:

“Protocols help us, but sometimes patient cases need to be adjusted according to our clinical judgment.” (Participant, IAH)

One physician at ISH said:

“Following them strictly is not always the best option; experience teaches us to adjust accordingly.” (Participant, ISH)

Participants suggested involving front-line providers in protocol development and using patient feedback in revisions. ISH participants felt there were more institutional mechanisms for feedback integration, while IAH used more individual clinician judgment. This distinction helps explain why ISH demonstrated more system-wide improvements (e.g., falls and ALOS), whereas IAH showed greater variability across outcomes, reflecting reliance on personal judgment rather than institutional learning.

Taken together, these themes illustrate that accreditation had begun to bring about positive changes in both hospitals, although the degree to which patient safety outcomes had been affected varied. The qualitative data have proved invaluable in explaining why some patient safety outcomes had been so dramatically affected, while others had had only a limited impact following accreditation.

4.1.1.2 Thematic Code Matrix By Hospital

IAH’s informal communication and resource constraints were contrasted with ISH’s formal training, leadership involvement, and consistent protocol implementation. These themes and sub-themes were previously discussed in the appendix 7

4.1.1.3 Sample Literally Quotes

The illustrative participant quotations reflecting key themes related to accreditation implementation, leadership support, communication, and clinical practice across both hospitals are presented in Appendix 8.

4.2.2 Patient Perspective: Qualitative Thematic Analysis of Discharged Patients' Perceptions of Standardized Protocols at ISH and IAH

4.2.2.1 Emergent Themes and Comparative Insights

Table 4.19 summarizes patient perspectives, indicating that patients at ISH generally described care experiences as more consistent and protocol-oriented, whereas patients at IAH more often emphasized compassionate care but less structured service experiences.

Theme 1: Hospital Experience and Care Perceptions

Patients at ISH were constantly expressing well-organized and effective services: “The follow-up appointments were on time, and nurses also explained everything patiently” (Participant, ISH). On the other hand, patients at IAH appreciated compassion but experienced delays: “Sometimes we waited a long time, but the nurses were supportive, kind, and tried to help” (Participant, IAH).

ISH patients emphasized the effectiveness and organization, whereas IAH patients valued compassion but pointed out delays. This indicates that ISH's structural organization made smoother experiences, whereas IAH's strength was in the staff's empathy, instead of process efficiency.

Theme 2: Communication and Involvement in Care

ISH patients reported that the communication was clear and comprehensive, with a chance to ask questions: “Doctors took the time to explain risks and benefits, clearly” (P18, ISH). IAH patients, on the other hand, reported that the consultation was rushed: “I wanted to ask more, but the doctor seemed busy” (Participant, IAH).

ISH patients reported open and comprehensive communication, whereas IAH patients often reported rushed and incomplete communication. This suggests that ISH's communication culture has enhanced patient engagement, whereas IAH can be detrimental to it.

Theme 3: Perceptions of Safety and Standardized Practices

Patients at ISH were consistent in reporting visible adherence to safety practices. A 52-year-old female patient said:

“I saw nurses always washing hands and following procedures strictly.”

(Participant, ISH)

Patients at IAH reported some inconsistencies in safety practices. A 38-year-old male patient said:

“I wasn't sure if everyone was following all the safety steps.”

(Participant, IAH)

The above statements from patients illustrate the differences in the perceived consistency of safety practices at the two hospitals and support the findings, where ISH had more consistent improvements in safety indicators, and IAH had more variability in the safety outcomes chosen.

Patients at ISH reported consistent adherence to safety practices, while patients at IAH reported some gaps. This illustrates that patients at ISH felt their visible adherence to safety practices had improved their confidence, while patients at IAH felt the inconsistencies had lowered their confidence.

Theme 4: Trust and Standardized Care

ISH patients showed high trust: “Knowing they followed firm guidelines made me feel safe” (P3, ISH). The trust of the clients of IAH patients rather alternated: “I feel very badly when medical treatment is good, even much worse” ((Participant, Female, ISH)

High trust at ISH was associated with observable guideline following, while trust in IAH patients was variable and staff-dependent. Such differences are shown to highlight the benefits of consistency at the system level to already-stronger patient trust.

Theme 5: Flexibility and Personalized Care

ISH patients valued that the protocols were followed flexibly: “They followed protocols, but also asked about my preferences” (Participant, ISH). Some IAH patients felt that care was strict: “It felt like a checklist rather than personal care” (Participant, IAH).

ISH patients valued a balance between safety protocols and personal preferences, while IAH patients sometimes felt that care was too strict. This variation indicates that ISH has the capacity to integrate customization into care as determined by protocols.

Theme 6: Recommendations from Patients

Patients at both hospitals recommended improvements in communication, cultural sensitivity, and scheduling. A patient at ISH said, “I liked it when the nurse asked about my religious needs before treatment” (ISH). A patient at IAH commented: “It would be helpful if doctors had more time to explain things to us” (IAH) (Table 4.19).

Both sets of patients recommended improved communication and respect for preferences, but ISH patients emphasized scheduling and cultural sensitivity, whereas IAH patients, who emphasized safety visibility, wanted more of it. This implies that patient priorities were influenced by hospital culture; ISH patients wanted improvements in already structured care, whereas IAH patients wanted improvements in the basics of communication and safety visibility.

Table 4.19. Comparative Summary of Qualitative Patient Perspectives Between IAH and ISH Across Major Themes

Theme	IAH Patients	ISH Patients
Hospital Experience	Compassionate but sometimes slow	Efficient, organized
Communication	Mixed, sometimes rushed	Clear, inclusive
Safety Practices	Generally good, occasional lapses	Consistent, reassuring
Trust in Care	Moderate, variable experience	High protocol confidence
Personalization	Perceived rigidity, less personal	Balanced between protocols and needs
Patient Recommendations	More time, communication, and safety focus	More info, respect, better scheduling

4.2.2.2 Sample Literally Quotes

Table 4.20 mentioned patient quotations that highlight differences in care perceptions, with ISH patients emphasizing safety and cultural-sensitivity, while IAH patients noted limited communication and impersonality.

Table 4.20. Sample Participant Quotations Illustrating Patient Perspectives at IAH and ISH

Quote	Hospital
“Following the rules made me feel my safety was their priority.”	ISH
“I appreciated when the nurse asked about my religious needs before treatment.”	ISH
“Sometimes I felt like just a number in a system, not a person.”	IAH
“It would help if doctors had more time to explain things to us.”	IAH

Chapter Five

Discussion

5.1 Introduction

This chapter interprets the key findings of the study in relation to the research objectives, existing literature, and the theoretical framework guiding the study. It goes beyond merely presenting results, offering a comprehensive explanation of the observed patterns in patient safety indicators and clinical outcomes following the implementation of standardized healthcare services through accreditation at Al-Istishari Arab Hospital (IAH) and Ibn Sina Specialized Hospital (ISH). The discussion is organized around the main outcome domains of the study, including infection control, medication safety, patient fall rates, efficiency indicators, patient satisfaction, and organizational safety culture. Each section delves into the observed changes and the underlying mechanisms that may explain these outcomes, utilizing the Donabedian model of structure, process, and outcomes as the primary analytical framework (Donabedian, 1988). Furthermore, the discussion incorporates qualitative findings to provide contextual explanations for the quantitative results, underscoring how organizational factors such as leadership engagement, staffing levels, training, and implementation fidelity influenced the effectiveness of accreditation. These insights align with evidence indicating that the impact of accreditation significantly depends on organizational readiness and implementation context (Braithwaite et al., 2017; Greenfield et al., 2020). Finally, the chapter contrasts the findings with existing national and international literature to pinpoint areas of convergence and divergence. It also synthesizes the overall implications of the study for policy, practice, and future research, emphasizing the role of accreditation as an organizational change process rather than merely a static quality assurance tool (WHO, 2021).

5.2 Infection Control (CAUTI and CLABSI)

The findings regarding infection control indicators, specifically CAUTI and CLABSI, reveal differing post-accreditation trends between the two hospitals, indicating that accreditation alone does not guarantee consistent improvements in infection prevention outcomes. Al-Istishari Arab Hospital (IAH) exhibited modest progress, while Ibn Sina

Specialized Hospital (ISH) saw a decline in infection-related indicators. These differences suggest that the effectiveness of standardization is significantly impacted by the organizational context, particularly its readiness and system stability, rather than merely the existence of accreditation standards. From a structural standpoint, the disparities between the two hospitals have critically influenced their infection control performance. IAH maintained relatively stable staffing levels and had clearer accountability within its infection prevention teams, which facilitated partial compliance with catheter care bundles. In contrast, ISH encountered staffing limitations and inconsistent refresher training, likely undermining its ability to adhere to infection prevention protocols. This aligns with evidence from resource-limited healthcare environments, which indicates that workforce shortages and high workload pressures can severely compromise infection control compliance, even in accredited systems (Alkhawaja et al., 2020; Bahegwa et al., 2022). Regarding process performance, IAH benefited from consistent unit-level monitoring and timely feedback mechanisms, which reinforced adherence to aseptic techniques and improved compliance with infection prevention practices. On the other hand, ISH appeared to suffer from implementation fatigue, where the administrative demands associated with accreditation may have diverted focus from bedside clinical practice. This observation aligns with literature suggesting that excessive documentation and administrative burdens can adversely impact frontline infection prevention efforts if not balanced with sufficient organizational support (Braithwaite et al., 2017; Presseau et al., 2019). In summary, these findings underscore the international evidence that infection control outcomes are highly sensitive to staffing adequacy, continuity of training, and leadership engagement. They further imply that standardization and accreditation initiatives are unlikely to yield sustained improvements in infection prevention unless bolstered by a strong organizational infrastructure and effective implementation capacity. In this regard, accreditation serves as a facilitating framework rather than a standalone catalyst for enhancing infection control performance (Allegranzi et al., 2022; Armstrong et al., 2022).

5.3 Medication Safety

Medication safety outcomes showed significant improvement following accreditation, particularly at Al-Istishari Arab Hospital (IAH). This indicates that medication management is a clinical area highly responsive to structured standardization interventions, especially when supported by effective processes and system reinforcement mechanisms. Applying the Donabedian framework, these improvements stem from enhanced process components, such as standardized prescribing protocols, double-checking procedures, and clearer role delineation among healthcare professionals. These advancements likely minimized variability in medication handling and improved communication within the multidisciplinary team. Regional evidence supports this, indicating that structured prescribing systems and active pharmacist involvement effectively reduce medication errors and enhance patient safety outcomes (Abdel-Qader et al., 2021; Albalawi et al., 2022). Conversely, Ibn Sina Specialized Hospital (ISH) exhibited more limited improvement in medication safety outcomes. This may be attributed to a ceiling effect, where baseline medication safety practices were already well-established, leaving little room for measurable improvement during the study period. Furthermore, high workload

conditions and inconsistent reinforcement of safe medication practices may have undermined the sustained application of standardized procedures. This aligns with evidence suggesting that the impact of accreditation on medication safety is more pronounced in settings with initially higher error rates, while hospitals with pre-existing safety systems often show smaller incremental gains in the short term (Araujo et al., 2020; Hussein et al., 2021). In summary, these findings indicate that accreditation is most effective in enhancing medication safety when it bolsters existing processes and reinforces interprofessional communication and monitoring systems. However, its impact is influenced by baseline performance levels and the extent to which standardized procedures are consistently integrated into daily clinical practice.

5.4 Patient Fall Rates

The findings regarding patient fall rates underscore the essential role of leadership engagement, consistent supervision, and frontline accountability in determining the success of standardized healthcare interventions. The differing outcomes between the two hospitals—improvement at Ibn Sina Specialized Hospital (ISH) and deterioration at Al-Istishari Arab Hospital (IAH)—indicate that accreditation does not yield uniform results; instead, it interacts with local organizational conditions to influence patient safety outcomes. Patient fall prevention is particularly affected by workforce stability, ongoing monitoring, and real-time clinical supervision. This aligns with evidence suggesting that effective fall prevention programs heavily rely on adequate staffing levels and active surveillance systems within acute care settings (Al Tehewy et al., 2022; Spoelstra et al., 2020). At ISH, enhancements in managerial oversight and consistent reinforcement of fall risk assessment protocols likely improved adherence to prevention strategies, leading to the observed reduction in fall rates. Conversely, the rise in fall rates at IAH may be attributed to workforce pressures and fluctuations in staffing stability, which can compromise the reliable implementation of standardized fall prevention protocols. In such circumstances, even well-crafted accreditation standards may struggle to translate into effective bedside practices due to diminished monitoring capabilities and competing clinical demands. Overall, these findings resonate with the broader patient safety literature, which highlights that fall prevention initiatives necessitate ongoing leadership involvement, continuous reinforcement, and robust frontline accountability to maintain effectiveness beyond the accreditation stage (Morris et al., 2022; Lolange, 2023). This suggests that while accreditation serves as a supportive framework, its effectiveness hinges on the strength of organizational implementation processes and the maturity of the safety culture.

5.5 Readmissions and ALOS

The findings regarding efficiency indicators, particularly average length of stay (ALOS) and readmission rates, reveal distinct patterns between the two hospitals, reflecting variations in baseline performance and the maturity of their discharge planning systems. The reduction in ALOS at Ibn Sina Specialized Hospital (ISH), in contrast to the stable trend at Al-Istishari Arab Hospital (IAH), indicates that the effectiveness of standardization depends on the degree to which discharge processes were previously developed and

integrated into routine practice. The improvement in ALOS at ISH can be attributed to enhanced multidisciplinary coordination, more structured discharge planning, and better clinical workflow integration following accreditation. This is consistent with evidence suggesting that standardized discharge pathways and coordinated multidisciplinary rounds lead to improved patient flow and shorter hospital stays (Alghamdi et al., 2022; Trimarchi et al., 2021). These findings imply that accreditation may serve as a catalyst for boosting efficiency in environments where discharge systems are still evolving. Conversely, the stable ALOS at IAH may indicate a ceiling effect, where discharge processes were already relatively efficient before accreditation, thus limiting the potential for further measurable improvements. This suggests that accreditation may strengthen existing high-performing systems rather than yield significant additional gains in already optimized settings. Regarding readmission rates, the findings indicate that improvements in in-hospital processes alone are insufficient to substantially impact post-discharge outcomes. The literature highlights that reducing readmissions necessitates not only standardized discharge procedures but also effective transitional care, follow-up systems, and patient engagement strategies that extend beyond the hospital setting (Anderson et al., 2022; Fu et al., 2023). The minimal change in readmission trends at both hospitals suggests that while accreditation may enhance internal hospital processes, its effect on continuity of care post-discharge remains limited. In summary, these findings underscore that efficiency outcomes are influenced not only by standardization but also by baseline organizational performance and the robustness of post-discharge care systems. This reinforces the idea that accreditation most effectively improves internal processes, while its impact on broader care continuity requires integration with external follow-up and community-based care mechanisms.

5.6 Patient Satisfaction

The findings reveal a modest increase in patient satisfaction in both hospitals following accreditation, with more significant improvements noted at Ibn Sina Specialized Hospital (ISH). These changes should be understood primarily as patient-reported and relational outcomes, indicating enhancements in perceived service quality rather than direct clinical effectiveness. The observed increases in patient satisfaction are likely linked to improved communication, service organization, and responsiveness following the adoption of standardized healthcare processes. Evidence indicates that accreditation is closely associated with enhancements in patient experience, driven by better service coordination, clearer communication pathways, and more structured care delivery systems (Alkhenizan & Shaw, 2019; A'aqoulah et al., 2022). In this context, the more substantial improvement at ISH may reflect a stronger institutional commitment to patient-centered care practices, while the more modest gains at Al-Istishari Arab Hospital (IAH) may suggest that improvements were primarily focused on service efficiency and hospitality rather than comprehensive system transformation. Overall, these findings are consistent with the literature, which demonstrates that accreditation tends to have a more immediate and consistent impact on patient experience domains—such as communication, responsiveness, and service organization—compared to direct clinical outcomes (Friedel et al., 2023; Gualandi et al., 2021). This indicates that enhancements in patient satisfaction

are largely influenced by changes in care processes and interaction quality, rather than by clinical performance alone.

5.7 Organizational Safety Culture

The findings demonstrate that both hospitals saw enhancements in their organizational patient safety culture following accreditation; however, these improvements varied between the two settings. At Al-Istishari Arab Hospital (IAH), enhancements were more prominent in interpersonal areas such as communication and teamwork, while Ibn Sina Specialized Hospital (ISH) exhibited greater progress in operational aspects, including reporting practices and system-level safety processes. From a theoretical standpoint, patient safety culture is influenced by the interplay of leadership commitment, reporting systems, and frontline staff engagement. For sustained improvement, alignment among these elements is essential (Singer et al., 2011; Arzahan et al., 2022). In this regard, the increased consistency in incident reporting at ISH may reflect a more advanced and structured reporting culture, indicating a stronger integration of safety practices into daily operations. Conversely, the variability in reporting and implementation at IAH may point to ongoing challenges in fully integrating accreditation-driven safety practices into routine clinical workflows. These findings align with regional literature, which suggests that while accreditation can serve as a catalyst for enhancing safety culture, the sustainability and depth of these improvements heavily rely on leadership engagement, organizational reinforcement mechanisms, and ongoing support beyond accreditation cycles (Al-Surimi et al., 2021; Zabin & Hamdan, 2024). This underscores that transforming safety culture is a gradual process that transcends mere structural compliance and necessitates sustained behavioral and managerial commitment.

5.8 Integrated Interpretation Using the Donabedian Framework

The Donabedian framework serves as a valuable lens for understanding the varying effects of accreditation and standardization across the two hospitals. The findings indicate that differences in outcomes are best explained by the interaction of structure, process, and outcomes, rather than by accreditation alone. Structural factors varied between the hospitals, particularly regarding staffing levels, staff stability, leadership continuity, and the availability of clinical and administrative resources.

These structural differences influenced each hospital's ability to consistently implement standardized healthcare protocols. At the process level, notable differences emerged in protocol adherence, the consistency of monitoring systems, communication effectiveness, and the extent of multidisciplinary coordination. Hospitals that demonstrated stronger and more consistent implementation processes were more successful in integrating accreditation requirements into routine clinical practice. Consequently, the outcomes—including patient safety indicators and efficiency measures—reflect the combined influence of structural capacity and process implementation, rather than merely accreditation status. In this context, accreditation served as a facilitating framework, while actual performance outcomes were determined by how effectively each hospital operationalized standards within its specific environment.

This comprehensive interpretation clarifies why improvements were more significant in areas such as medication safety and length of stay, where structured processes and monitoring systems were more effectively implemented. In contrast, infection control and patient falls remained more vulnerable to contextual constraints, including staffing pressures and workload variability.

5.9 Overall Synthesis and Implications

This study demonstrates that hospital accreditation primarily serves as a mechanism to facilitate improvements in patient safety outcomes, rather than ensuring uniform or comprehensive enhancements across all performance areas. The findings reveal that accreditation standards are most effective when accompanied by adequate staffing levels, ongoing training, and active managerial involvement. However, the results also emphasize that accreditation alone cannot resolve deeper structural and operational challenges within the healthcare system. In transitional and resource-limited environments like Palestine, these findings suggest that accreditation should be integrated into a broader strategy for strengthening the health system, rather than functioning as a standalone quality improvement measure. Without sufficient organizational capacity and sustained support for implementation, there is a risk of only partial adherence to standards and potential implementation fatigue, which could undermine the long-term success of accreditation efforts. This aligns with international evidence indicating that the effectiveness of accreditation is highly context-dependent and influenced by organizational readiness, leadership commitment, and implementation capacity (Braithwaite et al., 2017; Greenfield et al., 2020). While accreditation has led to improvements in specific areas such as medication safety, patient experience, and efficiency indicators, its effect on infection control and patient falls has been less consistent. These differences are strongly influenced by staffing stability, workload pressures, and the extent of adherence to standardized processes at the point of care. The observed variations between Al-Istishari Arab Hospital (IAH) and Ibn Sina Specialized Hospital (ISH) further highlight that organizational readiness, leadership engagement, and fidelity to implementation are critical factors in achieving successful accreditation outcomes. Overall, this study adds to the existing literature by providing empirical evidence from Palestinian hospitals, reinforcing the notion that accreditation should be viewed as an ongoing process of organizational change rather than a final goal. Sustainable enhancements in patient safety necessitate not only formal accreditation standards but also continuous investment in leadership, workforce capacity, and implementation support systems.

Chapter Six

Conclusion and Recommendations

6.1 Introduction

The last chapter of this research will present its main findings, which will then be connected to the research goals and theoretical frameworks described in Chapter Two. The chapter will present research results that show how hospital accreditation and standardized protocols affect patient safety and health outcomes in the Palestinian healthcare system.

The discussion also provides a summary of recommendations to ensure the improvement of implementation and sustainability of accreditation-driven improvements. Furthermore, the discussion also provides future research directions to ensure the continuous improvement of quality.

6.2 Summary of Major Conclusions

This study is a mixed-methods approach to explore the impact of standardized healthcare protocols on patient safety and health outcomes in IAH and ISH. The quantitative findings revealed mixed but significant changes, and the qualitative findings provided insights into why these issues existed.

Key findings include:

1. Infection Indicators (CAUTI & CLABSI)

- IAH indicated modest enhancements in both CAUTI and CLABSI.
- ISH faced a significant deterioration in the same indicators.
- Qualitative data showed that staffing inadequacies, delayed refresher training, and performance fatigue were major barriers at ISH.

2. Medication Safety

- Both hospitals revealed a reduction in medication errors.

- Enhancements were stronger in IAH because of clearer workflows, structured monitoring, and stronger interdisciplinary communication.

3. Patient Falls

- Falls reduced in ISH but increased in IAH.
- Leadership visibility and consistent fall-risk screening clarify ISH's best performance.

4. Efficiency Indicators (LOS & Readmissions)

- ISH minimizes LOS due to enhanced discharge planning.
- IAH remained stable, probably because workflows were already enhanced pre-accreditation.
- Readmissions increased at ISH due to inconsistent follow-up systems for high-risk patients.

5. Patient Satisfaction

- Satisfaction was enhanced in both hospitals, with ISH indicating stronger gains because of better patient communication and leadership presence.

6.3 Conclusion

In conclusion, the paper finds that standardization can lead to better patient safety, but only if it is complemented by adequate staffing, leadership, training, and communication.

Major conclusions:

1. Standardization alone is not adequate. It must be strengthened by organizational culture and leadership.
2. Implementation fidelity identifies outcomes. Hospitals with supportive leadership, stable staffing, and continuing training (IAH) attained better findings.
3. Workload and transition fatigue can reverse enhancements. ISH's worsening infection rates illustrate the lack of standardization in high-stress settings.

4. Accreditation is an effective motivator but a poor predictor.

5. Without ongoing evaluation, enhancements may be fleeting or sporadic across departments.
6. A mixed-methods approach provides greater understanding. Mixed-methods assessment offers more insight. Qualitative findings explained why quantitative data trends varied by hospital.

6.4 Theoretical and Practical Implications

6.4.1 Theoretical Implications

The research demonstrates theoretical significance through its application of Lewin's Change Theory together with the Knowledge-Attitude-Practice (KAP) Model and the Donabedian Structure-Process-Outcome Model to assess hospital accreditation in resource-limited environments.

According to Lewin's Change Theory, change in an organization is a basic process that organizations go through throughout their lifetime. The hospitals apply accreditation as a way of initiating the unfreezing-change-refreezing process of change in an organization. The unfreezing process is shown through heightened awareness, policy changes, and staff mobilization during the preparation for accreditation. The change stage represents the implementation of standardized procedures, training, and workflow changes. However, the refreezing stage, which is a very important stage for sustainability, as Lewin said, was not systematically accomplished in the two hospitals. This theoretical framework may help to explain why accreditation introduced some positive, although partial and temporary, changes in certain indicators of safety, especially when the continuity of leadership, monitoring systems, and staff stability were not sufficient to consolidate new behaviors into established practices.

The KAP Model can be used to explain the processes involved in the achievement of these results. While it did prove to be an effective strategy for improving staff knowledge and attitude towards patient safety, staff behavior could only be sustained when an enabling environment was created. The results clearly indicate that knowledge and attitudes alone are not enough to bring about staff change. This theoretical result can explain why there was more evidence of improvement in areas where there was more procedural clarity and monitoring (such as medication safety), but not in more complex areas (such as infection control and fall prevention), which were still limited by staffing and workload constraints.

In combination, the findings are also consistent with the Donabedian Structure-Process-Outcomes Model, which is a broad-based framework for explaining the variability of outcomes that have been observed. The greatest improvements occurred when the structural elements (leadership involvement, personnel, governance, and information systems) and process elements (process standardization, communication, and supervision) were addressed simultaneously. Whereas, when the structural constraints were in place, standardization of processes by itself was not enough to ensure improvements in outcomes. This supports the idea that the outcomes of accreditation are mediated by organizational capacity, rather than the status of accreditation.

Cumulatively, the integration of these three theoretical perspectives offers a coherent explanation for the role of accreditation as a catalyst for improvement rather than a guarantee for change. The research offers a contribution to the existing body of theory by demonstrating that the effectiveness of accreditation is context-dependent and that the factors of organizational readiness, leadership stability, and the institutionalization of change are pivotal to this. This theoretical synthesis has a direct application to the remaining chapter in that it emphasizes the importance of recommendations extending beyond the boundaries of compliance-driven accreditation models and towards the development of strategies that improve organizational capacity and leadership-driven sustainability within the Palestinian context of the healthcare system.

6.4.2 Practical Implications

On the operational level, accreditation was shown to improve procedural quality, record accuracy, and safety knowledge. Yet its effect on specific patient health outcomes is dependent on the following related factors:

- Leadership Stability is essential in sustaining compliance and encouraging employees to adhere to safety procedures.
- Continuous professional development and refresher courses will ensure that the benefits are maintained after the first accreditation cycle.
- Internal audits with feedback will aid in sustaining the culture of accountability and adaptive learning.
- Safety culture and non-punitive reporting of incidents will aid in developing trust and transforming errors into learning opportunities.

In the context of the Palestinian healthcare setting, with limited resources, the application of low-cost approaches such as peer support, audit feedback, and visual displays would be of immense benefit in improving sustainability without burdening the staff.

6.5 Policy and Operational Recommendations

The following recommendations interpret the study results into actionable strategies for policymakers, hospital administrators, and clinical teams.

6.5.1 For Hospital Management and Leadership

- Standardization needs to be implemented as a part of the daily activities, and accreditation protocols requires also to be included in daily activities. Daily CAUTI checklist and actual time CLABSI audits need to be implemented as standard operating procedures.
- Leadership engagement requires to be enhanced, and it seems that hospital leaders need to be visible, accessible, and proactive in leading teams, addressing staff concerns, and improving psychological safety
- Strategic resource allocation in adequate staffing, infection control supplies, and monitoring instruments require to be continued to avoid protocol fatigue.
- Continuous quality units need to be developed, and quality officers require to be assigned to monitor compliance, develop monthly performance dashboards, and control continuous education sessions.

6.5.2 For Policy and Accreditation Bodies

- The national framework for accreditation continuity will develop a system that connects accreditation processes to performance evaluation through infection rate data, medication error records, and patient satisfaction metrics.
- Localization of standards and adjustment of international accreditation standards to fit the realities of available resources.

- Post-Accreditation Assessment through the existing periodic external assessment surveys to ensure continued compliance.
- National learning platforms can be developed by creating national e-learning platforms for hospitals to exchange best practices, knowledge, and results of quality improvement.
- Financial and technical support through the allocation of national budgets for the quality departments of hospitals to improve capacity.

6.5.3 For Clinical Teams and Frontline Staff

- Enhance non-punitive reporting, which encourages a culture of safety by focusing on errors as opportunities for improvement in the system rather than justifying the assignment of blame.
- Enhance inter-professional collaboration and teamwork between nurses, doctors, and pharmacists to ensure compliance with protocols.
- Involve staff in decision-making and the development of policies and review of audits to encourage ownership and compliance with safety policies.
- Through simulation learning, peer education, and simulated audits, there can be enhanced readiness for accreditation renewal and real-time compliance.

6.6 Research Recommendations

Future research needs to be extend upon this study to deepen understanding and lead-national policy-formulation:

1. Assess the sustainability of accreditation results after the early implementation phase.
2. Examine the effect of leadership development and safety culture interventions on the sustainability of compliance as part of intervention-based research studies.
3. Assess the effect of different healthcare systems in the Middle East on the success of standardization and the transferability of accreditation models.
4. Assess patient perceptions of healthcare quality and satisfaction in accredited and non-accredited hospitals to determine external validity.
5. Relationship between quantitative measures and qualitative views to achieve a comprehensive understanding of accreditation health outcomes.

6.7 Final Remarks

This research proves the relevance of accreditation and healthcare protocols as effective frameworks for improving patient safety, but it is also dependent on leadership engagement, organizational readiness, and learning. Healthcare protocols are not enough; the relevance of healthcare protocols is overstated and is dependent on the culture in which they exist.

Hospitals that invest their resources into active leadership, necessary resources, and a safety culture will change their accreditation process into an ongoing growth experience.

Finally, accreditation need to be seen as a continuous process that people require to complete instead of an ultimate goal. The study represents the initial research study which compares Palestinian hospitals' accreditation health outcomes through analytical methods, which provide essential evidence base for developing regional quality improvement strategies.

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Appendices

Appendix (1): Ethical Approval Letter

Al-Quds University
Jerusalem
Deanship of Scientific Research

بسم الله الرحمن الرحيم



جامعة القدس
القدس
عمادة البحث العلمي

**Research Ethics Committee
Committee's Decision Letter**

Date: February 2nd, 2025
Ref No: 491/REC/2025

Dears Dr. Bassam Hamad, Dr. Atif Rimawi, Mr. Tareq Ramahi,

Thank you for submitting your application seeking approval for research ethics. After a thorough review of your submission titled "Impact of Standardized Healthcare on Patient Safety and Outcomes: A Mixed-Methods Study", the Research Ethics Committee (REC) at Al-Quds University is pleased to confirm that your application aligns with our research ethics guidelines.

Please be aware that while this approval authorizes your research, it does not replace any departmental or other necessary approvals. These may include permissions for sample shipment, data sharing, or administrative approval to distribute questionnaires.

Additionally, we kindly request that you provide us with a copy of your final research report or publication once it is available.

Thank you once again for your commitment to conducting ethical research. We extend our best wishes for a productive research endeavor that benefits your research subjects.

Please note that this ethical approval letter is valid for two years from the date of issuance. If your research extends beyond this timeframe, a renewal request will be necessary. This approval remains valid as long as there are no changes to the data collection procedures or any aspect of the research protocol.

Sincerely,

Suheir Ereqat, PhD
Associate Professor of Molecular Biology

Research Ethics Committee Chair

Cc. Prof. Imad Abu Kishek - President
Cc. Members of the committee
Cc. file

Appendix (2): Healthcare Workers Consent Form

Study Title	The Impact of Standardized Healthcare Services and Protocols on Patient Safety and Healthcare Outcomes in Hospital Departments
Principal Investigator	Tareq Al-Ramahi
Institution	Al-Quds University
Contact Information	Phone: Email:

Introduction

You are invited to take part in a research study to investigate the impact of standardized healthcare protocols on patient safety and outcomes. This consent form contains important information to help you decide taking part in the study. Please read it carefully and ask questions before signing.

Study Purpose & Objectives

| **Objective** | To explore healthcare workers' experiences and perspectives on implementing standardized protocols and their effects on patient safety and healthcare quality. |

Participation Details

Item	Details
Interview Format	One-on-one discussion
Estimated Duration	Approximately 50-60 minutes
Recording	Audio-recorded (only if you agree)
Discussion Topics	Your role in implementing protocols, perceived impact, challenges, and suggested improvements.

Voluntary Participation

Your Rights	Details
Voluntary Basis	Your participation is entirely voluntary
Right to Withdraw	You may withdraw at any point without penalty.
Right to Decline	You can skip any question you do not wish to answer.

Confidentiality & Data Protection

Measure	Description
Anonymity	Your name and identity will not be linked to your responses
Data Storage	Data will be securely stored and accessed only by the research team.
Employer Protection	No information will be shared with your employer or used for job evaluation purposes.

Potential Risks & Benefits

Risks	Benefits
Minimal risk: Some questions may cause mild discomfort when discussing workplace challenges. You may skip any question.	Your insights may contribute to improved healthcare practices and patient outcomes in hospital departments.

Consent to Participate

Consent Statement	I have read and understood the study information. I had the opportunity to ask questions and voluntarily agree to participate.
Participant's Name	
Signature	
Date	
Researcher's Name	Tareq Al-Ramahi
Researcher's Signature	_____
Date	

Audio Recording Consent (Optional)

| Do you agree to have your interview audio-recorded? | ☐ Yes ☐ No |

Appendix (3) : Participant Consent Form (patients) / English - Arabic

Study Title	The Impact of Standardized Healthcare Services and Protocols on Patient Safety and Healthcare Outcomes in Hospital Departments
Principal Investigator	Tareq Al-Ramahi
Institution	Al-Quds University
Contact Information	Phone: Email:

Introduction

You are invited to take part in a research study that seeks to assess the effect of standardized healthcare services on patient safety and healthcare outcomes. Before making a decision, please take time to read the following information. If you have any questions, do not hesitate to ask the researcher before signing this form.

Purpose of the Study

This study seeks to explore how standardized healthcare protocols affect patient safety, quality of care, and healthcare outcomes from the perspectives of both healthcare workers and patients.

Participation Details

Participation Type	Details
Interview Duration	Approximately 30–45 minutes
Interview Format	One-on-one discussion
Recording	Audio-recorded (if you agree) for accuracy
Topics Covered	Experiences and opinions on standardized healthcare services

Voluntary Participation

Important Notes	Details
Participation	Completely voluntary
Right to Withdraw	You can withdraw anytime without consequences.
Right to Refuse	You may skip any question you do not wish to answer.

Confidentiality & Data Protection

Confidentiality Measures	Details
Anonymity	Your responses will be anonymized and not linked to your identity
Data Storage	Information will be securely stored and accessed only by the research team.

Potential Risks & Benefits

Risks	Benefits
No direct risks. You may skip any question that makes you uncomfortable.	Your insights will help improve patient safety and healthcare practices.

Consent to Participate

Participant's Name:	
Signature:	
Date:	
Researcher's Name:	Tareq Al-Ramahi
Signature:	
Date:	

Audio Recording Consent (Optional)

Do you agree to have your interview audio-recorded?
☐ Yes ☐ No

نموذج موافقة المرضى- عربي

معلومات الدراسة

المعلومات	البند
تأثير توحيد الخدمات الصحية والبروتوكولات على سلامة المرضى والنتائج الصحية في أقسام المستشفيات	عنوان الدراسة
طارق الرمحي	الباحث الرئيسي
جامعة القدس	المؤسسة
الهاتف : البريد الإلكتروني:	معلومات الاتصال

المقدمة

النص
ندعوك للمشاركة في دراسة بحثية تهدف إلى تقييم تأثير توحيد الخدمات الصحية والبروتوكولات المعيارية على سلامة المرضى والنتائج الصحية. قبل اتخاذ قرارك بالمشاركة، يرجى قراءة المعلومات التالية بعناية. إذا كان لديك أي أسئلة، فلا تتردد في طرحها على الباحث قبل توقيع نموذج الموافقة هذا.

هدف الدراسة

النص
تهدف هذه الدراسة إلى استكشاف تأثير البروتوكولات الصحية المعيارية على سلامة المرضى وجودة الرعاية الصحية والنتائج الصحية، وذلك من وجهات نظر كل من العاملين في الرعاية الصحية والمرضى.

تفاصيل المشاركة

نوع المشاركة	التفاصيل
مدة المقابلة	حوالي 30 – 45 دقيقة
شكل المقابلة	مقابلة فردية
التسجيل	سيتم تسجيل المقابلة صوتيًا (في حال موافقتك) لضمان دقة المعلومات
المواضيع التي سيتم تناولها	تجارب وآراء المرضى حول الخدمات الصحية المعيارية

المشاركة الطوعية

التفاصيل	ملاحظات مهمة
المشاركة في هذه الدراسة طوعية بالكامل	المشاركة
يمكنك الانسحاب من الدراسة في أي وقت دون أي تبعات	حق الانسحاب
يمكنك الامتناع عن الإجابة عن أي سؤال لا ترغب في الإجابة عنه	حق الامتناع

السرية وحماية البيانات

التفاصيل	إجراءات السرية
سيتم إخفاء هوية المشاركين ولن يتم ربط الإجابات بهويتهم الشخصية	إخفاء الهوية
سيتم حفظ البيانات بشكل آمن ولن يتم الوصول إليها إلا من قبل فريق البحث	تخزين البيانات

المخاطر والفوائد المحتملة

الفوائد	المخاطر
ستساعد أراؤك وخبراتك في تحسين سلامة المرضى والممارسات الصحية في المستشفيات.	لا توجد مخاطر مباشرة متوقعة. يمكنك الامتناع عن الإجابة عن أي سؤال يجعلك غير مرتاح.

الموافقة على المشاركة

المعلومات	البند
	اسم المشارك
	التوقيع
	التاريخ
طارق الرمحي	اسم الباحث
	التوقيع
	التاريخ

الموافقة على التسجيل الصوتي (اختياري)

الإجابة	السؤال
☐ نعم ☐ لا	هل توافق على تسجيل المقابلة صوتياً؟

Appendix (4) : Standardized Data Extraction Form

Medical Record Review Checklist for Patient Safety and Clinical Outcomes

This tool is designed to systematically collect data from patient medical records and Electronic records of the quality department related to key safety indicators and clinical outcomes.

Patient ID	Hospital	Admission Date	Discharge Date	Length of Stay (LOS)	Medication Errors	CAUTI	CLABSI	Patient Falls	30-day Readmission	Patient Satisfaction	Staff Safety Culture
001	IAH										
002	ISH										
003	IAH										
004	ISH										
...	...	...	...	...	...	...	...				

Appendix (5) : Interview Guide: Healthcare Workers' Perceptions of Standardized Protocols : English – Arabic

Section	Main Question	Probing / Follow-up Questions
1. Background and Role in Patient Care		
1.1	Can you briefly introduce yourself (gender, age)?	What is your current position in the hospital? How long have you been working in this role?
1.2	What is your professional role in this hospital?	How does your role relate to direct patient care? Are you primarily in a clinical, managerial, or supportive position?
1.3	How long have you been working here?	Has your role or responsibilities changed during your time here?
1.4	What is the extent of your involvement in direct patient care?	How often do you interact with patients? Are there specific departments or procedures you focus on?
2. Understanding and Perceptions of Protocols		
2.1	How would you describe your understanding of standardized protocols in your hospital?	Can you give examples of specific protocols you use regularly? How were you introduced to them?
2.2	How were these protocols introduced or explained to you and your team?	Was there formal training, written guidelines, or peer-led orientation?
2.3	How accessible and understandable are these protocols to staff?	Are they available in print or digital form? Are they in Arabic or English?
2.4	How would you describe staff adherence to these protocols in your department?	Are there areas where compliance is stronger or weaker? Why do you think that is?
2.5	What has been your experience with updates or revisions to protocols?	How often are protocols updated? Who communicates these changes?
2.6	What do you see as the main benefits of using standardized protocols?	Can you give an example of how a protocol improved patient safety or care quality?
2.7	Can you recall a case where applying a protocol led to a better patient outcome?	What was your role in that case? How did the protocol influence the actions taken?

3. Operational and Implementation Challenges		
3.1	What challenges have you faced when implementing standardized protocols?	Are the challenges more related to workload, resources, staff attitudes, or something else?
3.2	How have limited resources or training affected your ability to implement protocols?	Are there specific situations where you felt unable to follow a protocol as intended?
3.3	What was your experience with support (time, materials, or education) when new protocols were introduced?	Were refresher sessions or practical demonstrations available?
3.4	How would you describe the role of leadership in supporting protocol implementation?	Do managers monitor compliance or provide guidance? How approachable is the leadership?
3.5	How has leadership support helped or hindered protocol adoption?	Can you recall a specific case when strong leadership made a difference? Or the opposite?
4. Impact on Patient Safety and Clinical Outcomes		
4.1	Have you observed changes in patient safety or clinical outcomes after protocol implementation?	What indicators or signs suggest improvement (e.g., fewer errors, faster recovery, etc.)?
4.2	Can you recall a situation where a protocol helped prevent an error or improve care?	What would have happened if that protocol had not followed?
4.3	Have you ever felt that a protocol was too restrictive or hindered flexible care?	What was the situation? How did you handle it? Was patient care affected?
4.4	How do you manage cases where patients don't fit neatly into protocol criteria?	Is there room for professional judgment or adaptation? How is this perceived by leadership?
4.5	In your view, how do protocols affect patients' understanding and adherence to care plans?	Do you notice improved communication or confusion as a result of protocols?
4.6	What kinds of patient feedback have you	Have patients ever commented on the consistency, clarity, or impersonality of

	encountered regarding standardized care?	care?
5. Monitoring, Evaluation, and Recommendations		
5.1	How are new or updated protocols typically introduced in your department?	Is there a structured process, such as meetings, memos, or training sessions?
5.2	What training or continuous support is provided when a new protocol is rolled out?	Are trainings hands-on, theoretical, or both? How useful do you find them?
5.3	What systems are in place to ensure staff follow protocols?	Are there audits, peer evaluations, and feedback sessions? Who oversees them?
5.4	How effective are monitoring tools like checklists, audits, or feedback systems?	Are these tools used consistently? Do staff respond positively or feel burdened?
5.5	What improvements would you suggest to implement protocols more effectively?	Would more flexibility, training, or involvement in development help?
5.6	Where do you think adding flexibility might improve care quality or staff morale?	Are there specific procedures where strict adherence might be counterproductive?
5.7	Are there any other experiences, insights, or lessons you'd like to share about protocols?	Perhaps something we haven't covered that you feel is important?
5.8	Are there any areas we haven't discussed that you think are important to address?	Anything you believe is essential for researchers or managers to know?

دليل المقالة الخاص بالعاملين الصحيين – عربي

القسم	السؤال الرئيسي	أسئلة المتابعة / الاستيضاح
1. الخلفية والدور	هل يمكنك تقديم نفسك باختصار (الجنس، العمر)؟	- ما هو منصبك الحالي؟ - منذ متى تعمل في هذا الدور؟
	ما هو دورك المهني في هذا المستشفى؟	- كيف يرتبط دورك بالرعاية المباشرة؟ - طبيعة الدور: سريري/إداري/داعم
	منذ متى تعمل هنا؟	- هل تغير دورك أو مسؤولياتك؟
	ما مدى مشاركتك في الرعاية المباشرة؟	- مرات التفاعل مع المرضى - أقسام محددة
	كيف تصف فهمك للبروتوكولات المعيارية؟	- أمثلة بروتوكولات - كيف تم التعريف عليها؟
2. فهم البروتوكولات	كيف تم تقديم أو شرح البروتوكولات؟	- تدريب رسمي؟ - إرشادات مكتوبة؟
	ما مدى سهولة الوصول إلى البروتوكولات؟	- ورقي/إلكتروني - عربي/إنجليزي
	كيف تصف التزام الموظفين بالبروتوكولات؟	- أين الالتزام أقوى/أضعف - الأسباب المحتملة
	ما تجربتك مع تحديث البروتوكولات؟	- تكرار التحديث - جهة الإبلاغ
	ما الفوائد الرئيسية للبروتوكولات؟	- مثال يوضح تحسين السلامة
	هل تتذكر حالة تحسنت بنتيجتها بسبب البروتوكول؟	- ما دورك؟ - كيف أثر البروتوكول؟
	ما التحديات التي واجهتها في تطبيق البروتوكولات؟	- عبء العمل - الموارد - المواقف
	كيف أثر نقص الموارد أو التدريب؟	- مواقف لم تستطع فيها التطبيق الكامل
3. التحديات	ما تجربتك مع الدعم عند إدخال بروتوكول جديد؟	- جلسات تعزيزية؟ - عروض عملية؟
	كيف تصف دور القيادة في التطبيق؟	- متابعة الالتزام

		-التوجيه
	كيف ساعد دعم القيادة أو أعاق التطبيق؟	-موقف إيجابي/سلبي
4.التأثير	هل لاحظت تغييرات في سلامة المرضى؟	-مؤشرات تحسين :الأخطاء، التعافي
	هل ساعد بروتوكول في منع خطأ؟	-ماذا لو لم يُستخدم؟
	هل كان بروتوكول مقيّدًا أكثر من اللازم؟	-تأثيره على الرعاية
	كيف تتعامل مع الحالات غير الملائمة تمامًا للبروتوكول؟	-مدى المرونة -رأي القيادة
	كيف تؤثر البروتوكولات على فهم المرضى والتزامهم؟	-تحسين أو ارتباك
	ملاحظات المرضى حول الرعاية المعيارية؟	-الاتساق، الوضوح، الجفاوة
5.المراقبة	كيف يتم تقديم البروتوكولات الجديدة؟	-آلية منظمة :اجتماعات/نشرات
	ما التدريب المقدم عند تطبيق بروتوكول جديد؟	-عملي/نظري -فائدته
	ما الأنظمة لضمان الالتزام؟	-تدقيقات/تقييم زملاء
	ما مدى فعالية أدوات المراقبة؟	-الاتساق -استجابة الموظفين
	ما التحسينات المقترحة للتطبيق؟	-المزيد من التدريب/المرونة
	أين يمكن إضافة مرونة لتحسين الجودة؟	-إجراءات تتطلب مرونة
	هل لديك تجارب أو رؤى إضافية؟	-نقاط مهمة لم تُناقش
	هل توجد نقاط مهمة لم نتناولها؟	-ما يجب أن يعرفه الباحثون/الإدارة

Appendix (6) : Interview Guide: Patient Perceptions of Standardized Protocols : English – Arabic

Section	Main Question	Probing Questions
Section 1: Background and Hospital Experience	How would you describe yourself and your general health background?	- Can you tell me more about your medical history or any ongoing conditions? - How has your health affected your daily life?
	What has your experience been like in terms of the time you've spent receiving care at this hospital?	- How frequently have you visited or been admitted here? - How do you feel about the wait times or appointment scheduling?
	What brought you to this hospital initially, and how has your relationship with it evolved?	- Were you referred by another doctor, or did you come here on your own? - Have you noticed any changes in the hospital services since your first visit?
	What can you share about your most recent hospital stay or visit?	- How long was your stay? - What stood out to you during that visit? - Were there any challenges you faced?
	What kind of care or treatment did you receive during that visit, and how did it go?	- Did you feel the treatment was effective? - Were you comfortable during the care process?
	How would you describe your overall experience with the hospital so far?	- What have been the best and worst parts of your experience? - Would you recommend this hospital to others? Why or why not?
Section 2: Communication and Involvement in Care	How has communication with your healthcare providers felt to you during your care?	- Were you given clear explanations? - Did you feel listened to? - Were language or cultural differences a barrier?
	In what ways have your condition and treatment been explained to you?	- Did providers use any materials like brochures or drawings? - Were you given time to ask questions?
	How have your questions or concerns been handled by the healthcare team?	- Can you describe a time when a concern was addressed well or not well? - Did you feel supported?
	How have you been involved in decisions about your care or treatment plan?	- Were you given options to choose from? - Did you feel pressured or comfortable making decisions?
	How were the risks and benefits of your treatment discussed with you?	- Did you feel fully informed before consenting to treatment? - Were potential side effects explained?
	How would you describe the way	- Were your cultural or religious needs

	your personal preferences and values have been considered in your care?	respected? - Did providers ask about your preferences?
Section 3: Perceptions of Safety and Standardized Practices	How do you feel about the level of safety provided during your care at this hospital?	- Have you ever felt unsafe? - What made you feel safe or unsafe?
	What safety practices have you noticed during your visits or stays here?	- Did you see staff washing hands or using gloves? - Were there safety signs or instructions you noticed?
	How have you observed healthcare workers following specific procedures or routines?	- Can you describe any steps nurses or doctors followed that seemed standardized? - Did you notice any deviations?
	What patterns or steps have you noticed in how nurses and doctors carry out your care?	- How consistent was the care from visit to visit? - Did you feel care was organized and systematic?
	What experiences have you had—if any—where something felt unsafe or went wrong in your care?	- What happened? - How did it affect your confidence in the care?
	When something didn't go as expected, how was the situation handled by the healthcare team?	- Did staff apologize or explain what happened? - Was there a follow-up to prevent future problems?
Section 4: Trust and Standardized Care	How would you describe your level of trust in this hospital's ability to provide quality care?	- What builds or undermines your trust here? - Have you ever doubted the care you received?
	What thoughts or concerns have you had about decisions made during your care?	- Were you worried about any treatments or tests? - Did you feel involved enough in decisions?
	What are your views on the use of standardized protocols in healthcare settings?	- Do you think protocols help ensure good care? - Have you ever felt that protocols limited personalized care?
	How have consistent care procedures affected your experience as a patient?	- Did you notice more reliability or predictability? - Did it make the experience better or worse?
	What moments stand out when	- Can you share an example?

	your care felt too rigid or impersonal due to protocol use?	- How did that make you feel?
	In what ways have your personal needs or circumstances felt either supported or overlooked during your care?	- Were any accommodations made for you? - Did you ever feel your individual situation was ignored?
Section 5: Recommendations and Closing Reflections	What changes do you think would make healthcare services safer or more centered around patients?	- What specific improvements would you suggest? - Are there services or supports missing?
	How do you think your experience could be improved through more personal attention or better communication?	- What would make you feel more cared for? - How important is the relationship with your healthcare provider?
	What would help you feel more confident and secure while receiving care?	- What kind of information or support do you need? - How important is transparency to you?
	How could clearer information or more involvement in decisions improve your healthcare experience?	- Would you want more educational materials? - Would you like to be part of care planning meetings?
	What additional comments, stories, or reflections would you like to share about your care?	- Is there anything we haven't discussed? - Do you have any memorable experiences you want to tell?
	What topics do you think we haven't touched on that are important to discuss?	- Are there other aspects of hospital care you think we should explore? - Any concerns or hopes you want to add?

دليل المقابلة الخاصة بالمرضى : تصورات المرضى حول جودة الرعاية والسلامة والرعاية المعيارية

القسم	أسئلة المقابلة
القسم الأول: الخلفية والخبرة في المستشفى	-كيف تصف نفسك وخلفيتك الصحية بشكل عام؟ -كيف كانت تجربتك فيما يتعلق بالوقت الذي قضيته في تلقي الرعاية في هذا المستشفى؟ -ما الذي دفعك لزيارة هذا المستشفى في البداية، وكيف تطورت علاقتك به مع مرور الوقت؟ -ماذا يمكنك أن تخبرنا عن زيارتك أو إقامتك الأخيرة في المستشفى؟ -ما نوع الرعاية أو العلاج الذي تلقيته خلال تلك الزيارة، وكيف كانت تجربتك معه؟ -كيف تصف تجربتك العامة مع المستشفى حتى الآن؟
القسم الثاني: التواصل والمشاركة في الرعاية	-كيف كان شعورك تجاه التواصل مع مقدمي الرعاية الصحية خلال فترة العلاج؟ -بأي طرق تم شرح حالتك الصحية وخطة العلاج لك؟ -كيف تعامل فريق الرعاية الصحية مع أسئلتك أو مخاوفك؟ -كيف تم إشراكك في اتخاذ القرارات المتعلقة برعايتك أو خطة العلاج الخاصة بك؟ -كيف تمت مناقشة فوائد ومخاطر العلاج معك؟ -كيف تصف الطريقة التي تم من خلالها مراعاة تفضيلاتك وقيمك الشخصية في الرعاية التي تلقيتها؟
القسم الثالث: تصورات السلامة والممارسات المعيارية	-كيف تشعر تجاه مستوى السلامة الذي تم توفيره لك خلال الرعاية؟ -ما هي ممارسات السلامة التي لاحظتها خلال زيارتك أو إقامتك في المستشفى؟ -كيف لاحظت التزام العاملين في الرعاية الصحية بإجراءات أو بروتوكولات معينة؟ -ما الأنماط أو الخطوات التي لاحظتها في الطريقة التي ينفذ بها الأطباء والممرضون رعايتك؟ -هل مررت بتجارب شعرت فيها أن شيئاً ما لم يكن آمناً أو حدث بشكل خاطئ خلال رعايتك؟ -في حال حدث أمر غير متوقع، كيف تعامل فريق الرعاية الصحية مع الموقف؟
القسم الرابع: الثقة والرعاية المعيارية	-كيف تصف مستوى ثقتك في قدرة هذا المستشفى على تقديم رعاية صحية عالية الجودة؟ -ما الأفكار أو المخاوف التي كانت لديك بشأن القرارات المتخذة خلال رعايتك؟ -ما رأيك في استخدام البروتوكولات المعيارية في بيانات الرعاية الصحية؟ -كيف أثرت إجراءات الرعاية الموحدة على تجربتك كمريض؟ -ما المواقف التي شعرت فيها أن الرعاية كانت جامدة أو غير شخصية بسبب استخدام البروتوكولات؟ -كيف شعرت بأنه تم دعم احتياجاتك أو ربما تجاهلها خلال الرعاية الموحدة؟
القسم الخامس: التوصيات والانطباعات الختامية	-ما التغييرات التي تعتقد أنها قد تجعل خدمات الرعاية الصحية أكثر أماناً وأكثر تركيزاً على المرضى؟ -كيف يمكن تحسين تجربتك من خلال مزيد من الاهتمام الشخصي أو التواصل الأفضل؟ -ما الذي يساعدك على الشعور بمزيد من الثقة والأمان أثناء تلقي الرعاية؟ -كيف يمكن أن يساعد توضيح المعلومات أو إشراكك بشكل أكبر في القرارات على تحسين تجربتك الصحية؟ -هل لديك أي تعليقات إضافية أو قصص أو تجارب تود مشاركتها حول رعايتك الصحية؟ -ما الموضوعات التي تعتقد أننا لم نتطرق إليها ويجب مناقشتها؟

Appendix 7 Thematic Code Matrix by Hospital

Theme	Sub-Themes	IAH Participants	ISH Participants
Understanding & Access	Informal vs formal training	P1, P3, P6, P8	P10, P12, P13
Patient Safety	Reduced errors and improved consistency	P4, P2, P7	P11, P14, P18
Implementation Barriers	Staff shortages, training	P1, P5, P6	P12, P15, P16
Leadership Support	Active monitoring & audits	P8, P9	P13, P17, P19
Flexibility & Judgment	Clinical autonomy	P7, P4	P11, P14

Appendix 8. Sample Literally Quotes

Hospital	Participant	Role	Quote
IAH	P4	Head Nurse	“Protocols help us react faster in emergencies, which saves lives.”
IAH	P6	Nurse Educator	“We need more formal workshops to understand new protocols better.”
ISH	P13	Department Manager	“Monthly meetings help us stay updated and engaged with protocols.”
ISH	P17	Hospital Director	“Leadership support here ensures protocols are taken seriously.”
Both	P7 (IAH), P14 (ISH)	Physicians	“Protocols are guides, but clinical judgment is essential in many cases.”

اثر معيرة الإجراءات الصحية على سلامة المرضى وجودة نتائج الرعاية الصحية: دراسة مختلطة

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د. عاطف الريماوي

ملخص

تعد سلامة المرضى إحدى أولويات الأنظمة الصحية عالمياً، إلا أن النظام الصحي في فلسطين ما يزال يواجه تحديات هيكلية، ونقصاً في الموارد، ومعوقات تنظيمية تؤخر تطبيق توحيد الخدمات الصحية. وعلى الرغم من الدور المهم الذي تلعبه مبادرات الاعتماد الصحي عالمياً في تعزيز الممارسات الآمنة، فإن الأدلة المتوفرة حول فعاليتها في المستشفيات الفلسطينية ما تزال محدودة.

هدفت هذه الدراسة إلى تقييم أثر تطبيق التوحيد (المعيارية) على مؤشرات سلامة المرضى والنتائج السريرية في مستشفيات فلسطينيين، إضافةً إلى استكشاف تصورات مقدمي الرعاية الصحية والمرضى حول تطبيق توحيد الخدمات الصحية.

استخدم تصميم البحث المختلط المتقارب؛ حيث جمعت البيانات الكمية بشكل رجعي من السجلات الطبية الإلكترونية والسجلات الصحية قبل وبعد تطبيق البروتوكولات المعيارية في مستشفى العربي الاستشاري ومستشفى ابن سينا. شملت المؤشرات: الأخطاء الدوائية، التهابات المسالك البولية المرتبطة بالقسطرة، التهابات مجرى الدم المرتبطة بالقسطرة الوريدية المركزية، سقوط المرضى، إعادة الإدخال خلال 30 يوماً، متوسط مدة الإقامة، رضا المرضى، وتصورات العاملين حول ثقافة السلامة. كما جمعت البيانات النوعية من خلال مقابلات شبه مهيكلة مع مقدمي الرعاية الصحية والمرضى الذين تم خروجهم من المستشفى، وحلّت باستخدام منهجية التحليل الموضوعي لتحديد الأنماط المتعلقة بأهمية البروتوكولات، قابليتها للتطبيق، أثرها المتصور، ومعوقات التنفيذ.

أظهرت النتائج تحسّات متفاوتة بين المستشفيات بعد الاعتماد. ففي مستشفى العربي الاستشاري، انخفضت الأخطاء الدوائية بنسبة 17.9%، مع تحسن محدود في رضا المرضى وثقافة السلامة، إلا أن معدلات سقوط المرضى ارتفعت بنسبة 64.3%، بينما ظلت التغيرات في معدلات التهابات المسالك البولية المرتبطة بالقسطرة التهابات مجرى الدم المرتبطة بالقسطرة الوريدية المركزية محدودة. في المقابل، حقق مستشفى ابن سينا تحسّات أكثر وضوحاً، شملت انخفاضاً في الأخطاء الدوائية بنسبة 60%، وسقوط المرضى بنسبة 58.5%، ومتوسط مدة الإقامة، إلى جانب تحسن أكبر في رضا المرضى، في حين ساءت مؤشرات العدوى في التهابات المسالك البولية المرتبطة بالقسطرة و التهابات مجرى الدم المرتبطة بالقسطرة الوريدية المركزية ومعدلات إعادة الإدخال. وبوجه عام، اتسمت اتجاهات مؤشرات العدوى بعدم الاتساق، مما يشير إلى حساسيتها للعوامل السياقية والتشغيلية. كما أبرزت النتائج النوعية الدور المحوري لدعم القيادة، وجودة التواصل، وعبء العمل، والتدريب المستمر في تعزيز الالتزام بالبروتوكولات المعيارية وتشكيل فعاليتها المتصورة.

تخلص الدراسة إلى أن توحيد الخدمات الصحية يسهم في تحسين سلامة المرضى والنتائج السريرية، إلا أن فعاليته تعتمد على جاهزية المؤسسات، والتزام القيادة، وتوفر الموارد. ويعد تعزيز ثقافة السلامة، والتدريب المستمر، وتحسين آليات المتابعة والرصد عوامل أساسية لضمان ترسيخ آثار التوحيد والاعتماد الصحي واستدامتها في المستشفيات الفلسطينية.

الكلمات المفتاحية: الرعاية الصحية الموحدة، العمليات، سلامة المرضى، نتائج الرعاية الصحية